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GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

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Construction Skill Development Council

Facilitator Guide



Sector
Construction

Sub-Sector
Real Estate and Infrastructure Construction

Occupation
Interior & Exterior Finishes

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False Ceiling & Dry Wall Installer

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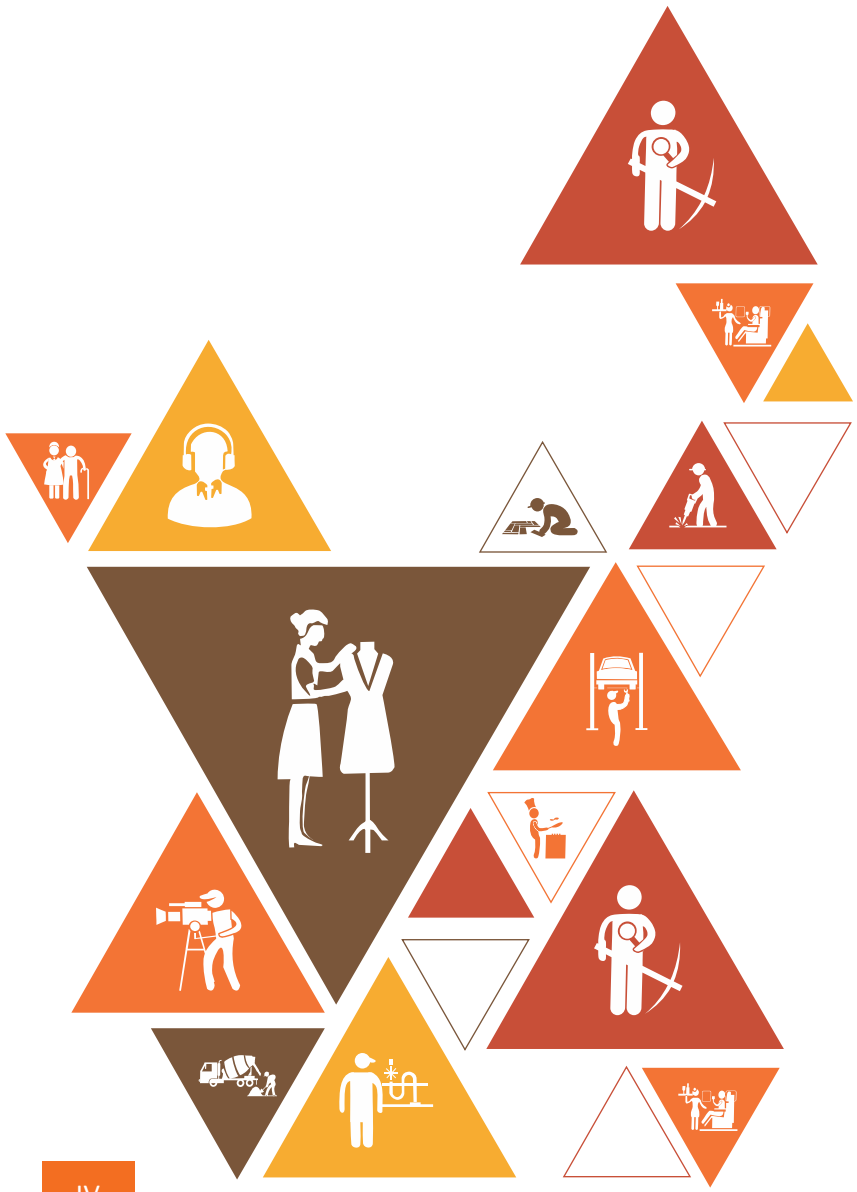
Disclaimer

"Skilling is building a better India. If we have to move India towards development then Skill Development should be our mission."

Shri Narendra Modi
Prime Minister of India



Acknowledgement

We are thankful to all organizations and individuals who have helped us in the preparation of this Facilitator Guide. We also wish to extend our gratitude to all those who reviewed the content and provided valuable inputs for improving the quality, coherence and content presentation of chapters. This Facilitator Guide will lead to the successful rollout of the skill development initiatives, helping greatly our stakeholders particularly trainees, trainers and assessors etc. We are thankful to our Subject Matter Expert for the content and for helping us in the preparation of this Facilitator Guide.

It is expected that this publication would meet the complete requirements of QP/NOS based training delivery. We welcome suggestions from users, industry experts and other stakeholders for any improvement in future.

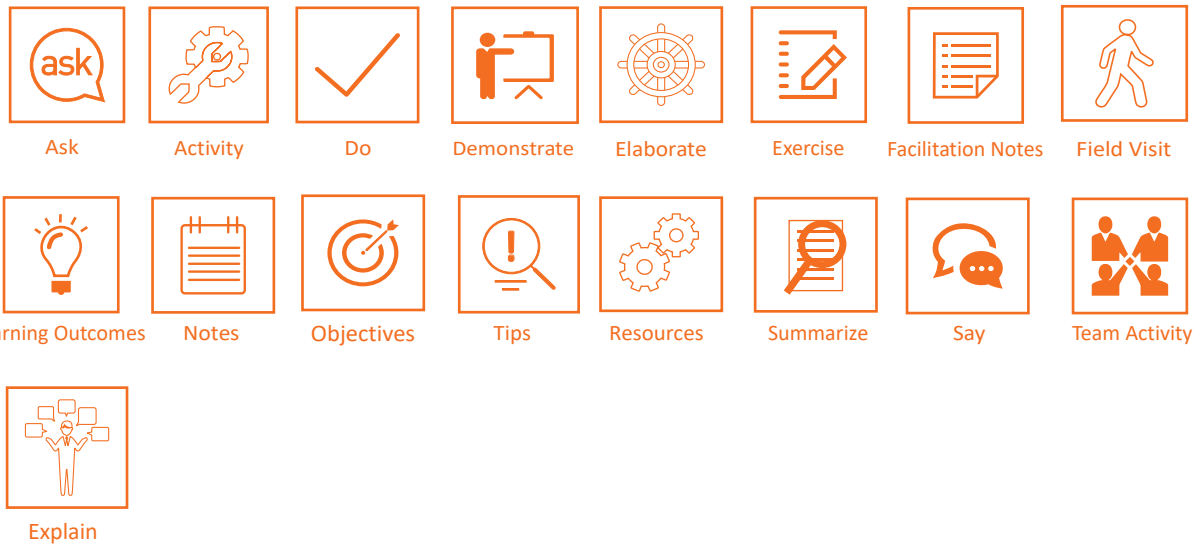
About the Book

The objective of the guide is to provide an approach map for interacting with the trainees undergoing training in this job role. The course aims to provide both theoretical and practical knowledge to the trainees and also to guide them about False Ceiling & Dry Wall Installer. The guide is neither a substitute nor a complete road map, but an aid to help to pass on the knowledge on all the aspects to the trainees in a systematic manner. It is expected that the trainer is fully conversant with all the contents of the guide. The guide is just to indicate how to proceed in covering a topic and includes some additional information that may be necessary for the trainer to develop better comprehension of the following aspects:

- **Knowledge and Understanding:** Satisfactory operational learning and comprehension to play out the required chore.
- **Performance Criteria:** Pick up the required aptitudes through hands-on preparation and play out the required operations inside the predetermined measures.
- **Professional Skills:** Capacity to settle on operational choices relating to the zone of work.

The job will also include judging comprehension and also help them learn more through hands-on training. But it has to be ensured that these are following the knowledge imparted and time spent on each unit. It is expected that irrespective of the region, knowledge of all aspects will be imparted to trainees.

Symbols Used



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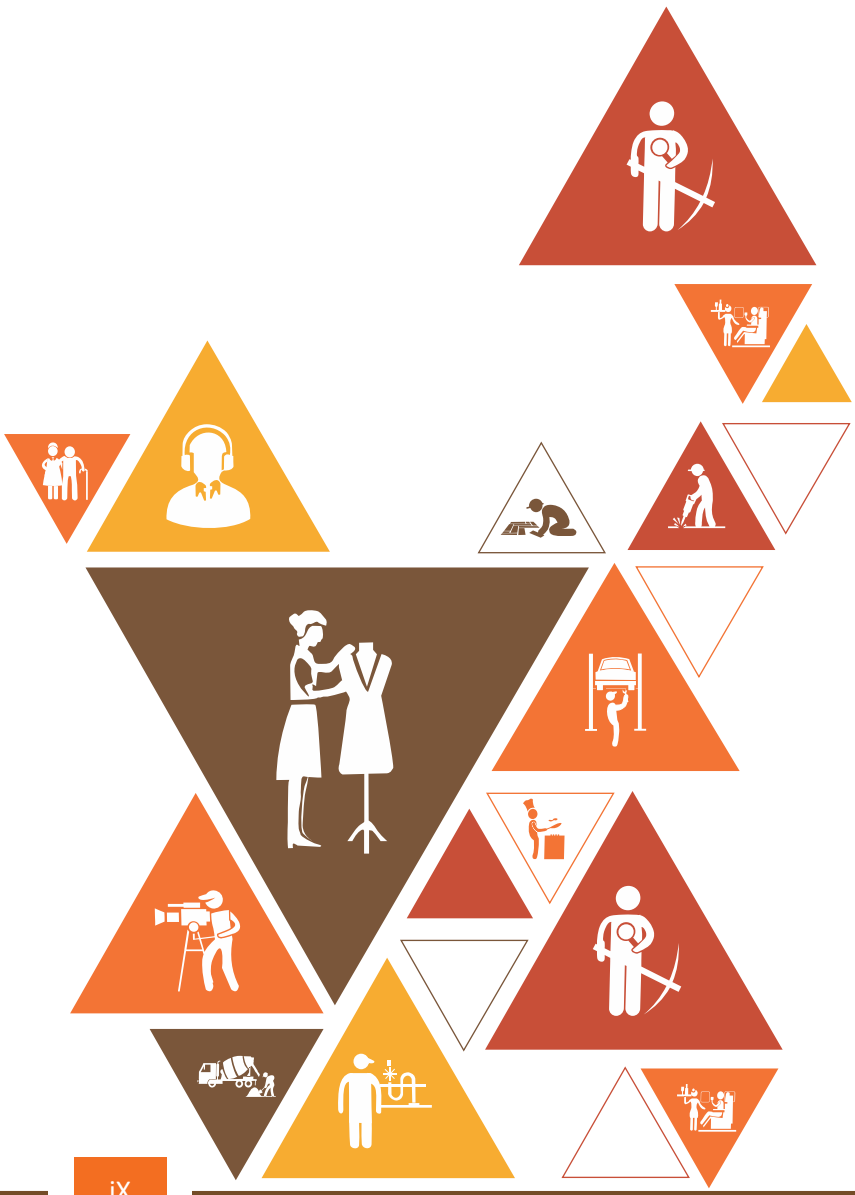
https://www.skillindiadigital.gov.in/content/list



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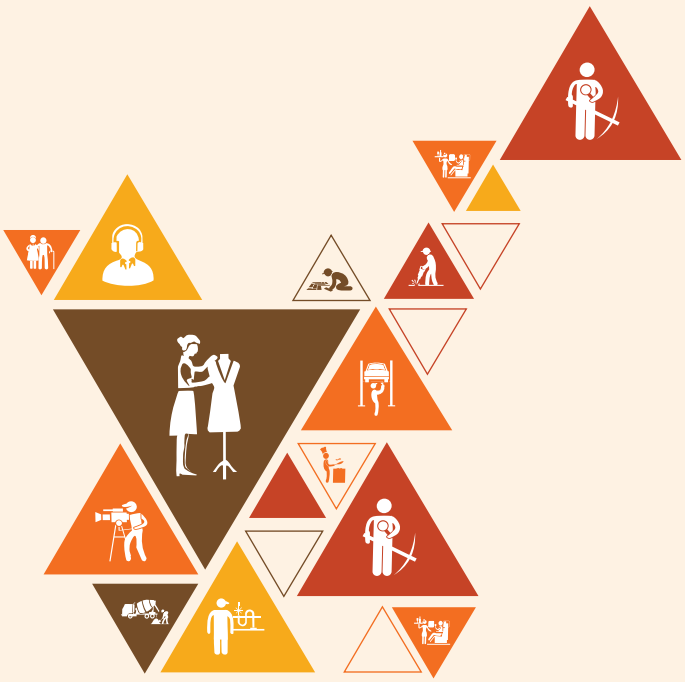
1. Introduction of Construction Sector and False Ceiling & Dry Wall Installer Job Role

Unit 1.1 - Construction Industry in India

Unit 1.2 - About Interior and Exterior Finishes Occupation



Bridge Module

Key Learning Outcomes

At the end of this module, trainer will ensure that participant will be able to:

1. Explain role description/ functions of the job role-false ceiling and drywall installer.
2. Define the personal attributes required in interior and exterior finishes occupation.
3. Recall the basic terms used in interior and exterior finishes occupation.
4. Explain future possible progression for role of false ceiling and drywall installer.

Unit 1.1: Construction Industry in India

Unit Objectives

At the end of this unit, trainer will ensure that participant will be able to:

1. Describe the size and scope of the construction industry and its sub-sectors
2. Compare urban and rural construction
3. Observe and outline modernization of construction
4. Know about major occupations in the construction sector

Resources to be used

- **Theory**
    - **Training Kit** - Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films.

Say

- Let's begin with an ice-breaking session, introduce yourself and ask participants to introduce themselves.

Team Activity

- **Purpose:** This activity aims to familiarise the participants in the group with one another.
- **Tentative Duration:** 15 Mins
- **Procedure:**
    - Ask the participants to pronounce their name with an adjective beginning with the initial letter of their name.
    - Request that they additionally provide a brief introduction of themselves.
- **Expected Outcome:** The outcome of this activity is that the participants will become familiar with each other.

Explain

Introduction to Major Occupations in Construction Sector:

- Explain about construction sector in India
- Compare urban and rural construction types
- Observe and outline modernization of construction
- Know about major occupations in the construction sector

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 1.1 to explain Construction Industry.
- The construction industry in India is a critical driver of economic growth, encompassing various sectors such as real estate, infrastructure, and rural construction. Let's take a closer look at each of these segments:
    - **Real Estate Sector**: The real estate sector in India includes the development of residential, commercial, and industrial properties. It has a substantial impact on urbanization and provides essential spaces for living, working, and recreation. Key Points are:
        - **Residential Properties:** The demand for housing, especially in urban areas, remains high due to rapid urbanization and population growth.
        - **Commercial Properties:** The growth of industries and businesses fuels demand for office spaces, retail outlets, and commercial complexes.
        - **Industrial Properties:** As manufacturing and industrial sectors expand, there's a need for well-designed industrial facilities and warehouses.
    - **Infrastructure Development:** India's focus on infrastructure development is crucial for economic progress and improving the quality of life for its citizens. Key Points are:
        - **Transportation:** Roadways, highways, railways, airports, and ports are being developed to improve connectivity.
        - **Energy:** Investment in power plants and renewable energy projects is essential for meeting the energy needs of a growing economy.
        - **Urban Development:** The "Smart Cities Mission" aims to create sustainable and efficient urban centers.
    - Rural construction focuses on developing infrastructure and facilities in rural areas to bridge the urban-rural divide and improve the living standards of rural communities. Key Points are:
        - **Housing:** Initiatives like "Pradhan Mantri Awas Yojana - Rural" aim to provide affordable housing to rural populations.
        - **Rural Infrastructure:** Building roads, schools, healthcare facilities, and water supply systems enhances rural living conditions.
- The construction sector encompasses a wide range of job opportunities across various occupations. Here are some major occupations in the construction industry along with a few job roles under each occupation:
    - **Civil Engineers:** Civil engineers play a key role in designing, planning, and overseeing construction projects. They ensure projects are completed safely, efficiently, and according to specifications.

- **Structural Engineer:** Designs and analyzes the structural components of buildings and infrastructure projects.
- **Geotechnical Engineer:** Evaluates soil conditions and provides recommendations for foundation design.
- **Transportation Engineer:** Designs roads, highways, and transportation systems to ensure smooth mobility.

- **Architects:** Architects are responsible for designing the overall layout, aesthetics, and functionality of buildings and structures.
  - **Residential Architect:** Designs homes and residential buildings, focusing on functionality and aesthetics.
  - **Commercial Architect:** Specializes in designing commercial spaces, offices, and retail complexes.
  - **Landscape Architect:** Plans outdoor spaces, parks, and landscapes within construction projects.
- **Construction Managers:** Construction managers oversee the entire construction process, including budgeting, scheduling, and coordinating various teams.
  - **Project Manager:** Manages all aspects of a construction project, from planning to completion.
  - **Site Manager:** Supervises on-site activities, ensuring safety and efficient progress.
  - **Estimator:** Calculates project costs and prepares budgets for construction projects.
- **Electricians:** Electricians are responsible for installing and maintaining electrical systems in buildings and structures.
  - **Residential Electrician:** Installs electrical systems in homes and residential complexes.
  - **Commercial Electrician:** Works on electrical installations in commercial buildings and offices.
  - **Industrial Electrician:** Focuses on electrical systems in factories and industrial facilities.
- **Plumbers:** Plumbers install, repair, and maintain water supply and drainage systems in buildings.
  - **Residential Plumber:** Handles plumbing systems in homes and residential buildings.
  - **Commercial Plumber:** Works on plumbing installations in commercial spaces and offices.
  - **Pipefitter:** Installs and maintains pipes in industrial settings.
- **Welders and False Ceiling & Dry Wall Installer:** Welders and False Ceiling & Dry Wall Installer join and shape metal parts to create structures and components.
  - **Structural Welder:** Welds and assembles metal parts for construction projects.
  - **Pipe Welder:** Specializes in welding pipes for plumbing and industrial systems.
  - **Sheet Metal False Ceiling & Dry Wall Installer:** Crafts metal components used in construction projects.

- **Surveyors:** Surveyors measure and map out the land, providing crucial data for construction projects.
  - **Land Surveyor:** Measures and defines property boundaries and topography.
  - **Quantity Surveyor:** Estimates materials and costs for construction projects.
  - **Geodetic Surveyor:** Uses advanced techniques to map larger areas and create accurate models.
- **Construction Laborers:** Construction laborers perform various physical tasks on construction sites to support other professionals.
  - **Concrete Worker:** Pours, levels, and finishes concrete for foundations and structures.
  - **Carpenter:** Constructs and installs wooden components in buildings.
  - **Mason:** Lays bricks, stones, and other masonry materials to build structures.

- Each of these major occupations within the construction sector offers a wide range of job opportunities and career paths. From engineering and design to hands-on labor, the construction industry provides diverse roles that contribute to building the world around us.

Say

- Let us now perform an activity based on various market segments of the construction industry.

Team Activity

- **Purpose:** The objective of this activity is to introduce participants to the different market segments within the construction industry.
- **Resources Required:** Presentation materials (slides or handouts) explaining market segments in the construction industry, internet access or library resources for research, whiteboard or flip chart with markers, printed construction industry reports or data (optional but helpful), worksheets for students to complete during the activity.
- **Tentative Duration:** 60-90 minutes
- **Methods/Procedure:**
  - **Step 1:** Introduction- Begin the activity by discussing the importance of understanding market segments in the construction industry. Explain that market segmentation helps professionals identify specialized opportunities and areas of expertise within the broader field of construction.
  - **Step 2:** Presentation- Deliver a presentation on the different market segments within the construction industry. Include information on residential construction, commercial construction, industrial construction, infrastructure development, and specializations like green building, renovation, and restoration. Use visual aids to make the information more

engaging and accessible.

- **Step 3:** Group Research- Divide the students into small groups and assign each group a specific market segment to focus on. Provide the groups with access to the internet or library resources to conduct research on their assigned market segment. They should explore the scope, current trends, major players, challenges, and potential career opportunities within their segment.
- **Step 4:** Group Presentation- Each group presents their findings to the rest of the class. Encourage them to use visuals, statistics, and examples to support their presentation. Allow for a short Q&A session after each presentation to clarify doubts and exchange insights.
- **Step 5:** Reflection and Discussion- Lead a class discussion to debrief the activity. Encourage students to share their thoughts on which market segments they find most appealing and why. Discuss the skills and qualifications required for different market segments and how students can prepare to excel in their chosen area.

- **Expected Outcome:** By the end of this classroom activity, students are expected to:
  - Understand the concept of market segmentation in the construction industry.
  - Identify the various market segments within the construction field, including residential, commercial, industrial, infrastructure, and specialized sectors.
  - Analyse the characteristics, opportunities, and challenges associated with each market segment.
  - Gain insights into potential career paths and specialization options within the construction industry.
  - Reflect on their interests and skills to make informed decisions about their vocational course and future career goals in construction.

Notes

Unit 1.2: About Fabrication Occupation

Unit Objectives

At the end of this unit, trainer will ensure that participant will be able to:

1. Explain role description/ functions of the job role-false ceiling and drywall installer.
2. Define the personal attributes required in interior and exterior finishes occupation.
3. Recall the basic terms used in interior and exterior finishes occupation.
4. Explain future possible progression for role of false ceiling and drywall installer.

Resources to be used

- **Theory**
    - **Training Kit** - Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films.

Explain

- Explain the role description/ functions of the job role- false ceiling and drywall installer.
- Reiterate the personal attributes required in interior and exterior finishes occupation.
- Explain the future possible progression for role of false ceiling and drywall installer.

Career Progression Path

- Show and explain the various stages of career progression path.
- List down the important mile stones in the progression path.
- Discuss the advantages of the career progression path.

Elaborate

- About the necessity of defining roles and responsibilities.
- List the roles and responsibilities of a false ceiling and drywall installer in detail.
- Correlate the roles and responsibilities of a false ceiling and drywall installer.
- About the necessity of personal attributes.
- List the personal attributes of a false ceiling and drywall installer in detail.
- Correlate the roles, responsibilities and personal attributes of a false ceiling and drywall installer.
- Show and explain the various stages of career progression path.
- Discuss the advantages of the career progression path.

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 1.2 to explain about Interior and Exterior Finishes Occupation.
- **Roles and Responsibilities of a False Ceiling & Dry Wall Installer:**
  - Review project plans and drawings for installation requirements.
  - Procure and prepare materials, including ceiling panels and drywall sheets.
  - Clear and prepare work areas for installation.
  - Install ceiling grids, tiles, or panels as per design specifications.
  - Mount drywall sheets on walls and ceilings, ensuring even finishes.
  - Apply adhesives or fasteners to secure drywall to framing.
  - Install insulation for thermal and acoustic purposes.
  - Apply sealants and joint compounds for a finished look.
  - Mount fixtures and fittings, such as light fixtures and electrical outlets.
  - Conduct quality inspections and rectify defects.
  - Adhere to safety protocols and use PPE.
  - Maintain clear communication with project teams.
  - Clean and dispose of debris and waste.
  - Keep records of materials, work hours, and deviations.
  - Troubleshoot and address installation challenges.
  - Stay updated on industry trends and techniques.
- **Personal Attributes of a False Ceiling & Dry Wall Installer:**
  - Attention to Detail
  - Physical Stamina
  - Problem-Solving Skills
  - Manual Dexterity
  - Teamwork
  - Safety Consciousness
  - Time Management
  - Customer Service
  - Adaptability
  - Quality Orientation
  - Attention to Safety Codes

- Detail-Oriented
- Patience
- Resilience
- Organizational Skills
- Communication
- Ethical Conduct

- **Career Progression Path Stages:**
  - **Entry-Level Apprentice:**
    - Learn the basics of false ceiling and drywall installation.
    - Assist experienced installers with tasks.
    - Acquire knowledge of tools and materials.
  - **Skilled Installer:**
    - Work independently on simple installation projects.
    - Gain proficiency in various ceiling and drywall systems.
    - Develop speed and accuracy in installation.
  - **Lead Installer:**
    - Supervise installation teams and assign tasks.
    - Train and mentor apprentices.
    - Ensure quality and safety standards are met.
  - **Foreman/Supervisor:**
    - Oversee multiple installation crews.
    - Plan project schedules and allocate resources.
    - Coordinate with clients and project managers.
  - **Project Manager:**
    - Manage entire installation projects from start to finish.
    - Estimate project costs and create budgets.
    - Coordinate with subcontractors and suppliers.
  - **Specialist/Consultant:**
    - Develop expertise in specific types of false ceilings or drywall systems.
    - Offer consultancy services to clients or other installers.
    - Stay updated with industry trends and innovations.

- **Business Owner/Entrepreneur:**
  - Start your own false ceiling and drywall installation company.
  - Handle business operations, marketing, and client relations.
  - Build a team of installers and expand your business.
- **Industry Trainer/Educator:**
  - Share your knowledge and experience by becoming a trainer or educator.
  - Teach aspiring installers in trade schools or apprenticeship programs.
  - Contribute to industry standards and best practices.
- **Industry Inspector/Quality Assurance:**
  - Work as an inspector or quality assurance specialist.
  - Ensure that installations meet regulatory and quality standards.
  - Provide feedback for continuous improvement.
- **Retirement/Consultancy:**
  - Consider retirement or semi-retirement.
  - Offer consultancy services for complex projects.
  - Share your expertise with the next generation of installers.

Say

- Let us now perform an activity based on various career opportunities available for a False Ceiling & Dry Wall Installer.

Activity

- **Purpose:** This activity aims to acquaint participants with various career prospects within the False Ceiling & Dry Wall Installation field. It will emphasize the roles, responsibilities, and potential career progression for False Ceiling & Dry Wall Installers.
- **Resources Required:** PowerPoint Presentation, Handouts or printouts of job descriptions.
- **Tentative Duration:** 60 Mins
- **Procedure:**
  - Introduction: Begin by highlighting the significance of False Ceiling & Dry Wall Installers in the construction industry, stressing their crucial role in creating functional and aesthetic interior spaces.

- **Objective:** Explain that the activity aims to explore diverse employment opportunities available to False Ceiling & Dry Wall Installers and inspire participants to consider different career paths within this field.
- **Initial Thoughts:** Encourage participants to share their initial thoughts on what they believe the roles and responsibilities of a False Ceiling & Dry Wall Installer entail.
- **Job Opportunities Handouts:** Distribute handouts or printouts containing information about various employment opportunities in False Ceiling & Dry Wall Installation, categorized according to different career levels and specializations.
- **Discussion:** Go through each opportunity, elaborating on roles, responsibilities, and the requisite skills. Discuss how each career path aligns with different aspects of False Ceiling & Dry Wall Installation.
- **Group Activity:** Divide participants into small groups.
- **Assignment:** Assign each group a specific employment opportunity from the handouts. Instruct them to discuss key aspects, including qualifications, skills, and potential career progression for that role.
- **Group Presentation:** Each group presents a brief researched explanation of the assigned employment opportunity to the entire group.
- **Summary:** Summarize the key points presented by each group, highlighting the wide range of career paths available to False Ceiling & Dry Wall Installers. Emphasize the importance of False Ceiling & Dry Wall Installers in the construction and interior design industries.

- **Expected outcome:** Participants will gain insights into the diverse career opportunities within the False Ceiling & Dry Wall Installation field, comprehend the specific roles and responsibilities of False Ceiling & Dry Wall Installers, and be motivated to explore potential career trajectories within this dynamic industry.

Exercise

Key Solutions to PHB Exercise

1. False ceiling and drywall installers are responsible for installing interior finishes, including suspended ceilings and drywall partitions, to create functional and aesthetically pleasing indoor spaces.
2. False ceiling installers enhance aesthetics by concealing structural elements and providing a smooth, finished appearance. They improve functionality by integrating lighting, HVAC systems, and soundproofing.
3. Attention to detail ensures precise installation, seamless finishes, and a high-quality result in interior and exterior finishes. It helps avoid flaws or imperfections that may affect aesthetics and performance.
4. Vigilance is an essential attribute for ensuring safety in interior and exterior finishes work. Being alert to potential hazards and following safety protocols is vital.
5. Skilled false ceiling and drywall installers may advance to roles such as project manager or construction supervisor, taking on leadership and management responsibilities.

B. Fill-in-the-Blanks Questions:

1. False ceiling and drywall installers are skilled tradespeople responsible for the installation of false ceilings and drywall in interior construction projects.
2. Good teamwork skills are essential for effective communication with fellow construction professionals.
3. Exterior finishes often include the installation of caulking to prevent water penetration at joints and seams.
4. With additional training and experience, a false ceiling and drywall installer may advance to roles such as project manager or construction supervisor.
5. Some false ceiling and drywall installers may transition into roles as construction managers or coordinators as they gain experience and leadership skills.

C. True/False Questions:

1. False.
2. False.
3. False.
4. True.
5. True.

Notes

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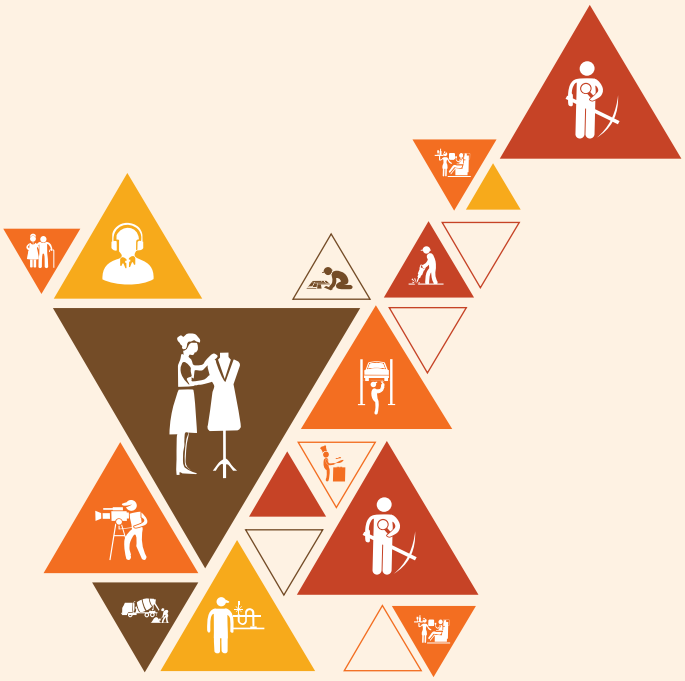
2. Generic Mathematical Skills

Unit 2.1 - Unit Conversion and Measurement

Unit 2.2 - Basic Geometrical Shapes and its Properties



Key Learning Outcomes

At the end of this module, trainer will ensure that participant will be able to:

1. Explain brief on metric system of measurement;
2. Explain briefly inch system of measurement;
3. Perform basic arithmetic calculations;
4. Know about basic geometrical shapes;
5. Calculate area, volume and perimeter of different shapes;

UNIT 2.1: Unit Conversion and Measurement

Unit Objectives

At the end of this unit, trainer will ensure that participant will be able to:

1. Explain brief on metric system of measurement; and
2. Understanding inch system of measurement.

Resources to be used

- **Theory**
  - **Training Kit -** Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films.
- **Practical**
  - Calculator, conversion charts, measurement tapes

Do

- Perform basic mathematical calculation
- Identify the different types of shapes

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 2.1 to explain Unit Conversion and Measurement.
- The metric system of measurement is a decimal-based system used for measuring various quantities such as length, area, volume, and weight. In this system:
  - Length is typically measured in meters (m) or millimeters (mm).
  - Area is measured in square meters (m^2).
  - Volume is measured in liters (L) or cubic meters (m^3).
  - Weight is measured in grams (g) or kilograms (kg).

As a False Ceiling & Dry Wall Installer, understanding the metric system is essential when working with construction materials and measurements. For example, you might need to measure the dimensions of plasterboards or ceiling panels in meters or millimeters to ensure they fit accurately within a space. Knowing how to convert between different metric units is also important for precise installations.

- The inch system of measurement is an imperial system predominantly used in the United States and a few other countries. In this system:
  - Length is typically measured in inches (in) or feet (ft).
  - Area is measured in square inches (sq in) or square feet (sq ft).
  - Volume is measured in fluid ounces (fl oz), pints (pt), quarts (qt), or gallons (gal).
  - Weight is measured in ounces (oz), pounds (lb), or tons.

While the metric system is more widely adopted globally, understanding the inch system may be necessary when working on construction projects in regions where it is prevalent. As a False Ceiling & Dry Wall Installer, you might encounter building plans and specifications that use the inch system, so being familiar with both metric and inch measurements is beneficial for accurate installations and ensuring compliance with local standards.

Activity

- **Name:** "Understanding Metric and Inch Measurements in False Ceiling & Dry Wall Installation"
- **Purpose:** The purpose of this activity is to familiarize false ceiling and dry wall installers with the metric and inch measurement systems, both of which are commonly used in the construction industry. This knowledge will enable installers to work effectively with diverse measurement units in the installation process.
- **Resources Required:**
  - Metric measuring tools (e.g., tape measures, rulers)
  - Inch measuring tools (e.g., tape measures, rulers)
  - Various construction materials (e.g., plasterboards, framing components)
  - Whiteboard or flip chart
  - Markers
- **Tentative Duration:** 45-60 minutes
- **Procedure:**
  1. **Introduction (5 minutes):**
     - Start by highlighting the importance of precise measurements in false ceiling and dry wall installation. Explain that installers encounter two primary measurement systems: the metric system and the inch system, both widely used in the industry.
  2. **Metric System Overview (10 minutes):**
     - Discuss the essential aspects of the metric system:
       - Base 10 system
       - Standard units like meters, centimeters, and millimetres
       - Utilization of metric measuring tools for accurate measurements
     - Show examples of metric measurements on the whiteboard.
  3. **Inch System Overview (10 minutes):**
     - Discuss the key features of the inch system:
       - Commonly used in the United States and certain other regions

- Units such as inches and feet, often with fractional representation
- Use of inch measuring tools for precise measurements

- Show examples of inch measurements on the whiteboard.

4. **Hands-On Activity (15 minutes):**
   - Form participants into pairs or small groups.
   - Provide each group with a range of construction materials (e.g., plasterboards, framing components).
   - Instruct them to measure the length, width, and thickness of these materials using both metric and inch measuring tools.
   - Have each group record their measurements on the whiteboard.
5. **Conversion Challenge (10 minutes):**
   - Ask the groups to select one measurement (e.g., length) and convert it from metric to inch or vice versa.
   - Discuss the conversion process and any challenges encountered.
   - Highlight the importance of accurate measurement conversions in installation projects involving different measurement systems.
6. **Group Discussion (5 minutes):**
   - Engage in a group discussion where participants share their experiences and insights regarding the differences between the metric and inch systems in the context of false ceiling and dry wall installation.
   - Encourage them to discuss situations where they might encounter both systems in their installation work.

Expected Outcome:

- False ceiling and dry wall installers will gain a practical understanding of both metric and inch measurement systems.
- They will be proficient in accurately measuring construction materials using both systems.
- Participants will develop the skills to convert measurements between the metric and inch systems, enhancing their adaptability in installation projects that use different measurement units.

Notes

UNIT 2.2: Basic Geometrical Shapes and its Properties

Unit Objectives

At the end of this unit, trainer will ensure that participant will be able to:

1. Perform basic arithmetic calculations;
2. Know about basic geometrical shapes; and
3. Calculate area, volume and perimeter of different shapes.

Resources to be used

- **Theory**
  - **Training Kit -** Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films.
- **Practical**
  - Calculator, conversion charts, measurement tapes

Do

- Explain basic arithmetic calculations;
- Demonstrate basic geometrical shapes; and explain them
- Calculate area, volume and perimeter of different shapes.

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 2.2 to explain Basic Geometrical Shapes and its Properties.
- **Explain Basic Arithmetic Calculations:**
  - This involves understanding and applying fundamental mathematical operations like addition, subtraction, multiplication, and division.
  - False Ceiling & Dry Wall Installers use basic arithmetic for various tasks, including measuring and calculating the amount of materials required for installation, determining the spacing of panels or ceiling fixtures, and estimating project costs.
  - It ensures precise material procurement and cost-effective project planning.
- **Demonstrate Basic Geometrical Shapes and Explain Them:**
  - False Ceiling & Dry Wall Installers need to be familiar with basic geometric shapes such as squares, rectangles, triangles, circles, and trapezoids.

- Understanding these shapes helps in creating accurate layouts and measurements for ceiling panels, wall partitions, and cut-outs.
- For instance, knowing the properties of a square is crucial when ensuring that ceiling panels have uniform dimensions and are installed neatly.

- Calculate Area, Volume, and Perimeter of Different Shapes:
  - Calculating area, volume, and perimeter is essential for space optimization and material estimation.
  - False Ceiling & Dry Wall Installers often encounter spaces and structures with various shapes, and being able to calculate these measurements accurately is vital.
  - For instance, they may need to calculate the area of a room's ceiling to determine the amount of plasterboard required or calculate the volume of insulation material needed for soundproofing.
- In summary, having a grasp of basic arithmetic calculations, familiarity with geometric shapes, and the ability to calculate area, volume, and perimeter of different shapes are crucial skills for False Ceiling & Dry Wall Installers. These skills enable them to work efficiently, ensure precise measurements and material estimations, and contribute to the overall quality of the installation project.

Activity

Mathematical skills - Practice

Conduct a group activity.

- Ask the participants to assemble at a designated place.
- Distribute the 'Practical Activity Format' which includes task, duration allowed, specific instructions, method statements, etc.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.
- Maximum duration mentioned in the below table is for extensive practice and corresponding guidance until the skill is acquired by the participants.
- Explain the roles to each of them.
- Rotate the roles after completing one cycle.

Sub activity	Skill Practice	Time	Resources
1	Measure the size of the room in metric system by using a tape measure	2 Hours	Tape measure, stationary items (pen, marker, scale and notebook)
2	Measure the size of the room in imperial system by using a tape measure	2 Hours	
3	Convert the following: • 100000 mm into …… mts, and • 1000mts into ……. mm. • 100 inches into …… ft. • 10000 sft into ……. m2 • 1m3 into …… mm3	1 Hour	
4	• Solve the below: • 300-200+100x50-30/5 = …… • 100-20/3+15-150 = …….. • 1.5-0.2/4+2.8-1500+15000 = ……..	1 Hour	

Table 2.2.1 – Mathematical skills

Specific Instructions:

- Make sure all the participants are wearing proper PPEs.
- Explain the overall procedure and key points of measuring the room with a tape measure before commencing the exercise.
- Use the unit conversion table for the activity.
- Give hints on the method of converting the units easily.
- Assist them wherever, it is necessary during the activity.
- At end of the process ask each one of them to mention the experience they had in activity.
- Clarify doubts, if any.
- Check and observe that all the steps followed by the participants.

- Complete the activity in scheduled time, at the end of activity, to assess the skill and knowledge acquired, call a person randomly from the group and ask him to explain the steps involved for mathematical conversion of units, calculation of area/volume and squaring of corners.

Exercise

Key Solutions to PHB Exercise

Short Questions:

1. The base unit for measuring length in the metric system is the “meter.”
2. The metric unit commonly used for measuring mass is the “gram.”
3. The metric system typically uses the “liter” as the unit for measuring volume.
4. In the inch system, 1 foot is equivalent to 12 inches.
5. To calculate the volume of a rectangular prism, you multiply its length, width, and height together. The formula is: Volume = Length × Width × Height.

Fill-in-the-Blanks Questions:

1. Fahrenheit
2. 1,000
3. Mass
4. 36
5. True

True/False Questions:

1. True
2. False
3. False
4. True
5. True

Notes

Skill India
कौशल भारत-कुशल भारत

सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

N·S·D·C
National
Skill Development
Corporation
Transforming the skill landscape

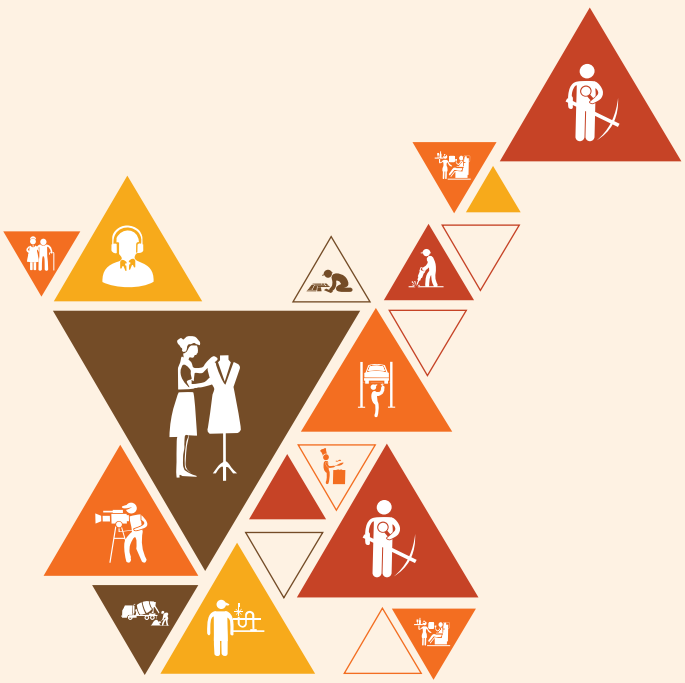
Construction Skill Development Council

3. Carry Out Preparatory Works and Levelling Procedure for Fixing False Ceiling

Unit 3.1 - Preparatory Steps and Material Familiarization

Unit 3.2 - Measurement, Levelling, and Marking

Unit 3.3 - Installation and Safety Preparations



CON/N1210

Key Learning Outcomes

At the end of this module, trainer will ensure that participant will be able to:

1. Interpret sketches for false ceiling works.
2. List the various tools and equipment such as broad knives, electric screw guns, hand and power drills, hand saws, scaffold planks, t squares, taping knives, trestles and other relevant tools used for false ceiling works.
3. List the various materials such as beads cement render, fibre cement sheets, finishing materials, plaster compounds, plasterboard and other such relevant materials used for false ceiling works.
4. Perform checks for clearance for false ceiling works.
5. Explain the standard method of storing and stacking gypsum board, plasterboard and fibre board.
6. Demonstrate the checks performed to ensure stacking and alignment of false ceiling materials.
7. Describe different types of false ceiling including grid ceiling, gypsum board ceiling, fiber board ceiling, concealed ceiling, semi concealed ceiling, exposed grid, concealed grid, linear and open cell, metal firing, pan grid, other proprietary suspended ceilings.
8. Explain the process used for measuring and marking gypsum board for false ceiling installation.
9. Demonstrate checks to ensure that board (gypsum, plaster, fiber board) is measured, marked and cut as per specification.
10. Explain levelling and basic mathematical techniques associated with levelling.
11. Explain the characteristics, technical capabilities and limitations of various levelling tools such as a spirit level, straight edge, levelling with water tube, laser levelling devices and other such levelling tools.
12. Explain the processes for setting out and transfer of levels for fixing perimeter.
13. Explain the process of marking perimeter for false ceiling works.
14. Demonstrate checks to confirm marking for brackets and perimeter as per specification for false ceiling installation.
15. Demonstrate checks to confirm the preparedness and safe erection of the access equipment, work platform and ladders.
16. Select tools and equipment to carry out levelling and marking for perimeter for false ceiling works.
17. Demonstrate checks on tools and equipment required to ensure serviceability for false ceiling work.
18. Demonstrate measurement of the ceiling to assess the ceiling for fixing false ceiling.
19. Demonstrate setting up of levelling device accurately and transfer of the specified levels as per specification.
20. Demonstrate marking of location of ceiling brackets/perimeter for false ceiling work, partitions and dry wall installation

UNIT 3.1: Preparatory Steps and Material Familiarization

Unit Objectives

At the end of this unit, trainer will ensure that participant will be able to:

1. Interpret sketches for false ceiling works.
2. List the various materials used for false ceiling works, including beads, cement render, fiber cement sheets, finishing materials, plaster compounds, and plasterboard.
3. List the various tools and equipment used for false ceiling works, such as broad knives, electric screw guns, hand and power drills, hand saws, scaffold planks, t squares, taping knives, and trestles.
4. Perform checks for clearance to prepare for false ceiling works.
5. Explain the standard method of storing and stacking gypsum board, plasterboard, and fiberboard.
6. Demonstrate the checks performed to ensure stacking and alignment of false ceiling materials.

Resources to be used

- Theory
  - **Training Kit -** Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films, Computer, Registers, and Trade specific charts
- **Practical**
  - Measuring tape, Scale, Right angle, Dry wall T-Square, Framing square, Chalk line, pencil, Line dori, Plumb bob, Spirit level, Pliers, Punch pliers, Paper cutting knife, Drywall knife 12,6 and 4 inches, Drywall Hammers, Taping knife, Sanding tool, Drywall saw, Hack saw, Hand saw, crew driver set, Screw gun, Drill machine, Metal cutter, Silicon gun/caulk gun, Stapler, Clutch angle.

Do

- Reiterate the way of Interpreting sketches for false ceiling works.
- Explain the various materials used for false ceiling works, including beads, cement render, fiber cement sheets, finishing materials, plaster compounds, and plasterboard.
- Explain the various tools and equipment used for false ceiling works, such as broad knives, electric screw guns, hand and power drills, hand saws, scaffold planks, t squares, taping knives, and trestles.
- Perform checks for clearance to prepare for false ceiling works.
- Explain the standard method of storing and stacking gypsum board, plasterboard, and fiberboard.
- Demonstrate the checks performed to ensure stacking and alignment of false ceiling materials.

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 3.1 to explain Preparatory Steps and Material Familiarization.
- **Reiterate the Way of Interpreting Sketches for False Ceiling Works:**
  - Interpreting sketches is a critical skill for us as False Ceiling & Dry Wall Installers. It involves understanding the detailed drawings and plans provided by designers or project supervisors.
  - These sketches guide us in determining the precise locations, measurements, and layouts for false ceiling installations, ensuring that the final result aligns with the intended design and functionality.
- **Explain the Various Materials Used for False Ceiling Works:**
  - In our line of work, we encounter various materials like beads, cement render, fiber cement sheets, finishing materials, plaster compounds, and plasterboard.
  - Understanding these materials is essential as it enables us to select the right ones for specific tasks, ensuring the durability and quality of the false ceiling installation.
- **Explain the Various Tools and Equipment Used for False Ceiling Works:**
  - We rely on a range of tools and equipment for our tasks, including broad knives, electric screw guns, hand and power drills, hand saws, scaffold planks, t squares, taping knives, and trestles.
  - Proficiency with these tools ensures efficient and precise installation, whether it's cutting plasterboard, securing panels, or applying finishing touches.
- **Perform Checks for Clearance to Prepare for False Ceiling Works:**
  - Before we begin false ceiling installations, it's crucial to perform checks for clearance. This involves assessing the existing structures, utilities, and any potential obstructions.
  - By doing so, we ensure that the installation process proceeds smoothly and without any unexpected challenges.
- **Explain the Standard Method of Storing and Stacking Gypsum Board, Plasterboard, and Fiberboard:**
  - Proper storage and stacking of materials like gypsum board, plasterboard, and fiberboard are essential to prevent damage and maintain their integrity.
  - Understanding the standard methods for storage ensures that these materials remain in optimal condition until they are used in the installation.
- **Demonstrate the Checks Performed to Ensure Stacking and Alignment of False Ceiling Materials:**
  - Aligning false ceiling materials correctly is vital for achieving a polished and professional finish.
  - We perform meticulous checks to ensure that the materials are stacked neatly, with proper alignment, minimizing any inconsistencies during installation.
- In summary, as False Ceiling & Dry Wall Installers, we rely on our ability to interpret sketches accurately, understand the materials and tools we work with, perform clearance checks, and ensure proper material storage and alignment. These skills and practices are fundamental to the successful execution of false ceiling projects.

Activity

- **Name:** " False Ceiling Materials and Tools Workshop"
- **Purpose:** The purpose of this workshop is to familiarize False Ceiling & Dry Wall Installers with the various materials, tools, and equipment used in false ceiling works. It aims to enhance their knowledge and practical skills, ensuring they can effectively select, handle, and use these resources in their projects.
- **Resources Required:**
  - Samples of false ceiling materials (e.g., beads, cement render, plasterboard).
  - Assorted tools and equipment (e.g., broad knives, electric screw guns, hand and power drills).
  - Presentation materials.
  - Workspace for hands-on activities.
- **Tentative Duration:** 2 hours
- **Procedure:**

1. **Introduction (15 minutes):**
   - Start with an overview of the workshop's objectives.
   - Emphasize the importance of understanding materials and tools for successful false ceiling installations.
2. **Materials Overview (20 minutes):**
   - Present various false ceiling materials, including beads, cement render, fiber cement sheets, finishing materials, plaster compounds, and plasterboard.
   - Explain the characteristics, uses, and limitations of each material.
   - Allow participants to examine samples and ask questions.
3. **Tools and Equipment (20 minutes):**
   - Introduce the tools and equipment commonly used in false ceiling works, such as broad knives, electric screw guns, hand and power drills, hand saws, scaffold planks, t squares, taping knives, and trestles.
   - Explain the specific roles of each tool and demonstrate their proper usage.
4. **Clearance Checks (15 minutes):**
   - Discuss the importance of clearance checks before starting false ceiling installations.
   - Explain the checklist for clearance checks, including utilities, obstructions, and structural considerations.

- Provide scenarios for participants to practice clearance checks.

5. **Storage and Stacking (15 minutes):**
   - Describe the standard method of storing and stacking gypsum board, plasterboard, and fiberboard.
   - Emphasize the significance of proper storage to prevent damage and maintain material integrity.
   - Show examples of correct and incorrect stacking.
6. **Alignment Demonstration (15 minutes):**
   - Demonstrate the checks and techniques used to ensure stacking and alignment of false ceiling materials.
   - Allow participants to practice alignment checks with sample materials.
7. **Q&A and Discussion (20 minutes):**
   - Open the floor for questions and discussion.
   - Encourage participants to share their experiences and insights related to materials and tools in their previous projects.
8. **Hands-On Activity (30 minutes):**
   - Divide participants into groups.
   - Provide them with materials, tools, and equipment.
   - Instruct each group to work on a simple false ceiling installation task, applying their knowledge of materials, tools, and alignment.

- **Expected Outcome:**
  - Participants will gain a comprehensive understanding of false ceiling materials, tools, and equipment.
  - They will develop practical skills in handling materials and using tools for false ceiling installations.
  - Participants will be better prepared to select the right materials and tools for specific project requirements, contributing to the success of their false ceiling projects.

Notes

UNIT 3.2: Measurement, Levelling, and Marking

Unit Objectives

At the end of this unit, trainer will ensure that participant will be able to:

1. Explain the process used for measuring and marking gypsum board for false ceiling installation.
2. Demonstrate checks to ensure that board (gypsum, plaster, fiberboard) is measured, marked, and cut as per specification.
3. Explain levelling techniques and basic mathematical concepts related to levelling.
4. Explain the characteristics, technical capabilities, and limitations of various levelling tools, including spirit levels, straight edges, water tube levelling, laser levelling devices, and others.
5. Explain the process of setting out and transferring levels for fixing the perimeter.
6. Explain the process of marking the perimeter for false ceiling works.
7. Demonstrate checks to confirm marking for brackets and perimeter as per specification for false ceiling installation.
8. Select tools and equipment to carry out levelling and marking for the perimeter of false ceiling works.

Resources to be used

- **Theory**
  - **Training Kit -** Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films, Computer, Registers, and Trade specific charts
- **Practical**
  - Measuring tape, Scale, Right angle, Dry wall T-Square, Framing square, Chalk line, pencil, Line dori, Plumb bob, Spirit level, Pliers, Punch pliers, Paper cutting knife, Drywall knife 12,6 and 4 inches, Drywall Hammers, Taping knife, Sanding tool, Drywall saw, Hack saw, Hand saw, crew driver set, Screw gun, Drill machine, Metal cutter, Silicon gun/caulk gun, Stapler, Clutch angle.

Do

- Explain the process used for measuring and marking gypsum board for false ceiling installation.
- Demonstrate checks to ensure that board (gypsum, plaster, fiberboard) is measured, marked, and cut as per specification.
- Explain levelling techniques and basic mathematical concepts related to levelling.
- Explain the characteristics, technical capabilities, and limitations of various levelling tools, including spirit levels, straight edges, water tube levelling, laser levelling devices, and others.
- Explain the process of setting out and transferring levels for fixing the perimeter.

- Explain the process of marking the perimeter for false ceiling works.
- Demonstrate checks to confirm marking for brackets and perimeter as per specification for false ceiling installation.
- Explain tools and equipment to carry out levelling and marking for the perimeter of false ceiling works.

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 3.2 to explain Measurement, Levelling, and Marking.
- **Measuring and Marking Gypsum Board for False Ceiling Installation:**
  - Start by measuring the length and width of the area where the gypsum board will be installed.
  - Use a tape measure to ensure accurate measurements.
  - Double-check your measurements to minimize errors.
  - Mark the measurements on the gypsum board using a pencil or chalk line.
  - Always measure and mark from the reference point or baseline for consistency.
  - Prioritize accuracy, as precise measurements are crucial for a proper fit.
- **Checks for Measuring, Marking, and Cutting Board:**
  - After marking, use a straight edge or T-square to create straight lines.
  - Ensure that the lines are perpendicular and parallel where needed.
  - Verify that the marked dimensions match the specifications provided.
  - Double-check measurements before cutting to avoid wastage.
  - Use a sharp utility knife or a specialized cutting tool designed for gypsum board.
  - Follow safety protocols when cutting to prevent accidents.
- **Levelling Techniques and Mathematical Concepts:**
  - Understand the concept of a horizontal plane for leveling.
  - Use a spirit level to determine horizontal and vertical levels accurately.
  - Apply basic mathematical principles such as the Pythagorean theorem for diagonal measurements.
  - Familiarize yourself with the concept of rise over run for calculating slopes.
- **Characteristics of Levelling Tools:**
  - Spirit Levels: Reliable for basic horizontal and vertical leveling.

- **Straight Edges**: Useful for checking straightness and alignment.
- **Water Tube Levelling:** Precise for long-distance leveling, but requires setup time.
- **Laser Levelling Devices:** Quick and accurate for both horizontal and vertical leveling.

- **Setting Out and Transferring Levels:**
  - Establish a reference point at the desired ceiling height.
  - Use a spirit level to transfer this reference point horizontally around the room.
  - Ensure that the reference point is consistent across all walls.
- **Marking the Perimeter:**
  - Measure and mark the perimeter of the false ceiling, keeping the reference level in mind.
  - Use a chalk line or a laser level for straight and level markings.
  - Verify the measurements and markings for accuracy.
- **Checks for Marking Brackets and Perimeter:**
  - Confirm that the marked perimeter aligns with the project specifications.
  - Ensure that the brackets' positions match the marked perimeter.
  - Double-check the levels of the markings to avoid inconsistencies.
  - Verify that brackets are evenly spaced to support the false ceiling adequately.
- **Selecting Tools and Equipment for Levelling and Markin**g:
  - Choose a spirit level appropriate for the length of the spans you are working on.
  - Opt for laser leveling devices when precise, long-distance leveling is required.
  - Ensure that your tools are in good condition and calibrated.
  - Use sturdy, adjustable brackets for marking the perimeter accurately.
- **Tips:**
  - Always measure twice and cut once to avoid material wastage.
  - Keep your tools well-maintained and calibrated for accurate measurements.
  - Double-check your leveling work as even a small error can affect the entire false ceiling.
  - Work methodically, ensuring that your measurements, markings, and leveling are consistent across the entire installation area.
  - Prioritize safety when using cutting tools, sharp objects, and elevated positions.
  - Communicate with your team to ensure everyone is on the same page regarding measurements and levels.

Activity

- **Name:** "False Ceiling Measurement and Levelling Workshop"
- **Purpose:** This workshop aims to familiarize False Ceiling & Dry Wall Installers with essential measurement, marking, and leveling techniques for gypsum board installation in false ceilings. Participants will also gain insights into the characteristics and usage of various leveling tools.
- **Resources Required:**
  - Gypsum boards or simulated materials
  - Tape measures
  - Pencils, chalk lines, or markers
  - Spirit levels (various sizes)
  - Straight edges
  - Water tube leveling tools
  - Laser leveling devices (optional)
  - Presentation materials
  - Workshop handouts
- **Tentative Duration:** 90 minutes
- **Procedure:**
  1. **Introduction (10 minutes):**
     - Welcome participants and explain the purpose of the workshop.
     - Highlight the importance of accurate measurements and leveling in false ceiling installation.
  2. **Measurement and Marking (15 minutes):**
     - Explain the process of measuring and marking gypsum boards for false ceiling installation.
     - Demonstrate how to measure and mark dimensions on a gypsum board.
     - Participants practice measuring and marking on sample gypsum boards.
  3. **Checks for Accuracy (15 minutes):**
     - Describe the checks and verifications required to ensure that measurements, markings, and cuts align with project specifications.
     - Provide examples of common errors and how to avoid them.
     - Participants perform accuracy checks on their measurements and markings.
  4. **Levelling Techniques (15 minutes):**
     - Explain basic levelling concepts and mathematical principles.

- Discuss the importance of a horizontal reference plane.
- Demonstrate how to use a spirit level for horizontal and vertical leveling.
- Participants practice leveling using spirit levels.

5. **5Understanding Levelling Tools (20 minutes):**
   - Introduce various leveling tools, including straight edges, water tube leveling tools, and laser leveling devices.
   - Explain the characteristics, technical capabilities, and limitations of each tool.
   - Participants have hands-on experience with different leveling tools.
6. **Setting Out and Marking the Perimeter (10 minutes):**
   - Describe the process of setting out and transferring levels for fixing the perimeter of a false ceiling.
   - Explain the importance of maintaining consistent levels.
   - Participants practice setting out and marking the perimeter.
7. **Checks for Marking Brackets and Perimeter (10 minutes):**
   - Explain the checks required to confirm that markings align with project specifications.
   - Emphasize the importance of bracket placement.
   - Participants perform checks on their markings.
8. **Selecting Tools and Equipment (10 minutes):**
   - Discuss the criteria for selecting appropriate leveling and marking tools and equipment.
   - Highlight the importance of tool maintenance.
   - Participants gain insights into tool selection.
9. **Q & A and Summary (10 minutes):**
   - Open the floor for questions and discussions.
   - Summarize key takeaways from the workshop.

- **Expected Outcome:**
  - Participants will have a practical understanding of measuring, marking, and leveling techniques for false ceiling installation.
  - They will be able to accurately measure and mark gypsum boards, maintain level surfaces, and choose the right leveling tools.
  - Participants will leave the workshop with improved skills for ensuring precision in their false ceiling and drywall installation work.

Notes

UNIT 3.3: Installation and Safety Preparations

Unit Objectives

At the end of this unit, trainer will ensure that participant will be able to:

1. Demonstrate measurement of the ceiling to assess the ceiling for fixing the false ceiling.
2. Demonstrate setting up the levelling device accurately and transferring the specified levels as per specification.
3. Demonstrate marking the location of ceiling brackets/perimeter for false ceiling work, partitions, and drywall installation.
4. Demonstrate checks to confirm the preparedness and safe erection of the access equipment, work platform, and ladders.

Resources to be used

- **Theory**
  - **Training Kit -** Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films, Computer, Registers, and Trade specific charts
- **Practical**
  - Measuring tape, Scale, Right angle, Dry wall T-Square, Framing square, Chalk line, pencil, Line dori, Plumb bob, Spirit level, Pliers, Punch pliers, Paper cutting knife, Drywall knife 12,6 and 4 inches, Drywall Hammers, Taping knife, Sanding tool, Drywall saw, Hack saw, Hand saw, crew driver set, Screw gun, Drill machine, Metal cutter, Silicon gun/caulk gun, Stapler, Clutch angle.

Do

- Demonstrate measurement of the ceiling to assess the ceiling for fixing the false ceiling.
- Demonstrate setting up the levelling device accurately and transferring the specified levels as per specification.
- Demonstrate marking the location of ceiling brackets/perimeter for false ceiling work, partitions, and drywall installation.
- Demonstrate checks to confirm the preparedness and safe erection of the access equipment, work platform, and ladders.

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 3.3 to explain Installation and Safety Preparations.
- **Demonstrate measurement of the ceiling to assess the ceiling for fixing the false ceiling:**

  As a False Ceiling & Dry Wall Installer, accurately measuring the existing ceiling is a critical first step in ensuring the successful installation of a false ceiling. Here are some tips for this task:

  - Begin by gathering all the necessary tools, including a measuring tape, laser distance measurer (if available), and a notepad or tablet for recording measurements.
  - Ensure that the area where you'll be working is well-lit to obtain precise measurements.
  - Start at one corner of the room and work your way around systematically, measuring the length and width of the ceiling. Record these measurements.
  - Pay attention to any irregularities or variations in ceiling height, as these will need to be addressed during installation.
  - Double-check your measurements to minimize errors. Use the laser distance measurer for long spans to improve accuracy.
  - If the room has an irregular shape, break it down into smaller, more manageable sections for measurement.

- **Demonstrate setting up the leveling device accurately and transferring the specified levels as per specification:**

  Accurate leveling is essential for the even and aesthetically pleasing installation of false ceilings. Here's how to set up and use a leveling device effectively:

  - Choose a high-quality leveling device, such as a laser level or water level, depending on your preference and project requirements.
  - Set up the leveling device on a stable surface, ensuring it's secure and doesn't wobble during measurements.
  - Follow the manufacturer's instructions for calibration and operation of the leveling device.
  - Establish a reference level for the false ceiling. This is typically a consistent height from the floor or an existing reference point.
  - Transfer this reference level accurately across the entire ceiling using the leveling device. Ensure that the bubble or laser line aligns perfectly with the reference point.
  - Regularly check and recalibrate the leveling device as needed to maintain accuracy.

- **Demonstrate marking the location of ceiling brackets/perimeter for false ceiling work, partitions, and drywall installation:**

  Precise marking of the ceiling brackets and perimeter is essential to ensure the false ceiling, partitions, and drywall are installed correctly. Follow these tips:

- Use the reference level you established earlier as a guide for marking the location of ceiling brackets. Measure the distance from the reference level to where brackets should be installed and mark these spots systematically.
- When marking the perimeter, measure from the walls or other fixed points to ensure a consistent and symmetrical layout.
- Double-check your markings to avoid errors. Use a straightedge or laser level to ensure straight lines and right angles.
- Mark the locations of any additional fixtures, such as light fittings, vents, or access panels, accurately in relation to the false ceiling layout.

- **Demonstrate checks to confirm the preparedness and safe erection of the access equipment, work platform, and ladders:**

  Safety is paramount when working on false ceiling installation. Before erecting access equipment, work platforms, or ladders, consider these safety checks:

  - Ensure that all equipment is in good working condition and free from defects. Check for any damaged parts, loose bolts, or missing safety features.
  - Place work platforms or ladders on stable and level ground. Avoid setting them up on uneven or soft surfaces that could lead to instability.
  - Double-check weight capacities to ensure they can safely support you and your tools.
  - Inspect the area for potential hazards, such as overhead obstructions, electrical wires, or slippery surfaces.
  - Always use personal protective equipment (PPE), including helmets, safety harnesses, and non-slip footwear, when working at heights.
  - If you're working with a team, establish clear communication and coordination to prevent accidents.

By following these tips and demonstrating the correct procedures, False Ceiling & Dry Wall Installers can ensure precise measurements, accurate leveling, and safe work practices during false ceiling installations and drywall work.

Activity

- **Name:** "Ceiling Assessment and Safe Setup"
- **Purpose:** This activity aims to familiarize False Ceiling & Dry Wall Installers with essential tasks related to ceiling assessment and ensuring a safe setup before commencing false ceiling, partition, or drywall installations. It emphasizes precision, safety, and adherence to specifications.
- **Resources Required:**
  - Measuring tools (tape measure, laser distance measurer)

- Levelling device (laser level, water level)
- Marking tools (chalk, pencils)
- Simulated ceiling area (can be a mockup or a designated area)
- Access equipment (ladders, work platforms)
- Safety equipment (helmets, safety harnesses)
- Stopwatch or timer

- **Tentative Duration:** 60 minutes
- **Procedure:**

1. **Introduction (5 minutes):**
    - Explain the importance of accurate ceiling assessment and safe setup in false ceiling and drywall installations.
    - Briefly introduce the tasks involved in this activity.
2. **Ceiling Measurement (15 minutes):**
    - Divide participants into pairs or small groups.
    - Provide each group with measuring tools and access to the simulated ceiling area.
    - Instruct participants to measure and record the dimensions (length and width) of the simulated ceiling.
    - Emphasize the need for precision and double-checking measurements.
3. **Levelling Device Setup (15 minutes):**
    - Introduce participants to the levelling device (laser level or water level).
    - Demonstrate how to set up and calibrate the device.
    - Assign each group a levelling device and instruct them to set it up accurately in the simulated ceiling area.
4. **Transferring Levels (10 minutes):**
    - Explain the concept of transferring specified levels from a reference point to the ceiling using the levelling device.
    - Instruct participants to transfer specified levels from a designated reference point to the simulated ceiling. They should mark these levels accurately.
5. **Marking Ceiling Brackets/Perimeter (10 minutes):**
    - Provide chalk or pencils for marking the ceiling brackets and perimeter.

- Ask participants to mark the locations where ceiling brackets should be installed and outline the perimeter for false ceiling work.
- Emphasize precision and the importance of following specifications.

6. **Safety Checks (5 minutes):**
   - Discuss the importance of safety in false ceiling and drywall installations.
   - Provide access equipment (ladders, work platforms) and safety gear (helmets, safety harnesses).
   - Demonstrate how to perform safety checks on the equipment, ensuring stability and functionality.
7. **Practical Exercise (5 minutes):**
   - Each group will perform a brief practical exercise: climbing a ladder or work platform safely.
   - Emphasize the correct posture and safety precautions during this exercise.
8. **Group Discussion and Review (5 minutes):**
   - Conduct a group discussion to share experiences and insights from the activity.
   - Review key takeaways related to ceiling assessment, leveling, marking, and safety checks.

- **Expected Outcome:** Participants will gain practical experience in measuring ceilings accurately, setting up levelling devices, transferring levels, marking ceiling brackets and perimeters as per specifications, and performing safety checks on access equipment. They will be better prepared to ensure precision and safety when undertaking false ceiling, partition, or drywall installations.

Exercise

Key Solutions to PHB Exercise

Short Questions:

1. The primary purpose of interpreting sketches in false ceiling works is to understand and visualize the layout, design, and placement of the false ceiling components within the construction project.
2. One tool commonly used for drilling holes in false ceiling works is an electric screw gun.
3. Performing checks for clearance before starting false ceiling installation is essential to identify and address any obstacles or obstructions that may hinder the installation process.
4. Characteristics of a grid ceiling in false ceiling installations may include a network of intersecting metal or aluminum grid members that support ceiling panels or tiles.
5. The purpose of using levelling tools in false ceiling and drywall installation is to ensure the accurate alignment, positioning, and leveling of ceiling components or drywall sheets for a visually pleasing and structurally sound installation.

Fill-in-the-Blanks:

1. The materials commonly used for false ceiling works include cement render, plaster compounds, and plasterboard.
2. Hand saw is a tool used for making straight cuts in gypsum board during installation.
3. The process of marking the perimeter for false ceiling works involves creating reference lines.
4. Levelling tools, such as spirit levels and laser levelling devices, help ensure vertical alignment in false ceiling installation.
5. When selecting tools for levelling and marking in false ceiling works, it's essential to consider the specific requirements of the project.

True/False Questions:

1. False. Interpreting sketches is crucial in false ceiling works to plan and execute the installation accurately.
2. False. A spirit level is not commonly used for cutting gypsum boards during installation.
3. True. The primary purpose of levelling tools is to ensure vertical alignment, among other considerations.
4. True. The process of marking the perimeter for false ceiling works often involves creating reference lines for accurate installation.
5. True. Checks for clearance are essential to avoid potential obstacles and ensure a smooth false ceiling installation process.

Notes

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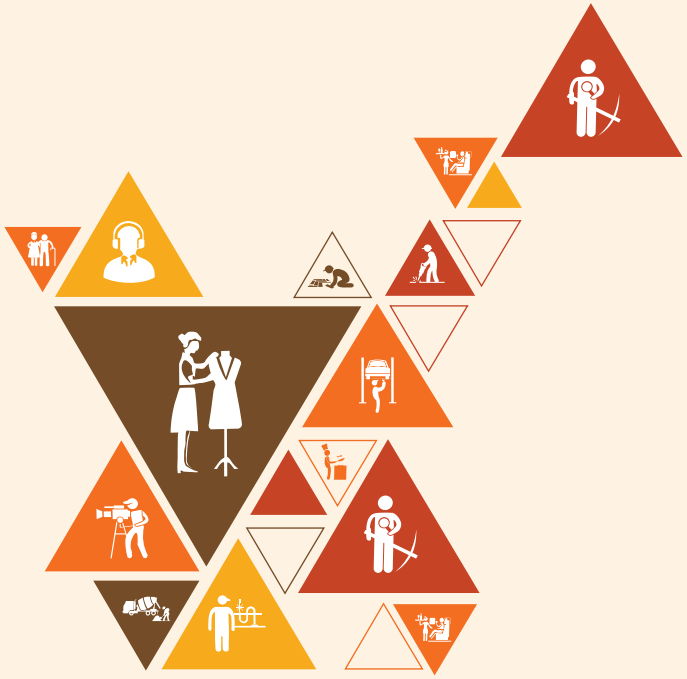
4. Install Flush Jointed Ceiling System at Construction Site

Unit 4.1 - Install Non-suspended Flush Jointed Ceiling System

Unit 4.2 - Install Suspended Flush Jointed Ceiling System



CON/N1121

Key Learning Outcomes

At the end of this module, trainer will ensure that participant will be able to:

1. Describe advantage and suitability of flush jointed ceiling system.
2. Describe the characteristics, quality, uses, limitations and defects associated with the material resources in relation to:- grid tiles, grid components, hangers, battens, braces, light fittings, grilles, insulation, panels, sealants, fixings and fittings.
3. Explain various jointing compounds used for seamless finish of plasterboard.
4. Describe the hand and/or powered tools and equipment used for installation of non-suspended flush jointed ceiling system.
5. Describe the process of installation of non-suspended flush jointed ceiling system.
6. Interpret sketches, specifications and work instructions for fixing non suspended flush jointed ceiling.
7. Demonstrate establishing of datum/levels and setting out of fixing points as per specifications, for fixing non suspended flush jointed ceiling system.
8. Demonstrate the process of marking and cutting plasterboard/gypsum board/fiber board to required shape as per drawing/specification.
9. Demonstrate marking for fixing of perimeter for installation of non-suspended flush jointed ceiling system.
10. Demonstrate fixing of various framing systems such as metal grid, steel furring, steel c-stud and resilient mounted furring channel as per specification.
11. Demonstrate fixing of plasterboard directly to metal grid, steel furring, steel c-stud and resilient mounted furring channel as per specification.
12. Describe the process of providing cut out using appropriate tools.
13. Demonstrate process of providing control joints and cut out for services work as per specification.
14. Explain the importance of correct positioning of studs on side wall panels.
15. Describe the hand and/or powered tools and equipment used for installation of suspended flush jointed ceiling system.
16. Describe the process of installation of suspended flush jointed ceiling system.
17. Describe the process of providing cut out using appropriate tools.
18. nterpret sketches, specifications and work instructions for fixing suspended flush jointed ceiling.
19. Explain the importance of correct positioning of studs on side wall panels.
20. Demonstrate marking on wall for fixing ceiling brackets and perimeter for suspended ceiling.
21. Demonstrate fixing of wall angles/perimeter channel to the wall as per specification.
22. Demonstrate fixing of metal ceiling angle strip from roof at specified points as per drawing/ specification for suspended flush jointed ceiling systems.
23. Demonstrate connection of free ends of the metal ceiling angle strips to the perimeter channel using intermediate channels with metal-to-metal screws.
24. Demonstrate fixing and fitting of the ceiling sections and intermediate channels as per standard procedure.
25. Demonstrate fixing of plasterboards of the desired thickness to the ceiling sections.
26. Demonstrate covering of joints and edges, provide cut out and finish the fix.

UNIT 4.1: Install Non-suspended Flush Jointed Ceiling System

Unit Objectives

At the end of this unit, trainer will ensure that participant will be able to:

1. Describe advantage and suitability of flush jointed ceiling system.
2. Describe the characteristics, quality, uses, limitations and defects associated with the material resources in relation to: - grid tiles, grid components, hangers, battens, braces, light fittings, grilles, insulation, panels, sealants, fixings and fittings.
3. Explain various jointing compounds used for seamless finish of plasterboard.
4. Describe the hand and/or powered tools and equipment used for installation of non-suspended flush jointed ceiling system.
5. Describe the process of installation of non-suspended flush jointed ceiling system.
6. Interpret sketches, specifications and work instructions for fixing non suspended flush jointed ceiling.
7. Demonstrate establishing of datum/levels and setting out of fixing points as per specifications, for fixing non suspended flush jointed ceiling system.
8. Demonstrate the process of marking and cutting plasterboard/gypsum board/fiber board to required shape as per drawing/specification.
9. Demonstrate marking for fixing of perimeter for installation of non-suspended flush jointed ceiling system.
10. Demonstrate fixing of various framing systems such as metal grid, steel furring, steel c-stud and resilient mounted furring channel as per specification.
11. Demonstrate fixing of plasterboard directly to metal grid, steel furring, steel c-stud and resilient mounted furring channel as per specification.
12. Describe the process of providing cut out using appropriate tools.
13. Demonstrate process of providing control joints and cut out for services work as per specification.
14. Explain the importance of correct positioning of studs on side wall panels.

Resources to be used

- **Theory**
  - **Training Kit -** Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films, Computer, Registers, and Trade specific charts
- **Practical**
  - Measuring tape, Scale, Right angle, Dry wall T-Square, Framing square, Chalk line, pencil, Line dori, Plumb bob, Spirit level, Pliers, Punch pliers, Paper cutting knife, Drywall knife 12,6 and 4 inches, Drywall Hammers, Taping knife, Sanding tool, Drywall saw, Hack saw, Hand saw, crew driver set, Screw gun, Drill machine, Metal cutter, Silicon gun/caulk gun, Stapler, Clutch angle.

Do

- Explain advantage and suitability of flush jointed ceiling system.
- Explain the characteristics, quality, uses, limitations and defects associated with the material resources in relation to: - grid tiles, grid components, hangers, battens, braces, light fittings, grilles, insulation, panels, sealants, fixings and fittings.
- Explain various jointing compounds used for seamless finish of plasterboard.
- Explain the hand and/or powered tools and equipment used for installation of non-suspended flush jointed ceiling system.
- Explain the process of installation of non-suspended flush jointed ceiling system.
- Interpret sketches, specifications and work instructions for fixing non suspended flush jointed ceiling.
- Demonstrate establishing of datum/levels and setting out of fixing points as per specifications, for fixing non suspended flush jointed ceiling system.
- Demonstrate the process of marking and cutting plasterboard/gypsum board/fiber board to required shape as per drawing/specification.
- Demonstrate marking for fixing of perimeter for installation of non-suspended flush jointed ceiling system.
- Demonstrate fixing of various framing systems such as metal grid, steel furring, steel c-stud and resilient mounted furring channel as per specification.
- Demonstrate fixing of plasterboard directly to metal grid, steel furring, steel c-stud and resilient mounted furring channel as per specification.
- Explain the process of providing cut out using appropriate tools.
- Demonstrate process of providing control joints and cut out for services work as per specification.
- Explain the importance of correct positioning of studs on side wall panels.

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 4.1 to explain Installation of Non-suspended Flush Jointed Ceiling System.
- **Explaining the Advantage and Suitability of Flush Jointed Ceiling System (Tips):**

The flush jointed ceiling system offers a sleek and seamless finish, which makes it an ideal choice for modern interior designs. It eliminates the visible joints or seams typically seen in other ceiling systems, providing a clean and continuous look. This system is particularly suitable for spaces where aesthetics is a priority, such as offices, homes, and commercial establishments.

- **Explaining Characteristics, Quality, Uses, Limitations, and Defects of Material Resources (Tips):**
    - **Grid Tiles:** Grid tiles are typically made from lightweight materials and are easy to install. They are commonly used in suspended ceiling systems.
    - **Grid Components:** Grid components, including main runners and cross tees, provide structural support to the ceiling system. Quality components are essential to ensure stability.
    - **Hangers, Battens, Braces:** These accessories are used to suspend ceiling components. They should be durable and properly installed to prevent sagging.
    - **Light Fittings, Grilles, Insulation:** These materials serve specific functions in the ceiling system, such as providing lighting, ventilation, or thermal insulation.
    - **Panels:** Ceiling panels can vary in quality and appearance. Choose panels that meet design and performance requirements.
    - **Sealants:** Sealants are used to seal gaps and joints in the ceiling system. Ensure they are compatible with other materials and prevent air or moisture infiltration.
    - **Fixings and Fittings:** Properly selected and installed fixings and fittings are essential for the stability and safety of the ceiling system. Defective fixings can lead to structural issues.
- **Explaining Various Jointing Compounds (Tips):** Various jointing compounds, such as jointing plaster and jointing tapes, are used for achieving a seamless finish of plasterboard joints. Select the appropriate compound based on the specific requirements of the project, and follow the manufacturer's instructions for mixing and application.
- **Explaining Hand and Powered Tools and Equipment (Tips):** For the installation of non-suspended flush jointed ceiling systems, you may use hand tools like taping knives and mud pans for jointing compounds, as well as powered tools like electric screw guns for fastening plasterboard to framing.
- **Explaining the Process of Installation (Tips):** The installation of non-suspended flush jointed ceiling systems involves setting out fixing points, cutting and shaping plasterboard, fixing framing systems, attaching plasterboard, providing cutouts for fixtures, and ensuring proper positioning of studs on side wall panels. Follow the project specifications and drawings meticulously to achieve a precise and seamless finish.
- **Interpreting Sketches, Specifications, and Work Instructions (Tips):** Carefully review sketches, specifications, and work instructions to understand the layout, dimensions, and other project-specific details. This ensures accurate installation and adherence to design requirements.
- **Demonstrating Establishing Datum/Levels and Setting Out Fixing Points (Tips):** Use leveling tools and measurements to establish datum levels and accurately set out fixing points according to project specifications. This is critical for achieving a level and uniform ceiling.
- **Demonstrating Marking and Cutting Plasterboard/Gypsum Board/Fiber Board (Tips):** Accurate marking and cutting of plasterboard are essential to fit the material precisely into the designated areas. Use appropriate cutting tools and follow the specified shapes outlined in drawings or specifications.

- **Demonstrating Fixing Framing Systems and Plasterboard (Tips):** Follow the recommended sequence for fixing framing systems, whether it's a metal grid, steel furring, steel c-stud, or resilient mounted furring channel. Ensure that plasterboard is securely attached to the framing, maintaining alignment and spacing as per specifications.
- **Explaining the Process of Providing Cutouts and Control Joints (Tips):** When fixtures or services need to pass through the ceiling, use suitable tools to create precise cutouts. Additionally, provide control joints as specified to accommodate natural movements and prevent cracks.
- **Explaining the Importance of Correct Positioning of Studs (Tips):** Properly positioning studs on side wall panels is crucial for the stability and integrity of the ceiling system. Ensure they align with the layout and spacing requirements specified in the project plans.

Activity

- **Name:** "Advantages and Applications of Flush Jointed Ceiling Systems"
- **Purpose:** The purpose of this activity is to educate participants about the advantages and suitability of flush jointed ceiling systems in various construction projects. Participants will gain insights into when and why this type of ceiling system is preferred over others.
- **Resources Required:**
  - Presentation materials
  - Samples of flush jointed ceiling materials (optional)
  - Whiteboard and markers
  - Projector (if using a digital presentation)
- **Tentative Duration:** 45-60 minutes
- **Procedure:**

1. **Introduction (5 minutes):**
   - Begin by explaining the purpose of the activity, which is to explore the advantages and suitability of flush jointed ceiling systems.
2. **Advantages of Flush Jointed Ceilings (10 minutes):**
   - Present a list of advantages associated with flush jointed ceiling systems, such as seamless appearance, modern aesthetics, and ease of maintenance.
   - Use visuals and examples to illustrate these advantages.

3. **Suitability in Different Settings (10 minutes):**
    - Discuss where flush jointed ceiling systems are most suitable. Highlight settings like offices, residential spaces, and commercial establishments where aesthetics and a clean finish are essential.
    - Show images of real-world applications to demonstrate suitability.
4. **Comparison with Other Ceiling Systems (10 minutes):**
    - Briefly compare flush jointed ceilings with other common ceiling systems (e.g., suspended ceilings, exposed ceilings).
    - Highlight situations where flush jointed ceilings outperform others.
5. **Participant Discussion (10 minutes):**
    - Engage participants in a discussion by asking questions like, “Can you think of scenarios where flush jointed ceilings may not be the best choice?”
    - Encourage participants to share their insights and experiences.
6. **Q & A Session (5 minutes):**
    - Allow participants to ask questions and seek clarifications on flush jointed ceilings and their advantages.
7. **Summary and Conclusion (5 minutes):**
    - Summarize the key points discussed during the session.
    - Emphasize the importance of considering the advantages and suitability of ceiling systems in construction projects.

- **Expected Outcome:** Participants will have a clear understanding of the advantages of flush jointed ceiling systems and where they are most suitable. They will be better equipped to make informed decisions regarding ceiling choices in construction projects.

Notes

UNIT 4.2: Install Suspended Flush Jointed Ceiling System

Unit Objectives

At the end of this unit, trainer will ensure that participant will be able to:

1. Describe advantage and suitability of flush jointed ceiling system.
2. Describe the characteristics, quality, uses, limitations and defects associated with material resources in relation to: - grid tiles, grid components, hangers, battens, braces, light fittings, grilles, insulation, panels, sealants, fixings and fittings.
3. Explain various jointing compounds used for joining and finishing plasterboard.
4. Describe the hand and/or powered tools and equipment used for installation of suspended flush jointed ceiling system.
5. Describe the process of installation of suspended flush jointed ceiling system.
6. Describe the process of providing cut out using appropriate tools.
7. Interpret sketches, specifications and work instructions for fixing suspended flush jointed ceiling.
8. Explain the importance of correct positioning of studs on side wall panels.
9. Demonstrate marking on the wall for fixing ceiling brackets and perimeter for suspended ceiling.
10. Demonstrate fixing of wall angles/perimeter channel to the wall as per specification.
11. Demonstrate fixing of metal ceiling angle strip from roof at specified points as per drawing/ specification for suspended flush jointed ceiling systems.
12. Demonstrate connection of free ends of the metal ceiling angle strips to the perimeter channel using intermediate channels with metal-to-metal screws.
13. Demonstrate fixing and fitting of the ceiling sections and intermediate channels as per standard procedure.
14. Demonstrate fixing of plasterboards of the desired thickness to the ceiling sections.
15. Demonstrate covering of joints and edges, provide cut out and finish the fix.

Resources to be used

- **Theory**
    - **Training Kit -** Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films, Computer, Registers, and Trade specific charts
- **Practical**
    - Measuring tape, Scale, Right angle, Dry wall T-Square, Framing square, Chalk line, pencil, Line dori, Plumb bob, spirit level, Pliers, Punch pliers, Paper cutting knife, Drywall knife 12,6 and 4 inches, Drywall Hammers, Taping knife, Sanding tool, Drywall saw, Hack saw, Hand saw, Screw driver set, Screw gun, Drill machine, Metal cutter, Silicon gun/caulk gun, Stapler, Clutch angle, Utility knife.

Do

- Explain advantage and suitability of flush jointed ceiling system.
- Explain the characteristics, quality, uses, limitations and defects associated with material resources in relation to: - grid tiles, grid components, hangers, battens, braces, light fittings, grilles, insulation, panels, sealants, fixings and fittings.
- Explain various jointing compounds used for joining and finishing plasterboard.
- Explain the hand and/or powered tools and equipment used for installation of suspended flush jointed ceiling system.
- Explain the process of installation of suspended flush jointed ceiling system.
- Explain the process of providing cut out using appropriate tools.
- Interpret sketches, specifications and work instructions for fixing suspended flush jointed ceiling.
- Explain the importance of correct positioning of studs on side wall panels.
- Demonstrate marking on the wall for fixing ceiling brackets and perimeter for suspended ceiling.
- Demonstrate fixing of wall angles/perimeter channel to the wall as per specification.
- Demonstrate fixing of metal ceiling angle strip from roof at specified points as per drawing/ specification for suspended flush jointed ceiling systems.
- Demonstrate connection of free ends of the metal ceiling angle strips to the perimeter channel using intermediate channels with metal-to-metal screws.
- Demonstrate fixing and fitting of the ceiling sections and intermediate channels as per standard procedure.
- Demonstrate fixing of plasterboards of the desired thickness to the ceiling sections.
- Demonstrate covering of joints and edges, provide cut out and finish the fix.

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 4.2 to explain Installation of Suspended Flush Jointed Ceiling System.
- **Advantage and Suitability of Flush Jointed Ceiling System:**
    - **Advantage:** Provides a seamless and modern aesthetic with no visible joints, easy maintenance, and design flexibility.
    - **Suitability:** Ideal for commercial spaces, residential areas, healthcare facilities, the hospitality industry, and modern architecture.
- **Characteristics, Quality, Uses, Limitations, and Defects of Ceiling System Materials:**
    - **Grid Tiles:** Lightweight, modular, quality-varied, used for suspended ceilings, design

limitations, defects like sagging and discoloration.

- **Grid Components:** Durable, corrosion-resistant, critical for safety, used for framework creation, safety risks, defects like corrosion.
- **Hangers:** Provide stability, load-bearing capacity, importance for structural integrity, attach ceiling materials, potential failure, defects like corrosion.
- **Battens:** Natural and warm aesthetic, maintenance-dependent, decorative, moisture sensitivity, defects like warping and cracking.

- **Various Jointing Compounds for Plasterboard:**
  - Compounds like joint compound, setting compound, and topping compound used for joining and finishing plasterboard seams.
  - Quality and application methods impact the final finish and durability of the plasterboard joints.
- **Hand and/or Powered Tools and Equipment for Suspended Flush Jointed Ceiling System Installation:**
  - Tools such as drills, saws, laser levels, and scaffold planks.
  - Proper equipment ensures accurate installation, leveling, and support for ceiling materials.
- **Process of Installation of Suspended Flush Jointed Ceiling System:**
  - Includes marking and fixing ceiling brackets, perimeter channel, metal ceiling angle strips, intermediate channels, ceiling sections, and plasterboards.
  - Ensures a secure and seamless ceiling installation.
- **Process of Providing Cut Out Using Appropriate Tools:**
  - Involves using tools to create openings in ceiling materials for fixtures or services.
  - Requires precision to maintain the integrity of the ceiling.
- **Interpretation of Sketches, Specifications, and Work Instructions for Fixing Suspended Flush Jointed Ceiling:**
  - Understanding and following detailed plans and instructions for accurate installation.
  - Crucial for ensuring the desired outcome and functionality of the ceiling.
- **Importance of Correct Positioning of Studs on Side Wall Panels:**
  - Proper placement of studs ensures the structural integrity of the wall and supports the ceiling.
  - Incorrect positioning can lead to instability and safety concerns.

- **Demonstration of Marking on the Wall for Fixing Ceiling Brackets and Perimeter:**
    - Marking precise locations for attaching ceiling brackets and perimeter channels.
    - Ensures accurate alignment of the ceiling components.
- **Demonstration of Fixing Wall Angles/Perimeter Channel to the Wall:**
    - Proper attachment of wall angles and perimeter channels to create a stable framework.
    - Critical for supporting the suspended ceiling system.
- **Demonstration of Fixing Metal Ceiling Angle Strip from Roof at Specified Points:**
    - Secure attachment of metal angle strips to the roof structure.
    - Forms the basis for the suspended ceiling framework.
- **Demonstration of Connection of Free Ends of Metal Ceiling Angle Strips to Perimeter Channel:**
    - Connecting angle strips to perimeter channels using intermediate channels and metal-to-metal screws.
    - Ensures stability and uniform support.
- **Demonstration of Fixing and Fitting Ceiling Sections and Intermediate Channels:**
    - Properly securing ceiling sections and intermediate channels within the framework.
    - Forms the visible surface of the suspended ceiling.
- **Demonstration of Fixing Plasterboards of Desired Thickness to Ceiling Sections:**
    - Attaching plasterboards to the ceiling sections to create a smooth surface.
    - Ensures a seamless appearance.
- **Demonstration of Covering Joints and Edges, Providing Cut Out, and Finishing the Fix:**
    - Covering joints and edges with jointing compounds for a seamless finish.
    - Creating cutouts for fixtures or services and ensuring a polished final appearance.

Activity -1

- **Name:** “Exploring the Advantages of Flush Jointed Ceiling Systems”
- **Purpose:** This activity aims to educate participants about the advantages and suitability of flush jointed ceiling systems in various construction scenarios. It will highlight the benefits of this ceiling system and its relevance in different settings.
- **Resources Required:**
    - Presentation materials (slides or posters)

- Examples of flush jointed ceiling systems
- Handouts explaining the advantages
- Projector and screen (optional)

- **Tentative Duration:** 45 minutes
- **Procedure:**

1. Introduction (5 minutes):
    - Start with a brief introduction to flush jointed ceiling systems.
    - Explain that these systems offer a seamless and modern aesthetic with no visible joints.
2. Advantages Presentation (10 minutes):
    - Present a slide or poster detailing the advantages of flush jointed ceiling systems.
    - Highlight benefits such as a sleek appearance, ease of maintenance, design flexibility, and suitability for various applications.
3. Discussion (10 minutes):
    - Encourage participants to share their thoughts and experiences with different ceiling systems they have encountered.
    - Facilitate a discussion on how the advantages of flush jointed systems can be beneficial in specific construction projects.
4. Examples (5 minutes):
    - Show examples or samples of flush jointed ceiling systems.
    - Allow participants to examine the materials up close to understand their characteristics.
5. Advantage Analysis (10 minutes):
    - Distribute handouts that delve deeper into each advantage discussed.
    - Ask participants to analyze how these advantages can address challenges in construction projects.
6. Q & A (5 minutes):
    - Open the floor for any questions or clarifications.

- **Expected Outcome:** Participants will gain a thorough understanding of the advantages and suitability of flush jointed ceiling systems. They will be able to assess when and where such systems can be most beneficial in construction projects, considering their unique characteristics.

Activity -2

- **Name:** "Exploring Material Resources in Suspended Ceiling Systems"
- **Purpose:** This practical activity is designed to familiarize participants with the various material resources used in suspended ceiling systems. Participants will gain hands-on experience in identifying, examining, and understanding the characteristics, quality, uses, limitations, and defects associated with these materials.
- **Resources Required:**
  - Samples or specimens of grid tiles, grid components, hangers, battens, braces, light fittings, grilles, insulation, panels, sealants, fixings, and fittings.
  - Workstation or display area with proper lighting.
  - Informational posters or boards describing each material resource.
  - Observation sheets for participants.
  - Safety equipment (e.g., gloves, safety goggles).
- **Tentative Duration:** 60 minutes
- **Procedure:**

1. **Introduction (5 minutes):**
   - Begin with an overview of the practical activity's purpose and objectives.
   - Emphasize the importance of understanding material resources in suspended ceiling systems.
2. **Material Stations Setup (10 minutes):**
   - Arrange samples of different material resources at separate stations within the workstation.
   - Ensure each station has an informational poster describing the material's characteristics, quality, uses, limitations, and common defects.
3. **Guided Exploration (15 minutes):**
   - Divide participants into small groups.
   - Assign each group to a material resource station.
   - Instruct participants to examine the materials closely, taking note of their texture, weight, composition, and any distinctive features.
   - Encourage participants to read the informational posters and discuss their findings.

4. **Quality Assessment (10 minutes):**
    - Ask participants to assess the quality of the materials based on the provided information.
    - Have them discuss the potential uses and limitations of each material in suspended ceiling systems.
5. **Defect Identification (10 minutes):**
    - Challenge participants to identify possible defects or issues that may arise with each material.
    - Discuss how these defects could impact the performance of a suspended ceiling system.
6. **Group Presentations (5 minutes per group):**
    - Each group presents their findings, including material characteristics, quality assessment, uses, limitations, and defect identification.
7. **Q & A and Discussion (10 minutes):**
    - Open the floor for questions and initiate a discussion on the importance of selecting the right materials for suspended ceiling systems.

- **Expected Outcome:** Participants will gain practical knowledge of various material resources used in suspended ceiling systems. They will be able to assess the suitability of different materials for specific construction scenarios, identify potential defects, and make informed decisions when working on suspended ceiling installations.

Exercise

Key Solutions to PHB Exercise

Short Questions:

1. The advantages of a flush jointed ceiling system include a seamless and clean appearance with minimal visible joints and grid lines, making it suitable for modern and aesthetically pleasing interiors.
2. The purpose of control joints in ceiling installations is to accommodate the natural expansion and contraction of materials due to temperature and humidity changes, preventing cracks and damage to the ceiling.
3. Common defects associated with plasterboard installation include cracks, uneven jointing, visible seams, and improper finishing.
4. It is important to establish datum/levels when fixing ceilings to ensure the accurate alignment and levelness of the ceiling sections, which is essential for a professional and visually appealing finish.
5. The positioning of studs on side wall panels affects ceiling installations by providing structural support and attachment points for the ceiling framework.

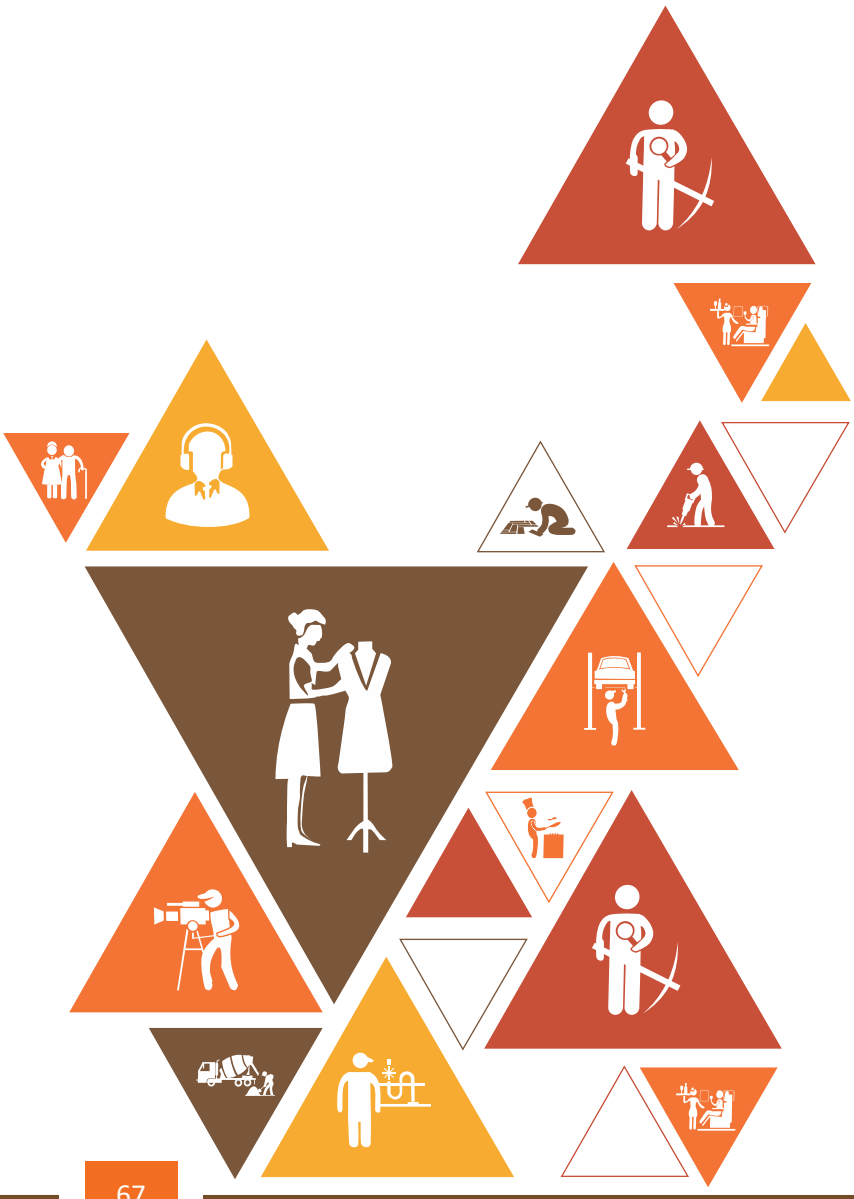
Fill-in-the-Blanks:

1. The tools and equipment used for installing non-suspended flush jointed ceilings include Broad knives, Power drills.
2. Jointing compound is used for achieving a seamless finish of plasterboard in ceiling systems.
3. When fixing suspended flush jointed ceilings, it's essential to Use appropriate tools and equipment.
4. Control joints and cut-outs in ceiling systems are important for Accommodating services work.
5. The process of establishing datum/levels ensures Accurate alignment of ceiling sections.

True/False Questions:

1. **True or False:** Flush jointed ceiling systems are known for their visible grid lines and gaps between panels. False
2. **True or False:** All-purpose joint compound is suitable for a wide range of jointing tasks. True
3. **True or False:** Ready-mixed joint compound has an unlimited working time once the container is opened. False
4. **True or False:** Correct positioning of studs on side wall panels is crucial for structural integrity. True
5. **True or False:** Control joints in ceiling systems are primarily used for decorative purposes. False

Notes



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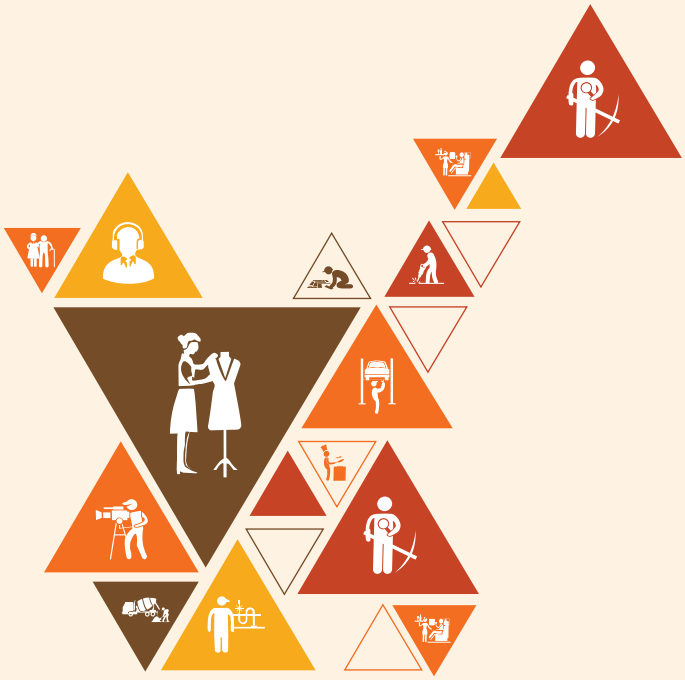
5. Installation of Exposed Grid Suspended Panel Ceiling System at Construction Sites

Unit 5.1 - Understanding Exposed Grid Suspended Panel Ceiling Systems and Materials

Unit 5.2 - Exposed Grid Suspended Panel Ceiling System Installation Techniques



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Key Learning Outcomes

At the end of this module, trainer will ensure that participant will be able to:

1. Explain how to interpret sketches for false ceiling work.
2. Describe the characteristics, quality, uses, limitations, and defects associated with material resources concerning - grid tiles, grid components, hangers, battens, braces, light fittings, grilles, insulation, panels, sealants, fixings, and fittings.
3. Discuss various jointing compounds used for a seamless finish in plasterboards.
4. Describe the process of providing cut-outs using appropriate tools.
5. Explain the use of different types of panels for grid system ceilings.
6. Explain the advantages and suitability of a flush jointed ceiling system.
7. Explain the importance of correct positioning of studs on side wall panels.
8. Describe the use of hand/power tools and equipment for the installation of an exposed grid-suspended panel ceiling system.
9. Describe the process of installing a suspended and fixed flush jointed ceiling system.
10. Demonstrate the measuring and marking on the wall for fixing ceiling brackets and perimeter for the suspended ceiling.
11. Demonstrate marking and fixing of ceiling brackets and perimeter for the suspended ceiling as per the specification.
12. Demonstrate the positioning and fixing of suspension brackets to the floor/roof structure.
13. Demonstrate the marking and cutting of the plasterboard as per the required shape.
14. Demonstrate installation of a suspension bracket, main tees, and cross tees by an appropriate method as per the specification.
15. Demonstrate installation of the outer cross tees onto the wall trim as per specifications.
16. Demonstrate the positioning of the grid on the bottom flanges of the grid main/cross tees.
17. Demonstrate the fixing of plasterboards as per the specifications.
18. Demonstrate covering and finishing of joints and edges of plasterboard panels using appropriate compounds.

UNIT 5.1: Understanding Exposed Grid Suspended Panel Ceiling Systems and Materials

Unit Objectives

At the end of this unit, trainer will ensure that participant will be able to:

1. Explain how to interpret sketches for false ceiling work.
2. Describe the characteristics, quality, uses, limitations, and defects associated with material resources concerning - grid tiles, grid components, hangers, battens, braces, light fittings, grilles, insulation, panels, sealants, fixings, and fittings.
3. Discuss various jointing compounds used for a seamless finish in plasterboards.
4. Describe the process of providing cut-outs using appropriate tools.
5. Explain the use of different types of panels for grid system ceilings.

Resources to be used

- **Theory**
  - **Training Kit -** Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films, Computer, Registers, and Trade specific charts
- **Practical**
  - Measuring tape, Scale, Right angle, Dry wall T-Square, Framing square, Chalk line, pencil, Line dori, Plumb bob, Spirit level, Pliers, Punch pliers, Paper cutting knife, Drywall knife 12,6 and 4 inches, Drywall Hammers, Taping knife, Sanding tool, Drywall saw, Hack saw, Hand saw, crew driver set, Screw gun, Drill machine, Metal cutter, Silicon gun/caulk gun, Stapler, Clutch angle.

Do

- Explain how to interpret sketches for false ceiling work.
- Describe the characteristics, quality, uses, limitations, and defects associated with material resources concerning - grid tiles, grid components, hangers, battens, braces, light fittings, grilles, insulation, panels, sealants, fixings, and fittings.
- Discuss various jointing compounds used for a seamless finish in plasterboards.
- Describe the process of providing cut-outs using appropriate tools.
- Explain the use of different types of panels for grid system ceilings.

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 5.1 to explain Understanding Exposed Grid Suspended Panel Ceiling Systems and Materials.
- **Interpreting Sketches for False Ceiling Work:** Interpreting sketches is a fundamental skill for false ceiling installers. It involves understanding and visualizing the design and layout of the ceiling, including the positioning of grid components, light fittings, and panels. Accurate interpretation ensures that the false ceiling aligns with the design specifications and provides a precise visual representation of the intended finished product.
- **Characteristics, Quality, Uses, Limitations, and Defects of Material Resources:** Understanding the characteristics, quality, uses, limitations, and potential defects of various material resources is crucial for false ceiling installers. Grid tiles, grid components, hangers, battens, braces, light fittings, grilles, insulation, panels, sealants, fixings, and fittings all play essential roles in ceiling installations. Installers must be knowledgeable about these materials to ensure proper selection, installation, and maintenance. Recognizing defects and limitations helps prevent issues during and after installation.
- **Various Jointing Compounds for Seamless Finish:** Jointing compounds are integral for achieving a seamless finish in plasterboards used in false ceilings. Different types of jointing compounds, such as all-purpose, setting-type, and ready-mixed compounds, have distinct properties and purposes. False ceiling installers must be proficient in selecting the appropriate jointing compound for the specific application and achieving a smooth, finished surface that conceals joints and seams effectively.
- **Providing Cut-Outs Using Appropriate Tools:** Creating cut-outs for services like light fixtures, vents, or access points is a common requirement in false ceiling installations. Installers need to use appropriate tools, such as hole saws or drywall saws, to accurately and cleanly cut through the ceiling material. Precision is crucial to ensure that cut-outs align with the design and provide easy access to utilities or fixtures without compromising the ceiling's integrity.
- **Use of Different Types of Panels for Grid System Ceilings:** Grid system ceilings offer flexibility in terms of panel selection. Installers should be familiar with various panel types, including acoustic panels, gypsum boards, fiberglass panels, or other specialized materials. Each panel type has specific characteristics, such as sound absorption, fire resistance, or moisture resistance, making them suitable for different applications. The choice of panels should align with project requirements and performance expectations for the ceiling system.

Activity

- **Name:** "Material Resources Assessment for False Ceiling Installation"
- **Purpose:** The purpose of this activity is to familiarize false ceiling installers with the assessment and selection of material resources critical for successful false ceiling installations. This includes understanding the characteristics, quality, uses, limitations, and potential defects of various

materials commonly used in false ceiling work.

- **Resources Required:**
  - Samples of grid tiles, grid components, hangers, battens, braces, light fittings, grilles, insulation, panels, sealants, fixings, and fittings (if available).
  - Informational materials or product specifications for the above materials.
  - Presentation materials (slides or printed information).
  - Safety equipment (gloves, safety glasses).
- **Tentative Duration:** 60 minutes
- **Procedure:**

1. **Introduction (5 minutes):**
   - Provide an overview of the importance of material selection in false ceiling installations.
   - Explain that this activity will focus on assessing and understanding material resources commonly used in the industry.
2. **Characteristics and Uses (15 minutes):**
   - Present information on the characteristics, quality, and common uses of the materials listed above using slides or printed materials.
   - Highlight key features, such as fire resistance, acoustic properties, or moisture resistance, that make each material suitable for specific applications.
3. **Limitations and Defects (15 minutes):**
   - Discuss the limitations and potential defects associated with each material.
   - Emphasize the importance of recognizing these limitations to avoid issues during installation and maintenance.
4. **Group Assessment (15 minutes):**
   - Divide participants into small groups.
   - Provide samples of the materials (if available) or detailed product information for assessment.
   - Instruct each group to assess a specific material, discussing its characteristics, uses, limitations, and potential defects.
   - Encourage group discussions and questions.

5. **Jointing Compounds and Cut-Outs (5 minutes):**
    - Briefly discuss the various jointing compounds used for seamless finishes in plasterboards and the tools required for creating cut-outs.
6. **Panel Selection (5 minutes):**
    - Explain the importance of panel selection in grid system ceilings.
    - Mention different panel types and their suitability for various scenarios, such as acoustic panels for sound control.
7. **Group Presentation (10 minutes):**
    - Each group presents its findings and assessments of the assigned material.
    - Encourage discussions and questions from other groups.

- Expected Outcome: **Participants will have a better understanding of the characteristics, quality,** uses, limitations, and potential defects of common materials used in false ceiling installations. They will also gain insights into the importance of material selection and assessment in ensuring the success and longevity of false ceiling projects.

Notes

UNIT 5.2: Exposed Grid Suspended Panel Ceiling System Installation Techniques

Unit Objectives

At the end of this unit, trainer will ensure that participant will be able to:

1. Explain the advantages and suitability of a flush jointed ceiling system.
2. Explain the importance of correct positioning of studs on side wall panels.
3. Describe the use of hand/power tools and equipment for the installation of an exposed grid-suspended panel ceiling system.
4. Describe the process of installing a suspended and fixed flush jointed ceiling system.
5. Demonstrate the measuring and marking on the wall for fixing ceiling brackets and perimeter for the suspended ceiling.
6. Demonstrate marking and fixing of ceiling brackets and perimeter for the suspended ceiling as per the specification.
7. Demonstrate the positioning and fixing of suspension brackets to the floor/roof structure.
8. Demonstrate the marking and cutting of the plasterboard as per the required shape.
9. Demonstrate installation of a suspension bracket, main tees, and cross tees by an appropriate method as per the specification.
10. Demonstrate installation of the outer cross tees onto the wall trim as per specifications.
11. Demonstrate the positioning of the grid on the bottom flanges of the grid main/cross tees.
12. Demonstrate the fixing of plasterboards as per the specifications.
13. Demonstrate covering and finishing of joints and edges of plasterboard panels using appropriate compounds.

Resources to be used

- **Theory**
  - **Training Kit -** Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films, Computer, Registers, and Trade specific charts
- **Practical**
  - Measuring tape, Scale, Right angle, Dry wall T-Square, Framing square, Chalk line, pencil, Line dori, Plumb bob, Spirit level, Pliers, Punch pliers, Paper cutting knife, Drywall knife 12,6 and 4 inches, Drywall Hammers, Taping knife, Sanding tool, Drywall saw, Hack saw, Hand saw, crew driver set, Screw gun, Drill machine, Metal cutter, Silicon gun/caulk gun, Stapler, Clutch angle.

Do

- Explain the advantages and suitability of a flush jointed ceiling system.
- Explain the importance of correct positioning of studs on side wall panels.
- Explain the use of hand/power tools and equipment for the installation of an exposed grid-suspended panel ceiling system.
- Explain the process of installing a suspended and fixed flush jointed ceiling system.
- Demonstrate the measuring and marking on the wall for fixing ceiling brackets and perimeter for the suspended ceiling.
- Demonstrate marking and fixing of ceiling brackets and perimeter for the suspended ceiling as per the specification.
- Demonstrate the positioning and fixing of suspension brackets to the floor/roof structure.
- Demonstrate the marking and cutting of the plasterboard as per the required shape.
- Demonstrate installation of a suspension bracket, main tees, and cross tees by an appropriate method as per the specification.
- Demonstrate installation of the outer cross tees onto the wall trim as per specifications.
- Demonstrate the positioning of the grid on the bottom flanges of the grid main/cross tees.
- Demonstrate the fixing of plasterboards as per the specifications.
- Demonstrate covering and finishing of joints and edges of plasterboard panels using appropriate compounds.

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 5.2 to explain Exposed Grid Suspended Panel Ceiling System Installation Techniques.
- **Advantages and Suitability of a Flush Jointed Ceiling System:** A flush jointed ceiling system offers a sleek, modern appearance with clean, uninterrupted lines. It is highly suitable for contemporary interior designs, providing a seamless and minimalist look. This system is particularly advantageous in spaces where aesthetics and a sense of spaciousness are crucial, such as commercial offices, upscale residences, and retail environments. The flush jointed system can conceal structural elements, wiring, and plumbing, enhancing the overall appearance of the ceiling.
- **Importance of Correct Positioning of Studs on Side Wall Panels:** Correct positioning of studs on side wall panels is crucial for ensuring structural integrity and the stability of the ceiling installation. Properly aligned studs provide robust support for attaching the ceiling components, preventing sagging or detachment over time. Accurate positioning of studs also ensures that the ceiling system remains level and securely anchored to the wall, contributing to a professional and long-lasting result.

- **Use of Hand/Power Tools and Equipment for the Installation of an Exposed Grid-Suspended Panel Ceiling System:** The installation of an exposed grid-suspended panel ceiling system requires a range of hand and power tools and equipment. These tools typically include hammers, pliers, power drills, screwdrivers, laser levels, measuring tapes, and ceiling tile lifters. Power tools are used for drilling holes, securing components, and cutting materials. Laser levels assist in achieving precise alignment, while ceiling tile lifters simplify the handling and installation of ceiling panels.
- **Process of Installing a Suspended and Fixed Flush Jointed Ceiling System:** Installing a suspended and fixed flush jointed ceiling system involves several steps. This process begins with establishing datum levels and positioning suspension brackets. Main tees and cross tees are then installed, forming the grid framework. Plasterboard panels are attached to this grid, and joints and edges are sealed for a seamless finish. Proper installation techniques ensure that the ceiling system is securely fastened, level, and visually appealing.
- **Measuring and Marking on the Wall for Fixing Ceiling Brackets and Perimeter for the Suspended Ceiling:** Measuring and marking on the wall are essential steps in the preparation for suspended ceiling installation. Accurate measurements and markings ensure that ceiling brackets and perimeter channels are positioned correctly. This process involves using measuring tapes, laser levels, and markers to mark precise locations for securing these components. Proper measurement and marking contribute to the alignment and stability of the suspended ceiling.
- **Marking and Fixing of Ceiling Brackets and Perimeter for the Suspended Ceiling as per the Specification:** Following the measurements and markings, ceiling brackets and perimeter channels are fixed to the wall according to the specifications. This step involves securely attaching these components using appropriate fasteners and tools. Strict adherence to specifications ensures that the suspended ceiling system is properly anchored and capable of supporting the grid and panels.
- **Positioning and Fixing of Suspension Brackets to the Floor/Roof Structure:** Positioning and fixing suspension brackets to the floor or roof structure is a critical aspect of suspended ceiling installation. These brackets provide vertical support for the ceiling system. Careful alignment and secure attachment using suitable anchors and hardware are essential to prevent ceiling sagging or instability. Proper positioning contributes to the overall structural integrity of the ceiling.
- **Marking and Cutting of the Plasterboard as per the Required Shape:** To accommodate various architectural features and layouts, plasterboards often need to be marked and cut to the required shapes. This involves using measuring tools to mark the dimensions and a utility knife or saw to make precise cuts. Accurate cutting ensures that the plasterboards fit seamlessly within the grid framework, resulting in a visually pleasing and well-fitted ceiling.
- **Installation of a Suspension Bracket, Main Tees, and Cross Tees by an Appropriate Method as per the Specification:** The installation of suspension brackets, main tees, and cross tees should align with the specifications provided. Proper methods, such as securing brackets at designated intervals and connecting tees at precise angles, must be followed. This meticulous installation process ensures that the grid framework maintains structural stability and a level profile.

- **Installation of Outer Cross Tees onto the Wall Trim as per Specifications:** Outer cross tees are installed onto wall trim according to specifications to create a smooth transition between the ceiling and the wall. Proper installation methods, including securing the outer cross tees securely and aligning them with the wall trim, contribute to a polished and finished appearance.
- **Positioning of the Grid on the Bottom Flanges of the Grid Main/Cross Tees:** Positioning the grid on the bottom flanges of the grid main and cross tees is crucial for forming a secure and stable framework. Accurate placement ensures that the grid components interlock effectively, preventing any sagging or misalignment of the ceiling panels. Proper positioning contributes to the overall structural integrity of the ceiling system.
- **Fixing of Plasterboards as per the Specifications:** Plasterboards are fixed to the grid framework as per the provided specifications. This involves attaching the boards securely to the grid components using appropriate fasteners. Following the specifications ensures that the plasterboards are installed correctly and contribute to a uniform and level ceiling surface.
- **Covering and Finishing of Joints and Edges of Plasterboard Panels Using Appropriate Compounds:** Covering and finishing joints and edges of plasterboard panels are essential for achieving a seamless and visually appealing ceiling surface. Appropriate jointing compounds are used to fill gaps and imperfections. Skilled application and finishing techniques result in smooth, inconspicuous joints and edges, providing a polished appearance to the false ceiling.

Activity

- **Name:** "Installation of an Exposed Grid-Suspended Panel Ceiling"
- **Purpose:** This practical activity is designed to provide hands-on experience in installing an exposed grid-suspended panel ceiling system. Participants will learn about the advantages and suitability of this type of ceiling, the importance of precise positioning, the use of tools and equipment, and the step-by-step installation process.
- **Resources Required:**

1. Ceiling grid components (main tees, cross tees, wall angles, hangers, etc.).
2. Ceiling panels (suspended panel ceiling tiles).
3. Hand and power tools (drills, screwdrivers, laser level, measuring tape, utility knife, etc.).
4. Safety equipment (safety glasses, gloves, hard hat, etc.).
5. Marking tools (pencils, markers).
6. Ceiling tile lifters or handling tools.

- **Tentative Duration:** 4-6 hours (may vary based on project complexity).
- **Procedure:**

1. **Introduction (15 minutes):**
    - Overview of exposed grid-suspended panel ceiling systems.
    - Explanation of the practical activity's objectives.
2. **Safety Precautions (10 minutes):**
    - Explanation of safety equipment and guidelines.
3. **Advantages of Exposed Grid-Suspended Panel Ceilings (15 minutes):**
    - Discuss the benefits and suitability of this ceiling system.
    - Emphasize its aesthetic and functional advantages.
4. **Importance of Correct Positioning (15 minutes):**
    - Explain the significance of precise positioning of studs on side wall panels for a stable framework.
5. **Tools and Equipment (20 minutes):**
    - Describe the hand and power tools used for the installation, including their functions.
    - Safety checks and maintenance tips for tools.
6. **Installation Process (120 minutes):**
    - **Step-by-step demonstration of the installation process, including:**
        - Measuring and marking on the wall for fixing ceiling brackets and perimeter.
        - Marking and fixing ceiling brackets and perimeter as per specifications.
        - Positioning and fixing suspension brackets to the floor/roof structure.
        - Marking and cutting plasterboard as per required shapes.
        - Installation of suspension brackets, main tees, and cross tees according to specifications.
        - Installation of outer cross tees onto the wall trim.
        - Positioning the grid on the bottom flanges of grid main/cross tees.
        - Fixing plasterboards as per specifications.
        - Covering and finishing joints and edges of plasterboard panels using appropriate compounds.

7. **Q & A Session (15 minutes):**
    - Address questions and provide clarifications.

- **Expected Outcome:** Participants will gain practical skills and knowledge in the installation of exposed grid-suspended panel ceiling systems. They will understand the advantages of this type of ceiling, the importance of precise positioning, and the proper use of tools and equipment. Additionally, they will learn how to follow specifications and ensure a professional finish.

Exercise

Key Solutions to PHB Exercise

Short Questions:

1. The primary characteristics of grid components in ceiling systems include their structural stability, precise measurements, and compatibility with other system components.
2. Correct positioning of studs on side wall panels is important in ceiling installation because it ensures the structural integrity and stability of the ceiling system.
3. The purpose of using jointing compounds in plasterboard installation is to create a seamless and smooth finish, concealing joints and imperfections.
4. In ceiling installations, providing cut-outs is crucial for accommodating fixtures, utilities, or access points. Tools such as saws, utility knives, and hole saws are used for this purpose.
5. The advantages of a flush jointed ceiling system in construction include a seamless appearance, easy maintenance, and the ability to hide imperfections and utilities.

Fill-in-the-Blanks:

1. Grid tiles, grid components, hangers, battens, braces, and other material resources play a vital role in the structural support of suspended ceilings.
2. Jointing compounds are used to create a seamless finish in plasterboard installations.
3. When providing cut-outs in ceilings, it's essential to use appropriate tools for precision.
4. Different types of panels are used in grid system ceilings to achieve specific aesthetics and performance goals.
5. The correct positioning of studs on side wall panels ensures the structural integrity and stability of the ceiling system.

True/False:

1. **False:** Jointing compounds are mainly used in ceiling installations for creating a smooth finish and concealing joints, not for soundproofing.
2. **False:** Providing cut-outs may be necessary for various reasons, including fixtures, utilities, or access points, even if there are no existing fixtures.
3. **False:** Grid tiles are typically not made of solid wood but are more commonly made of materials like metal, mineral fiber, or PVC.
4. **False:** Flush jointed ceiling systems are known for their relatively straightforward installation process, which contributes to their popularity.
5. **True:** Battens in ceiling systems are often used to hang light fixtures and other components.

Notes

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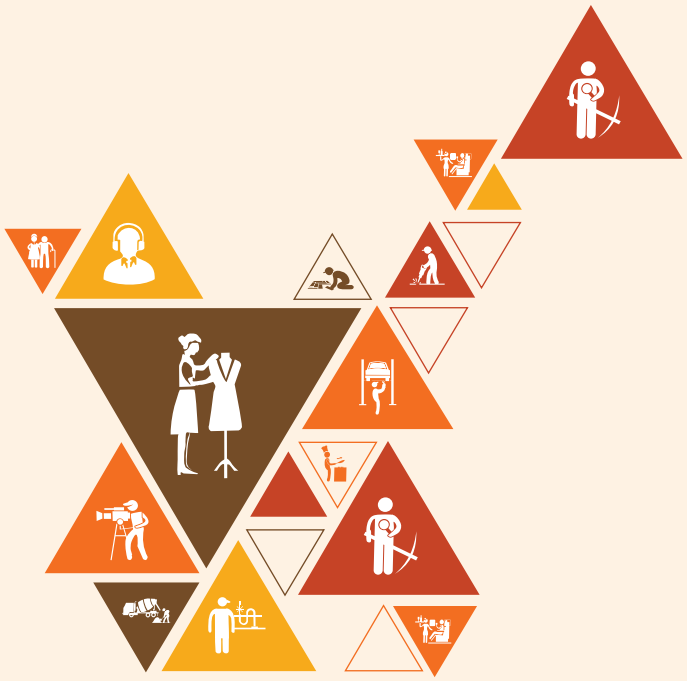
6. Installation of Wall Partitions and Panels

Unit 6.1 - Understanding Wall Panel Installation Basics

Unit 6.2 - Preparing and Installing Wall Panels



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Key Learning Outcomes

At the end of this module, trainer will ensure that participant will be able to:

1. Interpret schematic drawings and sketches for dry wall installation works.
2. Describe specifications related to fixing of wall panels.
3. Describe the different types of joints to be used in frames including butt joint, mitre joints and others such joints used in frames.
4. Explain the process of measuring and marking for cutting panels.
5. Explain method statement for installation of wall panels.
6. Explain the importance of providing proper spacing between screws used for fixing panels.
7. Explain the precautions followed in fixing of wall panels.
8. Select tools and materials as per the requirement of wall panel fixing.
9. Demonstrate checks to ensure that the ceiling and floor frame are fixed properly and spacing between frames is as per board dimension and layout.
10. Demonstrate checks to ensure the height of vertical frame and joints in the frames are as per specification.
11. Demonstrate checks to ensure boards are accurately marked and cut to the required dimensions.
12. Demonstrate checks to ensure proper spacing between bottom end of panel and floor.
13. Demonstrate checks to ensure additional support for fixing door frames /sockets/additional fixtures is provided in studs.
14. Demonstrate checks for ensuring installation of supporting structures for correct alignment of the panels.
15. Demonstrate fixing of horizontal and vertical panels as per specified method statement as well as following all precautions.
16. Demonstrate checks for alignment of panels and joints ensuring verticality of the end wall.
17. Demonstrate finishing of panel joints as per instructions.
18. Demonstrate checks to ensure that the infill and cladding panels are free from any distortions and joints are accurately aligned.

UNIT 6.1: Understanding Wall Panel Installation Basics

Unit Objectives

At the end of this unit, trainer will ensure that participant will be able to:

1. Interpret schematic drawings and sketches for drywall installation works.
2. Describe specifications related to fixing of wall panels.
3. Describe the different types of joints to be used in frames, including butt joint, mitre joints, and others used in frames.
4. Explain the process of measuring and marking for cutting panels.
5. Explain the method statement for the installation of wall panels.
6. Explain the importance of providing proper spacing between screws used for fixing panels.
7. Explain the precautions followed in fixing wall panels.
8. Select tools and materials as per the requirement of wall panel fixing.

Resources to be used

- **Theory**
  - **Training Kit -** Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films, Computer, Registers, and Trade specific charts
- **Practical**
  - Measuring tape, Scale, Right angle, Dry wall T-Square, Framing square, Chalk line, pencil, Line dori, Plumb bob, Spirit level, Pliers, Punch pliers, Paper cutting knife, Drywall knife 12,6 and 4 inches, Drywall Hammers, Taping knife, Sanding tool, Drywall saw, Hack saw, Hand saw, crew driver set, Screw gun, Drill machine, Metal cutter, Silicon gun/caulk gun, Stapler, Clutch angle.

Do

- Interpret schematic drawings and sketches for drywall installation works.
- Explain specifications related to fixing of wall panels.
- Explain the different types of joints to be used in frames, including butt joint, mitre joints, and others used in frames.
- Explain the process of measuring and marking for cutting panels.
- Explain the method statement for the installation of wall panels.

- Explain the importance of providing proper spacing between screws used for fixing panels.
- Explain the precautions followed in fixing wall panels.
- Explain process of selecting tools and materials as per the requirement of wall panel fixing.

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 6.1 to explain Understanding Wall Panel Installation Basics.
- **Interpret schematic drawings and sketches for drywall installation works:** Interpreting schematic drawings and sketches is essential for understanding the layout, dimensions, and design specifications of drywall installation projects. This helps ensure accurate execution of the plans.
- **Explain specifications related to fixing wall panels:** Specifications provide detailed instructions regarding the type of panels to be used, their dimensions, spacing, fastening methods, and other critical aspects of wall panel installation, ensuring compliance with project requirements.
- **Explain the different types of joints to be used in frames, including butt joints, mitre joints, and others used in frames:** Understanding various types of joints, such as butt joints, mitre joints, and lap joints, is crucial for selecting the appropriate jointing method based on project needs. Each type has specific applications and characteristics.
- **Explain the process of measuring and marking for cutting panels:** Proper measurement and marking techniques are fundamental for accurate panel cutting. This ensures that panels fit precisely and meet design specifications.
- **Explain the method statement for the installation of wall panels:** A method statement outlines the step-by-step procedure for wall panel installation. It includes safety measures, tools and materials required, and the sequence of tasks, ensuring a systematic and safe installation process.
- **Explain the importance of providing proper spacing between screws used for fixing panels:** Proper spacing between screws is essential to ensure even distribution of load and prevent panel deformation or damage. It helps maintain the integrity of the wall and provides a secure installation.
- **Explain the precautions followed in fixing wall panels:** Precautions in wall panel installation include ensuring panels are dry, inspecting for defects, verifying structural integrity, using appropriate fasteners, and following safety measures to avoid accidents during installation.
- **Explain the process of selecting tools and materials as per the requirement of wall panel fixing:** Selecting the right tools and materials is critical for efficient wall panel installation. It involves choosing appropriate fasteners, adhesives, cutting tools, and safety equipment to match the specific project needs, ensuring a successful installation.
- Understanding these aspects is essential for a successful drywall installation project, ensuring that panels are securely fixed, aesthetically pleasing, and compliant with design specifications.

Activity

- **Name:** "Practical Workshop on Drywall Installation Planning"
- **Purpose:** This practical activity aims to familiarize participants with essential aspects of drywall installation planning and execution, focusing on interpreting schematic drawings, understanding specifications, joint types, measurements, and safety measures.
- **Resources required:**
  - Schematic drawings and sketches
  - Wall panel specifications
  - Drywall panels
  - Measuring tape and marking tools
  - Fasteners and screws
  - Safety equipment (gloves, goggles, dust masks)
  - Various types of joints (e.g., butt joints, mitre joints)
  - A variety of wall panel fixing tools and materials (e.g., drills, screws, adhesives)
- **Tentative duration:** Half-day workshop
- **Procedure:**
  1. **Introduction (15 minutes):**
     - Provide an overview of the workshop's purpose and objectives.
     - Explain the importance of proper planning in drywall installation.
  2. **Interpreting Schematic Drawings (30 minutes):**
     - Distribute schematic drawings and sketches of a hypothetical drywall installation project.
     - Instruct participants to analyze and interpret the drawings to understand the layout and dimensions.
  3. **Understanding Specifications (15 minutes):**
     - Discuss the provided wall panel specifications, emphasizing key details such as panel type, dimensions, fastening requirements, and spacing.
  4. **Exploring Joint Types (20 minutes):**
     - Show examples of different joint types used in framing, including butt joints and mitre joints.
     - Explain when and why each type is used in wall panel installations.

5. **Measuring and Marking (30 minutes):**
    - Provide drywall panels to participants.
    - Demonstrate how to measure and mark panels accurately based on the interpreted drawings and specifications.
    - Allow participants to practice measuring and marking panels.
6. **Method Statement (20 minutes):**
    - Discuss the importance of a method statement in drywall installation projects.
    - Provide a sample method statement for wall panel installation.
    - Review key elements such as safety measures, tools and materials, and installation sequence.
7. **Spacing and Fasteners (20 minutes):**
    - Explain the significance of proper screw spacing in panel fixing.
    - Demonstrate the correct spacing technique and types of fasteners to use.
    - Allow participants to practice screw installation.
8. **Safety Precautions (15 minutes):**
    - Highlight safety precautions that must be followed during drywall installation, including the use of safety equipment and minimizing dust exposure.
9. **Tool and Material Selection (20 minutes):**
    - Explain how to choose the appropriate tools and materials for wall panel fixing based on project requirements.
    - Showcase various tools and materials commonly used in drywall installation.

- **Expected Outcome:** Participants should have a better understanding of interpreting schematic drawings, comprehending specifications, recognizing different joint types, measuring and marking panels accurately, creating method statements, maintaining proper screw spacing, observing safety precautions, and selecting the right tools and materials for successful wall panel installation. This knowledge will enhance their skills in planning and executing drywall projects effectively and safely.

Notes

UNIT 6.2: Preparing and Installing Wall Panels

Unit Objectives

At the end of this unit, trainer will ensure that participant will be able to:

1. Demonstrate checks to ensure that the ceiling and floor frame are fixed properly, and spacing between frames is as per board dimension and layout.
2. Demonstrate checks to ensure the height of the vertical frame and joints in the frames are as per specification.
3. Demonstrate checks to ensure boards are accurately marked and cut to the required dimensions.
4. Demonstrate checks to ensure proper spacing between the bottom end of the panel and the floor.
5. Demonstrate checks to ensure additional support for fixing door frames/sockets/additional fixtures is provided in studs.
6. Demonstrate checks for ensuring the installation of supporting structures for correct alignment of the panels.
7. Demonstrate fixing of horizontal and vertical panels as per the specified method statement as well as following all precautions.
8. Demonstrate checks for the alignment of panels and joints ensuring verticality of the end wall.
9. Demonstrate finishing of panel joints as per instructions.
10. Demonstrate checks to ensure that the infill and cladding panels are free from any distortions, and joints are accurately aligned.

Resources to be used

- **Theory**
  - **Training Kit -** Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films, Computer, Registers, and Trade specific charts
- **Practical**
  - Measuring tape, Scale, Right angle, Dry wall T-Square, Framing square, Chalk line, pencil, Line dori, Plumb bob, Spirit level, Pliers, Punch pliers, Paper cutting knife, Drywall knife 12,6 and 4 inches, Drywall Hammers, Taping knife, Sanding tool, Drywall saw, Hack saw, Hand saw, crew driver set, Screw gun, Drill machine, Metal cutter, Silicon gun/caulk gun, Stapler, Clutch angle.

Do

- Demonstrate checks to ensure that the ceiling and floor frame are fixed properly, and spacing between frames is as per board dimension and layout.
- Demonstrate checks to ensure the height of the vertical frame and joints in the frames are as per specification.
- Demonstrate checks to ensure boards are accurately marked and cut to the required dimensions.
- Demonstrate checks to ensure proper spacing between the bottom end of the panel and the floor.
- Demonstrate checks to ensure additional support for fixing door frames/sockets/additional fixtures is provided in studs.
- Demonstrate checks for ensuring the installation of supporting structures for correct alignment of the panels.
- Demonstrate fixing of horizontal and vertical panels as per the specified method statement as well as following all precautions.
- Demonstrate checks for the alignment of panels and joints ensuring verticality of the end wall.
- Demonstrate finishing of panel joints as per instructions.
- Demonstrate checks to ensure that the infill and cladding panels are free from any distortions, and joints are accurately aligned.

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 6.2 to explain Preparing and Installing Wall Panels.
- **Demonstrate checks to ensure that the ceiling and floor frame are fixed properly, and spacing between frames is as per board dimension and layout:** In this step, you need to visually inspect the ceiling and floor frames to ensure they are securely fixed in place. Check for any loose or missing fasteners. Use a measuring tape or a square to verify that the spacing between frames matches the specified board dimensions and layout. This is crucial to ensure that the panels will fit correctly without gaps or overlaps.
- **Demonstrate checks to ensure the height of the vertical frame and joints in the frames are as per specification:** Measure the height of the vertical frames and the joints between them to ensure they meet the specified dimensions in the project's specifications. Use a measuring tape or a level to confirm that the frames are installed at the correct height, and there are no irregularities in the joints that could affect the panel's alignment.
- **Demonstrate checks to ensure boards are accurately marked and cut to the required dimensions:** Inspect the boards to ensure they have been accurately marked and cut to the required dimensions. Check for any irregularities, such as jagged edges or incorrect measurements. Properly marked and cut boards are essential for a precise and seamless panel installation.

- **Demonstrate checks to ensure proper spacing between the bottom end of the panel and the floor:** Verify that there is proper spacing between the bottom end of the panel and the floor. This spacing is important to accommodate any potential floor irregularities and to ensure a clean and even finish. Use a level or measuring tape to confirm that the spacing is consistent.
- **Demonstrate checks to ensure additional support for fixing door frames/sockets/additional fixtures is provided in studs:** Inspect the studs and framing to ensure that additional support, such as noggings or backing, has been provided at the appropriate locations for fixing door frames, electrical sockets, or any additional fixtures. This support is essential for the stability and strength of the wall.
- **Demonstrate checks for ensuring the installation of supporting structures for correct alignment of the panels:** Check that all supporting structures, such as braces or struts, are correctly installed to maintain the alignment of the panels. These supporting structures help prevent sagging or misalignment of the panels over time.
- **Demonstrate fixing of horizontal and vertical panels as per the specified method statement as well as following all precautions:** Show how to fix horizontal and vertical panels according to the specified method statement. Emphasize the importance of following the recommended precautions, including using the correct fasteners and maintaining proper spacing. Demonstrate the proper technique for securing the panels to the framing.
- **Demonstrate checks for the alignment of panels and joints ensuring verticality of the end wall:** After fixing the panels, check for alignment and verticality. Use a level to ensure that the panels are straight and that joints are correctly aligned. Proper alignment is crucial for the overall aesthetics and functionality of the wall.
- **Demonstrate finishing of panel joints as per instructions:** Show how to finish panel joints according to the provided instructions. This may involve applying joint compound or tape to create a seamless and smooth surface. Proper finishing is essential for achieving a polished appearance.
- **Demonstrate checks to ensure that the infill and cladding panels are free from any distortions, and joints are accurately aligned:** Inspect the infill and cladding panels to ensure they are free from distortions or defects. Check that the joints between these panels are accurately aligned, as any misalignment can negatively impact the wall's appearance and structural integrity.

Activity-1

- **Name:** "Quality Assurance Checks for Drywall Installation"
- **Purpose:** This practical activity aims to demonstrate the critical quality assurance checks required during drywall installation to ensure the integrity, alignment, and precision of the wall panels. These checks are essential for maintaining structural stability and achieving a professional finish.
- **Resources Required:**

- Drywall panels
- Ceiling and floor frames (mock frames for demonstration)
- Measuring tape
- Level
- Framing square
- Studs (mock studs for demonstration)
- Fasteners
- Marking tools
- Joint compound and finishing tools (for demonstrating finishing)
- Infill and cladding panels

- **Tentative Duration:** Approximately 1-2 hours, depending on the number of checks demonstrated and the complexity of the installation.
- **Procedure:**

1. **Ceiling and Floor Frame Check:**
    - Demonstrate how to inspect the ceiling and floor frames (mock frames) for proper installation.
    - Ensure the frames are securely fixed and aligned.
    - Measure and verify the spacing between frames, ensuring it matches the board dimensions and layout specifications.
2. **Vertical Frame and Joint Height Check:**
    - Demonstrate how to measure and confirm the height of the vertical frames.
    - Check for any irregularities in the joints between frames.
    - Ensure that the measurements align with the project's specifications.
3. **Accurate Marking and Cutting:**
    - Show how to inspect drywall boards for accurate marking and cutting.
    - Check for jagged edges or incorrect measurements.
    - Emphasize the importance of precise cutting for a seamless fit.
4. **Spacing from Bottom to Floor Check:**
    - Demonstrate how to verify the spacing between the bottom end of the panel and the floor.

- Explain the significance of this spacing to accommodate floor irregularities.

5. **Additional Support for Fixtures:**
    - Show how to check for and ensure the provision of additional support, such as noggings or backing, for fixing door frames, sockets, or other fixtures.
    - Emphasize the role of this support in wall stability.
6. **Supporting Structures Check:**
    - Demonstrate how to check for the installation of supporting structures, such as braces or struts, to maintain panel alignment.
    - Explain how these structures prevent sagging or misalignment.
7. **Fixing Horizontal and Vertical Panels:**
    - Show how to properly fix horizontal and vertical panels according to the specified method statement.
    - Highlight the importance of following precautions for secure attachment.
8. **Alignment of Panels and Joints:**
    - Demonstrate how to check the alignment of panels and joints to ensure verticality.
    - Use a level to verify that panels are straight, and joints are correctly aligned.
9. **Finishing of Panel Joints:**
    - Show how to finish panel joints according to provided instructions.
    - Explain the use of joint compound and finishing tools for achieving a smooth surface.
10. **Infill and Cladding Panel Check:**
    - Demonstrate how to inspect infill and cladding panels for distortions or defects.
    - Ensure that joints between these panels are accurately aligned.

- **Expected Outcome:** Participants will gain practical knowledge of the essential quality assurance checks required during drywall installation. They will understand how to assess and ensure proper framing, alignment, cutting, and finishing, resulting in a professionally installed and structurally sound wall.

Activity-2

- **Name:** "Drywall Installation Quality Assurance Workshop"
- **Purpose:** The purpose of this practical activity is to provide hands-on experience in performing critical quality checks during the drywall installation process. Participants will learn to ensure the proper framing, alignment, cutting, spacing, and finishing of drywall panels, ultimately resulting in a professionally installed and structurally sound wall.
- **Resources Required:**
  - Mock ceiling and floor frames
  - Drywall panels
  - Measuring tape
  - Level
  - Framing square
  - Mock studs
  - Fasteners (screws/nails)
  - Marking tools
  - Joint compound and finishing tools
  - Infill and cladding panels
  - Safety equipment (gloves, safety glasses)
- **Tentative Duration:** Approximately 2-3 hours, depending on the number of checks demonstrated and the complexity of the installation.
- **Procedure:**
  1. **Ceiling and Floor Frame Check (15 minutes):**
     - Participants will inspect mock ceiling and floor frames for proper installation.
     - They will measure and verify the spacing between frames to ensure it matches the board dimensions and layout specifications.
     - Corrective actions for frame adjustments will be demonstrated.
  2. **Vertical Frame and Joint Height Check (15 minutes):**
     - Participants will measure and confirm the height of mock vertical frames.
     - They will check for any irregularities in the joints between frames to meet project specifications.

- Corrective actions for frame height adjustments will be demonstrated.

3. **Accurate Marking and Cutting (15 minutes):**
   - Participants will inspect drywall boards for accurate marking and cutting.
   - They will identify any jagged edges or incorrect measurements and learn how to correct them.
   - Corrective actions for inaccurate cutting will be demonstrated.
4. **Spacing from Bottom to Floor Check (10 minutes):**
   - Participants will verify the spacing between the mock panels' bottom end and the floor, accommodating floor irregularities.
   - The importance of this spacing will be emphasized.
5. **Additional Support for Fixtures (10 minutes):**
   - Participants will learn to check for and ensure the provision of additional support, such as mock noggings or backing, for fixing door frames, sockets, or other fixtures.
   - The role of this support in wall stability will be explained.
6. **Supporting Structures Check (15 minutes):**
   - Participants will inspect mock supporting structures, such as braces or struts, to maintain panel alignment.
   - They will understand how these structures prevent sagging or misalignment.
7. **Fixing Horizontal and Vertical Panels (30 minutes):**
   - Participants will practice fixing mock horizontal and vertical panels following the specified method statement and safety precautions.
   - Correct panel attachment techniques will be demonstrated.
8. **Alignment of Panels and Joints (15 minutes):**
   - Participants will use a level to check the alignment of mock panels and joints, ensuring verticality.
   - Corrective actions for misaligned panels or joints will be demonstrated.
9. **Finishing of Panel Joints (20 minutes):**
   - Participants will learn to finish mock panel joints using joint compound and finishing tools according to provided instructions.
   - Techniques for achieving a smooth surface will be demonstrated.

10. Infill and Cladding Panel Check (15 minutes):

- Participants will inspect mock infill and cladding panels for distortions or defects.
- They will ensure that joints between these panels are accurately aligned.
- Corrective actions for alignment issues will be demonstrated.

- **Expected Outcome:** Participants will gain practical expertise in conducting essential quality checks during drywall installation. They will be capable of ensuring the correct framing, alignment, cutting, spacing, and finishing of drywall panels, contributing to the successful completion of wall installations with structural integrity and professional appearance.

Exercise

Key Solutions to PHB Exercise

Short Questions:

1. The purpose of interpreting schematic drawings and sketches in drywall installation is to understand the layout, dimensions, and positioning of wall panels, frames, and fixtures, ensuring accurate and precise installation.
2. Proper spacing between screws when fixing wall panels is important to distribute the load evenly, prevent panel deformation, and ensure the structural stability of the wall.
3. Two common types of joints used in framing for wall panels are butt joints and mitre joints.
4. Precautions to follow when fixing wall panels include ensuring accurate measurements, maintaining proper spacing, providing additional support for fixtures, checking for supporting structures, and using the correct fixing techniques.
5. Checking the alignment of panels and joints during the installation process is necessary to ensure the verticality and overall appearance of the end wall.

Fill-in-the-Blanks:

1. The process of measuring and marking for cutting panels is essential to ensure consistent dimensions and accurate cuts.
2. In wall panel installation, it's crucial to select the appropriate tools and materials for the job.
3. When fixing panels, it's important to check that the ceiling and floor frame are fixed properly and spacing between frames matches the board dimension and layout.
4. Proper spacing between the bottom end of the panel and the floor is necessary to allow for expansion and contraction.
5. To ensure a successful installation, it's important to demonstrate checks for the alignment of panels and joints, ensuring verticality of the end wall.

True/False Questions:

1. True
2. True
3. True
4. True
5. False

Notes

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Transforming the skill landscape

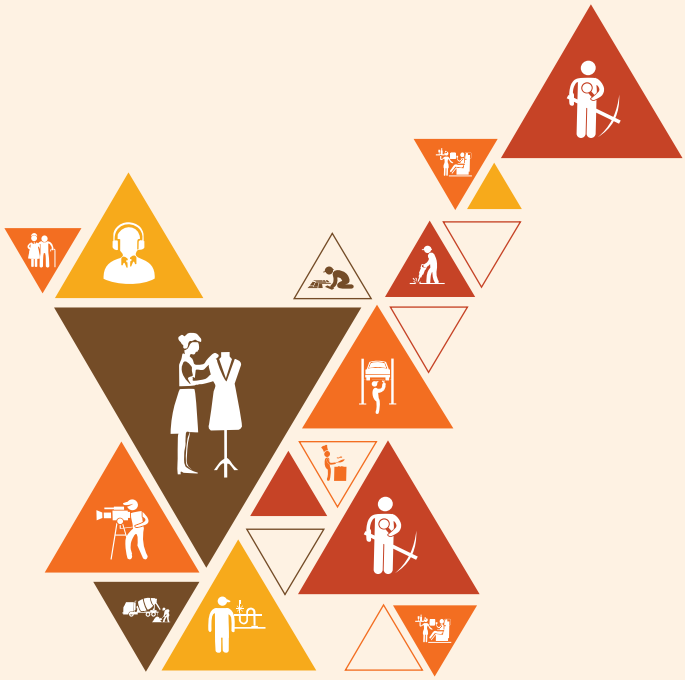
Construction Skill Development Council

7. Communicate Effectively at Workplace

Unit 7.1 - Effective Communication and Teamwork

Unit 7.2 - Working Effectively and Maintaining Discipline at Work

Unit 7.3 - Maintaining Social Diversity at Work



CON/N8001

Key Learning Outcomes

At the end of this module, trainer will ensure that participant will be able to:

1. Explain the effects and benefits of timely actions relevant to the task at hand with examples.
2. Explain the importance of teamwork and its effects relevant to the task at hand with examples.
3. Demonstrate teamwork skills during assigned task.
4. Explain the importance of proper and effective communication and its adverse effects in case of failure of proper communication.
5. Apply effective communication skills while interacting with co-workers, trade seniors and others during the assigned task.
6. Use appropriate writing skills and verbal communication reporting as per commonly applicable organisational norms.
7. Discuss about gender and its related concept: gender equality, gender equity (group work).
8. Discuss different types of disabilities (physical, mental, intellectual or sensory impairment).
9. Discuss the activities sensitive to the cultural diversity, disabilities and gender neutrality at the workplace.
10. Demonstrate acceptable interpersonal transactions with individuals having disabilities (physical, mental, intellectual or sensory impairment) or cultural diversity.
11. Discuss the basic rules and regulations related to gender sensitivity, disabilities, and cultural diversity, with their impact on operations of a workplace.
12. Demonstrate the process modifications required to make the workplace free from gender biases.
13. Discuss how to take initiative in resolving issues among co-workers in a given situation.
14. Discuss reporting procedure followed at the workplace.

UNIT 7.1: Effective Communication and Teamwork

Unit Objectives

At the end of this unit, trainer will ensure that participant will be able to:

1. Elucidate own roles and responsibilities.
2. Explain the importance of effective communication.
3. Explain different modes of communication used at the workplace.
4. Elucidate the consequence of poor teamwork on project outcomes, timelines, safety at the construction site, etc.
5. Demonstrate how to pass on work-related information/requirements clearly to the team members.
6. Show how to report any unresolved problem to the supervisor immediately.

Resources to be used

- **Theory**
    - **Training Kit -** Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films, Computer, Registers, and Trade specific charts

Do

- Explain own roles and responsibilities.
- Explain the importance of effective communication.
- Explain different modes of communication used at the workplace.
- Explain the consequence of poor teamwork on project outcomes, timelines, safety at the construction site, etc.
- Demonstrate how to pass on work-related information/requirements clearly to the team members.
- Demonstrate how to report any unresolved problem to the supervisor immediately.

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 7.1 to explain Effective Communication and Teamwork.

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 7.1 to explain Effective Communication and Teamwork.
- As a False Ceiling & Dry Wall Installer, it is crucial to understand and fulfill various roles and responsibilities to ensure the successful completion of projects. Let's explore these responsibilities and other related aspects:
    - **Roles and Responsibilities:**
        - **Installation:** The primary role involves the installation of false ceilings and drywall systems according to project specifications.
        - Measurement: **Accurately measure and mark surfaces for the installation of framing,** panels, and fixtures.
        - **Material Handling:** Safely handle, transport, and store materials and tools required for the job.
        - **Quality Control:** Ensure that all installations meet quality standards and adhere to safety regulations.
        - **Teamwork:** Collaborate with team members, such as supervisors, architects, and other tradespeople, to achieve project goals.
        - **Safety:** Follow safety protocols to minimize workplace accidents and hazards.
        - **Communication:** Effectively communicate with team members, including passing on work-related information and reporting any issues promptly.
    - **Importance of Effective Communication:** Effective communication is vital in the construction industry for several reasons:
        - **Safety:** Clear communication helps prevent accidents and ensures that everyone understands and follows safety procedures.
        - **Efficiency:** It streamlines work processes, reduces errors, and minimizes delays.
        - **Quality:** Precise communication helps maintain quality standards in installations.
        - **Problem-Solving:** It enables quick resolution of issues and prevents them from escalating.
        - **Team Cohesion:** Effective communication fosters better teamwork and collaboration.
    - **Different Modes of Communication**:
        - **Verbal Communication:** Spoken instructions, discussions, and meetings.
        - **Written Communication:** Emails, reports, work instructions, and project documentation.
        - **Visual Communication:** Diagrams, drawings, blueprints, and sketches.
        - **Digital Communication:** Messaging apps, project management software, and virtual meetings.
    - **Consequences of Poor Teamwork:** Poor teamwork can have detrimental effects on project

outcomes, timelines, safety, and overall construction site efficiency:

- **Delays:** Miscommunication and lack of coordination can lead to project delays.
- **Errors:** Inadequate teamwork may result in mistakes and rework, affecting the project's **quality.**
- **Safety Risks:** A breakdown in teamwork can compromise safety, leading to accidents.
- **Low Morale:** Poor teamwork can negatively impact team morale and job satisfaction.

o **Passing on Work-**Related Information: To pass on information clearly:

- Use precise language and terms relevant to the task.
- Provide context and details to ensure understanding.
- Confirm that team members acknowledge and comprehend the information.

o **Reporting Unresolved Problems: When encountering issues beyond your control or expertise:**

- Immediately inform your supervisor or relevant authority.
- Clearly describe the problem, its impact, and any attempted solutions.
- Collaborate with colleagues and supervisors to find a resolution.

- In summary, effective communication, teamwork, and the fulfilment of roles and responsibilities are essential for success in the role of a False Ceiling & Dry Wall Installer. Clear communication and proactive teamwork contribute to safe, efficient, and high-quality project outcomes.

Activity

- **Name:** "Effective Communication Workshop"
- **Purpose:** This activity aims to enhance the learners' understanding of the importance of effective communication, the various modes of communication in the workplace, the impact of poor teamwork, and practical communication skills. It also encourages them to report issues promptly.
- **Resources Required:**
  - Whiteboard and markers
  - Flipcharts and sticky notes
  - Projector and screen (optional)
  - Scenario cards (pre-written workplace scenarios)
  - Notepads and pens
  - Supervisor or facilitator
- **Tentative Duration:** 2 hours
- **Procedure:**

1. **Introduction (15 minutes):**

- Begin with a brief introduction to the importance of effective communication in construction work.
- Highlight the consequences of poor teamwork and communication on project outcomes, timelines, and safety.

2. **Modes of Communication (20 minutes):**
   - Discuss different modes of communication used at the workplace, including verbal, written, visual, and non-verbal communication.
   - Use examples to illustrate when each mode is most appropriate.
3. **Interactive Scenarios (30 minutes):**
   - Divide learners into small groups.
   - Provide scenario cards describing workplace situations involving communication challenges or teamwork issues.
   - Each group discusses how they would address the scenario and improve communication/ teamwork.
   - Groups present their solutions to the whole class.
4. **Demonstration (15 minutes):**
   - The facilitator demonstrates how to pass on work-related information clearly to team members using effective communication techniques.
   - Learners can observe and ask questions.
5. **Role-Playing Activity (30 minutes):**
   - Each group is given a different communication challenge scenario.
   - They role-play the scenario, focusing on effective communication and teamwork.
   - After each role-play, the facilitator and peers provide feedback.
6. **Reporting Issues (15 minutes):**
   - Discuss the importance of reporting issues to supervisors promptly.
   - Explain the reporting process in the workplace.
   - Encourage learners to ask questions and clarify doubts.
7. **Q & A and Discussion (15 minutes):**
   - Open the floor for questions and discussions.
   - Address any queries or concerns related to communication and teamwork.

- **Expected Outcome:** Learners will have a deeper understanding of effective communication, various communication modes, teamwork, and the significance of reporting issues promptly. They will also acquire practical communication skills to apply in their work.

Notes

UNIT 7.2: Working Effectively and Maintaining Discipline at Work

Unit Objectives

At the end of this unit, trainer will ensure that participant will be able to:

1. Explain the importance of creating healthy and cooperative work environment among the gangs of workers.
2. Elucidate applicable techniques of work, properties of materials used, tools and tackles used, safety standards that co-workers might need as per the requirement.
3. Explain the importance of proper and effective communication and the expected adverse effects in case of failure relating to quality, timeliness, safety, risks at the construction project site.
4. Explain the importance and need of supporting co-workers facing problems for the smooth functioning of work.
5. Demonstrate ways to hand over the required material, tools, tackles, equipment and work fronts timely to interfacing teams.
6. Demonstrate ways to work together with co-workers in a synchronized manner.

Resources to be used

- **Theory**
    - **Training Kit -** Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films, Computer, Registers, and Trade specific charts

Do

- Explain the importance of creating healthy and cooperative work environment among the gangs of workers.
- Explain applicable techniques of work, properties of materials used, tools and tackles used, safety standards that co-workers might need as per the requirement.
- Explain the importance of proper and effective communication and the expected adverse effects in case of failure relating to quality, timeliness, safety, risks at the construction project site.
- Explain the importance and need of supporting co-workers facing problems for the smooth functioning of work.
- Demonstrate ways to hand over the required material, tools, tackles, equipment and work fronts timely to interfacing teams.
- Demonstrate ways to work together with co-workers in a synchronized manner.

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 7.2 to explain Working Effectively and Maintaining Discipline at Work.
- A healthy and cooperative work environment fosters teamwork, improves morale, and enhances productivity. In construction, where tasks are often interdependent, a positive work atmosphere is essential for safety and project success.
- **Tips:** Encourage open communication, resolve conflicts promptly, and promote a culture of respect among co-workers.
- Understanding the techniques, materials, tools, and safety standards relevant to the job is essential for efficient and safe work. Bar benders and steel fixers should have a solid grasp of these aspects to perform their tasks effectively.
- **Tips:** Stay updated on industry best practices, attend relevant training sessions, and seek guidance from experienced colleagues.
- Effective communication ensures that tasks are carried out correctly, on time, and safely. Poor communication can lead to mistakes, delays, and even accidents on construction sites.
- **Tips:** Practice active listening, be clear in your messages, and encourage co-workers to communicate openly.
- Supporting co-workers facing challenges is crucial for maintaining project progress and morale. A construction project's success often hinges on the ability of the team to overcome obstacles together.
- **Tips:** Offer assistance when you see a co-worker struggling, seek help when needed, and foster a culture of mutual support.
- Efficient handovers are essential to ensure smooth transitions between tasks and teams. Bar benders and steel fixers should know how to pass on materials and information effectively.
- **Tips:** Clearly communicate what is needed, provide proper documentation, and conduct thorough handover briefings.
- Synchronized teamwork is critical in construction to avoid clashes, improve efficiency, and ensure safety. False Ceiling & Dry Wall Installers should know how to coordinate their tasks with other trades and workers on the site.
- **Tips:** Plan tasks together with other teams, establish clear workflows, and communicate any changes promptly to maintain synchronization.

Notes

UNIT 7.3: Maintaining Social Diversity at Work

Unit Objectives

At the end of this unit, trainer will ensure that participant will be able to:

1. Discuss the fundamental concept of gender equality.
2. Explain how to recognise and be sensitive to issues of disability culture and gender.
3. Discuss legislation, policies, and procedures relating to gender sensitivity and cultural diversity including their impact on the area of operation.
4. Demonstrate effective implementation of gender-neutral practices at the workplace.
5. Demonstrate ways to address discriminatory and offensive behaviour in a professional manner as per organizational policy.

Resources to be used

- **Theory**
    - **Training Kit -** Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films, Computer, Registers, and Trade specific charts

Do

- Explain the fundamental concept of gender equality.
- Explain how to recognise and be sensitive to issues of disability culture and gender.
- Explain legislation, policies, and procedures relating to gender sensitivity and cultural diversity including their impact on the area of operation.
- Demonstrate effective implementation of gender-neutral practices at the workplace.
- Demonstrate ways to address discriminatory and offensive behaviour in a professional manner as per organizational policy.

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 7.3 to explain Maintaining Social Diversity at Work.
- Gender equality is the principle that all individuals, regardless of their gender, should have equal rights, opportunities, and treatment in all aspects of life. It promotes fairness and prevents

discrimination based on gender, ensuring that everyone can reach their full potential.

- **Tips:** Foster a workplace culture that values diversity, provides equal opportunities, and actively combats gender bias.

- Recognizing and being sensitive to issues related to disability culture and gender requires empathy, education, and a willingness to understand the unique experiences and challenges faced by different individuals. It involves acknowledging diversity and respecting the perspectives of others.
  - **Tips:** Engage in diversity training, actively listen to others' experiences, and avoid making assumptions about people based on their gender or disability.
- Understanding the legal and organizational frameworks that address gender sensitivity and cultural diversity is essential. It involves being aware of anti-discrimination laws, company policies, and procedures that promote inclusion and fairness.
  - **Tips:** Familiarize yourself with relevant laws and policies, and ensure compliance to create a more inclusive and respectful workplace.
- Implementing gender-neutral practices involves creating an environment where individuals are treated equally regardless of their gender. This includes fair hiring practices, unbiased decision-making, and providing equal opportunities for career growth.
  - **Tips:** Review hiring and promotion processes for gender bias, promote diversity in leadership roles, and actively address any gender-related issues that arise.
- Addressing discriminatory and offensive behavior is crucial for maintaining a respectful work environment. It involves addressing such behavior promptly, professionally, and in alignment with organizational policies.
  - **Tips:** Report incidents following company procedures, engage in constructive dialogue with offenders when appropriate, and support colleagues who experience discrimination or offensive behavior.

Exercise

Key Solutions to PHB Exercise

Short Questions:

1. Effective communication is essential in construction job roles to ensure that tasks, instructions, and safety protocols are understood and followed, preventing errors, delays, and accidents.
2. The consequences of poor teamwork on project outcomes and safety at a construction site can include project delays, compromised quality, reduced efficiency, increased safety risks, and potentially higher costs.
3. Work-related information can be passed on clearly to team members by using concise and structured communication methods, such as written instructions, diagrams, or verbal explanations, ensuring that critical details are not omitted or misunderstood.
4. Different modes of communication used in the workplace include verbal communication (spoken or face-to-face), written communication (emails, reports), visual communication (diagrams, charts), and digital communication (instant messaging, video conferences).
5. Creating a healthy and cooperative work environment among gangs of workers is important because it fosters efficient collaboration, enhances productivity, improves worker morale, and can lead to safer and more successful construction projects.

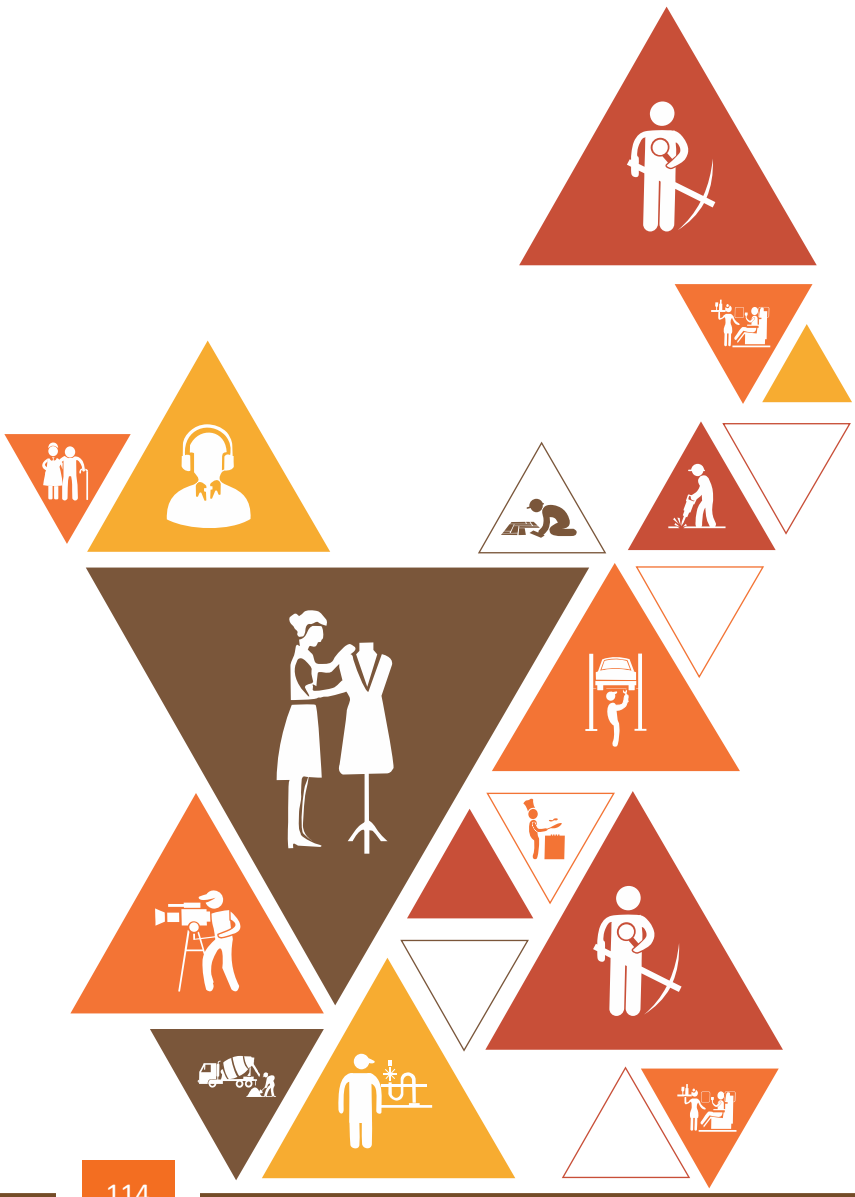
Fill-in-the-Blanks:

1. Effective communication ensures that project goals and tasks are understood by everyone.
2. Poor teamwork can lead to delays, compromised quality, and increased safety risks.
3. To ensure clarity, it's essential to provide work-related information to team members in a concise manner.
4. Communication modes include verbal, written, visual, and digital forms.
5. Creating a cooperative work environment fosters efficient collaboration and unity among workers.

True/False Questions:

1. **False:** Effective communication is important for all job roles in construction, not just supervisory roles.
2. **False:** Poor teamwork can significantly affect project timelines and safety on a construction site.
3. **False:** Passing on work-related information is crucial for effective coordination and understanding among team members.
4. **False:** Communication modes in the workplace encompass various forms, including verbal, written, visual, and digital.
5. **True:** A cooperative work environment can indeed enhance productivity and worker morale, leading to better outcomes.

Notes



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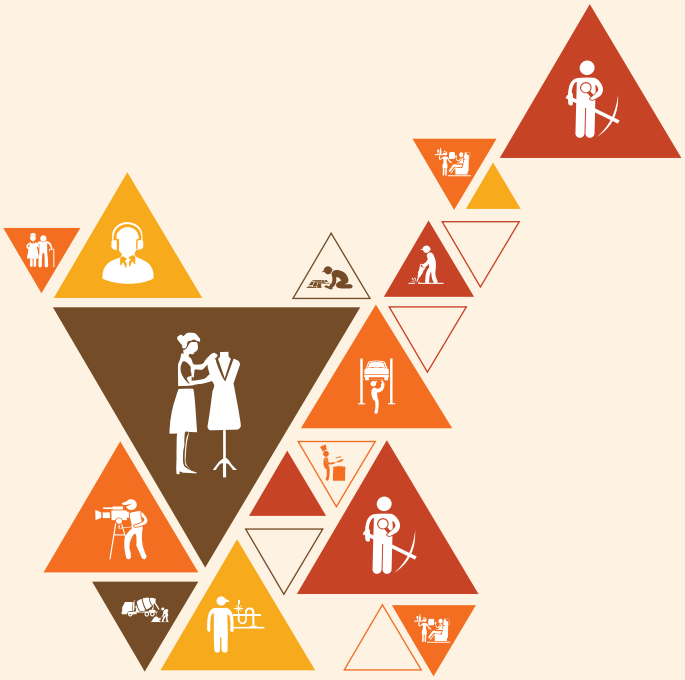
Construction Skill Development Council

8. Prioritise Activities and Organise Resources

Unit 8.1 - Prioritise Work Activities to Achieve Desired Results

Unit 8.2 - Organising Resources



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Key Learning Outcomes

At the end of this module, trainer will ensure that participant will be able to:

1. Explain methods to upkeep, store and stack tools, materials used for domain specific works.
2. Explain the process of planning of the given tasks and activities relevant to the trade/job role within defined scope and duration.
3. Demonstrate the planning for various activities relevant to task as per the scope and schedule.
4. Demonstrate how to organise the required tool, manpower and material resources for the assigned task.
5. Select required quantity of materials, tools or devices for defined work activities.
6. Explain the procedure adopted for prioritizing an activity and sequencing of activities.
7. Demonstrate how to prioritize all works/ activities to maximise output.
8. Explain the work plan and flow of activities in sequence for the assigned work.
9. Explain basic concept of labour productivity and work productivity.
10. Identify the work target and plan activities to achieve the desired productivity.
11. Explain requisition of resources, reporting for requirement of resources orally and in written to concerned authority.
12. Demonstrate requisition of resource citing an example.
13. Explain how to minimise wastage of resources.
14. Demonstrate optimum use of resources while performing domain specific work activities.
15. Demonstrate waste collection and disposal as per organisational norms.
16. Explain the plan for waste collection and disposal after task.
17. Demonstrate completion of work within stipulated time and plan.

UNIT 8.1: Prioritise Work Activities to Achieve Desired Results

Unit Objectives

At the end of this unit, trainer will ensure that participant will be able to:

1. Explain the basic concept of labor productivity and work productivity.
2. Identify the work target and plan activities to achieve the desired productivity.
3. Explain the process of planning the given tasks and activities relevant to the trade/job role within the defined scope and duration.
4. Demonstrate the planning for various activities relevant to the task as per the scope and schedule.
5. Explain the work plan and flow of activities in sequence for the assigned work.
6. Explain methods to upkeep, store, and stack tools, materials used for domain-specific works.
7. Select the required quantity of materials, tools, or devices for defined work activities.
8. Explain the procedure adopted for prioritizing an activity and sequencing of activities.
9. Demonstrate how to prioritize all works/activities to maximize output.
10. Explain requisition of resources, reporting for the requirement of resources orally and in writing to the concerned authority.
11. Demonstrate requisition of resources citing an example.

Resources to be used

- **Theory**
    - **Training Kit -** Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films, Computer, Registers, and Trade specific charts

Do

- Explain the basic concept of labor productivity and work productivity.
- Identify the work target and plan activities to achieve the desired productivity.
- Explain the process of planning the given tasks and activities relevant to the trade/job role within the defined scope and duration.
- Demonstrate the planning for various activities relevant to the task as per the scope and schedule.
- Explain the work plan and flow of activities in sequence for the assigned work.
- Explain methods to upkeep, store, and stack tools, materials used for domain-specific works.

- Explain the required quantity of materials, tools, or devices for defined work activities.
- Explain the procedure adopted for prioritizing an activity and sequencing of activities.
- Demonstrate how to prioritize all works/activities to maximize output.
- Explain requisition of resources, reporting for the requirement of resources orally and in writing to the concerned authority.
- Demonstrate requisition of resources citing an example.

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 8.1 to explain Prioritise Work Activities to Achieve Desired Results.
- As a False Ceiling & Dry Wall Installer, understanding labor productivity and work productivity is essential for efficient project management and successful task execution. Let's delve into these concepts and related aspects:
    - **Labor Productivity and Work Productivity:**
        - **Labor Productivity:** It refers to the efficiency of labor in performing specific tasks. It's typically measured by the amount of work completed in a given time by a worker or a team.
        - **Work Productivity:** This is a broader concept that encompasses the efficiency of all work processes, including labor, materials, and equipment. It evaluates the overall efficiency of a project or job site.
    - **Identifying Work Targets and Planning Activities:**
        - Identify specific project goals and objectives.
        - Break down the project into manageable tasks and activities.
        - Set realistic targets for completion based on project scope, deadlines, and available resources.
    - **Planning Tasks and Activities:**
        - Analyze the scope of work for each task.
        - Determine the sequence of activities required to achieve the task.
        - Allocate resources, including labor, materials, and equipment, to each activity.
        - Create a schedule that outlines when each task will be completed.
    - **Planning for Various Activities:**
        - Develop detailed task plans for activities within your trade, such as framing, panel installation, and finishing.
        - Consider factors like material availability, skill requirements, and safety precautions.
        - Create contingency plans for potential delays or issues.

- **Work Plan and Activity Flow:**
  - Establish a clear work plan that outlines the flow of activities from start to finish.
  - Ensure that activities are sequenced logically to maximize efficiency.
  - Define dependencies between tasks to avoid bottlenecks.
- **Storing and Managing Tools and Materials:**
  - Implement a system for organizing and storing tools, materials, and equipment.
  - Regularly inspect and maintain tools to ensure they are in good working condition.
  - Store materials in a secure and organized manner to prevent damage or loss.
- **Quantity of Materials and Resources:**
  - Calculate the required quantity of materials based on project specifications.
  - Estimate the number of labourers, tools, and equipment needed for each activity.
  - Ensure that resources are procured in advance to avoid delays.
- **Prioritizing and Sequencing Activities:**
  - Prioritize tasks based on criticality and project goals.
  - Sequence activities logically to minimize downtime and resource conflicts.
  - Adjust the sequence as needed to accommodate changing project conditions.
- **Requisition of Resources:**
  - Communicate resource requirements to the relevant authority, such as a project manager or procurement department.
  - Clearly articulate the type, quantity, and timing of resource needs.
  - Use both oral and written communication to ensure clarity and documentation.
- **Demonstrating Requisition of Resources:**
  - Provide an example of a situation where you identified a need for additional resources.
  - Describe how you communicated this need to the appropriate authority.
  - Highlight the positive impact of timely resource allocation on project productivity.

- In conclusion, as a False Ceiling & Dry Wall Installer, effective planning, resource management, and communication are essential for optimizing labor and work productivity. By understanding these concepts and implementing best practices, you can contribute to the successful completion of projects within defined scopes and timelines.

Notes

UNIT 8.2: Organising Resources

Unit Objectives

At the end of this unit, trainer will ensure that participant will be able to:

1. Explain how to minimize wastage of resources.
2. Demonstrate optimum use of resources while performing domain-specific work activities.
3. Demonstrate waste collection and disposal as per organizational norms.
4. Explain the plan for waste collection and disposal after the task.
5. Demonstrate completion of work within stipulated time and plan.

Resources to be used

- **Theory**
    - **Training Kit -** Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films, Computer, Registers, and Trade specific charts

Do

- Explain how to minimize wastage of resources.
- Demonstrate optimum use of resources while performing domain-specific work activities.
- Demonstrate waste collection and disposal as per organizational norms.
- Explain the plan for waste collection and disposal after the task.
- Demonstrate completion of work within stipulated time and plan.

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 8.2 to explain Organising Resources.
- As a False Ceiling & Dry Wall Installer, efficient resource management and waste reduction are crucial for maintaining a cost-effective and environmentally responsible work environment. Here's how you can minimize wastage of resources, optimize resource use, and handle waste collection and disposal:

1. Minimizing Wastage of Resources:
    - Materials:
        - ♦ - Carefully calculate and order materials to avoid overstocking or understocking.

- Store materials properly to prevent damage, spoilage, or theft.
- Use leftover materials from one job for smaller projects or keep them for future use.

- **Tools and Equipment:**
  - Regularly maintain and service tools to prolong their lifespan.
  - Train workers to use tools correctly to prevent damage and accidents.
  - Implement a tracking system to monitor tool usage and ensure accountability.
- **Labor:**
  - Efficiently allocate labor resources to tasks based on skills and expertise.
  - Provide adequate training to minimize errors and rework.
  - Schedule work shifts and breaks to maximize productivity.

2. Demonstrating Optimum Use of Resources:

- **Planning:**
  - Develop a detailed work plan that outlines resource requirements for each task.
  - Assign tasks to workers with the necessary skills and experience.
- **Supervision:**
  - Supervise work activities to ensure that resources are used efficiently.
  - Provide guidance and instructions to workers on resource optimization techniques.
- **Adaptation:**
  - Be flexible and adapt to changing project conditions or unforeseen challenges.
  - Adjust resource allocation as needed to meet project goals.

3. Waste Collection and Disposal:

- **Collection:**
  - Set up designated waste collection areas on the job site.
  - Separate different types of waste, such as construction debris, packaging materials, and hazardous substances.
  - Provide workers with clear guidelines on waste segregation.
- **Disposal:**
  - Follow organizational norms and local regulations for waste disposal.
  - Arrange for the proper disposal of hazardous materials through authorized disposal services.
  - Coordinate with waste management companies or local authorities for regular waste pickup.

4. **Planning for Waste Collection and Disposal:**
    - **Develop a Waste Management Plan:**
        - Create a comprehensive plan that outlines how waste will be collected, segregated, and disposed of during and after the project.
        - Specify responsibilities for waste management tasks.
        - Include a timeline for waste collection and disposal activities.
5. **Demonstrating Completion of Work within Stipulated Time and Plan:**
    - **Time Management:**
        - Adhere to the project schedule and deadlines.
        - Monitor progress regularly and identify potential delays.
        - Take proactive measures to address delays and keep the project on track.
    - **Quality Assurance:**
        - Ensure that work is completed according to specifications and quality standards.
        - Conduct inspections and quality checks to verify compliance.
        - Rectify any defects or issues promptly to avoid rework and additional resource consumption.

- By implementing these strategies, you can contribute to reducing resource wastage, optimizing resource use, and ensuring that waste is collected and disposed of responsibly. This not only benefits your organization's bottom line but also promotes sustainability and environmental responsibility in your work as a False Ceiling & Dry Wall Installer.

Exercise

Key Solutions to PHB Exercise

Short Questions:

1. How can you ensure the efficient upkeep of tools and materials on a construction site?
   - Implement proper storage and handling procedures.
   - Schedule regular maintenance and inspections.
   - Train workers on tool and material care.
2. What is the primary purpose of a project plan in the construction industry?
   - The primary purpose is to outline project objectives, tasks, timelines, and resource allocation to ensure successful project completion.
3. Why is sequencing of activities important in project planning?
   - Sequencing determines the order in which tasks must be performed, ensuring that activities are executed logically and efficiently, minimizing delays.
4. What steps should you take to organize the required resources for an assigned task?
   - Identify the specific resource requirements.
   - Requisition resources from the appropriate authority.
   - Allocate and assign resources to the task.
   - Monitor resource usage during the task.
5. How does selecting the right quantity of materials contribute to project efficiency?
   - Selecting the right quantity prevents waste, keeps costs in check, and ensures that the project stays on schedule by avoiding material shortages or overstocking.

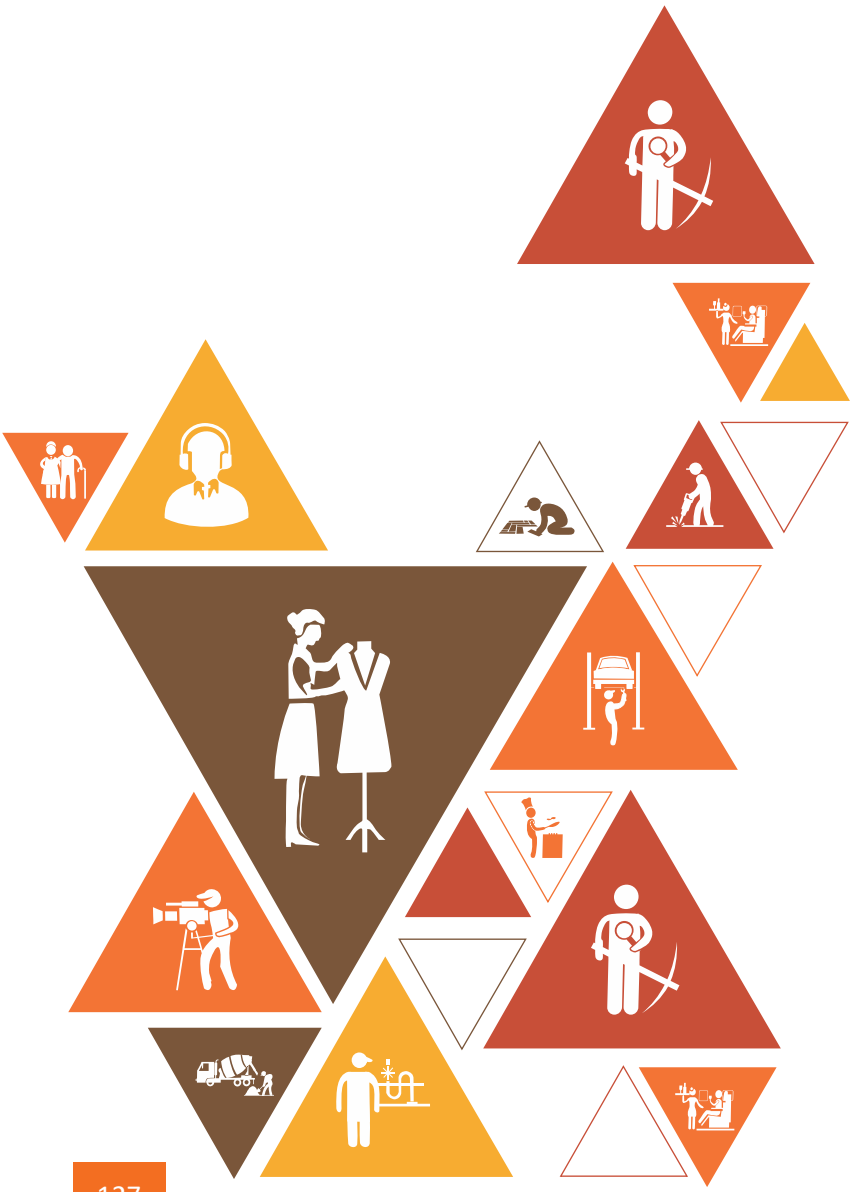
Fill in the Blanks:

1. Proper storage helps extend the lifespan of tools and materials.
2. The critical path method helps identify the longest sequence of activities.
3. Selecting the optimal quantity of materials helps prevent waste and ensures the project stays on budget.
4. True or False: Organizing resources is a one-time activity and does not require adjustments as the project progresses. (False)
5. Planning activities based on the schedule is more important than considering their complexity.

True/False Questions:

1. **True or False:** Prioritizing activities is not essential in project planning. (False)
2. **True or False:** Selecting the right quantity of materials has no impact on project cost. (False)
3. **True or False:** Proper resource organization has no influence on construction site safety. (False)
4. **True or False:** The critical path is the shortest path to complete a project. (False)
5. **True or False:** Requisition of resources is only necessary when there is a shortage. (False)

Notes



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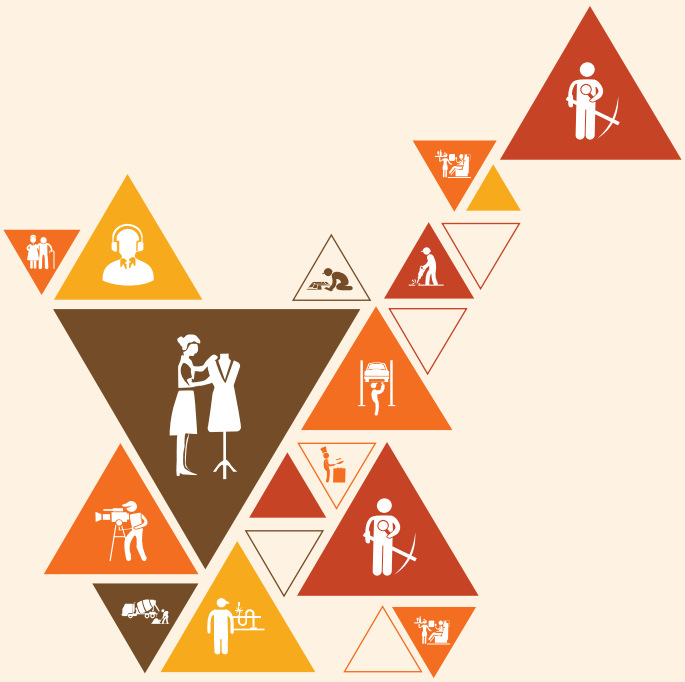
9. Follow Safety Norms as defined by organization, Adopt Healthy and Safe Work Practices

Unit 9.1 - Hazards and Emergency Situations

Unit 9.2 - Safety Drills, PPEs and Fire Safety

Unit 9.3 - Hygiene and Safe Waste Disposal Practices

Unit 9.4 - Infectious Disease and Its Cure



CON/N9001

Key Learning Outcomes

At the end of this module, trainer will ensure that participant will be able to:

1. Describe the reporting procedures in cases of breaches or hazards for site safety, accidents, and emergencies as per guidelines.
2. Explain different types of safety hazards at construction sites.
3. Demonstrate how to follow emergency and evacuation procedures in case of accidents, fires, or natural calamities.
4. Discuss basic ergonomic principles as per applicability.
5. Describe the procedure for responding to accidents and other emergencies at the site.
6. Explain the importance of handling tools, equipment, and materials as per applicable norms.
7. Explain the effect of construction material on health and environments as per applicability.
8. Describe various environmental protection methods as per applicability.
9. Explain the storage requirement of waste including non-combustible scrap material and debris, combustible scrap material and debris, general construction waste and trash (non-toxic, non-hazardous), any other hazardous wastes and any other flammable wastes at the appropriate location.
10. Show how to collect, segregate and deposit construction waste into appropriate containers based on their toxicity or hazardous nature.
11. Explain how to use hazardous material in a safe and appropriate manner as per applicability.
12. Explain types of fire.
13. Describe the procedure of operating different types of fire extinguishers.
14. Show how to operate different types of fire extinguishers corresponding to various types of fires as per EHS guidelines.
15. State safety relevant to tools, tackles, and equipment as per applicability.
16. Demonstrate the use of appropriate Personal Protective Equipment (PPE) as per work requirements for Head Protection, Ear Protection, Fall Protection, Foot Protection, Face and Eye Protection, Hand and Body Protection, and Respiratory Protection (if required).
17. Demonstrate how to check and install all safety equipment as per standard guidelines.
18. List housekeeping activities relevant to the task.
19. Elucidate ways of transmission of infection Explain the ways to manage infectious risks at the workplace.
20. Describe different methods of cleaning, disinfection, sterilization, and sanitization.
21. Show how to clean and disinfect all materials, tools and supplies before and after use.
22. List the symptoms of infection like fever, cough, redness, swelling, and inflammation.

Unit 9.1: Hazards and Emergency Situations

Unit Objectives

After the end of this unit, participants will be able to:

- Understand the types of hazards at the construction sites and identify the hazards specific to the domain related works.
- Recognize the safety control measures and actions to be taken under emergency situation.
- Know the reporting procedure to the concerned authority in case of emergency situations.

Resources to be used

- **Theory**
    - Training Kit - Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films.
- **Practical**
    - Leather Hand Gloves, Jump suit, Wire brush, Hand and Leg guard leather, Safety goggles, Nose mask, Ear protection, Fire extinguishers, Sand buckets Flashback arrestors, Welding helmet, Welding glass, Fire Extinguisher, Fire prevention kit, First Aid box, Safety tags and Safety Notice board.

Do

- Explain the types of hazards at the construction sites and identify the hazards specific to the domain related works.
- Reiterate about safety control measures and actions to be taken under emergency situation.
- Share reporting procedure to the concerned authority in case of emergency situations.

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 9.1 to explain Hazards and Emergency Situations.
- As a False Ceiling & Dry Wall Installer, understanding and prioritizing safety is paramount in ensuring the well-being of yourself, your colleagues, and the success of any construction project. Here are key aspects of safety awareness and response in your role:
    - **Identifying Hazards:** Construction sites are inherently hazardous environments, and it's crucial to recognize potential dangers, especially those specific to False Ceiling & Dry Wall Installation:

- **Falls:** Ceilings and walls often involve working at heights. Be aware of unprotected edges, holes, or incomplete structures that could lead to falls.
- **Material Handling:** Heavy plasterboards and equipment can cause musculoskeletal injuries if not handled correctly. Pay attention to proper lifting techniques and team lifting when needed.
- **Electricity:** Electrical hazards can arise when installing fixtures and wiring for lighting. Ensure electrical circuits are de-energized before working on them.
- **Tool Safety:** Misuse or malfunction of hand and power tools can lead to accidents. Regularly inspect and maintain tools and always use them as intended.
- **Fire Safety:** Drywall materials can be flammable. Know the location of fire extinguishers and emergency exits. Follow proper procedures for storing flammable materials.

o **Safety Control Measures:**

- **Personal Protective Equipment (PPE):** Always wear appropriate PPE such as hard hats, safety glasses, gloves, and fall protection gear when necessary.
- **Training:** Stay updated on safety training and procedures, including first aid and CPR, scaffold use, and electrical safety.
- **Emergency Response:** Understand the emergency procedures on the construction site, including evacuation plans, muster points, and how to use fire extinguishers and first-aid kits.

o **Responding to Emergencies:**

- **Stay Calm:** In the event of an emergency, remain calm to think and act rationally.
- **Alert Others:** If you encounter a hazardous situation, alert your colleagues immediately to prevent further accidents.
- **Follow Procedures:** Adhere to the established emergency procedures, including evacuation routes and assembly points.
- **First Aid:** If someone is injured, provide first aid as needed or seek assistance from trained personnel.

o **Reporting Procedures:**

- **Reporting Hazards:** If you identify a hazard that poses a risk to safety, report it to your supervisor or safety officer immediately.
- **Emergency Reporting:** In case of an emergency, use the designated communication channels to report the situation promptly.
- **Incident Reports:** If an accident or near-miss occurs, complete an incident report detailing the event and any injuries or damages. This helps in identifying root causes and preventing future incidents.

- By understanding the specific hazards related to False Ceiling & Dry Wall Installation, recognizing safety control measures, and knowing how to respond to emergencies and report issues, you contribute to a safer work environment, reduce the risk of accidents, and ensure the successful completion of construction projects while prioritizing the well-being of all involved.

Say

Let's engage in a practical activity focused on the reporting procedures that a False Ceiling & Dry Wall Installer should follow during emergency situations. This activity underscores the importance of effective communication and coordination to ensure the safety and well-being of all individuals on the construction site.

Activity

- **Purpose:** This activity aims to provide False Ceiling & Dry Wall Installer with hands-on experience in understanding and practicing the reporting procedures essential for effective emergency response.
- **Resources Required:** Scenario cards describing emergency situations, writing materials.
- **Tentative Duration:** 45 Minutes
- **Procedure:**
    - **Introduction:** Begin by emphasizing the significance of prompt and accurate reporting during emergencies to maintain a safe work environment.
    - **Scenario Distribution:** Distribute scenario cards, each depicting a unique emergency situation, to participants.
    - **Internal Communication Role Play:**
        - Form pairs among participants.
        - **Assign roles in each pair:** one as the False Ceiling & Dry Wall Installer and the other as the supervisor or project manager.
        - False Ceiling & Dry Wall Installer practice communicating the emergency to their supervisor using the established reporting procedures.
    - **Discussion on Established Protocol:**
        - Gather participants for a discussion about the organization's established protocol for reporting emergencies.
        - Emphasize the significance of adhering to these protocols for an organized response.
    - **Documentation Practice**:
        - Participants individually document the specifics of the emergency scenario assigned to them.
        - They note down the time, location, incident nature, and any injuries if applicable.
    - **Cooperation with Authorities Exercise:**
        - Present a scenario involving cooperation with emergency responders.
        - Participants engage in role-play, providing accurate information and following instructions from the responders.
    - **Group Discussion and Sharing:**
        - Participants share their experiences and insights from the role-playing exercises.
        - Facilitate a discussion on challenges faced and best practices for reporting emergencies.

- **Reflection and Conclusion:**
    - Engage participants in reflecting on the significance of precise reporting for maintaining safety during emergencies.
    - Summarize the key learnings and underscore the importance of following reporting procedures.

- **Expected Outcome:** Through this activity, False Ceiling & Dry Wall Installer will gain practical familiarity with reporting procedures during emergency situations. They will comprehend the importance of effective communication, documentation, and cooperation with authorities to ensure the safety and well-being of themselves and their colleagues on the construction site.

Notes

Unit 9.2: Safety Drills, PPEs and Fire Safety

Unit Objectives

After the end of this unit, participants will be able to:

- Explain the classes of fire and types of fire extinguishers.
- Demonstrate the operating procedure of the fire extinguishers.
- Explain the importance of participation of workers in safety drills.
- List out basic medical tests required for working at construction site.
- Explain the purpose and importance of vertigo test at construction site.
- Explain the types and benefits of basic ergonomic principles, which should be adopted while carrying out specific task at the construction sites.
- Demonstrate use of PPEs as per work requirements.

Resources to be used

- **Theory**
    - Training Kit - Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films.
- **Practical**
    - Leather Hand Gloves, Jump suit, Wire brush, Hand and Leg guard leather, Safety goggles, Nose mask, Ear protection, Fire extinguishers, Sand buckets Flashback arrestors, Welding helmet, Welding glass, Fire Extinguisher, Fire prevention kit, First Aid box, Safety tags and Safety Notice board.

Do

- Explain the classes of fire and types of fire extinguishers.
- Demonstrate the operating procedure of the fire extinguishers.
- Explain the importance of participation of workers in safety drills.
- Enlist basic medical tests required for working at construction site.
- Explain the purpose and importance of vertigo test at construction site.
- Explain the types and benefits of basic ergonomic principles, which should be adopted while carrying out specific task at the construction sites.
- Demonstrate use of PPEs as per work requirements.

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 7.2 to explain Safety Drills, PPEs and Fire Safety.
- **Classes of Fire:** Fires are classified into different classes based on the type of fuel involved:
    - **Class A:** Fires involving common combustible materials like wood, paper, and cloth.
    - **Class B:** Fires involving flammable liquids, gases, or greases.
    - **Class C:** Fires involving energized electrical equipment.
    - **Class D:** Fires involving combustible metals.
    - **Class K:** Fires involving cooking oils and fats, commonly found in kitchens.
- **Types of Fire Extinguishers:** Different types of fire extinguishers are designed to handle specific classes of fire:
    - **Water Extinguishers (Class A):** Suitable for Class A fires, but not for fires involving flammable liquids or electrical equipment.
    - **Foam Extinguishers (Class A and B):** Effective on Class A and B fires, but not for electrical fires.
    - **Dry Powder Extinguishers (Class A, B, C, and D):** Suitable for a range of fires, including electrical fires and flammable liquids.
    - **CO2 Extinguishers (Class B and Electrical Fires):** Effective for flammable liquid and electrical fires, but not for Class A fires.
    - **Wet Chemical Extinguishers (Class K):** Specifically designed for kitchen fires involving cooking oils and fats.
- **Operating Procedure of Fire Extinguishers:**
    - **Pull:** Pull the pin to break the seal and unlock the operating lever.
    - **Aim:** Aim the nozzle at the base of the fire where the fuel source is.
    - **Squeeze:** Squeeze the operating lever to release the extinguishing agent.
    - **Sweep:** Sweep the nozzle from side to side while directing the agent at the base of the fire until it's extinguished.
- **Importance of Participation in Safety Drills:** Participation in safety drills is important for several reasons:
    - **Familiarity:** Workers become familiar with evacuation routes and emergency procedures.
    - **Response Practice:** Workers practice how to respond to emergencies, minimizing confusion during real incidents.
    - **Efficiency:** Regular drills improve the efficiency of evacuation and emergency response.
    - **Identification of Weaknesses:** Drills help identify areas that need improvement in the emergency plan.
- **Basic Medical Tests Required for Construction Site:** Common medical tests for construction site workers include:
    - **Physical Examination:** Overall health assessment.

- **Vision and Hearing Tests:** Ensuring good visual and auditory health.
- **Lung Function Test:** Assessing respiratory health.
- **Blood Pressure and Heart Rate Check:** Monitoring cardiovascular health.

- **Purpose and Importance of Vertigo Test:** A vertigo test assesses a worker's balance and susceptibility to dizziness, which is crucial for working at heights. Vertigo can lead to accidents and falls, making this test vital for maintaining site safety.
- **Types and Benefits of Basic Ergonomic Principles:** Ergonomic principles for construction tasks include proper lifting techniques, maintaining neutral body positions, and using suitable tools. Benefits include reducing strain, preventing musculoskeletal injuries, and enhancing overall worker well-being.
- **Demonstrating Use of PPEs:** Proper PPE usage involves:
  - Selection: Choose the appropriate PPE for the task.
  - Fitting: Ensure PPE fits correctly and comfortably.
  - Wearing: Wear PPE consistently throughout the task.
  - Adjusting: Make necessary adjustments for comfort and effectiveness.
  - Maintaining: Regularly inspect and maintain PPE to ensure it functions properly.
- Using PPE correctly safeguards workers from potential hazards like head injuries, respiratory issues, and more, contributing to a safer work environment for False Ceiling & Dry Wall Installer.

Activity -1

Conduct a role play activity on following emergency procedure in case of accidental fire at work place.

- Ask the participants to assemble at a designated place.
- Distribute the 'Practical Activity Format' which includes task, duration allowed, specific instructions, method statements, etc.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.
- Ask two persons who are very much interactive to participate in the role play.
- Explain the roles to each of them.
- Rotate the roles after completing one cycle.

Sub Activity	Time	Resources
Start the fire alarm	1 hour	Stationary items, Fire extinguisher, wood and paper pieces, match box
Use fire extinguisher	6 hours	
Call for medical help and carryout primary first aid for the injured person	2 hours	
Instruct co-workers to gather at the collection point	2 hours	

Table 9.2.1 - General safety at a construction site

Specific Instructions

- Select four persons from the group.
- Name the persons selected as Peron A, B, C and D.
- Explain and demonstrate the method to perform the sub activities.
- Consider Person A to be a False Ceiling & Dry Wall Installer and the rest are co-workers.
- Start the role play and check whether it is happening as per the plan.
- Guide closely wherever needed.
- Complete the activity as per scheduled time.
- Ask the watching group to explain the steps that are performed.
- Clarify doubts, if any.

Activity -2

Conduct a skill practice activity on using ladder safely at heights with proper PPE.

- Ask the participants to assemble at a designated place.
- Distribute the 'Practical Activity Format' which includes task, duration allowed, specific instructions, method statements, etc.
- List and explain the safety guidelines followed at heights.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.
- Maximum duration mentioned in the below table is for extensive practice and corresponding guidance until the skill is acquired by the participants.

Sub Activity	Time	Resources
Practice wearing PPE	2 hours	Ladder, PPE
Erect the ladder	2 hours	
Practice climbing the ladder safely	2 hours	

Table 9.2.2 – Working at heights

Specific Instructions

- Show the PPE matrix that has to be followed at a construction site.
- Demonstrate the standard procedure for wearing the PPE.
- Demonstrate the important checks that are to be performed while erecting the ladder.
- Ask the participants to practice wearing PPE, check and ensure that there is no deviation of standard procedure.
- Ask the participant to practice using ladder.
- Guide and correct the participants wherever necessary.
- List the advantages of using PPE.
- Clarify doubts, if any.

Notes

Unit 9.3: Hygiene and Safe Waste Disposal Practices

Unit Objectives

After the end of this unit, participants will be able to:

- Follow the practices to maintain personal hygiene, workplace hygiene and site/ workplace sanitization
- Understand the importance of housekeeping works
- Keep an eye on safe housekeeping practices
- Understand different types of waste at construction sites and their disposal method
- Know safe waste disposal practices followed at construction site

Resources to be used

- **Theory**
    - **Training Kit -** Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films.
- **Practical**
    - Leather Hand Gloves, Jump suit, Wire brush, Hand and Leg guard leather, Safety goggles, Nose mask, Ear protection, Fire extinguishers, Sand buckets Flashback arrestors, Welding helmet, Welding glass, Fire Extinguisher, Fire prevention kit, First Aid box, Safety tags and Safety Notice board.

Do

- Explain the practices to maintain personal hygiene, workplace hygiene and site/ workplace sanitization
- Describe the importance of housekeeping works
- Discuss the safe housekeeping practices and ask them to follow
- Explain different types of waste at construction sites and their disposal method
- Explain safe waste disposal practices followed at construction site

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 7.3 to explain Hygiene and Safe Waste Disposal Practices.
- **Personal Hygiene:** Maintaining personal hygiene involves practices such as washing hands before and after work, wearing clean and appropriate clothing, and using personal protective equipment (PPE) to prevent contamination and protect oneself from hazards.
- **Workplace Hygiene:** Workplace hygiene includes keeping work areas clean, organized, and free from hazards. Regular cleaning of tools, equipment, and surfaces helps prevent accidents, maintain efficiency, and promote a healthy work environment.
- **Site Sanitization:** Site sanitization involves cleaning and disinfecting shared areas to prevent the spread of germs and ensure a safe working environment. This is especially important in light of health concerns and global events.
- **Importance of Housekeeping Works:** Housekeeping works are crucial in the construction industry for several reasons:
    - **Safety:** A clean and organized workspace reduces the risk of slips, trips, falls, and other accidents.
    - **Efficiency:** Proper organization of tools, materials, and equipment improves work efficiency.
    - Prevention: Regular cleaning prevents the buildup of dust, debris, and potential fire hazards.
    - **Morale:** A clean and organized work environment boosts worker morale and job satisfaction.
- **Safe Housekeeping Practices:**
    - **Daily Clean-up:** Clean-up work areas at the end of each day to ensure a fresh start the next day.
    - **Tool Storage:** Properly store tools, equipment, and materials after use to prevent tripping hazards and damage.
    - **Waste Disposal:** Dispose of waste properly and promptly to prevent clutter and hygiene issues.
- **Different Types of Waste at Construction Sites and Their Disposal:**
    - **General Waste:** Regular construction debris like paper, packaging, and non-hazardous materials.
    - **Hazardous Waste:** Includes chemicals, solvents, paints, and materials that pose health or environmental risks.
    - **Electronic Waste:** Old or broken electronic equipment, requiring proper disposal due to environmental concerns.
- **Safe Waste Disposal Practices at Construction Site:**
    - Separation: Segregate waste into different categories for appropriate disposal.
    - Labelling: Clearly label hazardous waste containers to prevent accidents.
    - **Storage:** Store waste in designated areas to avoid contamination and health hazards.
    - **Legal Compliance:** Follow local regulations and guidelines for waste disposal.
- Maintaining personal and workplace hygiene, implementing proper housekeeping practices, and ensuring safe waste disposal contribute to a safer and more organized construction site environment, benefitting both workers and the overall project.

Activity

Safe Disposal of Waste

Conduct a role play activity.

- Ask the participants to assemble at a designated place.
- Distribute the 'Practical Activity Format' which includes task, duration allowed, specific instructions, method statements, etc.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.
- Ask two persons who are very much interactive to participate in the role play.
- Explain the roles to each of them.
- Rotate the roles after completing one cycle.

Sub Activity	Time	Resources
Practice wearing PPE	1 hour	Waste containers, masonry pan, sample construction waste
Segregate the Wastes	2 hours	
Dispose the waste in the allocated container	2 hours	

Table 9.3.1 – Safe disposal of waste

Specific Instructions

- Ensure that all participants, especially Fabricators, are wearing the required Personal Protective Equipment (PPE) correctly, including helmets, safety vests, gloves, and any other relevant gear.
- Select two participants from the group who demonstrate effective communication skills. Designate one as the False Ceiling & Dry Wall Installer and the other as the Helper.
- Explain to the participants that they will be engaged in a practical activity that simulates a waste management scenario on a construction site.
- Instruct the Helper (one of the participants) to deposit waste materials (simulated) in one designated location on the site and place empty containers at another location.
- Assign the role of Mason (the other participant) to the Fabricator. The False Ceiling & Dry Wall Installer's task is to instruct the Helper on how to segregate or differentiate the types of waste materials and dispose of them correctly.

- Encourage the False Ceiling & Dry Wall Installer to communicate clearly and effectively with the Helper during the activity, providing guidance and hints as needed.
- Set a time limit for completing the activity, simulating a real-world scenario where efficiency is crucial. Emphasize the importance of proper waste disposal and secure placement of wastes in containers.
- Monitor the participants' progress and ensure that they communicate effectively to achieve the task within the specified time.
- At the end of the activity, assess the proper segregation of waste materials and their secure placement in containers.
- Facilitate a debriefing session where participants can discuss their experiences and the importance of effective communication in waste management on construction sites.

This adapted activity for False Ceiling & Dry Wall Installers focuses on promoting communication skills and the importance of effective teamwork in managing waste materials, a common aspect of construction work.

Notes

Unit 9.4: Infectious Disease and Its Cure

Unit Objectives

After the end of this unit, participants will be able to:

- Know different types of infectious disease that can spread/ originate at a construction site
- Understand the ways of transmission of the various infectious disease.
- Recognize the methods to check the spread of the infectious disease.
- Understand the symptoms and cure of the various infectious disease.
- Apprehend the procedure to report to the concerned authority regarding the outbreak/ hazard of any infectious disease/ pandemic.

Resources to be used

- **Theory**
  - Training Kit - Trainer Guide & Participant Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films.
- **Practical**
  - Leather Hand Gloves, Jump suit, Wire brush, Hand and Leg guard leather, Safety goggles, Nose mask, Ear protection, Fire extinguishers, Sand buckets Flashback arrestors, Welding helmet, Welding glass, Fire Extinguisher, Fire prevention kit, First Aid box, Safety tags and Safety Notice board.

Do

- Clarify different types of infectious disease that can spread/ originate at a construction site
- Explain the ways of transmission of the various infectious disease.
- Mention the methods to check the spread of the infectious disease.
- Explain the symptoms and cure of the various infectious disease.
- Apprehend the procedure to report to the concerned authority regarding the outbreak/ hazard of any infectious disease/ pandemic.

Notes for facilitation

- Use the False Ceiling & Dry Wall Installer PHB and refer unit 7.4 to explain Infectious Disease and Its Cure.
- Infectious diseases that can spread or originate at construction sites include:
  - **Respiratory Infections:** Such as the flu, common cold, and COVID-19.

- **Skin Infections:** Like bacterial infections, fungal infections, and rashes.
- **Gastrointestinal Infections:** Including foodborne illnesses due to poor hygiene.
- **Vector-Borne Diseases:** Like mosquito-borne diseases (e.g., Zika, dengue) due to stagnant water.

- **Ways of Transmission of Infectious Diseases:**
  - **Airborne Transmission:** Respiratory infections can spread through respiratory droplets released when an infected person coughs, sneezes, or talks.
  - **Direct Contact:** Skin infections can be transmitted through direct skin-to-skin contact or contact with contaminated surfaces.
  - **Fecal-Oral Route:** Gastrointestinal infections can spread through contaminated food, water, or surfaces.
  - **Vector-Borne Transmission:** Insects like mosquitoes can carry and transmit diseases from person to person.
- **Methods to Check the Spread of Infectious Diseases:**
  - **Hand Hygiene:** Regularly washing hands with soap and water or using hand sanitizers.
  - **Respiratory Hygiene:** Covering mouth and nose when coughing or sneezing.
  - **Personal Protective Equipment (PPE):** Wearing appropriate PPE like masks and gloves.
  - **Disinfection:** Regularly cleaning and disinfecting surfaces and shared equipment.
- **Understanding Symptoms and Cure of Infectious Diseases:**
  - **Respiratory Infections:** Symptoms include fever, cough, sore throat, and shortness of breath. Treatment includes rest, fluids, and in severe cases, medical attention.
  - **Skin Infections:** Symptoms include redness, swelling, itching, and rashes. Treatment depends on the type of infection and may involve antibiotics or antifungal medications.
  - **Gastrointestinal Infections:** Symptoms include nausea, vomiting, diarrhea, and abdominal pain. Treatment involves staying hydrated and in severe cases, medical intervention.
  - **Vector-Borne Diseases:** Symptoms vary based on the disease. Treatment ranges from supportive care to specific antiviral or antibiotic medications.
- **Reporting Infectious Disease Outbreaks to Concerned Authorities:**
  - **Immediate Reporting:** If an infectious disease outbreak is suspected, immediately inform your supervisor, manager, or the designated health and safety personnel.
  - **Follow Protocols:** Follow the organization's protocols for reporting infectious diseases or pandemics, including informing co-workers who may have been exposed.
  - **Health Authorities:** If necessary, local health authorities should be contacted to ensure proper containment and response.
- Understanding, preventing, and reporting infectious diseases is crucial to maintaining a healthy and safe working environment in the Masonry industry. It protects both workers and the community from potential health risks.

Say

Let's participate in a practical activity focused on the reporting procedures that a False Ceiling & Dry Wall Installer should follow in the event of an infectious disease outbreak. This activity highlights the critical importance of swift and accurate reporting to maintain the health and safety of everyone on the construction site.

Activity

- **Purpose:** This activity aims to provide False Ceiling & Dry Wall Installer with hands-on experience in understanding and practicing the reporting procedures necessary for responding effectively to infectious disease outbreaks.
- **Resources Required:** Scenario cards depicting infectious disease outbreak situations, writing materials.
- **Tentative Duration:** 45 Minutes
- **Procedure:**
    - **Introduction:** Begin by discussing the vital role of immediate and accurate reporting during infectious disease outbreaks to safeguard the health of all individuals on the construction site.
    - **Scenario Distribution:** Distribute scenario cards, each portraying a distinct infectious disease outbreak situation, to participants.
    - **Immediate Reporting Role Play:**
        - Form pairs among participants.
        - **Assign roles:** one participant as the False Ceiling & Dry Wall Installer and the other as the supervisor or health and safety personnel.
        - False Ceiling & Dry Wall Installer practice promptly informing their supervisor or designated personnel about the infectious disease outbreak in their assigned scenario.
    - **Discussion on Protocol Adherence:**
        - Gather participants for a discussion about the organization's protocols for reporting infectious diseases or pandemics.
        - Emphasize the importance of following these protocols for effective containment.
    - **Health Authorities Interaction Exercise:**
        - Present a scenario requiring interaction with local health authorities.
        - Participants engage in role-play, contacting health authorities if necessary to ensure proper response and containment measures.

- **Group Discussion and Sharing:**
  - Participants share their experiences and insights from the role-playing exercises.
  - Facilitate a discussion on challenges faced and the significance of accurate reporting during infectious disease outbreaks.
- **Reflection and Conclusion:**
  - Engage participants in reflecting on the critical role of reporting procedures in safeguarding the health of the construction site community.
  - Summarize the key takeaways and underline the importance of swift reporting and following established protocols.

- **Expected Outcome:** Through this activity, False Ceiling & Dry Wall Installer will gain practical understanding of reporting infectious disease outbreaks. They will recognize the significance of immediate reporting, protocol adherence, and cooperation with health authorities in ensuring the safety and health of themselves and their colleagues on the construction site.

Exercise

Key Solutions to PHB Exercise

A. Short Questions' Answer:

1. Reporting procedures for breaches or hazards at the construction site involve notifying supervisors or management immediately as per established guidelines.
2. Common safety hazards at construction sites include falls, electrical hazards, confined spaces, struck-by or caught-in-between incidents, and chemical exposure.
3. Demonstrating emergency and evacuation procedures involves knowing evacuation routes, using fire alarms, assisting injured individuals, and assembling at designated safe areas.
4. Basic ergonomic principles focus on designing workspaces and tasks to fit the worker's abilities, reducing strain and discomfort during construction activities.
5. In response to accidents and emergencies, steps include assessing the situation, providing first aid if necessary, notifying supervisors, securing the area, and cooperating with emergency responders.

B. Fill-in-the-Blanks Questions' Answer:

1. Proper handling of tools, equipment, and materials is essential as per applicable norms.
2. Different types of fire extinguishers correspond to various types of fires.
3. Using hazardous materials safely involves following standard guidelines.
4. Proper disposal methods are important to manage construction waste.
5. Personal Protective Equipment (PPE) includes items like head protection, ear protection, and fall protection.

C. True/False Questions' Answer:

1. Accidents and hazards don't need to be reported if they result in minor injuries. (False)
2. Ergonomic principles focus on optimizing workspaces and equipment for worker comfort and safety. (True)
3. All types of fire extinguishers can be used interchangeably on different types of fires. (False)
4. Using Personal Protective Equipment (PPE) is not necessary if you're experienced in construction work. (False)
5. Proper cleaning and disinfection of materials, tools, and supplies is not important in construction work. (False)

Notes

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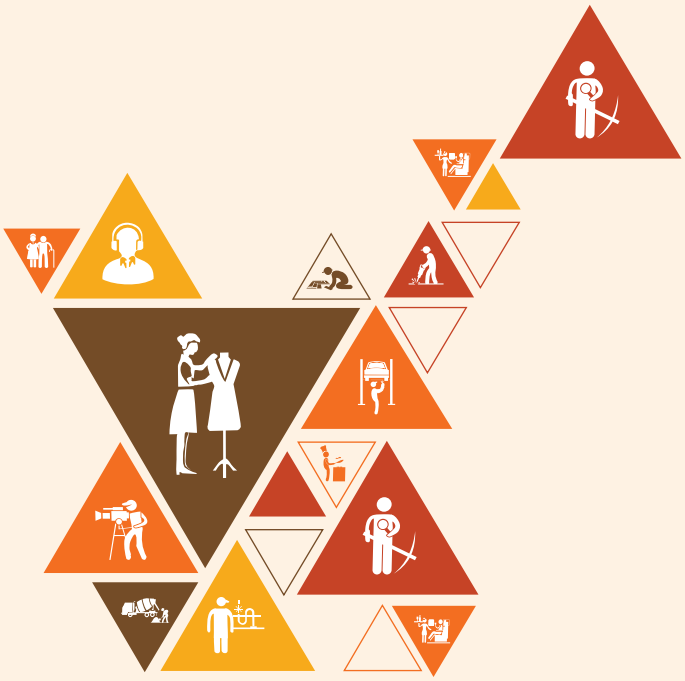
10. Employability Skills (30 Hours)

It is recommended that all trainings include the appropriate Employability skills Module. Content for the same can be accessed

https://www.skillindiadigital.gov.in/content/list

Scan the QR code below to access the ebook



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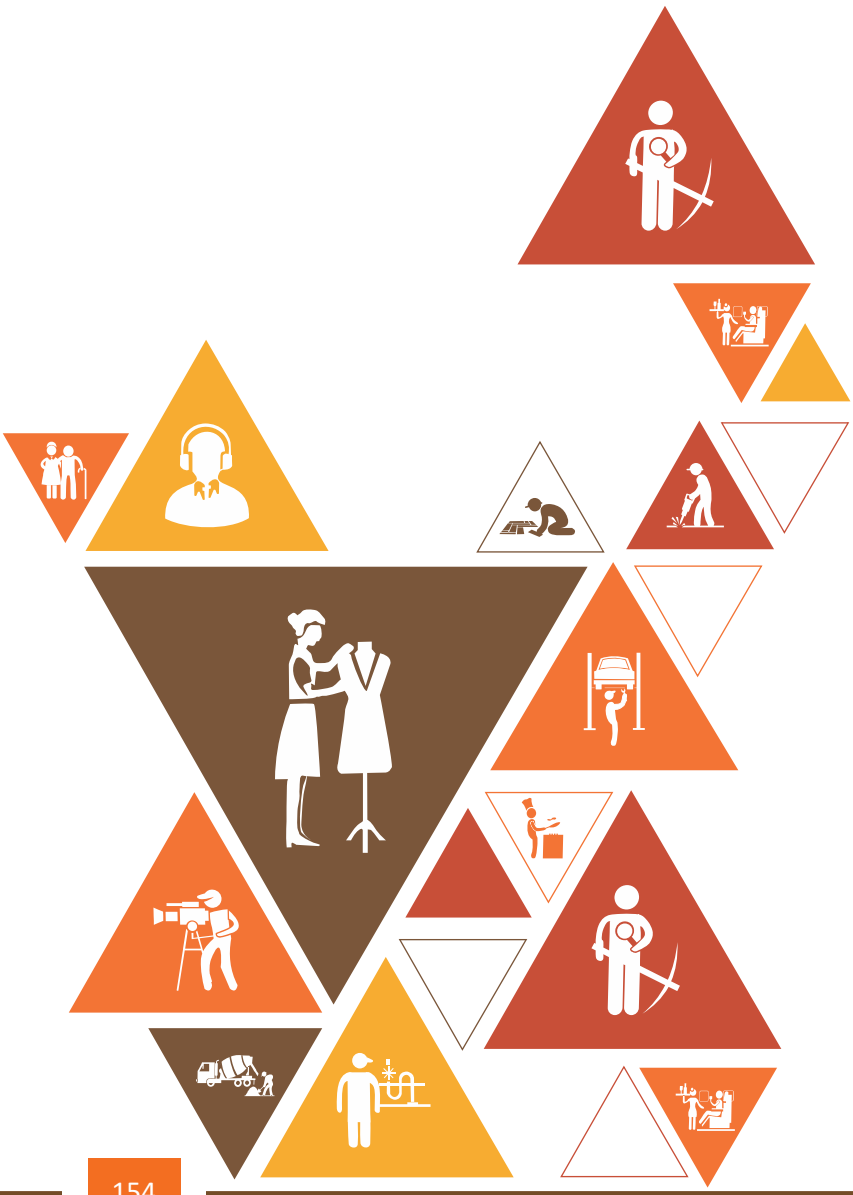

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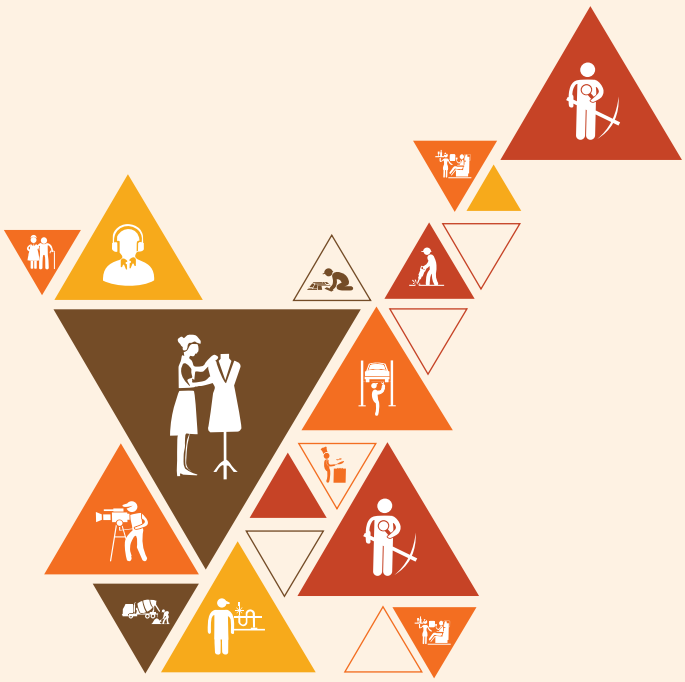
11. Annexures

Annexure I - Training Delivery Plan

Annexure II - Assessment Criteria

Annexure III - QR Codes –Video Links



Annexure I

Training Delivery Plan

Training Delivery Plan			
Program Name:	**False Ceiling & Dry Wall Installer**		
Qualification Pack Name & Ref. ID	False Ceiling & Dry Wall Installer, CON/Q1107		
Version No.	4	**Version Update Date**	22/08/2019
Prerequisites to Training (if any)	11th Grade pass OR Completed 1st year of 3-year diploma after 10th OR 10th-grade pass and pursuing continuous schooling OR 8th Grade pass with 3-year relevant experience OR Previous relevant Qualification of NSQF Level 2.5 with 3-year relevant experience OR Previous relevant Qualification of NSQF Level 3 with 1.5-year relevant experience		
Training Outcomes	**After completing this program, participants will be able to:** • Carry out preparatory works and leveling procedure for fixing false ceiling • Install flush jointed ceiling system at construction site • Install exposed grid suspended panel ceiling system at construction site • Install wall partitions and panels • Work effectively in a team to deliver desired results at the workplace • Plan and organize work to meet expected outcomes • Work according to personal health, safety and environment protocols at the construction site • Employability Skills (30 Hours)		

Sl. No	Module	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/ Aids	Duration (hours)
1	Introduction of Construction Sector and False Ceiling & Dry Wall Installer Job Role T- 05:00 (HH: MM)	1. Overview of Construction Industry	• Understand the size and scope of the construction industry and its sub-sectors	CON/N1120, PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20. KU1, KU2 KU3, KU4, KU5, KU6, KU7, KU8, KU9, KU10, KU11, KU12, KU13, KU14, KU15, KU16, KU17, KU18, KU19, KU20, KU21. GS1, GS2, GS3, GS4, GS5, GS6, GS7, GS8, GS9, GS10, GS11, GS12, GS13, GS14, GS15, GS16, GS17, GS18, GS19, GS20.	Computer, printer, projector, white-board/ flip chart, marker and duster	Training Kit – Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	T- 02:00
		2. Duties of a False Ceiling & Dry Wall Installer	• Understand the role and responsibilities of a False Ceiling & Dry Wall Installer				T-02:00
		3. About Interior and Exterior Finishes Occupation	• To understand the art of transforming architectural spaces with impeccable finishes, integrating safety, aesthetics, and sustainability in their work.				T-01:00
2	Core/Generic Skills T- 05:00 (HH: MM)	1. Metric and Imperial Conversion Mastery	• To empower Learners with the capability to seamlessly and accurately convert between metric and imperial measurement systems, enhancing their versatility in construction.		Classroom lecture, games, group participation, group activity	Training Kit – Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films, Measurement tape	T-02:00
		2. Exploring Geometric Shapes in Construction	• To provide Learners with a comprehensive grasp of geometric principles and shapes, enabling them to make informed decisions and excel in construction tasks.				T- 3:00

3	Preparatory Works and Levelling Procedures for the Installation of False Ceiling (CON/N1120) T- 10:00 P- 40:00 (HH: MM)	1. Interpreting Ceiling Sketches	• By the end of this session, learners will be able to effectively interpret sketches for false ceiling works, ensuring accurate execution.		Computer, printer, projector, white-board/ flip chart, marker and duster	Measuring tape, Scale, Right angle, Dry wall T-Square, Framing square, Chalk line, pencil, Line dori, Plumb bob, Spirit level, Pliers, Punch pliers, Paper cutting knife, Drywall knife 12,6 and 4 inches, Drywall Hammers, Taping knife, Sanding tool, Drywall saw, Hack saw, Hand saw, crew driver set, Screw gun, Drill machine, Metal cutter, Silicon gun/caulk gun, Stapler, Clutch angle	T-01:00 P- 4:00
		2. Materials for False Ceiling	• This session equips learners with the knowledge to list and understand various materials used in false ceiling works, promoting informed material selection.				T- 1:00 P- 4:00
		3. Tools and Equipment for Ceiling Installation	• By the end of this session, learners will be proficient in listing and comprehending the tools and equipment essential for false ceiling works, enhancing their preparedness for the job.				T-01:00 P-04:00
		4. Measuring and Marking for Ceiling Installation	• After this session, learners will be capable of explaining the step-by-step process used to accurately measure and mark gypsum board for false ceiling installation.				T-01:00 P-04:00
		5. Ensuring Precise Board Measurement and Cutting	• This session enables learners to demonstrate effective checks to ensure gypsum, plaster, or fiberboard is measured, marked, and cut precisely according to specifications.				T- 01:00 P- 04:00

		6. Levelling and Marking Techniques for False Ceiling	• By the end of this session, learners will be proficient in explaining levelling techniques, grasping basic mathematical concepts, and understanding the characteristics and limitations of various levelling tools, enhancing their capacity for precise false ceiling installation.				T- 01:00 P- 04:00
		7. Assessing Ceiling Measurements	• After this session, learners will be able to effectively demonstrate how to measure the existing ceiling to assess its dimensions and suitability for false ceiling installation.				T- 01:00 P- 04:00
		8. Assessing Ceiling Measurements	• This session equips learners with the skills to demonstrate the precise setup of levelling devices and the accurate transfer of specified levels in accordance with project specifications.				T- 01:00 P- 04:00
		9. Assessing Ceiling Measurements	• By the end of this session, learners will be proficient in demonstrating the meticulous process of marking the precise locations for ceiling brackets, perimeter, as well as areas designated for false ceiling work, partitions, and drywall installation.				T- 01:00 P- 04:00

		10. Ensuring Safe Erection of Access Equipment	• In this session, learners will demonstrate essential checks for ensuring the safe preparation and erection of access equipment, work platforms, and ladders, prioritizing on-site safety during false ceiling installation.				T- 01:00 P- 04:00
4	Install Flush Jointed Ceiling System at Construction Site (CON/N1121) T- 20:00 P- 40:00 (HH: MM)	1. Advantages of Flush Jointed Ceiling Systems	• By the end of this session, learners will be able to describe the advantages and suitability of flush jointed ceiling systems in construction.	CON/N1121, PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21, PC22, PC23,KU1, KU2 KU3, KU4, KU5, KU6, KU7, KU8, KU9, KU10, KU11, KU12, KU13, KU14, KU15, KU16, KU17. GS1, GS2, GS3, GS4, GS5, GS6, GS7, GS8, GS9, GS10, GS11, GS12, GS13, GS14, GS15, GS16, GS17, GS18, GS19.	Computer, printer, projector, whiteboard/ flip chart, marker and duster	Measuring tape, Scale, Right angle, Dry wall T-Square, Framing square, Chalk line, pencil, Line dori, Plumb bob, spirit level, Pliers, Punch pliers, Paper cutting knife, Drywall knife 12,6 and 4 inches, Drywall Hammers, Taping knife, Sanding tool, Drywall saw, Hack saw, Hand saw, Screw driver set, Screw gun, Drill machine, Metal cutter, Silicon gun/ caulk gun, Stapler, Clutch angle, Utility knife	T- 02:00 P- 04:00
		2. Understanding Material Resources	• This session provides learners with the knowledge to describe the characteristics, quality, uses, limitations, and defects associated with various material resources relevant to ceiling systems, including grid tiles, hangers, insulation, panels, and more.				T- 02:00 P- 04:00
		3. Jointing Compounds for Plasterboard	• After this session, learners will have a comprehensive understanding of different jointing compounds used to achieve a seamless finish on plasterboard in ceiling systems.				T- 02:00 P- 04:00

		4. Tools and Equipment for Non-Suspended Ceilings	• In this session, learners will gain insight into the hand and powered tools and equipment essential for the installation of non-suspended flush jointed ceiling systems.			T- 02:00 P- 04:00
		5. Installation Process of Non-Suspended Ceilings	• By the end of this session, learners will be proficient in describing the step-by-step process for installing non-suspended flush jointed ceiling systems, ensuring they can carry out this task effectively on the construction site.			T- 02:00 P- 04:00
		6. Advantages and Suitability of Flush Jointed Ceiling Systems	• By the end of this session, learners will be able to describe the advantages and suitability of flush jointed ceiling systems in construction projects.			T- 02:00 P- 04:00
		7. Understanding Material Resources for Ceilings	• This session equips learners with the knowledge to describe the characteristics, quality, uses, limitations, and defects associated with various material resources essential for ceiling systems, including grid tiles, hangers, insulation, and more.			T- 02:00 P- 04:00

		8. Jointing Compounds for Plaster-board	• After this session, learners will have a comprehensive understanding of the various jointing compounds used to join and finish plasterboard in ceiling systems.				T- 02:00 P- 04:00
		9. Tools and Equip-ment for Suspended Ceilings	• In this session, learners will gain insight into the hand and powered tools and equipment necessary for the installation of suspended flush jointed ceiling systems.				T- 02:00 P- 04:00
		10. In-stallation Process for Suspended Ceilings	• By the end of this session, learners will be proficient in describing the step-by-step process for installing suspended flush jointed ceiling systems, ensuring they can perform this task effectively on construction sites.				T- 02:00 P- 04:00
5	Installa-tion of ex-posed grid suspended panel ceiling system at construc-tion sites (CON/ N1122) T- 15:00 P- 15:00 (HH: MM)	1. Inter-preting Sketches for False Ceiling Work	• By the end of this session, learners will be able to explain how to interpret sketches and drawings effectively for false ceiling work, ensuring precise execution on construction sites.	CON/N1122, PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16. KU1, KU2 KU3, KU4, KU5, KU6, KU7, KU8, KU9, KU10, KU11, KU12, KU13, KU14, KU15, KU16, KU17, KU18, KU19,	Com-puter, printer, projector, white-board/ flip chart, mark-er and duster	Measuring tape, Scale, Right angle, Dry wall T-Square, Framing square, Chalk line, pencil, Line dori, Plumb bob, Spirit level, Pliers, Punch pli-ers, Paper cutting knife Dry-wall knife 12,6 and	T- 01:00 P- 02:00

	2. Material Resources in Ceiling Systems	• In this session, learners will describe the characteristics, quality, uses, limitations, and defects of various material resources used in ceiling systems, enhancing their understanding of materials like grid components, insulation, and panels.	GS1, GS2, GS3, GS4, GS5, GS6, GS7, GS8, GS9, GS10, GS11, GS12, GS13, GS14, GS15, GS16, GS17, GS18, GS19, GS20, GS21, GS22		4 inches, Drywall Hammers, Taping knife, Sanding tool, Drywall saw, Hack saw, Hand saw, Screw driver set, Screw gun, Drill machine, Metal cutter, Silicon gun/caulk gun, Stapler Clutch angle, Utility knife	T- 01:00 P- 02:00
	3. Seamless Finish with Jointing Compounds	• After this session, learners will have a thorough understanding of the different jointing compounds used in plasterboards to achieve a seamless finish in ceiling installations.				T- 01:00 P- 02:00
	4. Precision in Providing Cut-Outs	• By the end of this session, learners will be proficient in describing the process of providing cut-outs in ceiling systems using appropriate tools, ensuring accuracy and efficiency.				T- 02:00 P- 01:00
	5. Panel Selection for Grid System Ceilings	• In this session, learners will explain the purpose and advantages of using different types of panels in grid system ceilings, allowing them to make informed decisions during ceiling installations.				T- 02:00 P- 01:00

		6. Advantages of Flush Jointed Ceilings	• By the end of this session, learners will be able to explain the advantages and suitability of a flush jointed ceiling system in construction, recognizing its benefits.				T- 01:00 P- 02:00
		7. Proper Stud Positioning Importance	• In this session, learners will understand the critical importance of correctly positioning studs on side wall panels in ceiling installation, ensuring structural integrity.				T- 01:00 P- 02:00
		8. Tools for Grid-Suspended Ceilings	• After this session, learners will describe the use of hand and power tools and equipment necessary for installing an exposed grid-suspended panel ceiling system, improving their practical knowledge.				T- 02:00 P- 01:00
		9. Installing Suspended and Fixed Flush Jointed Ceilings	• By the end of this session, learners will be able to describe the process of installing both suspended and fixed flush jointed ceiling systems, expanding their understanding of ceiling construction methods.				T- 02:00 P- 01:00
		10. Measuring and Marking for Suspended Ceilings	• In this hands-on session, learners will demonstrate the accurate measuring and marking on the wall for fixing ceiling brackets and perimeter for suspended ceilings, ensuring precise installation.				T- 02:00 P- 01:00

6	Installation of Wall Partitions and Panels (CON/N1123) T- 20:00 P- 40:00 (HH: MM)	1. Interpreting Schematic Drawings	• • After this session, learners will be able to interpret schematic drawings and sketches for drywall installation works, enhancing their ability to understand construction plans.	CON/N1123, PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21, PC22, PC23, PC24, PC25, PC26, PC27, PC28, PC29, PC30, PC31, PC32, PC33, PC34, PC35, PC36, PC37, PC38, PC39, PC40, PC41, PC42, PC43, KU1, KU2 KU3, KU4, KU5, KU6, KU7, KU8, KU9, KU10, KU11, KU12, KU13, KU14, KU15, KU16, KU17, KU18, KU19. GS1, GS2, GS3, GS4, GS5, GS6, GS7, GS8, GS9, GS10, GS11, GS12, GS13, GS14, GS15, GS16, GS17, GS18, GS19, GS20, GS21, GS22, GS23, GS24, GS25, GS26	Computer, printer, projector, white-board/ flip chart, marker and duster	Measuring tape, Scale, Right angle, Dry wall T-Square, Framing square, Chalk line, pencil, Line dori, Plumb bob, Spirit level, Pliers, Punch pliers, Paper cutting knife Drywall knife 12,6 and 4 inches, Drywall Hammers, Taping knife, Sanding tool, Drywall saw, Hack saw, Hand saw, Screw driver set, Screw gun, Drill machine, Metal cutter, Silicon gun/caulk gun, Stapler Clutch angle, Utility knife	T- 02:00 P- 04:00
		2. Wall Panel Specifications	• In this session, learners will describe the specifications related to the fixing of wall panels, ensuring adherence to project requirements.				T- 02:00 P- 04:00
		3. Framing Joints in Wall Panels	• • By the end of this session, learners will understand the different types of joints used in frames, including butt joint, mitre joints, and others, for successful wall panel installations.				T- 02:00 P- 04:00
		4. Measuring and Marking for Cutting Panels	• • This session will equip learners with the knowledge to explain the process of measuring and marking accurately for cutting panels, improving precision in their work.				T- 02:00 P- 04:00
		5. Selecting Tools and Materials	• • After this session, learners will be able to select appropriate tools and materials as per the requirements of wall panel fixing, ensuring efficient and effective installations.				T- 02:00 P- 04:00

		6. Frame Alignment Checks	• After this session, learners will be able to demonstrate checks to ensure that the ceiling and floor frames are properly fixed, and spacing between frames matches board dimensions and layout.				T- 02:00 P- 04:00
		7. Vertical Frame In-spection	• In this session, learners will demonstrate checks to ensure the height of the vertical frame and joints in the frames align with specification requirements.				T- 02:00 P- 04:00
		8. Precision in Board Preparation	• By the end of this session, learners will be able to demonstrate checks to ensure that boards are accurately marked and cut to the required dimensions, ensuring a high standard of work.				T- 02:00 P- 04:00
		9. Panel and Floor Spac-ing Verifica-tion	• This session will equip learners with the skills to demonstrate checks for ensuring proper spacing between the bottom end of the panel and the floor, promoting a well-finished installation.				T- 02:00 P- 04:00
		10. Ad-ditional Support and Alignment	• After this session, learners will demonstrate checks to ensure additional support is provided for fixing door frames, sockets, and additional fixtures in the studs, and they will understand the importance of correct alignment.				T- 02:00 P- 04:00

7	Work effectively in a team to deliver desired results at the workplace (CON/N8001) T- 05:00 P- 25:00 (HH:MM)	1. Roles and Responsibilities in the Workplace	• By the end of this session, learners should be able to elucidate their own roles and responsibilities within the construction project, ensuring a clear understanding of their individual contributions to the team.	CON/N8001, PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12. KU1, KU2 KU3, KU4, KU5, KU6, KU7, KU8, KU9, KU10, KU11, KU12. GS1, GS2, GS3, GS4, GS5, GS6, GS7, GS8, GS9, GS10, GS11.	Classroom lecture, games, group participation, group activity	Black/White board, marker, Projector/LED Monitor, Computer, Trade specific charts, Safety tags, Safety Notice board, registers and other teaching aids	T- 01:00 P- 03:00
		2. Effective Communication at the Workplace	• The goal of this session is for learners to explain the importance of effective communication in a construction setting, highlighting its impact on project success, safety, and efficiency.				T- 01:00 P- 03:00
		3. Teamwork and Problem Reporting	• After this session, learners should be able to demonstrate the ability to effectively communicate work-related information to team members and show how to report any unresolved problems or issues to their supervisor promptly, fostering a culture of collaboration and timely issue resolution in the workplace.				T- 00:00 P- 03:00
		4. Creating a Cooperative Work Environment	• By the end of this session, learners should be able to explain the importance of fostering a healthy and cooperative work environment among gangs of workers, promoting teamwork and collaboration on construction projects.				T- 01:00 P- 03:00

		5. Knowledge Sharing and Effective Communication	• The goal of this session is for learners to elucidate techniques related to work methods, material properties, tools, tackles, and safety standards that co-workers might need, emphasizing the importance of sharing knowledge and information for improved project quality, safety, and efficiency.			T- 00:00 P- 02:00
		6. Synchronized Work and Support	• After this session, learners should be able to demonstrate the ability to work together in a synchronized manner with co-workers, support colleagues facing problems, and efficiently hand over required materials, tools, equipment, and work fronts to interfacing teams, ensuring seamless project operations and problem resolution.			T- 00:00 P- 02:00
		7. Understanding Gender Equality	• By the end of this session, learners should have a fundamental understanding of the concept of gender equality, including its importance, principles, and relevance in the workplace.			T- 01:00 P- 02:00

		8. Promoting Diversity and Inclusion	• The goal of this session is to explain how to recognize and be sensitive to issues related to disability, culture, and gender, fostering an inclusive and respectful work environment.			T- 00:00 P- 02:00
		9. Gender Sensitivity in the Workplace	• In this session, learners will discuss legislation, policies, and procedures related to gender sensitivity and cultural diversity, and understand their impact on the workplace, ensuring compliance with relevant regulations and organizational standards.			T- 00:00 P- 02:00
		10. Implementing Inclusive Practices	• After this session, learners should be able to demonstrate effective implementation of gender-neutral practices in the workplace, promoting diversity, and ensuring that all employees are treated fairly and equitably. Additionally, they should be able to address discriminatory and offensive behavior professionally and in accordance with organizational policy.			T- 00:00 P- 03:00

8	Plan and Organize Work to meet Expected Outcomes (CON/ N8002) T- 05:00 P- 25:00 (HH: MM)	1. Understanding Labor and Work Productivity	• By the end of this session, learners will be able to explain the basic concepts of labor productivity and work productivity in the context of their trade or job role.	CON/N8002, PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, KU1, KU2 KU3, KU4, KU5, KU6, KU7, KU8, GS1, GS2, GS3, GS4, GS5, GS6, GS7, GS8, GS9, GS10.	Classroom lecture, games, group participation, group activity	Black/ White board, marker, Projector/LED Monitor, Computer, Trade specific charts, Safety tags, Safety Notice board, registers and other teaching aids	T- 01:00 P- 03:00
		2. Planning for Productivity	• In this session, learners will identify work targets and plan activities to achieve the desired productivity levels, ensuring efficient task execution.				T- 01:00 P- 03:00
		3. Task Planning and Scope	• After this session, learners will have the knowledge to explain the process of planning tasks and activities within the defined scope and duration of their trade or job role.				T- 00:00 P- 03:00
		4. Effective Activity Planning	• This session will enable learners to demonstrate effective planning for various activities according to the project scope and schedule, ensuring organized and timely execution.				T- 01:00 P- 03:00
		5. Prioritization and Resource Requisition	• By the end of this session, learners will be able to explain the procedures for prioritizing activities and sequencing them to maximize output. They will also understand how to requisition resources and report resource requirements to the concerned authority, with practical examples.				T- 00:00 P- 02:00

		6. Resource Efficiency and Mini-mization of Waste	• In this session, learners will gain an understanding of how to minimize wastage of resources in their domain-specific work, promoting efficiency and cost-effectiveness.			T- 00:00 P- 02:00
		7. Optimal Resource Utilization	• After this session, learners will be able to demonstrate the optimal use of resources while carrying out domain-specific work activities, maximizing productivity.			T- 01:00 P- 02:00
		8. Proper Waste Col-lection and Disposal	• This session will teach learners how to collect and dispose of waste in accordance with organizational norms, ensuring a clean and safe work environment.			T- 00:00 P- 02:00
		9. Waste Manage-ment Plan-ning	• By the end of this session, learners will be equipped to explain the plan for waste collection and disposal following the completion of their tasks.			T- 00:00 P- 02:00
		10. Timely Completion and Efficien-cy	• In this session, learners will demonstrate their ability to complete work within the stipulated time and according to the planned schedule, enhancing overall project efficiency.			T- 00:00 P- 03:00

9	CON/ N9001: Follow safety norms as defined by organization, adopt healthy and safe work practices T- 05:00 P- 25:00 (HH: MM)	1. Types of hazards at the construction sites and identify the hazards specific to the domain related works	• Understand and categorize various types of hazards commonly found at construction sites, including physical, chemical, biological, and ergonomic hazards. • Identify hazards specific to the domain-related works being carried out, such as electrical hazards for electricians or fall hazards for roofers. • Recognize the potential risks associated with each hazard and their impact on worker safety.	CON/N9001, PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16, PC17, KU1, KU2 KU3, KU4, KU5, KU6, KU7, KU8, KU9, KU10, KU11, KU12, KU13, KU14, KU15, KU16, KU17, KU18, KU19. GS1, GS2, GS3, GS4, GS5, GS6, GS7.	Classroom lecture, games, group participation, group activity, field visit	Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop, Safety goggles, Nose mask, Ear protection, Safety tags, Safety Notice board	T- 01:00 P- 02:00
		2. Recognize the safety control measures and actions to be taken under emergency situation	• Familiarize oneself with safety control measures and precautions to mitigate identified hazards. • Learn the actions to be taken under emergency situations, including evacuation procedures, first aid response, and alerting the appropriate authorities. • Understand the importance of quick and effective responses in emergency scenarios to minimize harm and property damage.				T- 01:00 P- 01:00

		3. Reporting procedure to the concerned authority in case of emergency situations	• Comprehend the step-by-step reporting procedure to inform the concerned authorities in the event of emergencies, accidents, or hazardous incidents. • Learn how to provide accurate and timely information, including location, nature of the emergency, and the number of individuals affected.			T- 00:00 P- 01:00
		4. The classes of fire and types of fire extinguishers	• Explore the different classes of fires (e.g., Class A, B, C, D, and K) and their characteristics. • Identify the suitable types of fire extinguishers corresponding to each fire class and their appropriate use.			T- 01:00 P- 01:00
		5. The operating procedure of the fire extinguishers	• Understand the step-by-step procedure for safely operating fire extinguishers, including pulling the pin, aiming at the base of the fire, squeezing the handle, and sweeping from side to side. • Learn when and how to use fire extinguishers effectively to suppress fires and prevent their spread.			T- 00:00 P- 02:00

		6. The importance of participation of workers in safety drills	• Recognize the significance of active participation in safety drills and training exercises. • Understand how safety drills enhance preparedness and ensure that workers know how to respond during emergencies.			T- 00:00 P- 01:00
		7. Basic medical tests required for working at construction site	• Identify the essential medical tests that may be required before starting work at a construction site, such as physical examinations, vision tests, hearing tests, and drug screenings. • Understand how these tests contribute to worker health and safety.			T- 00:00 P- 01:00
		8. Purpose and importance of vertigo test at construction site	• Learn about vertigo tests and their relevance in assessing a worker's balance and coordination, especially for tasks involving heights. • Understand how vertigo tests help prevent accidents related to dizziness or loss of balance.			T- 00:00 P- 01:00
		9. Types and benefits of basic ergonomic principles,	• Explore various ergonomic principles applicable to specific tasks at construction sites,			T- 00:00 P- 01:00

		which should be adopted while carrying out specific task at the construction sites	• such as proper lifting techniques, posture, and equipment adjustments. • Understand the benefits of adopting ergonomic practices, including reduced risk of musculoskeletal injuries and increased productivity.				
		10. Use of PPEs as per work requirements	• Identify the specific PPE items required for different work conditions and tasks, such as helmets, safety goggles, ear protection, gloves, and respiratory protection. • Learn when and how to correctly wear and use PPE to safeguard against workplace hazards.				T- 00:00 P- 02:00
		11. Follow the practices to maintain personal hygiene, workplace hygiene and site/ workplace sanitization	• Understand the importance of personal hygiene and the role it plays in preventing the spread of illnesses in the workplace. • Learn about best practices for maintaining cleanliness in the workplace, including sanitization measures to reduce health risks.				T- 01:00 P- 01:00

		12. The importance of housekeeping works	• Recognize the significance of housekeeping in maintaining a safe and organized work environment. • Understand how proper housekeeping practices contribute to accident prevention, improved efficiency, and overall site safety.				T- 00:00 P- 01:00
		13. Keep an eye on safe housekeeping practices	• Learn how to proactively observe and ensure the implementation of safe housekeeping practices at construction sites. • Identify potential hazards related to housekeeping and take corrective actions or report issues to maintain a safe working environment.				T- 00:00 P- 01:00
		14. Different types of waste at construction sites and their disposal method	• Identify various types of waste generated at construction sites, including non-combustible scrap, combustible debris, general construction waste, and hazardous materials. • Understand the appropriate disposal methods for each waste type, including recycling, landfill disposal, and hazardous waste disposal.				T- 00:00 P- 01:00

		15. Know safe waste disposal practices followed at construc-tion site	• Familiarize oneself with safe waste disposal practices and regulations governing waste management at construction sites. • Learn how to segregate, handle, and dispose of different types of waste materials in compliance with environmental standards.				T- 00:00 P- 02:00
		16. Differ-ent types of infectious disease that can spread/ originate at a construc-tion site	• Learn about various infectious diseases that can potentially spread or originate at construction sites, including respiratory infections, skin diseases, and vector-borne diseases. • Understand the health risks associated with infectious diseases and their potential impact on the workforce.				T- 01:00 P- 01:00
		17. The ways of transmis-sion of the various infectious disease	• Explore the different modes of transmission for infectious diseases, such as direct contact, airborne transmission, and vector-borne transmission. • Recognize how infectious diseases can spread among workers and the importance of preventive measures.				T- 00:00 P- 01:00

		18. Methods to check the spread of the infectious disease	• Learn effective methods and preventive measures to control the spread of infectious diseases at construction sites, including vaccination programs, hygiene practices, and sanitation measures. • Understand the role of personal and collective responsibility in disease prevention.			T- 00:00 P- 01:00
		19. Symptoms and cure of the various infectious disease	• Identify common symptoms associated with infectious diseases and the importance of early detection. • Gain knowledge about available treatments, preventive measures, and the importance of seeking medical attention when symptoms arise.			T- 00:00 P- 01:00
		20. Procedure to report to the concerned authority regarding the outbreak/ hazard of any infectious disease/ pandemic	• Understand the procedure for promptly reporting outbreaks or hazards related to infectious diseases to the concerned authorities. • Learn how to provide essential information and follow reporting protocols during a disease-related emergency or pandemic.			T- 00:00 P- 02:00

10	DGT/VSQ/ N0101: Employ-ability Skills (30 Hours)	1. Intro-duction to Employabili-ty Skills	• Discuss the Employability Skills required for jobs in various industries. • List different learning and employability related GOI and private portals and their usage.	DGT/VSQ/ N0101, PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21, PC22, PC23, PC24, PC25, PC26, PC27, PC28, PC29, PC30, PC31, PC32, PC33, KU1, KU2 KU3, KU4, KU5, KU6, KU7, KU8, KU9, KU10, KU11, KU12, KU13, KU14, KU15, KU16, KU17, KU18, KU19. GS1, GS2, GS3, GS4, GS5, GS6, GS7, GS8, GS9.	Class-room lecture, games, group partici-pation, group activity, field visit	Handbook	1
		2. Consti-tutional values - Citi-zenship	• Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen. • Show how to practice different environmentally sustainable practices.				1
		3. Becoming a Profes-sional in the 21st Cen-tury	• Discuss importance of relevant 21st century skills. • Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life. • Describe the benefits of continuous learning.				1

		4. Basic English Skills	• Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone. • Read and interpret text written in basic English. • Write a short note/ paragraph / letter/e -mail using basic English.				2
		5. Communication Skills	• Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette. • Explain the importance of active listening for effective communication. • Discuss the significance of working collaboratively with others in a team.				4
		6. Diversity & Inclusion	• Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD. • Discuss the significance of escalating sexual harassment issues as per POSH act.				1

		7. Financial and Legal Literacy	• Outline the importance of selecting the right financial institution, product, and service. • Demonstrate how to carry out offline and online financial transactions, safely and securely. • List the common components of salary and compute income, expenditure, taxes, investments etc. • Discuss the legal rights, laws, and aids.				4
		8. Essential Digital Skills	• Describe the role of digital technology in today's life. • Demonstrate how to operate digital devices and use the associated applications and features, safely and securely. • Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, e-mails, etc., safely and securely. • Create sample word documents, excel sheets and presentations using basic features utilize virtual collaboration tools to work effectively.				3

		9. Entrepreneurship	• Explain the types of entrepreneurship and enterprises. • Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan. • Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement. • Create a sample business plan, for the selected business opportunity.				7
		10. Customer Service	• Describe the significance of analysing different types and needs of customers. Explain the significance of identifying customer needs and responding to them in a professional manner. Discuss the significance of maintaining hygiene and dressing appropriately.				4
		11. Getting Ready for apprenticeship & Jobs	• Create a professional Curriculum Vitae (CV). • Use various offline and online job search sources such as employment				2

			• exchanges, recruitment agencies, and job portals respectively. • Discuss the significance of maintaining hygiene and confidence during an interview. • Perform a mock interview. • List the steps for searching and registering for apprenticeship opportunities.				

Annexure - II

Assessment Guidelines and Assessment Weightage	
Job Role	**False Ceiling & Dry Wall Installer**
Qualification Pack	CON/Q1107
Sector Skill Council	Construction Skill Development Council of India

Sr. No.	Guidelines for Assessment
1	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2	The assessment for the knowledge part will be based on knowledge bank of questions created by Assessment
3	Individual assessment agencies will create unique question papers for knowledge/theory part for assessment of candidates as per assessment criteria given below
4	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on assessment criteria.
5	The passing percentage for each QP will be 50%. To pass the Qualification Pack, every trainee should score a minimum of 50% individually in each NOS.
6	The Assessor shall check the final outcome of the practices while evaluating the steps performed to achieve the final outcome
7	The trainee shall be provided with a chance to repeat the test to correct his procedures in case of improper performance, with a deduction of marks for each iteration.
8	After the certain number of iteration as decided by SSC the trainee is marked as fail, scoring zero marks for the procedure for the practical activity.
9	In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack within the specified timeframe set by SSC.
10	Minimum duration of Assessment of each QP shall be of 4hrs/trainee.

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N1120: Carry out preparatory works and leveling procedure for fixing false ceiling	20	40	-	-	60	-

CON/N1121: Install flush jointed ceiling system at construction site	20	40	-	-	60	-
CON/N1122: Install exposed grid suspended panel ceiling system at construction site	15	15	30	-	60	-
CON/N1123: Install wall partitions and panels	20	40	30	-	90	-
CON/N8001: Work effectively in a team to deliver desired results at the workplace	05	25	-	-	30	-
CON/N8002: Plan and organize work to meet expected outcomes	05	25	-	-	30	-
CON/N9001: Work according to personal health, safety and environment protocols at the construction site	05	25	-	-	30	-
DGT/VSQ/N0101: Employability Skills	30	-	-	-	30	-
Total	**120**	**210**	**60**	**-**	**390**	**-**

Annexure-III

Annexure of QR Codes for False Ceiling & Dry Wall Installer

Chapter Name	Unit Name	Topic Name	URL	QR Code	Video Duration
Chapter 1: Introduction of Construction Sector and False Ceiling & Dry Wall Installer Job Role	UNIT 1.1: Construction Industry in India	Overview of Construction Sector in India	https://youtu.be/yhjDhav4Pfw	Overview of Construction Sector in India	0:13:24
	UNIT 1.2: About Interior and Exterior Finishes Occupation	Interior & Exterior Design	https://youtu.be/gsAOidQwydY	Interior & Exterior Design	0:13:51
		Plain False Ceiling Installation	https://youtu.be/6kYe-ITXHAAo	Plain False Ceiling Installation	0:10:31
		A Career in Drywall Installation	https://youtu.be/_NY5YS_wWK4	A Career in Drywall Installation	0:00:30
Chapter 2: Generic Mathematical Skills	Unit 2.1 – Unit Conversion and Measurement	Different System of Measurement	https://youtu.be/H1xo5UVJKVo	Different System of Measurement	0:17:17

	Unit 2.2 – Basic Geometrical Shapes and its Properties	Area, volume and perimeter of geometrical shapes	https://youtu.be/OhTubw4C0to	Area, volume and perimeter of geometrical shapes	0:16:16
Chapter 3: Carry Out Preparatory Works and Levelling Procedure for Fixing False Ceiling (CON/N1210)	Unit 3.1: Preparatory Steps and Material Familiarization	Gypsum fibreboard vs standard plasterboard	https://youtu.be/DUdBjnAp0sQ	Gypsum fibreboard vs standard plasterboard	0:02:02
		Tools and Equipment in Drywall and False Ceiling	https://youtu.be/E7nZiezs7Ko	Tools and Equipment in Drywall and False Ceiling	0:05:56
	Unit 3.2: Measurement, Levelling, and Marking	How to Use a Spirit Level	https://youtu.be/ygxPWz-CiVNU	How to Use a Spirit Level	0:02:28
	Unit 3.3: Installation and Safety Preparations	How to Measure False Ceiling	https://youtu.be/q1VXA-Xxfqs	How to Measure False Ceiling	0:05:10
Chapter 4: Install Flush Jointed Ceiling System at Construction Site (CON/N1121)	Unit 4.1: Install Non-suspended Flush Jointed Ceiling System	Jointing Compounds for Seamless Finish of Plasterboard	https://youtu.be/8essH2I-uu3A	Jointing Compounds for Seamless Finish of Plasterboard	0:05:40

		Tools used for Installation of Gypsum Ceiling	https://youtu.be/z8tDhkRmnMA	Tools used for Installation of Gypsum Ceiling	0:06:41
	Unit 4.2: Install Suspended Flush Jointed Ceiling System	How to Install a Suspended Ceiling	https://youtu.be/2AViedXTH30	How to Install a Suspended Ceiling	0:05:37
		How to Install an MF Plasterboard Ceiling	https://youtu.be/hVJd2OROuSA	How to Install an MF Plasterboard Ceiling	0:07:18
Chapter 5: Installation of Exposed Grid Suspended Panel Ceiling System at Construction Sites (CON/N1122)	Unit 5.1 – Understanding Exposed Grid Suspended Panel Ceiling Systems and Materials	Grid Ceiling	https://youtu.be/L5UcjpUmGI0	Grid Ceiling	0:02:03
		What Is Drop Grid Ceiling (Ceiling Tile Installation)	https://youtu.be/Cd6feaeycSo	What Is Drop Grid Ceiling (Ceiling Tile Installation)	0:04:43
	Unit 5.2 – Exposed Grid Suspended Panel Ceiling System Installation Techniques	Flush Mounted Ceiling System - Ceiling	https://youtu.be/AmVM5VgbSXE	Flush Mounted Ceiling System - Ceiling	0:07:42

		How to Measure, Cut and Fit Plasterboard	https://youtu.be/X47sQ8wcKEE	How to Measure, Cut and Fit Plasterboard	0:05:15
Chapter 6: Installation of Wall Partitions and Panels (CON/N1123)	Unit 6.1 – Understanding Wall Panel Installation Basics	Commercial Drywall - Learn How To Read Drawings!	https://youtu.be/FZTTMpMoBeY	Commercial Drywall - Learn How To Read Drawings!	0:13:24
		How to Install Wall Panels | Wall Panelling Installation	https://youtu.be/Nk7CAlc5m1M	How to Install Wall Panels | Wall Panelling Installation	0:01:39
	Unit 6.2 – Preparing and Installing Wall Panels	Wall Panel Installation	https://youtu.be/B8Lsi2TTDDM	Wall Panel Installation	0:04:47
		PVC Wall Panel Installing Working	https://youtu.be/JMTN6x_D4hY	PVC Wall Panel Installing Working	0:09:27

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