



Skill India
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MINISTRY OF SKILL DEVELOPMENT
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Construction Skill
Development Council of India

Facilitator Guide



Sector
Construction

Sub-Sector
Real Estate and Infrastructure
Construction

Occupation
Masonry

Reference ID: CON/Q0105, Version 4.0
NSQF Level 3.5

Mason Concrete



Shri Narendra Modi
Prime Minister of India

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



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 this 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 Mason Concrete. 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



Steps



Time



Tips



Notes



Objectives



Do



Ask



Explain



Elaborate



Field Visit



Practical



Lab



Demonstrate



Exercise



Team Activity



Facilitation Notes



Learning Outcomes



Say



Resources



Activity



Summary



Role Play




Example

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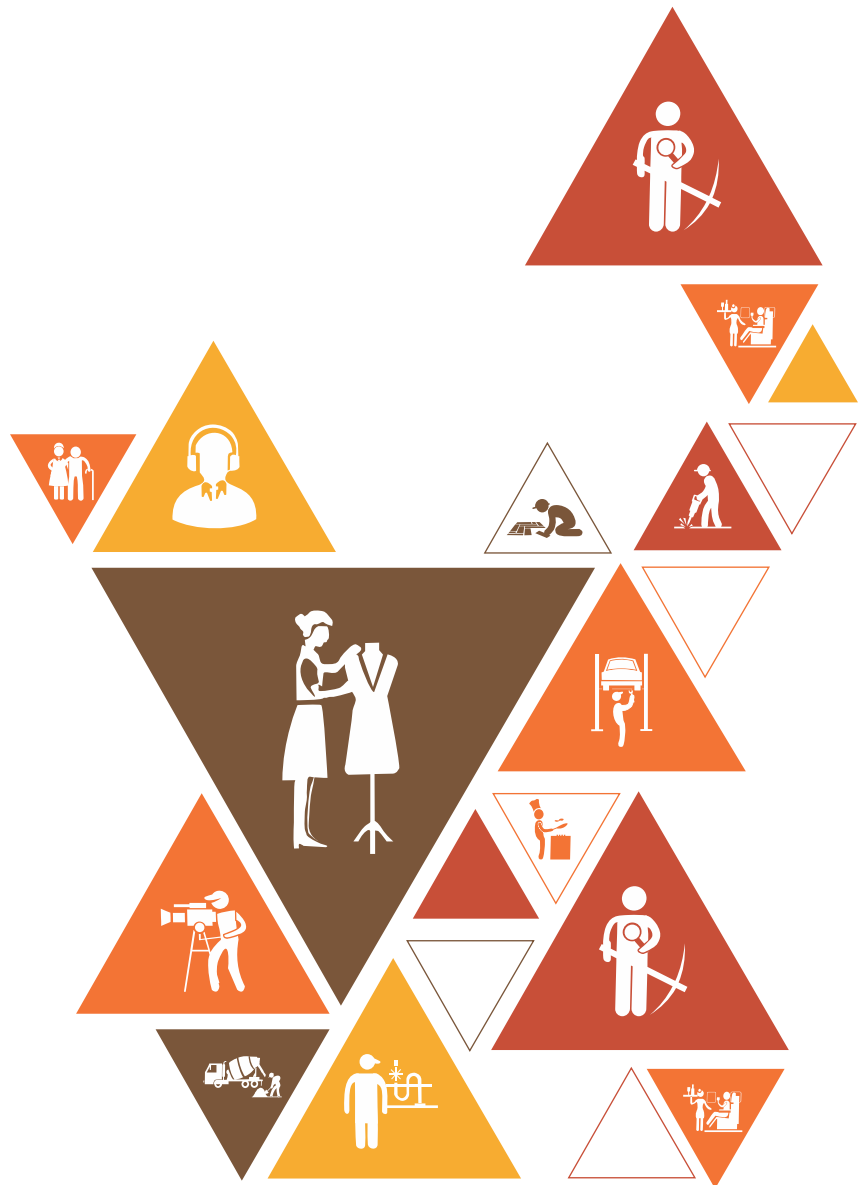
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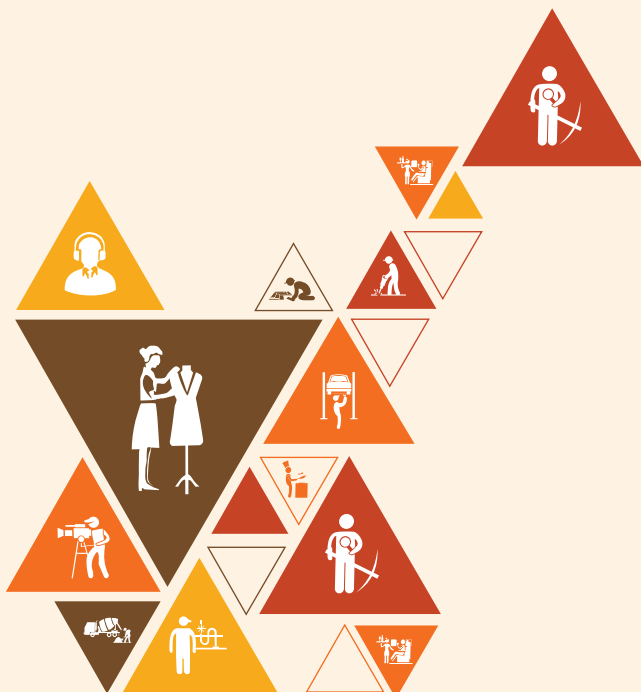


1. Introduction

Unit 1.1 - Introduction to Training Program

Unit 1.2 - An Overview of Construction Sector

Unit 1.3 - Mason Concrete as a Job Role



Bridge Module

Key Learning Outcomes

By the end of this module, participants will be able to:

1. Explain the purpose of training.
2. Understand National Occupation Standards and Qualification Pack.
3. Explain the benefits of training.
4. Explain about construction sector in India.
5. Explain urban and rural construction.
6. Outline modernization in construction.
7. List the major occupations in the construction sector.
8. List the roles and responsibilities of a mason concrete.
9. Explain career progression for mason concrete.

Unit 1.1 Introduction to Construction Industry

Unit Objectives

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

1. Understand the purpose of training.
2. Understand National Occupation Standards and Qualification Pack.
3. Explain the benefits of training.

Say

- Welcome and greet the participants.

Topic Introduction -

- Give the participants a brief overview of what will be covered in this unit.
- Applications of Mason Tiling job role in various construction sectors.

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete Participant handbook.

Activity

Do

- Ask each individual to take a paper and pen.
- Make a sketch of beam/slab/column.
- Give some hints for making the drawing and tell them to write their name on the right hand top corner.
- Ask them to complete within 15 minutes.
- At the end of the time limit, collect all the sketches.
- Hold each paper up and show it to the class one at a time.
- Then ask the class, what they could understand from the picture?
- Ask the owner to interpret the meaning behind the drawing.
- Complete all the drawings.

Explain

Introduction to major occupations in construction sector

- Purpose of the drawing.
- Ensure every participant understands from drawn image.
- Encourage the group by asking them leading question like:
- What are the important points to identify in this drawing?
- What do you think the participant is trying to convey through this picture?
- Encourage each participant to explain their picture.
- Help them by giving some hints to identify, if something is missing.
- Some participants may be shy and hesitant, encourage them to speak and share their details.
- When everyone finished introducing themselves, explain the schedule in detail for the day and inform about the break timings.

Introduction to Training Program

Do

- Explain the purpose of training program.
- Mention the mode and duration of training program.
- Give an introduction on QP and NOS.
- List and explain the benefits of training program.

Notes for Facilitation

- Use the content in participant handbook Unit 1.1, to explain about QP and NOS used for Mason concrete

Purpose, Benefits of the Training Programme and Introduction to QP and NOS

Say

- The purpose of the training program is to impart skills to individual so that they can perform as Mason Concrete.
- On the successful completion of training, a certificate from Construction Skill Development Council is provided which helps in getting employment in construction sector.

- A QP consists of a set of National Occupational Standards (NOS).
- NOS specifies the standards level of competency a worker should possess in order to perform the enlisted function at the workplace.
- NSQF is a quality assurance framework. It is an outcome based approach and each level in the NSQF is defined and described in terms of competency levels that would need to be achieved.
- The National Skill Qualification Framework is composed of 10 levels, each represents a different level of competency level 1 represent the lowest competency and level 10 highest competency.

Do

- Show and explain, how a training certificate looks?
- Explain the need of a certificate.
- Explain the need of QP and NOS.
- Show the sample of QP and NOS.
- Describe the major features of a QP and NOS.
- Explain the QP and NOS used for Mason Concrete job role.
- Explain NSQF level descriptor.

Elaborate

- National skill qualification frame work - NSQF

Through the national policy on skill development 2009 India recognized the need for development of a national qualification framework. The national skill qualification framework NSQF came into being as per the Gazette Notification no 8/06/2013 dated 27th Dec 2013. NSQF is a quality assurance framework

It is an outcome based approach and each level in the NSQF is defined and described in terms of competency levels that would need to be achieved. The National Skill Qualification Framework is composed of 10 levels, each represents a different level of competency level 1 represent the lowest competency and level 10 highest competency. Competence means the proven ability to use acquire knowledge, skills and personal and social abilities in discharge of responsibility of a job role.

It is important to note that the NSQF levels are not directly related to years of study.

NSQF organizes qualifications according to a series of levels of knowledge, skills and aptitude. These levels are defined in terms of learning outcomes which the learner must possess regardless of whether they were acquired through formal, non-formal or informal learning.

Each level of NSQF described by a statement of learning outcomes in five domains known as level descriptors. These five domains are:

1. Process
2. Professional knowledge

3. Professional skill
4. Core skill
5. Responsibility

Notes for Facilitation

Use the content in participant handbook Unit 1.1, section 1.1.4 to explain purpose, benefits of training program.

UNIT 1.2: An Overview of Construction Sector

Unit Objectives

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

1. Explain about construction sector in India.
2. Differentiate between urban and rural construction.
3. Explain about modernization in construction.
4. List the major occupations in the construction sector.

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete Participant handbook.

Construction Sector Overview

Do

- Explain overview of construction sector.
- Explain modernization in construction sector.
- List the major occupations in the construction sector.

Elaborate

- Describe construction sector and its sub sector
- Explain an occupation. What are the occupations that are common in construction sector?

Notes for Facilitation

- Use the content in participant handbook Unit 1.2 to explain construction sector overview.
- Plan for a site/field visit to show the construction sector occupation for detail understanding.

UNIT 1.3: Mason Concrete as a Job Role

Unit Objectives

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

1. Introduction to concrete structure.
2. State roles and responsibilities of a mason concrete.
3. List the required personal and professional attributes for a mason concrete.

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete Participant handbook.

Construction Sector Overview

Do

- Explain the types of concrete structures.
- Enlist the duties of a Mason concrete.
- Enlist the personal attribute of Mason concrete.
- Explain the career path for Mason concrete.

Notes for Facilitation

- Use the content in participant handbook Unit 1.3 to explain job role of mason concrete.
- Plan for a site/field visit to show mason concrete work at construction site.

Roles, Responsibilities and Personal Attributes of Mason Concrete

Do

- List the roles and responsibilities of a mason concrete in detail.
- Correlate the roles and responsibilities of mason concrete.
- Explain the necessary personal attributes.

- List the personal attributes of a mason concrete in detail.
- Correlate the roles, responsibilities, and personal attributes of a mason concrete.
- Plan for a site/field visit to show role of a Mason Concrete.

Notes for Facilitation

- Use the content in participant handbook Unit 1.3, sections 1.3.1 and 1.3.2 to explain role, responsibilities, and personal attributes of mason concrete.

Career Progression Path and NSQF Level Descriptor

Do

- 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.
- Create awareness and belief in the group to encourage their present occupation.

Notes for Facilitation

- Use the content in participant handbook Unit 1.3, section 1.3.3 to explain the career progression path for a mason concrete.



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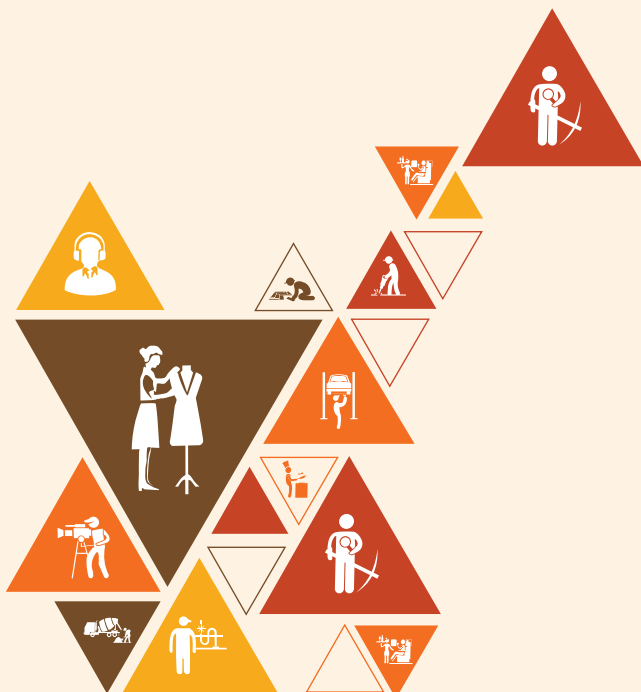


2. Core/ Generic Skills

Unit 2.1 - Numeracy Skills

Unit 2.2 - Systems of Measurements

Unit 2.3 - Calculating Area and Volume of Geometrical Shapes



(Bridge Module)

Key Learning Outcomes

By the end of this module, participants will be able to:

1. Understand the importance of clear communication.
2. Explain different methods of communication.
3. Communicate with others in an effective way.
4. Perform basic mathematical calculation.
5. Identify the different types of geometrical shapes.
6. Calculate the area and volume of a square, rectangle, cube and cylinder.
7. List the different types of systems of measurement.
8. Perform the conversion of measurements.
9. Read a measuring tape in imperial system.
10. Read a measuring tape in metric system

UNIT 2.1: Numeracy Skills

Unit Objectives

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

1. Perform basic mathematical calculation.
2. Identify the different types of shapes.
3. Calculate the perimeter of a square, rectangle, triangle and circle.

Topic Introduction

- Give the participants a brief overview of this unit
- Applications in various job environment

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete Participant handbook.

Practical

- Calculator, conversion charts

Numeracy Skills

Do

- Explain the basic mathematical calculation.

Notes for Facilitation

- Use the content in participant handbook Unit 2.2 to explain numeracy skills.
- Show and explain the calculation and provide calculator.

Mathematical Calculation

Activity - 1

Conduct a skill practice activity.

- Ask the participants to assemble at a designated place.
- 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	Skill Practice	Time	Resources
1	Convert the following 1. 100000 mm into _____mts, and 1000mts into _____mm. 2. 100 inches into _____ft. 3. 10000 sft into _____m ² 1m ³ into _____mm ³	2 hours	Stationary, Conversion charts, pen and paper
2	Solve the below 1. $300-200+100 \times 50-30/5$ = _____ 2. $100-20/3+15-150$ = _____ 3. $1.5-0.2/4+2.8-1500$ +15000 = _____	2 hours	

Table 2.1.1 Numeracy skills

Specific Instructions

- Make sure all the participants are having calculator and units chart.
- Explain the overall procedure to add, subtract, multiply and divide before commencing the exercise.
- Check and observe that all the conversions and formulas are 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 add, subtract, multiply and divide by giving a numerical value.

UNIT 2.2: Systems of Measurement

Unit Objectives

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

1. List the different types of systems of measurement.
2. Follow the conversion of measurements.
3. Read a measuring tape in imperial system.
4. Read a measuring tape in metric system.

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete Participant handbook.

Practical

- Tape measure, conversion charts

System of Measurement

Do

- Define system of measurement.
- List and explain the conversion of measurement.
- Explain the reading of tape in FPS system.
- Explain the reading of tape in Metric system.
- Explain the procedure to take measurement with metal and cloth tape.

Notes for Facilitation

- Use the content in participant handbook Unit 2.3 to explain the system of measurement.
- Show and explain the unit conversion chart.

Reading a Measuring Tape

Activity - 2

Conduct a skill practice activity.

- Ask the participants to assemble at a designated place.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.
- Distribute the practical activity format which includes task, duration allowed, specific instructions, method statements etc., under each activity of the book.
- Maximum duration mentioned in the below table is for extensive practice and corresponding guidance until the skill is acquired by the participants.

Sub Activity	Skill Practice	Time	Resources
1	Measure the size of the classroom in metric system by using a tape measure	4 hours	Pen, Paper, Calculator, Tape measure
2	Measure the size of the classroom in imperial system by using a tape measure	4 hours	

Table 2.2.1 Reading a Measuring Tape

Specific Instructions

- Make sure all the participants are having conversion chart and calculator.
- Explain the overall procedure to convert units before commencing the exercise.
- Check and observe that all the conversions are 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 convert by giving a numerical value.

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete Participant handbook..

Practical

- Calculator, conversion charts and tape measure.

Area & Volume of Geometrical Shapes

Do

- List and draw basic geometrical shapes.
- Explain the procedure to calculate perimeter, area and volume.
- Explain 3-4-5 method.

Notes for Facilitation

- Use the content in participant handbook Unit 2.4 to explain the calculation of area and volume.
- Show and explain the tools required for calculation.

Quantity Estimation

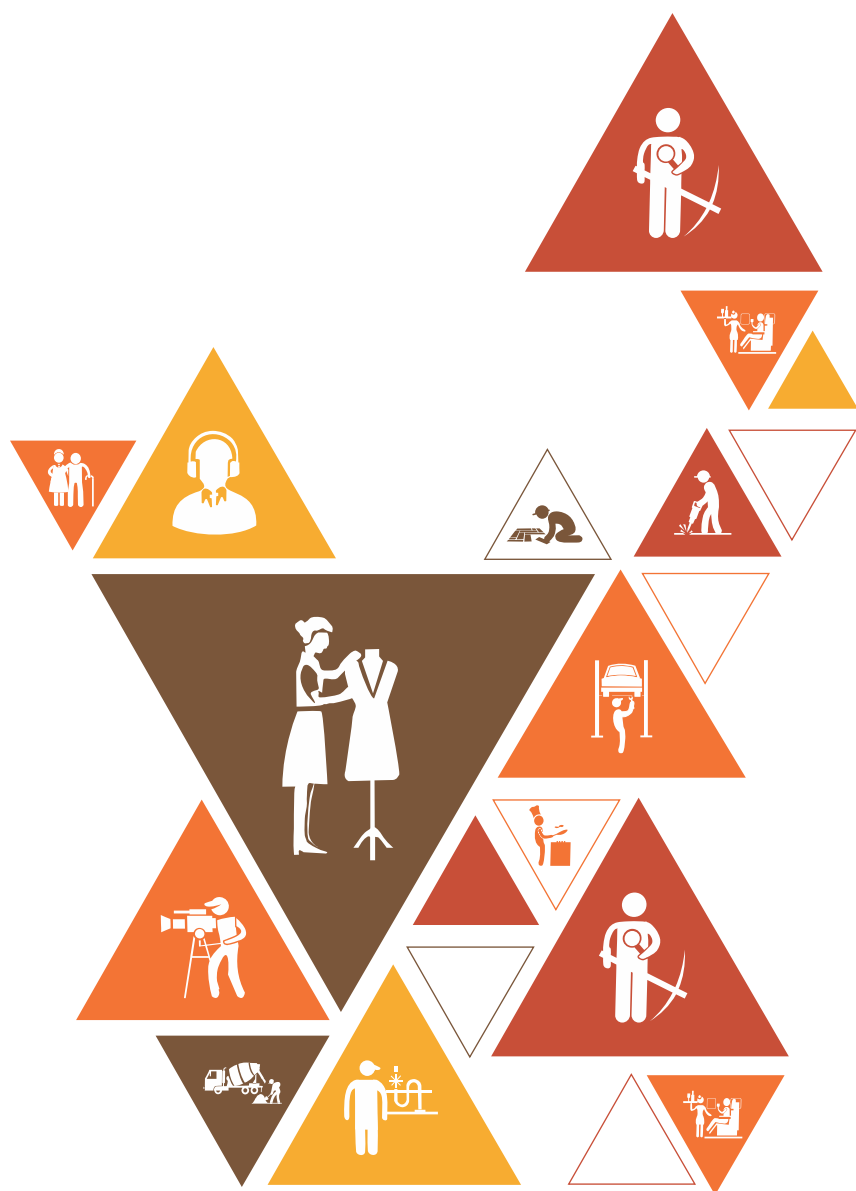
Activity - 2

General Instructions

- Conduct a group activity on identification of basic geometrical shapes.
- Ask the participants to assemble at a designated place.
- Explain the purpose and duration of the activity.
- Distribute the 'Practical Activity Format' which includes task, duration allowed, specific instructions, method statements, etc., under each activity of the book.
- Set guidelines pertaining to discipline and expected tasks.
- Ask each one of them to identify.

Sub Activity	Skill Practice	Time	Resources
1	Calculate the quantity of concrete is required for the below, use height/length as 3 mts 1. Column size 300 mm x 300 mm 2. Beam 300 mm x 600 mm 3. Slab 3000 mm x 5000 mm with 120 mm thickness	4 hours	Stationary, calculator, tape measure
2	Practice 3-4-5 method for squaring of comers of the classroom	8 hours	

Table 2.3.1 Quantity, 3-4-5 method





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3. Placing, Leveling and Finishing of Concrete in Various Structural

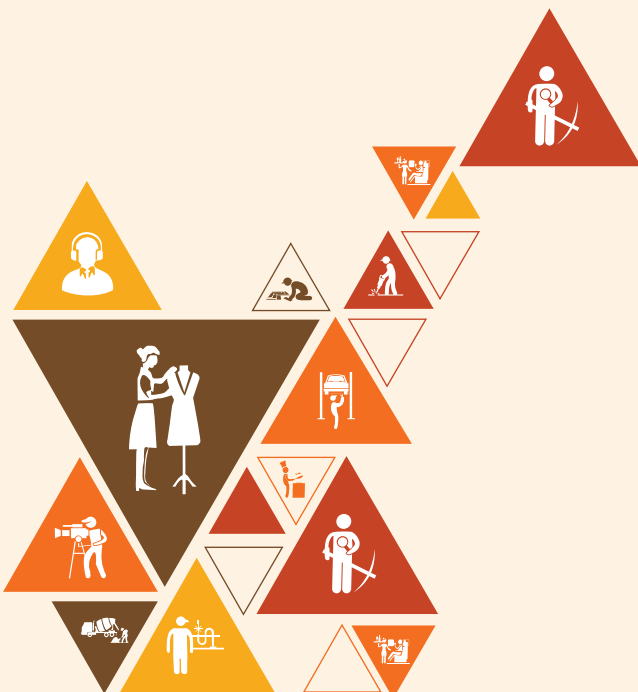
Unit 3.1 – Introduction to Concreting Work

Unit 3.2 - Tools and Equipment Used in Concreting Work

Unit 3.3 – Placing, leveling and finishing of concrete in various structural elements

Unit 3.4 – Concreting in Precast Segments

Unit 3.5 – Repair Works in Concrete



(CON/N0117)

Key Learning Outcomes



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

1. Explain concreting work.
2. Identify different hand and power tools used for concreting work.
3. Understand the application of different hand and power tools.
4. Have knowledge about concreting tools and equipment.
5. Identify the components of concrete and their attributes.
6. Understand use of cement and its attributes.
7. Explain various grades of concrete.
8. Understand the process of concrete mixing and proportioning.
9. Explain the process of Placing, leveling, compacting and finishing of concrete in various structural elements.
10. Know about Construction and expansion joints.
11. Know about concreting in precast segments.
12. Explain repairing work in concrete.

UNIT 3.1: Concreting Work and its Tools, Equipment and Materials in Concreting Work

Unit Objectives

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

1. Get brief overview about concreting work.
2. Define properties of Concrete.
3. Explain concrete and its composition.
4. Outline different types of cement and aggregates used in concreting.
5. Understand concreting operations.
6. Explain test performed on cement and concrete.

Concrete Work

Say

- Welcome and greet the participants.

Topic Introduction

- Give the participants a brief overview of this unit.
- Applications in various job environment

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete participant handbook.

Practical

- Resources such as concrete tools, materials and equipment, consumables and PPEs mentioned in the activity table given below.

Do 

- Define concrete.
- List the types of concrete
- List and explain the properties of concrete with composition.
- Explain aggregates with its types, physical properties and its effect on concrete.
- What are deleterious materials? Explain its effect on concrete.
- Explain the importance of sieving.
- Define cement. Explain its physical properties and test performed at site.
- List the grades of concrete.
- Mention and explain concrete mix proportions
- Explain the classification of tools based on its purpose
- List and explain the concreting hand and power tools.
- Explain the importance of good housekeeping and waste disposal
- Explain and demonstrate processes of curing.

Notes for Facilitation 

- Use the content in participant handbook Unit 3.1, topic 3.1.1 to explain concrete.
- Use the content in participant handbook Unit 3.1, topic 3.1.2 to explain properties of concrete.
- Use the content in participant handbook Unit 3.1, topic 3.1.3 to explain compositions in concrete.
- Use the content in participant handbook Unit 3.1, topic 3.1.4 to explain deleterious materials used in concrete.
- Use the content in participant handbook Unit 3.1, topic 3.1.5 to explain sieving of aggregates.
- Use the content in participant handbook Unit 3.1, topic 3.1.6 and 3.1.7 to explain cement, its properties and water.
- Use the content in participant handbook Unit 3.1, topic 3.1.8 to explain grades of concrete.
- Use the content in participant handbook Unit 3.1, topic 3.1.9 to explain hydration.
- Use the content in participant handbook Unit 3.1, topic 3.1.10 to explain mix proportions of concrete.
- Use the content in participant handbook Unit 3.1, topic 3.1.11 to explain concreting operation.
- Use the content in participant handbook Unit 3.1, topic 3.1.12 to explain various tests on fresh and hardened concrete.

- Use the content in participant handbook Unit 3.2, topic 3.2.1 to explain concreting tools and equipment.
- Use the content in participant handbook Unit 3.2, topic 3.2.1.1 and 3.2.1.2 to explain hand tools and power tools used in concreting.
- Use the content in participant handbook Unit 3.3 to explain importance of waste disposal and housekeeping at construction site.

Concrete Material

Activity - 1

General Instructions

- Conduct a group activity on identification of aggregates.
- Ask the participants to assemble at a designated place.
- Explain the purpose and duration of the activity.
- Distribute the 'Practical Activity Format' which includes task, duration allowed, specific instructions, method statements, etc., under each activity of the book.
- Set guidelines pertaining to discipline and expected tasks.

Sub Activity	Skill Practice	Time	Resources
1	<ul style="list-style-type: none"> • Identify the different sizes of coarse and fine aggregates using sieves 	4 hour	PPE, Natural Sand/Crushed stone sand, Gravel Stone, Coarse aggregates:80 mm down Sieve sizes 80mm, 63mm, 40mm, 20mm, 16mm, 12.5mm, 10mm, 4.75mm, 2.36mm Fine aggregates: 4.75 mm down Sieve sizes 10mm, 4.75mm, 2.36mm, 1.18mm, 600 Micron, 300 Micron, 150 Micron

Table 3.1.1 Sieve analysis

Specific Instructions

- Show the aggregates and ask the participants to identify and explain their uses
- Assist them by giving hints to remember the aggregates, for example sand is in powder form.
- Similarly, explain the other aggregates by giving relevant hints to identify and remember the same.

- Assess the level of understanding and change the instruction flow.
- Complete this activity in scheduled time, keep the discussion within the topic.
- Entertain doubts related to the topic only.
- Ask them to write the aggregates, and name them correctly at the end of the session.
- Explain the various types of admixtures that are used for improving various properties of concrete.

Field Tests of Cement

Activity - 2

General Instructions

- Ask the participants to assemble at a designated place.
- Explain the purpose and duration of the activity.
- Distribute the 'Practical Activity Format' which includes task, duration allowed, specific instructions, method statements, etc., under each activity of the book.
- 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	Skill Practice	Time	Resources
1	Carryout field tests of cement : Color, Rubbing, Hand insertion, Float test, Smell test, Presence of Lumps, Shape test	4 hours	PPE, Cement, Water Cement bags, Wooden planks, Polyethylene sheet
2	Ensure cement bags are stacked at site in a proper manner	1 hour	
3	Identify different types of cement and its grade	1 hour	

Table 3.1.2 Field tests on cement

Specific Instructions

- Make sure all the participants are wearing proper PPEs.
- Explain the overall procedure of storing cement bag before commencing the exercise.
- Check & observe that all the steps are 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 process of storing cement bags.

Concrete Mix

Activity - 3

General Instructions

- Ask the participants to assemble at a designated place.
- Explain the purpose and duration of the activity.
- Distribute the 'Practical Activity Format' which includes task, duration allowed, specific instructions, method statements, etc., under each activity of the book.
- 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	Skill Practice	Time	Resources
1	Monitor manual preparation of nominal mix of concrete ratio 1:4:8 and 1:1.5:3 use weigh balance method	8 hours	PPE, Concrete tools, Concrete equipment, Concrete Materials

Table 3.1.3 Concrete Mix

Specific Instructions

- Allot one helper to each participant and ask the participant to give instructions to prepare 1:4:8 and 1:1.5:3 nominal mix concrete.
- Ask the participants to ensure that the concrete mix proportion is 1:4:8 and 1:1.5:3.
- Assess the level of understanding and change the instruction flow.
- Complete this activity in scheduled time, keep the discussion within the topic.
- Entertain doubts related to the topic only.
- Ask them to write any 3 nominal mix ratios, and mention their significance.

UNIT 3.2: Tools and Equipment Used in Concreting

Unit Objectives

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

1. List out different concreting hand and power tools
2. Identify different concreting hand and power tools
3. Understand application of different concreting hand and power tools.
4. Store concreting tools and equipment in correct way.

Say

- Welcome and greet the participants

Topic Introduction -

- Give the participants a brief overview of this unit.
- Applications and Uses of hand and power tools.

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete participant handbook.

Practical

- Resources such as concrete tools, materials and equipment, consumables and PPEs mentioned in the activity table given below.

Do

- Explain the classification of tools based on its purpose
- List and explain the concreting hand and power tools.

Notes for Facilitation

- Use the content in participant handbook Unit 3.2, topic 3.2.1 to explain concreting tools and equipment.
- Use the content in participant handbook Unit 3.2, topic 3.2.1.1 and 3.2.1.2 to explain hand tools and power tools used in concreting.

Hand and Power Tools for Concrete Work

Activity - 1

General Instructions

- Conduct a group activity on identification of concrete tools and equipment.
- Ask the participants to assemble at a designated place.
- Explain the purpose and duration of the activity.
- Distribute the ‘Practical Activity Format’ which includes task, duration allowed, specific instructions, method statements, etc., under each activity of the book.
- Set guidelines pertaining to discipline and expected tasks.
- Ask each one of them to identify.

Sub Activity	Skill Practice	Time	Resources
1	Identify concrete hand tools	3 hours	PPE, Square Mouth Shovel, Wheel Barrow, Trowel, Pointing trowel, Finishing Trowel, Step trowel/edging trowel,
	Identify concrete power tools and equipment	5 hours	Concrete Float, Tamper, Bull Float, Groover, Moil (point)chisel, Plugging chisel, Screed board or straightedges, Squares, Spirit level, Plumb Bob, Batching Plant, Transit Mixer, Concrete Pump, Needle Vibrator, Double beam screed vibrator, Vacuum de-watering Pump, Floater machine, Concrete Saw

Table 3.2.1 Hand and power tools

Specific Instructions

- Show the grade ask the participants to identify and explain concrete tools and equipment.
- Assess the level of understanding and change the instruction flow.

- Complete this activity in scheduled time, keep the discussion within the topic.
- Entertain doubts related to the topic only.
- Ask them to write 5 different concrete tools and equipment, and explain their uses.

UNIT 3.3: Placing, levelling and finishing of concrete in various structural elements

Unit Objectives

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

1. Explain the different stages of reinforced cement concrete column construction (Formwork, Reinforcing Bar, Pouring, Finishing, Curing etc.).
2. Understand concreting procedures for reinforced cement concrete column.
3. Explain the different stages of Reinforced Cement Concrete Beam construction (Formwork, Reinforcing Bar, Pouring, Finishing, Curing etc.).
4. Understand concreting procedures for reinforced cement concrete beam.

RCC Foundation

Say

- Welcome and greet the participants.

Topic Introduction -

- Give the participants a brief overview of this unit.

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete Participant handbook.

Practical

- Resources such as concrete tools, materials and equipment, consumables and PPEs mentioned in the activity table given below.

Do

- Explain the type of concrete foundation.
- Explain the casting procedure for reinforced cement concrete foundation.
- Explain points to remember while casting reinforced cement concrete foundation.

- Explain the importance of good housekeeping and waste disposal.
- Define the different types of concrete defects and their cause.
- Explain the repair works done to the structure after de-shuttering.

Notes for Facilitation

- Use the content in participant handbook Unit 3.3, topic 3.3.3.3 to explain stages of work in RCC foundation.
- Use the content in participant handbook Unit 3.3, topic 3.3.4 to explain points to remember while casting reinforced cement concrete foundation.
- Use the content in participant handbook Unit 3.3 to explain importance of waste disposal and housekeeping at construction site.
- Use the content in participant handbook Unit 3.5, topic 3.5.1 to explain defects in concrete.
- Use the content in participant handbook Unit 3.5, topic 3.5.2 to explain repairing concrete defects.

Reinforced Cement Concrete Foundation

Activity - 1

Conduct a skill practice activity.

- Ask the participants to assemble at a designated place to prepare RCC foundation of a raft of dimension (2000x3000x500) mm.
- Reinforcement and shuttering works are completed in this task before mason concrete skill has to be applied.
- Explain the purpose and duration of the activity.
- Distribute the 'Practical Activity Format' which includes task, duration allowed, specific instructions, method statements, etc., under each activity of the book.
- 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	Skill Practice	Time	Resources
Concreting			
1	Carryout preliminary checks on materials and tools for quality and workability	2 hours	Measuring tape/rule, vibrator, shovels, rakes, screeding, board, tamping tools(hand,

2	Run checks on formwork and reinforcement before concreting	2 hours	rolling,etc.), large floating, device like bull, float, hammer, brick chisel, stone chisel, comb chisel, bolster, masonry hand saw, steel trowel, float(wooden/metal), straight edge(aluminium), wood/rubber mallet, spade, mortar pan, corner trowel, pointer trowel, tuck pointing, trowel, line and pins, screed board, jointers, steel lever, plumb bob, line string (line dori), try square, spirit level, measuring tape, steel or wooden scale, tapered rule, gauge box, plate, compactor, concrete vibrator, grouting machine(manual), dewatering machine(vdf), groove cutting machine, cement, sand, plasticizers, common burnt clay brick (2nd class), coarse, aggregates, rubble stone, (natural stone), water proofing compound with primer, glass stiff, scaffold set (includ- ing all components), lifting, appli- ances,(wheel and rope, shackles, sling, belts), wheel barrows, wooden sleepers, rhombus, mesh, expanded metal mesh, mixing platform (3'x5'), red oxide, helmet, face shield, safety goggles, safety shoes, safety belt ear defenders, particle masks, overalls knee pad , reflective jackets, pencil
3	Run checks on formwork and reinforcement before concreting	2 hours	
4	Compact the concrete with vibrator	3 hours	
5	Level and finish the surface with hand tools	4 hours	
Post Concreting			
6	Ensure moist and membrane curing of the surface is carried out as per standards	1 hour	
7	Carryout repairing works (if any)	1 hour	
8	Ensure standard housekeeping practices are adopted as per EHS guidelines	1 hour	

Table 3.3.1 RCC Foundation

Specific Instructions

- Make sure all the participants are wearing PPE before the practice.
- Explain the overall procedure of the stages of RCC foundation before commencing the exercise
- Check and observe that all the participants are following the steps accordingly with required tools and equipment.
- 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 stages of RCC foundation.

RCC Column

Do

- Explain the casting procedure of reinforced cement concrete column.
- Explain the importance of good housekeeping and waste disposal.
- Explain points to remember while performing concreting operations.
- Define the different types of concrete defects and their cause.
- Explain the repair works done to the structure after de-shuttering

Notes for Facilitation

- Use the content in participant handbook Unit 3.3, topic 3.3.3.1 to explain stages of work in RCC Column.
- Use the content in participant handbook Unit 3.3, topic 3.3.4 to explain points to remember while casting RCC member.
- Use the content in participant handbook Unit 3.3 to explain importance of waste disposal and housekeeping at construction site

RCC Column

Activity - 2

Conduct a skill practice activity.

- Ask the participants to assemble at a designated place to prepare RCC column for 300mmx450mm for a height of 3000 mm.
- Explain the purpose and duration of the activity.
- Distribute the 'Practical Activity Format' which includes task, duration allowed, specific instructions, method statements, etc., under each activity of the book.
- 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	Skill Practice	Time	Resources
Concreting			Measuring tape/rule, vibrator, shovels, rakes, screeding, board, tamping tools(hand, rolling,etc.), large floating, device like bull, float, hammer, brick chisel, stone chisel, comb chisel, bolster, masonry hand saw, steel trowel, float(wooden/metal), straight edge(aluminium), wood/rubber mallet, spade, mortar pan, corner trowel, pointer trowel, tuck pointing, trowel, line and pins, screed board, jointers, steel lever, plumb bob, line string (line dori), try square, spirit level, measuring tape, steel or wooden scale, tapered rule, gauge box, plate, compactor, concrete vibrator, grouting machine(manual), dewatering machine(vdf), groove cutting machine, cement, sand, plasticizers,
1	Carryout preliminary checks on materials and tools for quality and workability	2 hours	
2	Run checks on formwork and reinforcement before concreting	2 hours	
3	Pour concrete manually or by machine	3 hours	
4	Compact the concrete by using a vibrator	3 hours	
5	Level and finish the surface by using hand tools	5 hours	

Post Concreting			common burnt clay brick (2nd class), coarse, aggregate, rubble stone, (natural stone), water proofing compound with primer, glass stiff, scaffold set (including all components), lifting, appliances, (wheel and rope, shackles, sling, belts), wheel barrows, wooden sleepers, rhombus, mesh, expanded metal mesh, mixing platform (3'x5'), red oxide, helmet, face shield, safety goggles, safety shoes, safety belt ear defenders, particle masks, overalls knee pad, reflective jackets, pencil
6	Ensure moist and membrane curing of the surface is carried out	3 hours	
7	Carryout repairing works (if any)	2 hours	
8	Ensure that standard housekeeping practices are followed	2 hours	

Table 3.3.2 RCC Column

Specific Instructions

- Make sure all the participants are wearing PPE before the practice.
- Explain the overall procedure of the stages of RCC column before commencing the exercise.
- Check and observe that all the participants are following the steps accordingly with required tools and equipment.
- 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 stages of RCC column.

RCC Beam

Do

- Explain the different stages involved in casting of reinforced cement concrete beam.
- Explain points to remember while performing concreting operations.
- Define the different types of concrete defects and their cause.
- Explain the repair works done to the structure after de-shuttering

Notes for Facilitation

- Use the content in participant handbook Unit 3.3, topic 3.3.3.4 to explain stages of work in RCC beam.
- Use the content in participant handbook Unit 3.3, topic 3.3.4 to explain points to remember while casting RCC member.

- Use the content in participant handbook Unit 3.3 to explain importance of waste disposal and housekeeping at construction site.
- Use the content in participant handbook Unit 3.5, topic 3.5.1 to explain defects in concrete.
- Use the content in participant handbook Unit 3.5, topic 3.5.2 to explain repairing concrete defects.

RCC Column

Activity - 3

Conduct a skill practice activity.

- Ask the participants to assemble at a designated place to prepare RCC beam for 300 mm x 600 mm for a length of 3000 mm.
- Explain the purpose and duration of the activity.
- Distribute the 'Practical Activity Format' which includes task, duration allowed, specific instructions, method statements, etc., under each activity of the book.
- 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 Activityt	Skill Practice	Time	Resources
Concreting			Measuring tape/rule, vibrator, shovels, rakes, screeding, board, tamping tools(hand, rolling,etc.), large floating, device like bull, float, hammer, brick chisel, stone chisel, comb chisel, bolster, masonry hand saw, steel trowel, float(wooden/metal), straight edge(aluminium), wood/rubber mallet, spade, mortar pan, corner trowel, pointer trowel, tuck pointing, trowel, line and pins, screed board, jointers, steel lever, plumb bob, line string (line dori), try square, spirit level, measuring tape, steel or wooden scale, tapered rule, gauge box, plate, compactor, concrete vibrator, grouting machine(manual), dewatering machine(vdf), groove cutting machine, cement, sand, plasticizers, common burnt clay brick (2nd class), coarse, aggre- gates,
1	Carryout preliminary checks on materials and tools for quality and workability	2 hours	
2	Run checks on formwork and reinforcement before concreting	2 hours	
3	Pour concrete manually or by machine	3 hours	
4	Compact the concrete by using a vibrator	3 hours	
5	Level and finish the surface by hand tools	5 hours	
Post Concreting			

6	Ensure moist and membrane curing of the surface is carried out	3 hours	rubble stone, (natural stone), water proofing compound with primer, glass stiff, scaffold set (including all components), lifting, appliances,(wheel and rope, shackles, sling, belts), wheel barrows, wooden sleepers, rhombus, mesh, expanded metal mesh, mixing platform (3'x5'), red oxide, helmet, face shield, safety goggles, safety shoes, safety belt ear defenders, particle masks, overalls knee pad , reflective jackets, pencil
7	Carryout repairing works (if any)	2 hours	
8	Ensure that standard housekeeping practices are followed	2 hours	

Table 3.3.3 RCC Beam

Specific Instructions

- Make sure all the participants are wearing PPE before the practice
- Explain the overall procedure of the stages of RCC beam before commencing the exercise
- Check and observe that all the participants are following the steps accordingly with required tools and equipment.
- 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 stages of RCC beam.

UNIT 3.4 : Concreting in Precast Segments

Unit Objectives

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

1. Explain the different stages of reinforced cement concrete slab construction (Formwork, Reinforcing Bar, Pouring, Finishing, Curing etc.).
2. Understand concreting procedures for reinforced cement concrete slab.
3. Explain precast segments, their use and benefits.
4. Define different types of precast structures and their application.
5. Enlist materials and explain the steps involved in precasting of concrete structures.

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete participant handbook.

Practical

- Resources such as concrete tools, materials and equipment, consumables and PPEs mentioned in the activity table given below.

RCC Beam

Do

- Explain the different stages in casting of Reinforced Cement Concrete slab.
- Explain points to remember while performing concreting operations.
- Explain the importance of good housekeeping and waste disposal.
- Define the different types of concrete defects and their cause.
- Explain the repair works done to the structure after de-shuttering

Notes for Facilitation

- Use the content in participant handbook Unit 3.3, topic 3.3.3.4 to explain stages of work in RCC slab.

- Use the content in participant handbook Unit 3.3, topic 3.3.4 to explain points to remember while casting RCC member.
- Use the content in participant handbook Unit 3.3 to explain importance of waste disposal and housekeeping at construction site.
- Use the content in participant handbook Unit 3.5, topic 3.5.1 to explain defects in concrete.
- Use the content in participant handbook Unit 3.5, topic 3.5.2 to explain repairing concrete defects.

RCC Column

Activity - 1



Conduct a skill practice activity.

- Ask the participants to assemble at a designated place to prepare RCC slab for 2000 mm x 3000 mm and a thickness of 120 mm.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.
- Distribute the 'Practical Activity Format' which includes task, duration allowed, specific instructions, method statements, etc., under each activity of the book.
- Maximum duration mentioned in the below table is for extensive practice and corresponding guidance until the skill is acquired by the participants

Sub Activity	Skill Practice	Time	Resources
Concreting			Measuring tape/rule, vibrator, shovels, rakes, screeding, board, tamping tools(hand, rolling, etc.), large floating, device like bull, float, hammer, brick chisel, stone chisel, comb chisel, bolster, masonry hand saw, steel trowel, float(wooden/metal), straight edge(aluminium), wood/rubber mallet, spade, mortar pan, corner trowel, pointer trowel, tuck pointing, trowel, line and pins, screed board, jointers, steel lever, plumb bob, line string (line dori), try square, spirit level, measuring tape, steel or wooden scale, tapered rule, gauge box, plate, compactor, concrete vibrator, grouting machine(manual), dewatering machine(vdf), groove cutting machine, cement, sand, plasticizers, common burnt clay brick (2nd class), coarse, aggregate, rubble stone, (natural stone), water proofing compound with primer, glass stiff, scaffold set (including all components), lifting, appliances, (wheel and rope, shackles, sling, belts), wheel barrows, wooden sleepers, rhombus, mesh, expanded metal mesh, mixing platform (3'x5'),
1	Carryout preliminary checks on materials and tools required for quality and workability	3 hours	
2	Run checks on formwork and reinforcement before concreting	2 hours	
3	Pour concrete manually or by machine	3 hours	
4	Compact the concrete by using a vibrator	5 hours	

5	Level and finish the surface by hand tools	6 hours	
Post Concreting			
6	Ensure moist and membrane curing of the surface is carried out	3 hours	
7	Carryout repairing works (if any)	3 hours	
8	Ensure that standard housekeeping practices are followed	2 hours	red oxide, helmet, face shield, safety goggles, safety shoes, safety belt ear defenders, particle masks, overalls knee pad , reflective jackets, pencil

Table 3.4.1 RCC slab

Specific Instructions

- Make sure all the participants are wearing PPE before the practice
- Explain the overall procedure of the stages of RCC slab before commencing the exercise
- Check and observe that all the participants are following the steps accordingly with required tools and equipment.
- 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 stages of RCC slab.

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete participant handbook.

Practical

- Resources such as concrete tools, materials and equipment, consumables and PPEs mentioned in the activity table given below.

Precast Segments

Do

- Explain precast segments, their use and benefits.
- Define different types of precast structures and their application.
- List the materials involved in precasting of concrete structures.
- Explain the steps involved in precasting of beam, column, slab etc.
- Explain the points to remember while performing precasting operations.

Notes for Facilitation

- Use the content in participant handbook Unit 3.4, topic 3.4.1 to explain precast segments.
- Use the content in participant handbook Unit 3.4, section 3.4.2 to explain materials for making precast concrete segments.
- Use the content in participant handbook Unit 3.4, section 3.4.3 to explain process in making precast segments.

Precast Segment Concreting Work

Activity - 2

Conduct a skill practice activity.

- Ask the participants to assemble at a designated place to prepare a precast beam of cross sectional area of 400x1000mm and a length of 3000 mm.
- Explain the purpose and duration of the activity.
- Distribute the practical activity format which includes task, duration allowed, specific instructions, method statements etc., under each activity of the book.
- 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	Skill Practice	Time	Resources
Concreting			Measuring tape/rule, vibrator, shovels, rakes, screeding, board, tamping tools(hand, rolling,etc.), large floating, device like bull, float, hammer, brick chisel, stone chisel, comb chisel, bolster, masonry hand saw, steel trowel, float(wooden/metal), straight edge(aluminium), wood/rubber mallet, spade, mortar pan, corner
1	Carryout preliminary checks on materials and tools for quality and workability	2 hours	
2	Run checks on formwork and reinforcement before concreting	2 hours	

3	Pour concrete manually or by machine	2 hours	trowel, pointer trowel, tuck pointing, trowel, line and pins, screed board, jointers, steel lever, plumb bob, line string (line dori), try square, spirit level, measuring tape, steel or wooden scale, tapered rule, gauge box, plate, compactor, concrete vibrator, grouting machine (manual), dewatering machine (vdf), groove cutting machine, cement, sand, plasticizers, common burnt clay brick (2nd class), coarse, aggregate, rubble stone, (natural stone), water proofing compound with primer, glass stiff, scaffold set (including all components), lifting, appliances, (wheel and rope, shackles, sling, belts), wheel barrows, wooden sleepers, rhombus, mesh, expanded metal mesh, mixing platform (3'x5'), red oxide, helmet, face shield, safety goggles, safety shoes, safety belt ear defenders, particle masks, overalls knee pad, reflective jackets, pencil
4	Compact the concrete by using a vibrator	3 hours	
5	Level and finish the surface by hand tools	5 hours	
Post Concreting			
6	Ensure moist and membrane curing of the surface is carried out	1 hour	
7	Carry out repairing works (if any)	1 hour	
8	Ensure that standard housekeeping practices are followed	1 hour	

Table 3.4.2 Precast beam

Specific Instructions

- Make sure all the participants are wearing PPE before the practice.
- Explain the overall procedure of the stages of precast beam before commencing the exercise.
- Check and observe that all the participants are following the steps accordingly with required tools and equipment.
- 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 stages of casting the precast beam.

UNIT 3.5: Repair Works in Concrete

Unit Objectives

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

1. Define the different types of concrete defects and their cause.
2. Define the Materials and tools involved in repairing of concrete defects.
3. Define the process involved in repairing concrete defects.

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete participant handbook.

Concrete Repair Works

Do

- List the various types of defects that occur to concrete structures.
- Explain the repair works that are carried out to repair concrete structures.

Notes for Facilitation

- Use the content in participant handbook Unit 3.5, topic 3.5.1 to explain various defects of concrete structures.
- Use the content in participant handbook Unit 3.5, topic 3.5.2 to explain repairing defects of concrete structures.



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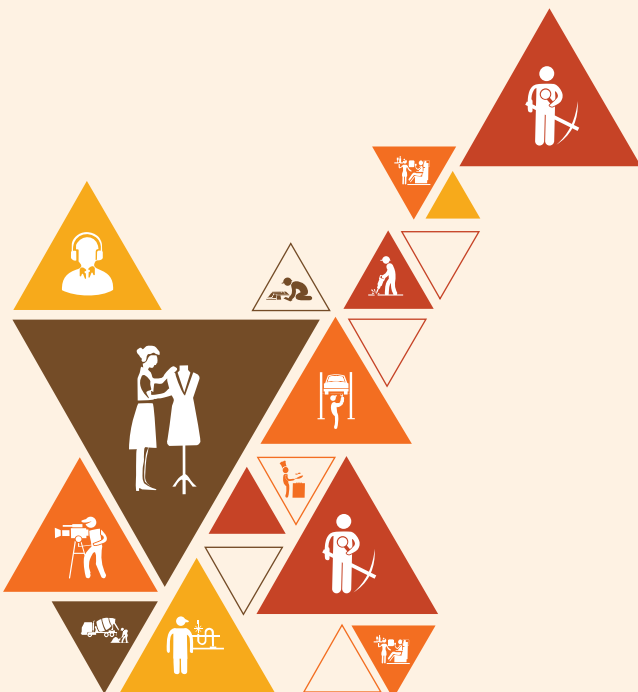


4. Carry out IPS/ Tremix Flooring

Unit 4.1 – Cement Concrete Flooring

Unit 4.2 – IPS Flooring

Unit 5.2 – Tremix Flooring



(CON/NO114)

Key Learning Outcomes

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

1. Explain about IPS flooring and Tremix flooring.
2. Identify the Tools and Materials required for IPS and Tremix flooring.
3. Understand the use of machines used in IPS and Tremix flooring.
4. Understand the IPS and Tremix flooring methodology.
5. Understand the process involved in preparing the sub base and base.
6. Explain use of reinforcement as per requirement.
7. Understand the correct pouring process.
8. Carryout various processes such as:
 - Screeding
 - Compacting
 - Troweling
 - De-watering
9. Identify the finishes used in Tremix flooring.
10. Understand the de-watering process used in Tremix flooring.
11. Outline the benefits of vacuum de-watering.

UNIT 4.1: IPS Flooring

Unit Objectives

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

1. Explain cement concrete flooring.

Topic Introduction

- Give the participants a brief overview of this unit.
- Applications in various job environment

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete participant handbook.

Practical

- Resources such as concrete tools, materials and equipment, consumables and PPEs mentioned in the activity table given below.

Cement Concrete Flooring

Do

- Explain cement concrete flooring and its types.

Notes for Facilitation

- Use the content in participant handbook Unit 4.1, topic 4.1.1 to explain cement concrete flooring.
- Use the content in participant handbook Unit 4.1, section 4.1.2 to explain preparation of sub base for concrete flooring

UNIT 4.2: IPS Flooring

Unit Objectives

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

1. Understand use and benefits of IPS Flooring.
2. Explain the procedures involved in IPS flooring.
3. Explain about the Hand tools and Power tools required for IPS flooring.

Topic Introduction

- Give the participants a brief overview of this unit.
- Applications in various job environment

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete participant handbook.

Practical

- Resources such as concrete tools, materials and equipment, consumables and PPEs mentioned in the activity table given below.

Do

- Explain IPS flooring.
- Explain preparation of sub base and base course for IPS flooring.
- Explain IPS flooring methodology.
- List the advantages of IPS flooring.

Notes for Facilitation

- Use the content in participant handbook Unit 4.2, section 4.2.1 to explain IPS flooring.

- Use the content in participant handbook Unit 4.2, section 4.1.2 to explain preparation of sub base for IPS flooring
- Use the content in participant handbook Unit 4.2, section 4.2.3 to explain flooring methodology.
- Use the content in participant handbook Unit 4.2, section 4.2.3 to explain flooring methodology.
- Use the content in participant handbook Unit 4.2, section 4.2.4 to explain advantages of IPS flooring.

IPS Flooring

Activity - 1



Conduct a skill practice activity.

- Ask the participants to assemble at a designated place to carry process of IPS flooring for an area of 2000mm x 3000mm.
- Formwork and reinforcement are placed as per proposed instructions.
- Explain the purpose and duration of the activity.
- Distribute the practical activity format which includes task, duration allowed, specific instructions, method statements etc., under each activity of the book.
- 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	Skill Practice	Time	Resources
Concreting			
1	Carryout preliminary checks on materials and tools for quality and workability	4 hours	Hammer, brick chisel, stone chisel, comb chisel, bolster, masonry hand saw, steel trowel, float wooden/metal, straight edge(aluminium), wood/rubber, mallet, spade(phawda), mortar pan, (ghamela), corner trowel, pointer trowel, tuck pointing trowel, line and pins, screed board, jointers, steel lever,
2	Ensure that sub base and base course are prepared as per standards	5 hours	
3	Mark and transfer levels to all floor locations using appropriate tools	4 hours	
4	Mark the thickness of floor	1 hour	
5	Fix glass and aluminium strips over base concrete with their top at proper levels and as per required slope	5 hours	plumb bob, line string (line dori), try square, spirit level, measuring tape, steel or wooden scale, tapered rule, gauge box, plate compactor, concrete vibrator, grouting machine (manual), dewatering machine (vdf), groove cutting machine,
6	Provide dummy dots to maintain required level of flooring	2 hours	

7	Pour concrete mix manually or by machine	4 hours	cement, sand (medium), plasticizers common burnt clay brick (2nd class), coarse aggregates, rubble stone (natural stone), water proofing compound with primer, glass stiff, scaffold set (including all components) lifting appliances (wheel and rope, shackles, sling, belts), wheel barrows, wooden sleepers, rhombus mesh, expanded metal mesh, mixing platform (3'x5'), red oxide, helmet, face shield, safety goggles, safety shoes, safety belt, ear defenders, particle masks, overalls knee pad, reflective jackets, pencil
8	Compact the concrete mix with vibrator	3 hours	
9	Level and finish the surface with hand tools	5 hours	
Post Concreting			
10	Ensure moist and membrane curing of the surface is carried out	3 hours	
11	Repairing the defects (if any)	2 hours	
12	Ensure that standard housekeeping practices are followed	2 hours	

Table 4.2.1 IPS flooring

Specific Instructions

- Make sure all the participants are wearing proper PPEs.
- Explain the overall procedure of IPS Flooring before commencing the exercise
- Check and observe that all the steps are 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 sequence of steps involved in IPS flooring.

UNIT 4.3: Tremix Flooring

Unit Objectives

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

1. Explain about Tremix Flooring and its benefits.
2. Explain about procedures involved in Tremix flooring
3. List out hand and power tools required for Tremix flooring

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete participant handbook.

Practical

- Resources such as concrete tools, materials and equipment, Consumables and PPEs mentioned in the activity table given below.

Tremix Flooring

Do

- What is Tremix flooring?
- Explain Tremix flooring Methodology.
- List and explain the tools and materials required for flooring.
- Explain forming and concrete mix for topping.
- Explain vacuum de-watering and troweling/ floating.
- List the advantages of Tremix flooring.

Notes for Facilitation

- Use the content in participant handbook Unit 4.3, topic 4.3.1 to explain Tremix flooring.
- Use the content in participant handbook Unit 4.3, topic 4.3.2 to explain Tremix flooring methodology.

- Use the content in participant handbook Unit 4.3, topic 4.3.3 to explain tools and materials required.
- Use the content in participant handbook Unit 4.3, topic 4.3.4 to explain preparation of sub base and base course for Tremix concrete flooring
- Use the content in participant handbook Unit 4.3, sections 4.3.5, 4.3.6 to explain forming and concrete mix for topping.
- Use the content in participant handbook Unit 4.3, sections 4.3.7, 4.3.8 to explain vacuum de-watering, troweling/floating.
- Use the content in participant handbook Unit 4.3, section 4.3.9 to explain advantages of Tremix flooring.

Tremix Flooring

Activity - 1

Conduct a skill practice activity.

- Ask the participants to assemble at a designated place to carry out the sequence of steps in Tremix flooring for an area of 2000mm x 3000mm.
- Formwork and reinforcement are placed as per proposed instructions.
- Explain the purpose and duration of the activity.
- Distribute the practical activity format which includes task, duration allowed, specific instructions, method statements etc., under each activity of the book.
- 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	Skill Practice	Time	Resources
Concreting			Hammer, brick chisel, stone chisel, comb chisel, bolster, masonry hand saw, steel trowel, float wooden/ metal), straight edge(aluminium), wood/rubber, mallet, spade(phawda), mortar pan, (ghamela), corner trowel, pointer trowel, tuck pointing, trowel, line and pins, screed board, jointers, steel lever, plumb bob, line string (line dori), try square, spirit level,
1	Carryout preliminary checks on materials and tools required for quality and workability	4 hours	
2	Lay the sub base (stone and boulder soling) and base course(PCC) are prepared as per standards	5 hours	
3	Run checks on formwork and reinforcement before concreting	3 hours	
4	Pour concrete mix manually or by machine	3 hours	
5	Vibrate and level the poured concrete by double beam vibrator	3 hours	

6	Remove excess water from concrete using vacuum dewatering treatment	2 hours	measuring tape, steel or wooden scale, tapered rule, gauge box, plate compactor, concrete vibrator, grouting machine (manual), dewatering machine (vdf), groove cutting machine, cement, sand (medium), plasticizers common burnt clay brick (2nd class), coarse aggregates, rubble stone (natural stone), water proofing compound with primer, glass stiff, scaffold set (including all components) lifting appliances (wheel and rope, shackles, sling, belts), wheel barrows, wooden sleepers, rhombus mesh, expanded metal mesh, mixing plat form (3'x5'), red oxide, helmet, face shield, safety goggles, safety shoes, safety belt, ear defenders, particle masks, overalls knee pad, reflective jackets, pencil
7	Sprinkle hardener as per requirement/specifications	2 hours	
8	Float the surface using hand and power tools	3 hours	
9	Trowel the surface hand and power tools	3 hours	
Post Concreting			
10	Ensure moist and membrane curing of the surface is carried out	1 hour	
11	Provide the joint with groove cutting machine	4 hours	
12	Fill the joints	2 hours	
13	Repair the defects (if any)	3 hours	
14	Ensure that standard housekeeping practices are followed	2 hours	

Table 4.3.1 Tremix flooring

Specific Instructions

- Make sure all the participants are wearing proper PPEs.
- Explain the overall procedure of Tremix Flooring before commencing the exercise.
- Check and observe that all the steps are 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 sequence of steps involved in Tremix flooring.



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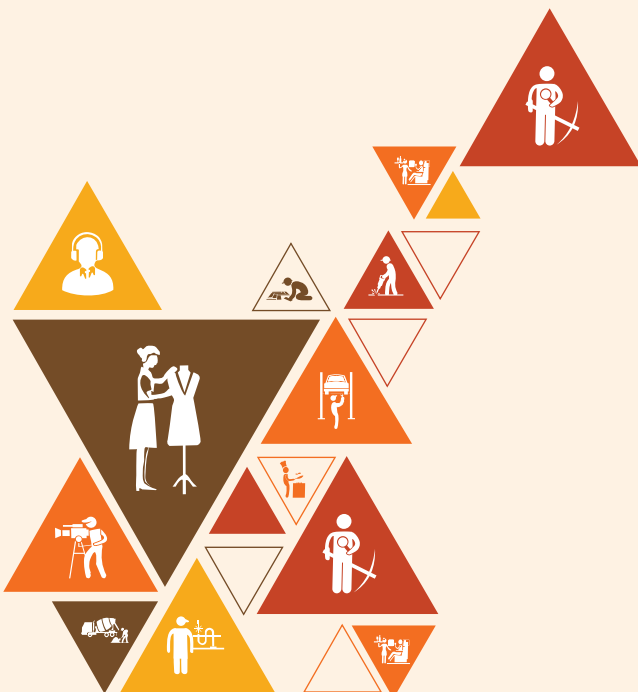
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5. Work Effectively in a Team to Deliver Desired Results at the Workplace

Unit 5.1 – Communication at Work Place

Unit 5.2 – Team work



(CON/N8001)

Key Learning Outcomes



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

1. Understand the benefits of reporting issues to seniors.
2. List out important issues that need immediate reporting.
3. Understand the importance of communication relevant information with the team.
4. Outline benefits of communicating information with the team members.
5. Understand the importance team work.
6. Explain benefits of working in a team.

UNIT 5.1: Communication at Work Place

Unit Objectives

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

1. Understand the benefits of reporting issues to seniors.
2. Explain important issues that need immediate reporting.
3. Understand the importance of communication relevant information with the team.
4. Benefits of communicating information with the team members.

Reporting Issue to Supervisor

Say

- Welcome and greet the participants.

Topic Introduction -

- Give the participants a brief overview of this unit.

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete participant handbook.

Practical

- Sample reporting format.

Do

- What are the types of issue that will be reported?
- List and explain the types of communication to be communicated with the team.

Notes for Facilitation

- Use the participant handbook, Unit 5.1 to explain the procedure to report supervisor and team communication

Reporting to Supervisor

Activity - 1

Conduct a role play activity on communication to the team and superior regarding shortage of resources for concreting a column of size 300mm x 400mm, 3000mm height.

- Ask the participants to assemble at a designated place.
- Explain the purpose and duration of the activity.
- Distribute the 'Practical Activity Format' which includes task, duration allowed, specific instructions, method statements, etc., under each activity of the book.
- 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
Communicate with supervisor and team regarding the shortage of resources	2 hours	PPE, Sample Reporting procedure
Fill a report for indent of resources	3 hours	
Report the issues in the work to supervisor	3 hours	

Table 5.1.1 Reporting procedure

Specific Instructions

- Explain the process of reporting the issue to supervisor and way to communicate with team.
- Select two persons from the group.
- Explain the role play that will be enacted.
- Ask the team head, how he will treat his team member at workplace while carrying out the task?
- Now ask the team member, how he will report any issue which needs a support from the team head?
- Help the person in understanding the work with an effective communication and guidance.
- Complete the activity in the scheduled time, and clarify any doubts.

UNIT 5.2: Team work

Unit Objectives

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

1. Understand the importance team work.
2. Benefits of working in a team.

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete participant handbook.

Team work

Do

- What is a team work?
- Explain the benefits and risk of failure working in team.

Notes for Facilitation

- Use the content in participant handbook Unit 5.2 and 5.3 to explain the process to work in a team.
- Use the tips in participant guide.

Reporting to Supervisor

Activity - 1

Conduct a role play activity on communication of the work plan for concrete operations of casting a beam of 300mm x 600mm, 3000mm length

- Ask the participants to assemble at a designated place.
- Explain the purpose and duration of the activity.
- Distribute the 'Practical Activity Format' which includes task, duration allowed, specific instructions, method statements, etc., under each activity of the book.

- 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
Communicate with the co-worker regarding the work plan	2 hours	Stationary
Ask the team for any clarifications	2 hours	
Adopt changes in work plan as per requirement	2 hours	

Table 5.2.1 Team work

Specific Instructions

- Explain the process of communication within a team before commencement of the role play.
- Select two persons from the group.
- Explain the role play that will be enacted.
- Now ask the team member, how he will communicate with his team member when a support is needed during work?
- Help the person in understanding the work with an effective communication and guidance.
- Complete the activity in the scheduled time, and clarify any doubts.





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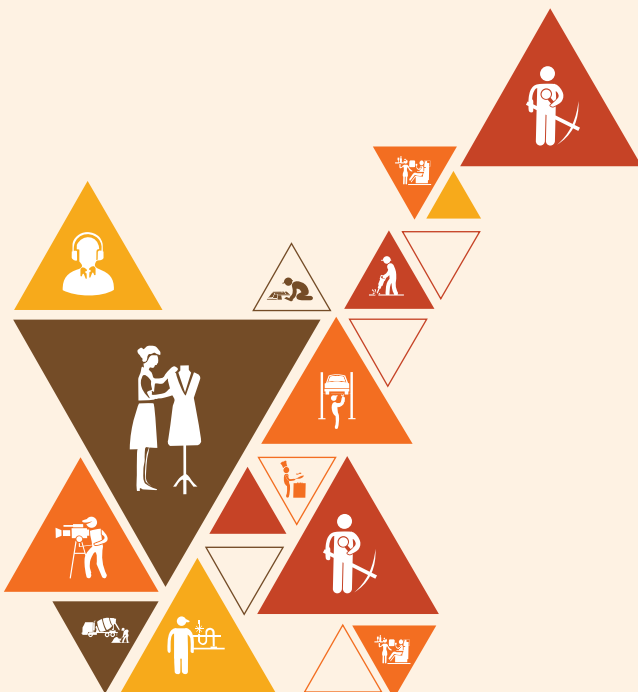
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6. Plan and Organize Work to Meet Expected Outcome

Unit 6.1 – Plan and Organise Work



(CON/N8002)

Key Learning Outcomes

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

1. Plan activities and schedules.
2. Prioritize tasks to achieve desired results.
3. Organise man power, material resources effectively.
4. Understand the necessity of meeting target deadline.
5. Outline dependency of activities on each other.
6. Explain material planning.
7. Outline benefits of material planning.
8. Understand work planning.
9. Understand the benefits of work planning.

UNIT 6.1: Plan and Organise Work

Unit Objectives

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

1. Plan activities and schedules.
2. Prioritize tasks to achieve desired results.
3. Organise man power, material resources effectively.
4. Define the necessity of meeting target deadline.
5. Explain dependency of activities on each other.
6. Define material planning.
7. Benefits of material planning.
8. Define work planning.
9. Understand the benefits of work planning.

Reporting Issue to Supervisor

Say

- Welcome and greet the participants.

Topic Introduction -

- Give the participants a brief overview of this unit
- Applications in various job environment

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete participant handbook.

Practical

- Resources such as concrete tools, materials and equipment, Consumables and PPEs mentioned in the activity table given below.

Do 

- Explain the benefits of achieving targets & timelines
- Explain the benefits of material planning
- Explain the benefits of work planning

Notes for Facilitation 

- Use the participant handbook, Unit 6.1, 6.2 and 6.3 to explain the targets and planning made to meet expected outcomes

Planning and Organizing Resources

Activity - 1 

Conduct a role play activity on prioritizing work and organizing resources for concreting work.

- Ask the participants to assemble at a designated place.
- 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
Breaking the main task into sub tasks and prioritizing work such as: Concreting a beam of size 300x600 mm and a length of 3000mm 1. Placing 2. Compaction 3. Finishing	1 hour	PPE, Tools, Equipment and materials, Sample planning report
Organize manpower, material.	2 hours	
Check and correct any allocation issues	4 hours	

Table 6.1.1 Planning the target

Specific Instructions

- Explain the process of targets and planning before commencement of the role play.
- Select two persons from the group.
- Explain the role play that will be enacted.
- Now ask the person to communicate with this team member to plan and execute various planning at work to meet the expected outcome.
- Help the person in understanding the work with an effective communication and guidance.
- Complete the activity in the scheduled time, and clarify any doubts.



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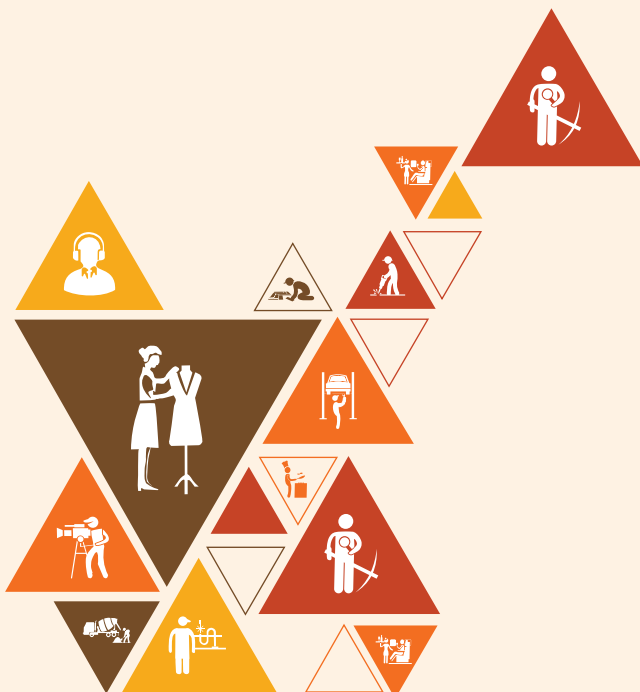
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7. Work According to Personal Health, Safety and Environment Protocol at Construction Site

Unit 7.1 - Introduction to Work Safety

Unit 7.2 - Personal Health and Safety for Mason Concrete



(CON/N9001)

Key Learning Outcomes



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

1. Understand the need and importance of safety.
2. Identify types of hazards at construction sites.
3. Identify types of hazards associated with concreting works.
4. Explain the general safety guidelines and safety guidelines to be followed during concreting.
5. Explain the safety precautions to be followed at the site.
6. Select the appropriate personal protective equipment (PPE) for the task to be performed.
7. Identify safety signages and their purpose.
8. Identify type of fire and ways to put out the same.
9. Understand meaning of different safety colors and their purpose.
10. Describe the importance of mock drills and tool box talks.
11. Explain the importance of good housekeeping and waste disposal.
12. List the dos and don'ts in keeping the construction site clean and in waste disposal.
13. Dispose waste safely as per environmental norms

UNIT 7.1: Introduction to Work Safety

Unit Objectives

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

1. Understand the need and importance of safety.
2. Identify types of hazards associated with concreting and at construction sites.
3. Know the general safety guidelines to be followed at the site.

Work Safety

Say

- Welcome and greet the participants.

Topic Introduction -

- Give the participants a brief overview of this unit
- Applications in various job environment

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete participant handbook.

Practical

- Fire extinguisher and PPEs mentioned in the activity table given below.

Do

- Explain the safety and its importance at construction site.
- List the hazards at construction site.
- Mention the safety guideline to be followed at construction site.

Notes for Facilitation

- Use the content in participant handbook Unit 7.1 to explain the importance of safety at construction site.

Activity - 1

Conduct a skill practice activity.

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

Sub Activity	Skill Practice	Time	Resources
1	Identify different types of fire extinguisher	1 hour	PPE, Fire source, Fire extinguisher
2	Practice operating fire extinguisher	4 hours	

Table 7.1.1 Fire safety

Specific Instructions

- Make sure all the participants are wearing proper PPEs
- Explain the overall procedure and key points of using fire extinguisher commencing the exercise
- 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 in using fire extinguisher.

Safety Signages

Activity - 2

Conduct a skill practice activity.

- Conduct a group activity on identification of different safety signage's used at construction site for various job of concrete.
- Ask the participants to assemble at a designated place.
- Explain the purpose and duration of the activity.

- Distribute the 'Practical Activity Format' which includes task, duration allowed, specific instructions, method statements, etc., under each activity of the book.
- Set guidelines pertaining to discipline and expected tasks.
- Ask each one of them to identify.

Sub Activity	Skill Practice	Time	Resources
1	Identify different safety signages used at construction site	2 hour	PPE, Signage chart

Table 7.1.2 Safety signage

Specific Instructions

- Show the picture and ask the participants to identify and explain different safety signage's
- Assist them by giving hints to remember the signage's, for example Red color indicates the danger warning.
- Similarly explain the other signages by giving relevant hints to identify and remember the same.
- Assess the level of understanding and change the instruction flow.
- Complete this activity in scheduled time, keep the discussion within the topic.
- Entertain doubts related to the topic only.
- Ask them to write 5 different safety signages, and explain their uses.

Mock Drill on Fire Safety

Activity - 3

Conduct a role play activity on prioritizing work and organizing resources for concreting work.

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

Sub Activity	Skill Practice	Time	Resources
1	Mock drill on Fire fighting	8 hour	PPE, Evacuation procedure, Wet towel/handkerchief, Fire extinguisher

Table 7.1.3 Mock drill

Specific Instructions

- Make sure all the participants are wearing proper PPEs.
- Explain the overall procedure and key points of toolbox and safety drills before commencing the exercise.
- 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 in firefighting.

Activity - 4



Conduct a role play activity on toolbox talk at construction site for Mason concrete.

- Ask the participants to assemble at a designated place
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.
- Distribute the 'Practical Activity Format' which includes task, duration allowed, specific instructions, method statements, etc., under each activity of the book.
- 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
Toolbox talk with team members before concreting activity	4 hour	Related Equipment

Table 7.1.4 Toolbox talk

Specific Instructions

- Explain the process of carrying out toolbox talk with the team before the work start
- Select 4-5 persons from the group.
- Explain the role play that will be enacted.
- Ask the one of the person to explain the toolbox talk to educate the workers about safety and hazard
- Complete the activity in the scheduled time, and clarify any doubts.

Hazards at Construction Site

Activity - 5

- Conduct a field visit on identification of different hazard at construction site.
- Ask the participants to assemble at a designated place.
- Explain the purpose and duration of the activity.
- Distribute the 'Practical Activity Format' which includes task, duration allowed, specific instructions, method statements, etc., under each activity of the book.
- Set guidelines pertaining to discipline and expected tasks.
- Ask each one of them to identify.

Sub Activity	Skill Practice	Time	Resources
1	Identify hazards associated with concreting work	4 hour	Construction site hazard chart, Pen, Pencil
2	Practice the preventive measures to avoid those hazards	2 hours	

Table 7.1.5 Hazard identification

Specific Instructions

- Show the hazard chart and ask the participants to explain their preventive measure
- Assess the level of understanding and change the instruction flow.
- Complete this activity in scheduled time, keep the discussion within the topic.
- Entertain doubts related to the topic only.
- Ask them to write some 5 types of hazard and name them correctly at the end of the session.

Sub Activity	Skill Practice	Time	Resources
1	Identify hazards associated with concreting work	4 hour	Construction site hazard chart, Pen, Pencil
2	Practice the preventive measures to avoid those hazards	2 hours	

Notes

Lined area for taking notes, consisting of multiple horizontal lines within a rectangular border.

UNIT 7.2: Personal Health and Safety for Mason Concrete

Unit Objectives

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

1. Know the safety precautions to be followed at the site.
2. Explain safety precautions and measures taken during concreting.
3. Select the appropriate personal protective equipment (PPE) for the task to be performed while concreting.
4. Identify safety signages.
5. Identify type of fire and ways to put out the same
6. Understand safety colors and their purpose
7. Describe the importance of mock drills
8. Explain standard housekeeping methods before and after concreting works

Resources to be used

Theory

- Black/white board, marker, notebook, and pen, laptop along with projector, PPT, Mason Concrete participant handbook.

Practical

- PPEs as mentioned in the activity table given below.

Safe Working Practices While Concreting

Do

- Define PPE and explain the different PPE used at the construction site.
- Explain the safety to be followed during concreting.
- List the causes of fire and explain the instruction to be followed during fire.
- Explain the steps to use a fire extinguisher.
- Mention and explain the various safety signage's used at site.
- Explain mock drills and Toolbox talks.
- Explain standard housekeeping methods before and after concreting works.

Notes for Facilitation

- Use the content in participant handbook Unit 3.2 to explain the various safety signs, regulations, PPE and precautionary measure at a construction site

Skill Practice of Safe Working Practices While Doing Concreting Work

Activity - 1

General Instructions

- Conduct a group activity on identification of different PPE used at construction site for various job of concrete.
- Ask the participants to assemble at a designated place
- Explain the purpose and duration of the activity.
- Distribute the 'Practical Activity Format' which includes task, duration allowed, specific instructions, method statements, etc., under each activity of the book.
- Set guidelines pertaining to discipline and expected tasks.
- Ask each one of them to identify.

Sub Activity	Skill Practice	Time	Resources
1	Practice safe working method including using required PPEs while working with fresh concrete	2 hour	Safety helmet, Safety goggles, Dust mask, Ear muffs or ear plug, Leather gloves, Safety boots, Horizontal lifeline, Safety belt, Harness, Ladder
2	Practice safe working method including using required PPEs while working with machinery and tools	2 hours	
3	Practice safe working method including using required PPEs while working with machinery and tools	2 hours	
4	Practice safe working method including using required PPEs while working at height	2 hours	
5	Practice safe working method including using required PPEs while using ladder	2 hours	

Table 7.2.1 Safe Working Practice

Specific Instructions

- Show the PPE and ask the participants to explain their uses at different work at construction site
- Assess the level of understanding and change the instruction flow.
- Complete this activity in scheduled time, keep the discussion within the topic.
- Entertain doubts related to the topic only.
- Ask them to write some 5 types of PPE and name them correctly at the end of the session.

Housekeeping

Activity - 2

General Instructions

- Ask the participants to assemble at a designated place to conduct housekeeping and waste disposal activity before and after concreting work.
- Explain the purpose and duration of the activity.
- Distribute the 'Practical Activity Format' which includes task, duration allowed, specific instructions, method statements, etc., under each activity of the book.
- 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	Skill Practice	Time	Resources
1	<ul style="list-style-type: none"> • Identify the type of wastes • Segregate the wastes • Dispose the wastes in the allocated container 	3 hour	Warm water, soap, Cleansers, Waste disposal bins, Fire extinguisher, Hammer, Cloth

Table 7.2.2 Housekeeping

Specific Instructions

- Show the PPE and ask the participants to explain their uses at different work at construction site
- Assess the level of understanding and change the instruction flow.
- Complete this activity in scheduled time, keep the discussion within the topic.
- Entertain doubts related to the topic only.
- Ask them to write some 5 types of PPE and name them correctly at the end of the session.

Notes





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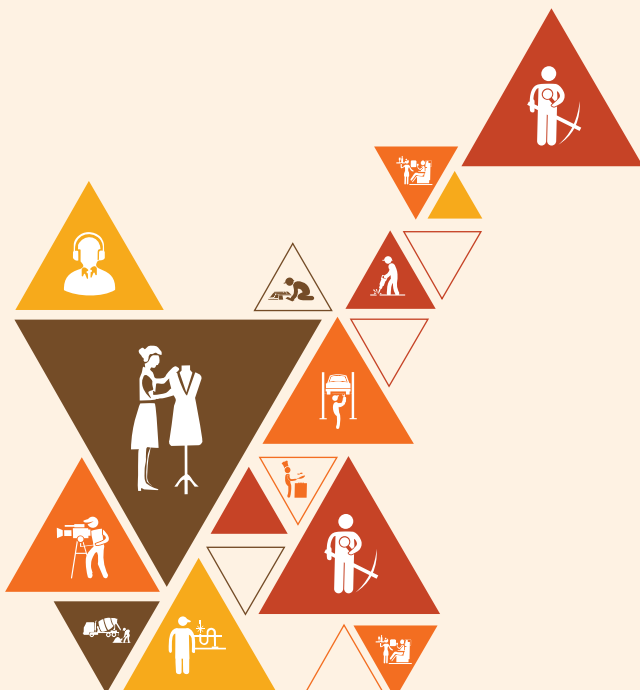
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8. Employability Skills (60 Hours)

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>



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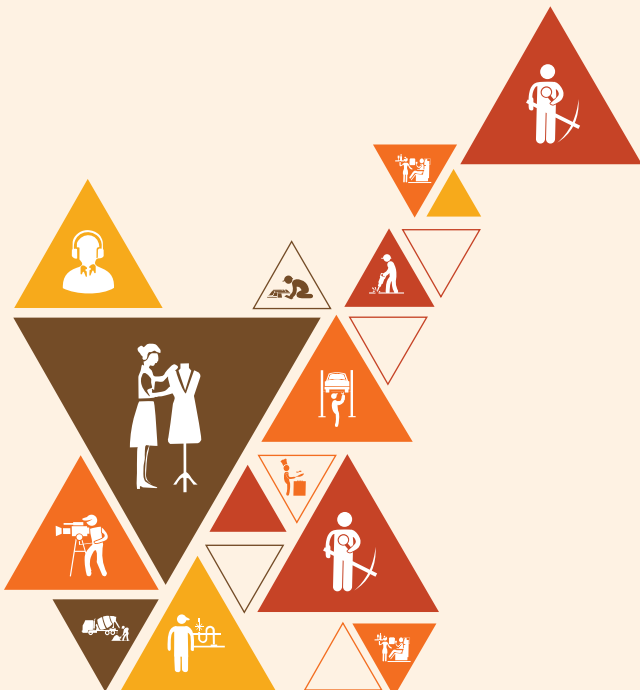


9. Annexures

Annexure I - Training Delivery Plan

Annexure II - Assessment Criteria

Annexure III – QR Code fro Vidoe



Annexure I

Program Name:	Certificate Course for Mason Concrete		
Qualification Pack Name & Ref. ID	Mason Concrete , CON/Q0105		
Version No.	4.0	Version Update Date	31-08-2023
Pre-requisites to Training (if any)	Preferably 10th Class, Desirable: 1. Non trained worker : 5 years site experience in same occupation 2. Trained worker : 3 years site experience as a certified Mason Concrete level-2		
Training Outcomes	By the end of this program, the participants will be able to: 1. Select and use mason concrete tools and material 2. Place, level and finish concrete in various structural elements including repair works 3. Carry out IPS/Tremix flooring 5. Plan and organize work to meet expected outcomes 6. Work according to personal health, safety and environment protocol at construction site 7. Evaluate personal strengths and understand value systems 8. Understand digital literacy, employment and unemployment 9. Acquire entrepreneurship skills		

Sl. No	Module	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration (hours)
1	Introduction	Purpose, Benefits of the Training Programme and Introduction to QP and NOS	Explain the purpose of training program Mention the mode and duration of training program Give an introduction on QP and NOS List and explain the benefits of training program	CON/NO 602 KB7 CON/NO 603 KB15	Interactive Lecture	PPT	5
		Construction sector overview	List the overview of construction sector Explain modernization in construction sector	NA	Interactive Lecture	PPT	3

		Introduction to Mason Concrete	Explain the introduction to concrete structures. List the duties of a Mason concrete. List the personal attribute of Mason concrete. Give the career path for Mason concrete.	NA	Interactive Lecture	PPT	5
2	Core/ Generic skills	Numeracy Skills	Explain the basic mathematical calculations	CON/N0 117 KB2, KB32	Interactive Lecture	PPT	5
		Mathematical Calculation	Calculate basic math like addition, subtraction, multiplication and division		Demonstration and practice	Pen, Paper, Calculator, Units chart	4
		Systems of Measurement	Define system of measurement List and explain the conversion of measurement Explain the reading of tape in FPS system Explain the reading of tape in Metric system Explain the procedure to take measurement with metal and cloth tape	CON/N0 117 KB2	Interactive Lecture	PPT	6
		Unit Conversion	Measure the size of the classroom in metric system by using a tape measure	CON/N0 117 KB2	Demonstration and practice	Pen, Paper, Calculator, Unit conversion chart	
			Measure the size of the classroom in imperial system by using a tape measure		Demonstration and practice	Pen, Paper, Calculator, Unit conversion chart, Measuring tape, Marker	4
		Area & Volume of Geometrical Shapes	List and draw basic geometrical shapes Explain the procedure to calculate perimeter, area and volume	CON/N0 117 KB32	Interactive Lecture	PPT	4

		Quantity estimation, 3-4-5 method	Calculate quantity of concrete required Use 3-4-5 method of squaring of corners	CON/N0 117 KB32	Demonstration and practice	Pen, Paper, Calculator, Conversion chart, Tape measure	8
							4
	Formative Assessment on Modules 1,2						8
3	Work according to personal health, safety and environment	Work safety	Explain the safety and its importance at construction site. List the hazards at construction site	CON/N9 001 PC1, PC4, PC3	Interactive Lecture	PPT	5
	protocol at construction site		Mention the safety guideline to be followed at construction site				
		General safety practices	Identify the different types of fire extinguisher used Use fire extinguisher in case of emergency	CON/N9 001 PC7, PC8, PC9, PC10, KA1, KA2, KB3, KB6, KB7	Demonstration and practice	PPE, Fire source, Fire extinguisher	1
		Safety Signages	Identify different safety signage's used at construction site		Demonstration and practice	PPE, Signage chart	4
		Mock drill on fire fighting	Carry out mock drill on fire fighting		Demonstration and practice	PPE, Evacuation procedure, Wet towel/handkerchief, Fire extinguisher	5
		Toolbox talk	Carry toolbox talk with team members		Role play		4
		Hazards at construction site	Identify hazards at construction site		Field visit		6

		Safe working practices while concreting	Define PPE and explain the different PPE used at construction site. Explain the safety to be followed during concreting. List the causes of fire and explain the instruction to be followed during fire	CON/N9 001 PC2, PC4, PC5, PC6, KB4	Interactive Lecture	PPT	5
		Hazards at Construction site	Explain the steps to use a fire extinguisher. Mention and explain the various safety signage's used at site. Explain mock drills and Toolbox talks	CON/N9 001 PC2, PC4, PC5, PC6, KB4	Interactive Lecture	PPT	4
		Skill practice of safe working practices while doing concreting work	Identify PPE and how to use PPE	CON/N9 001 KA3, KB1, KB5, KB8, KB9	Demonstration and practice	Ear Plug, Harness belt, Eye shields and goggles, Safety shoes, Hand gloves, Helmet	5
		Housekeeping	Identify the type of wastes and dispose the same as per guidelines		Demonstration and practice		2
4	Placing, levelling and finishing of concrete in various structural elements	Concrete work- 1	Define concrete. List the types of concrete. List and explain the properties of concrete with composition. Explain aggregates with its types, physical properties and its effect on concrete. What are deleterious materials? Explain its effect on concrete. Explain sieving of aggregates. Define cement. Explain its physical properties and test performed at site.	CON/N0 117 KA1, KB1, KB3, KB5, KB6, KB7	Interactive Lecture	PPT	8

		Concrete work- 2	List the grades of concrete Mention and explain concrete mix proportions Explain the classification of tools based on its purpose List and explain the concreting hand and power tools Explain the importance of good housekeeping and waste disposal	CON/N0 117 KA1, KB1, KB3, KB5, KB6, KB7	Interactive Lecture	PPT	6
		Concrete material	Identify fine and coarse aggregates Identify sieves and carry out sieve analysis	CON/N0 117 PC8, PC9	Demonstration and practice	PPE, Natural Sand/Crushed stone sand, Gravel Stone Coarse aggregates: 80mm, 63mm, 40mm, 20mm, 16mm, 12.5mm,	4
						10mm, 4.75mm, 2.36mm Fine aggregates: 10mm, 4.75mm, 2.36mm, 1.18mm, 600 Micron, 300 Micron, 150 Micron	4
		Field test of cement	Discuss field tests for cement Discuss stacking of cement bags as per the guidelines	CON/N0 117 KB3	Demonstration and practice	PPE, Cement, Water Cement bags, Wooden planks, Polyethylene	3
		Concrete mix proportions	Monitor preparation of nominal mix of concrete	CON/N0 117 PC7, PC9	Demonstration and practice	PPE, Concrete tools, Concrete equipment, Concrete Materials	8

		Hand and Power tools for Concrete operation	Identify concrete hand tools Identify concrete power tools and Equipment	CON/N0 117 KA2, KA3, KA5, KA6, KB4, KB5, KB39, PC10	Demonstration and practice	PPE, Square Mouth Shovel, Wheel Barrow, Trowel, Pointing trowel, Finishing Trowel, Step trowel/ edging trowel, Concrete Float, Tamper, Bull Float, Groover, Moil (point)chisel, Plugging chisel, Screed board or straightedges, Squares, Spirit level, Plumb Bob, Batching Plant, Transit Mixer, Concrete Pump, Needle Vibrator, Double beam	8
						screed vibrator, Vacuum de-watering Pump, Floater machine, Concrete Saw	
		Housekeeping	Ensure that good housekeeping and maintenance are carried out	CON/N9 001 PC11, PC1	Demonstration and practice	Warm water, soap, Cleansers, Waste disposal bins, Fire extinguisher, Hammer, Cloth,	2
		RCC Foundation	Explain the different stages of Reinforced Cement Concrete foundation. Explain the importance of good housekeeping and waste disposal Define the different types of concrete defects and their cause	CON/N0 117 KB9, KB10, KB12, KB13, KB15, KB20, KB27, KB28, KB29, KB35, KB36, KB37, KB40, KB41, KB42	Interactive Lecture	PPT	6

		Preliminary checks on materials and tools	Run preliminary checks on materials and tools	Kb8, KB11, KB14, KB16, KB17, KB18, KB19, KB21, KB22, KB23, KB24, KB25, KB26, KB30, KB31, KB33, KB34, KB38, PC2, PC3, PC4, PC11, PC12,	Demonstration and practice		2
		Reinforcement, formwork for foundation	Run checks on formwork and reinforcement before concreting		Demonstration and practice	PPE, Rebar cutting machine, Bar bending machine, MS/GI binding wire, L-Hook, Formwork, Concrete mix, Wheel barrow, Needle vibrator, Concrete trowel, Measuring tape, Electric chipping	2
		Pouring Concrete	Pour the concrete manually or by a machine		Demonstration and practice		2
		Compacting the concrete	Carry out compacting on concrete		Demonstration and practice		3
		Finishing of surface	Give finishing for surface		Demonstration and practice		5

		Curing	Ensure that the curing of the surface is carried out	PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21, PC22, PC23, PC24, PC25, PC26, PC27, PC29, PC29, PC30, PC31, PC32, PC33, PC34, PC35, PC36, PC37, PC38, PC39, PC40, PC41, PC42, PC43, PC44, PC45, PC46, PC47	Demonstration and practice	hammer/jack hammer, wire brush, Stiff bristled broom, repair mix, Bonding agent, water, Trowel	1
		Repairing defects (if any)	Repair concrete defects		Demonstration and practice		1
		Housekeeping	Ensure that good housekeeping is carried out		Demonstration and practice		1
		RCC Column	Explain the different stages of Reinforced Cement Concrete column. Explain the importance of good housekeeping and waste disposal Define the different types of concrete defects and their cause.	CON/NO 117 KB9, KB10, KB12, KB13, KB15, KB20, KB27, KB28, KB29, KB35, KB36, KB37, KB40, KB41, KB42	Interactive Lecture	PPT	6

		Preliminary checks on materials and tools	Run preliminary checks on materials and tools	KB8, KB11, KB14, KB16, KB17, KB18, KB19, KB21, KB22, KB23, KB24, KB25, KB26, KB30, KB31, KB33, KB34, KB38, PC2, PC3, PC4, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21,	Demonstration and practice	PPE, Rebar cutting machine, Bar bending machine, MS/GI binding wire, L-Hook, Formwork, Concrete mix, Wheel barrow, Needle vibrator, Concrete trowel, Measuring tape, Electric chipping hammer/jack hammer, wire brush, Stiff bristled broom, repair mix, Bonding agent, water, Trowel	2
		Reinforcement, formwork for foundation	Run checks on formwork and reinforcement before concreting		Demonstration and practice		2
		Pouring Concrete	Pour the concrete manually or by a machine		Demonstration and practice		2
		Compacting the concrete	Carry out compacting on concrete		Demonstration and practice		3
		Finishing of surface	Give finishing for surface		Demonstration and practice		5
		Curing	Ensure that the curing of the surface is carried out		Demonstration and practice		1

		Removal of Formwork/ de-shuttering	Ensure that the form work is removed properly	Pc22, PC23, PC24, PC25, PC26, PC27, PC29, PC29, PC30, PC31, PC32, PC33, PC34, PC35, PC36, PC37, PC38, PC39, PC40, PC41, PC42, PC43, PC44,	Demonstration and practice		1
		Repairing defects (if any)	Repair concrete defects		Demonstration and practice		1
		Housekeeping	Perform housekeeping		Demonstration and practice		1
				PC45, PC46, PC47			
		RCC Beam	Explain the different stages of Reinforced Cement Concrete beam. Explain the importance of good housekeeping and waste disposal Define the different types of concrete defects and their cause.	CON/N0 117 KB9, KB10, KB12, KB13, KB15, KB20, KB27, KB28, KB29, KB35, KB36, KB37, KB40, KB41, KB42	Interactive Lecture	PPT	6
		Preliminary checks on materials and tools	Run preliminary checks on materials and tools	Kb8, KB11, KB14, KB16, KB17, KB18,	Demonstration and practice	PPE, Rebar cutting machine, Bar bending machine, MS/GI binding	2

		Removal of Formwork/ de-shuttering	Ensure that the form work is removed properly	Pc22, PC23, PC24, PC25, PC26, PC27, PC29, PC29, PC30, PC31, PC32, PC33, PC34, PC35, PC36, PC37, PC38, PC39, PC40, PC41, PC42, PC43, PC44,	Demonstration and practice		1
		Repairing defects (if any)	Repair concrete defects		Demonstration and practice		1
		Housekeeping	Perform housekeeping		Demonstration and practice		1
				PC45, PC46, PC47			
		RCC Beam	Explain the different stages of Reinforced Cement Concrete beam. Explain the importance of good housekeeping and waste disposal Define the different types of concrete defects and their cause.	CON/N0 117 KB9, KB10, KB12, KB13, KB15, KB20, KB27, KB28, KB29, KB35, KB36, KB37, KB40, KB41, KB42	Interactive Lecture	PPT	6
		Preliminary checks on materials and tools	Run preliminary checks on materials and tools	Kb8, KB11, KB14, KB16, KB17, KB18,	Demonstration and practice	PPE, Rebar cutting machine, Bar bending machine, MS/GI binding	2

		Reinforcement, formwork for foundation	Run checks on formwork and reinforcement before concreting	KB19, KB21, KB22, KB23, KB24, KB25, Kb26, KB30, KB31, KB33, KB34, KB38, PC2, PC3, PC4, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21, PC22, PC23, PC24, PC25, PC26, PC27,	Demonstration and practice	wire, L-Hook, Formwork, Concrete mix, Wheel barrow, Needle	2
		Pouring Concrete	Pour the concrete manually or by a machine		Demonstration and practice		2
		Compacting the concrete	Carry out compacting on concrete		Demonstration and practice	vibrator, Concrete trowel, Measuring tape, Electric chipping hammer/jack hammer, wire brush, Stiff bristled broom, repair mix, Bonding agent, water, Trowel	3
		Finishing of surface	Give finishing for surface		Demonstration and practice		5
		Curing	Ensure that the curing of the surface is carried out		Demonstration and practice		1
		Repairing defects (if any)	Repair concrete defects		Demonstration and practice		1
		Housekeeping	Ensure that good housekeeping is carried out		Demonstration and practice		1

				PC29, PC29, PC30, PC31, PC32, PC33, PC34, PC35, PC36, PC37, PC38, PC39, PC40, PC41, PC42, PC43, PC44, PC45, PC46,PC47			
		RCC Slab	Explain the different stages of Reinforced Cement Concrete slab. Explain the importance of good housekeeping and waste disposal Define the different types of concrete defects and their cause.	CON/N0 117 Kb9, KB10, KB12, KB13, KB15, KB20, KB27, KB28, KB29, KB35, KB36, KB37, KB40, KB41, KB42	Interactive Lecture	PPT	2
		Preliminary checks on materials and tools	Run preliminary checks on materials and tools	Kb8, KB11, KB14, KB16, KB17, KB18, KB19, KB21, KB22, KB23, KB24, KB25, KB26, KB30, KB31, KB33, KB34, KB38, PC2, PC3, PC4,	Demonstration and practice	PPE, Rebar cutting machine, Bar bending machine, MS/GI binding wire, L-Hook, Formwork, Concrete mix, Wheel barrow, Needle vibrator, Concrete trowel, Measuring tape, Electric chipping hammer/jack hammer, wire	2
		Reinforcement, formwork for foundation	Run checks on form work and reinforcement before concreting		Demonstration and practice		2
					Demonstration and practice		

		Pouring Concrete	Pour the concrete manually or by a machine		Demonstration and practice		2
		Compacting the concrete	Carry out compacting on concrete		Demonstration and practice		3
		Finishing of surface	Give finishing for surface	PC11, PC12, PC13, PC14, PC15, PC16, Pc17, PC18, PC19, PC20, PC21, PC22, PC23, PC24, PC25, PC26, PC27, PC29, PC29, PC30, PC31, PC32, PC33, PC34, PC35, PC36, PC37, PC38, PC39, PC40, PC41, Pc42, Pc43, PC44, PC45, PC46, PC47	Demonstration and practice	brush, Stiff bristled broom, repair mix, Bonding agent, water, Trowel	5
		Curing	Give finishing for surface		Demonstration and practice		1
		Repairing defects (if any)	Repair concrete defects		Demonstration and practice		1
		Housekeeping	Perform housekeeping		Demonstration and practice		1

		RCC wall	Explain the different stages of Reinforced Cement Concrete wall. Explain the importance of good housekeeping and waste disposal. Define the different types of concrete defects and their cause.	CON/NO 117 KB9, KB10, KB12, KB13, KB15, KB20, KB27, KB28, KB29, KB35, KB36, KB37, KB40, KB41, KB42	Interactive Lecture	PPT	6
		Preliminary checks on materials and tools	Run preliminary checks on materials and tools	KB8, KB11, KB14, KB16,	Demonstration and practice	PPE, Rebar cutting machine, Bar bending	2
		Reinforcement, formwork for foundation	Run checks on form work and reinforcement before concreting	KB17, KB18, KB19, KB21, KB22, KB23, KB24, KB25, KB26, KB30, KB31, KB33, KB34, KB38, PC2, PC3, PC4, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19,	Demonstration and practice	machine, MS/GI binding wire, L-Hook, Formwork, Concrete mix, Wheel barrow, Needle vibrator, Concrete trowel, Measuring tape, Electric chipping hammer/jack hammer, wire brush, Stiff bristled broom, repair mix, Bonding agent, water, Trowel	2
		Pouring Concrete	• Pour the concrete manually or by a machine		Demonstration and practice		2
		Compacting the concrete	Carry out compacting on concrete		Demonstration and practice		3

		Finishing of surface	Give finishing for surface	PC20, PC21, PC22, PC23, PC24, PC25, PC26, PC27, PC29, PC29, PC30, PC31, PC32, PC33, PC34, PC35, PC36, PC37, PC38, PC39, PC40, PC41, PC42, PC43, PC44, PC45, PC46, PC47	Demonstration and practice		2
		Curing	Ensure that the curing of the surface is carried out		Demonstration and practice		2
		Removal of Formwork/ de-shuttering	•Ensure that the formwork is removed properly		Demonstration and practice		1
		Repairing defects (if any)	Repair concrete defects		Demonstration and practice		1
		Housekeeping	Perform housekeeping		Demonstration and practice		1

		Precast segments	Explain precast segments, their use and benefits. Define different types of precast structures and their application. List out the materials involved in precasting of concrete structures. Explain the steps involved in precasting of beam, column, and slab etc. Explain the points to remember while performing precasting operations.	CON/N0 117 KB33	Interactive lecture	PPT	4
		Preliminary checks on materials and tools	Run preliminary checks on materials and tools	CON/N0 117 PC28, PC29 PC30,PC 31 PC32,PC 33 PC34,PC 35 PC36,PC 37	Demonstration and practice	PPE, Rebar cutting machine, Bar bending machine, MS/GI binding wire, L-Hook, Formwork, Concrete mix, Wheel barrow, Needle vibrator, Concrete trowel, Measuring tape, Electric chipping hammer/jack hammer, wire brush, Stiff bristled broom, repair mix, Bonding agent, water, Trowel	2
		Reinforcement & formwork	Pour concrete manually or by a machine				2
		Concrete pour	Pour concrete manually or by a machine				2
		Compaction	Carry out compaction of concrete				2
		Finishing of surface	Finish the surface with hand tools				5

		Curing	Ensure that the curing of structure happens as per standards				1
		Check for defects and repair works	Check for any defects Carryout repair work (if any)				1
		Housekeeping	Ensure that standard housekeeping is carried out				1
	Formative Assessment on Modules 3,4						8
		Concrete repair works	List out the various defects came across in earlier activities. Explain the repair works carried out in earlier activities.	CON/N0 117 KB1, KB4, KB34, KB37 KB40, KB42	Interactive Lecture	PPT	4
5	Carry out IPS/ Tremix flooring	IPS Flooring	What is IPS flooring? Explain Preparation of sub base and base course for IPS flooring. Explain IPS flooring Methodology List the advantages of IPS flooring	CON/N0 114 KA1, KA2, KA3, KA4, KA5, KB1, KB3, KB5, KB6, KB9, KB12, KB13, KB14, KB17, KB18, KB19, KB20	Interactive Lecture	PPT	6
		Preparation of sub base and base course	Ensure that sub base and base course are prepared as per standards	CON/N0 114 KB4, PC1, PC2, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21, PC22	Demonstration and practice	PPE, Sand of 100mm thick, Concrete mix 1:4:8, Measuring tape, Chalk, Brass/glass strips Wooden peg, Concrete mix, Needle vibrator, Trowel, water, Jute cloth, Sealant, Electric chipping hammer/ jack hammer, wire brush, Stiff bristled broom, repair mix, Bonding, agent, water, Trowel	4

		Marking and transferring of levels	Mark and transfer levels		Demonstration and practice		3
		Marking the thickness of floor	Mark the thickness of floor		Demonstration and practice		1
		Positioning and straightening of Brass/Glass strip	Position and straighten of Brass/Glass strip		Demonstration and practice		1
						agent, water, Trowel	
		Providing dummy dots	Provide dummy dots		Demonstration and practice		1
		Pouring of concrete mix	Pour the concrete manually or by a machine		Demonstration and practice		2
		Compacting the concrete mix	Carry out compacting of concrete		Demonstration and practice		2
		Finishing of surface	Finish the concrete surface with hand tools		Demonstration and practice		4
		Curing	Ensure that the curing of structure is as per standards		Demonstration and practice		1
		Repairing the defects (if any)	Perform repair the defect if any		Demonstration and practice		1
		Housekeeping	Ensure that good housekeeping is carried out		Demonstration and practice		1

		Tremix Flooring	What is Tremix flooring? Explain Tremix flooring Methodology List and explain the tools and materials required for flooring Explain forming and concrete mix for topping Explain vacuum de-watering and troweling/ floating List the advantages of Tremix flooring	CON/N0 114 KA1, KA2, KA3, KA4, KA5, KB1, KB3, KB5, KB6, KB9, KB12, KB13, KB14, KB17, KB18, KB19, KB20	Interactive Lecture	PPT	5
		Preparation of sub base and base course	Ensure that the sub base and base course are prepared as per standards	CON/N0 114 KB2, KB7, KB8, KB10, KB11, KB15,	Demonstration and practice	PPE, Concrete mix Measuring tape, Chalk, Brass/glass strips Wooden peg, Concrete mix, Needle	4
		Reinforcement and formwork	Run checks on form work and reinforcement before concreting	KB16, PC1, PC3, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC23, PC24, PC25, PC26, PC27, PC28, PC29, PC30, PC31	Demonstration and practice	vibrator, Power floater, Trowel, Hardener, water, Jute cloth, Sealant, Electric chipping hammer/ jack hammer, wire brush, Stiff bristled broom, repair mix, Bonding agent, water, Trowel	2
		Pouring of concrete mix	Pour the concrete		Demonstration and practice		2
		Compacting the concrete mix	Carry out compacting of concrete		Demonstration and practice		2
		Levelling the surface	Level the surface using suitable equipment		Demonstration and practice		1
		Sprinkling hardener	•Sprinkle the hardener on surface		Demonstration and practice		1

		Floating of surface	Carry out the float of surface		Demonstration and practice		2
		Troweling the surface	Trowel the surface		Demonstration and practice		3
		Curing	Ensure that the curing of structure is as per standards		Demonstration and practice		1
		Removing of formwork/ de-shuttering	Ensure that the de-shuttering happens as per standards		Demonstration and practice		1
		Providing the joint with groove cutting	Provide the joint with groove cutting		Demonstration and practice		3
		Filling the joints	Fill the joints if there is any gap		Demonstration and practice		1
		Repairing the defects (if any)	Perform repair the defect if any		Demonstration and practice		3
		Housekeeping	Ensure that good housekeeping is carried out		Demonstration and practice		1
6	Work effectively in a Team to deliver desired results at the workplace	Reporting issue to Supervisor and Team communication	What are the types of issue that will be reported? List and explain the types of communication to be communicated with the team	CON/N8 001 KA1, KA2, KA3, KA4, KA5	Interactive Lecture	PPT	4
		Reporting procedure	Communicate with supervisor and team Fill a report Reporting the issues to supervisor	CON/N8 001 KB1, KB2, PC2, PC3, PC7, PC8	Role play	PPE, Tools, Equipment and materials, Sample Reporting procedure	8
		Team work	What is a team work? Explain the benefits and risk of failure working in team	CON/N8 001 KA1, KA2, KA3, KA4, KA5	Interactive Lecture	PPT	2
		Team Communication	Communicate within a team Interact and coordinate with colleagues	CON/N8 001 KB3, KB4, PC1, PC4, PC5, PC6	Role play	PPE, Tools, Equipment and materials, Sample Reporting procedure	6

7	Plan and Organize work to meet expected outcome	Plan and organise work	Explain the Benefits of Achieving Targets & Time lines Explain the Benefits of Material Planning Explain the Benefits of Work Planning	CON/N8 002 KA1, KA2, KA3, KB1, KB2	Interactive Lecture	PPT	5
		Plan and organise work	Achieve targets and time lines Carry out material required planning Plan the work accordingly	CON/N8 002 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12	Demonstration and practice	Pen, Pencil, Sample work	8
						report	

Annexure 2







Assessment Criteria for Bar Bender & Steel Fixer	
Job Role	Mason Concrete
Qualification Pack	CON/Q0105, v1.0
Sector Skill Council	Construction

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
Carry out IPS/Tremix flooring (CON/N0114)	30	60	-	10	100	40
Place, level and finish concrete in various structural elements including repairs (CON/N0117)	30	60	-	10	100	40
Work effectively in a team to deliver desired results at the workplace (CON/N8001)	30	70	-	-	100	5
Plan and organize work to meet expected outcomes (CON/N8002)	30	70	-	-	100	5
Work according to personal health, safety and environment protocols at construction site (CON/N9001)	30	70	-	-	100	5
Employability Skills (DGT/VSQ/N0102)	20	30	-	-	50	5
Total	170	360		20	550	100

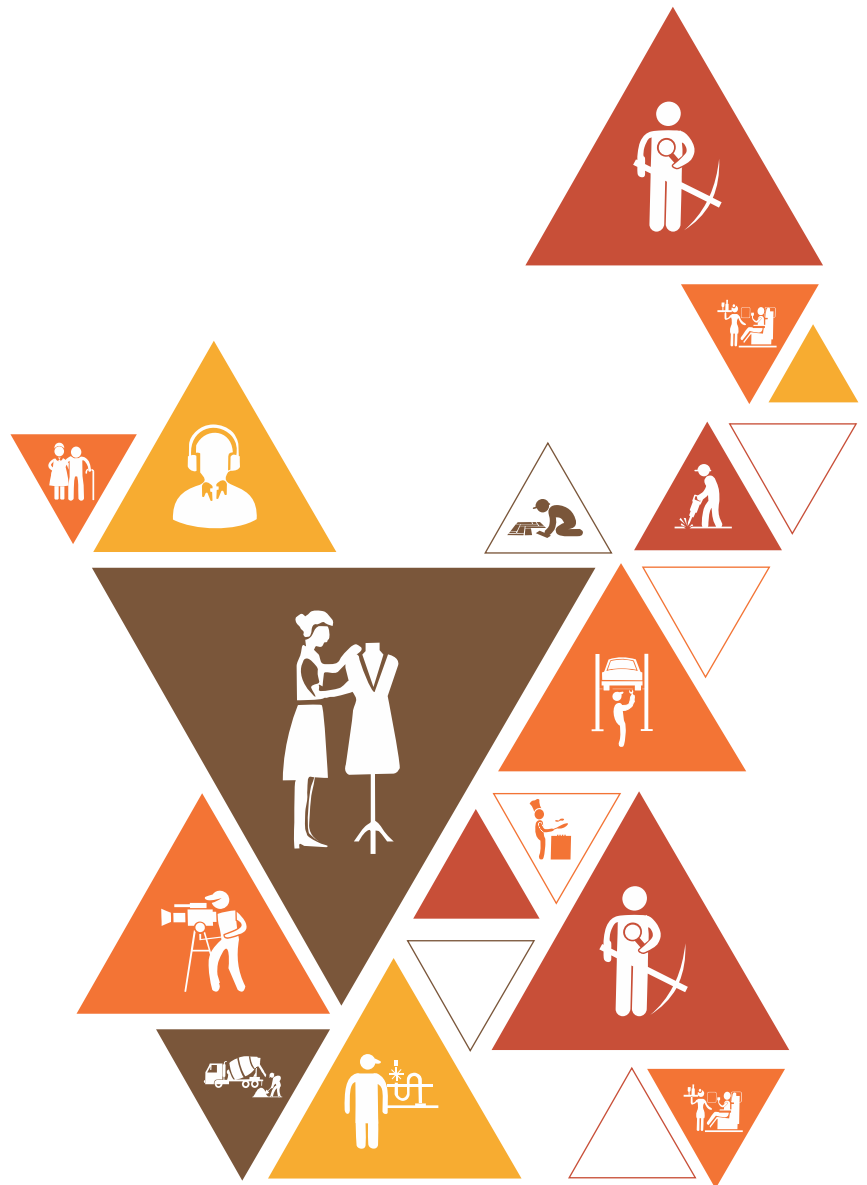
Annexure – III

Links for Video – QR Codes

Chapter Name	Unit Name	Topic Name	URL	QR Code
Chapter 1: Introduction to the role of a Mason Concrete	Unit 1.2: An Overview of Construction Sector	Construction Industry	https://youtu.be/p4f0Ni15EaM	 Construction Industry
		Modernization in Construction	https://youtu.be/WmQyPYm_g20	 Modernization in Construction
	Unit 1.3: Mason Concrete as a job role	Introduction to concrete structures	https://youtu.be/J7fTtNI3lwk	 Introduction to concrete structures
		Personal Attributes of Mason Concrete	https://youtu.be/juRxHEF67WQ	 Personal Attributes of Mason Concrete
Chapter 2: Core / Generic Skills	Unit 2.2 – Systems of Measurements	Systems of Measurement	https://youtu.be/H1xo5UVJKVo	 Systems of Measurement
		Calculation of Perimeter, Area and Volume	https://youtu.be/OhTubw4C0to	 Calculation of Perimeter, Area and Volume

Chapter 3: Place, level and finish concrete in various structural elements including repairs (CON/N0117)	Unit 3.1 – Introduction to Concreting Work	Compositions in Concrete	https://youtu.be/EZwRiBDGX0c	 Compositions in Concrete
	Unit 3.2 – Tools and equipment used in Concreting	Concreting Tools and Equipments	https://youtu.be/wuzQ&dsYJSw	 Concreting Tools and Equipments
	Unit 3.3 – Placing, leveling and finishing of concrete in various structural elements	Reinforced Cement Concrete Construction	https://youtu.be/b_PWGjsa7yc	 Reinforced Cement Concrete Construction
	Unit 3.4 – Concreting in Precast Segments	Process in Making Precast Concrete Segments	https://youtu.be/8yoHltK1Naw	 Process in Making Precast Concrete Segments
	Unit 3.5 – Repair works in Concrete	Repairing Concrete Defects	https://youtu.be/wXDelzvJyQs	 Repairing Concrete Defects

Chapter 4: Carry out IPS/Tremix flooring (CON/N0114)	Unit 4.1 – Introduction to cement concrete flooring	Reinforcement in Cement Concrete Flooring	https://youtu.be/Vx0lp4DjxfU	 Reinforcement in Cement Concrete Flooring
	Unit 4.2 – IPS Flooring	IPS Flooring Methodology	https://youtu.be/R2YAcUE_mCg	 IPS Flooring Methodology
	Unit 4.3 – Tremix Flooring	Tremix Flooring Methodology	https://youtu.be/X0zCZJHv3yI	 Tremix Flooring Methodology





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