



# Trainer Guide

## HELPER MASON

LN CON HMA L1 ENG TG VER 1.00

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# Foreword

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**LabourNet** is a social enterprise that creates sustainable benefits for workers in the informal sector, by taking an end to end solution focused on plugging gaps in the eco-system of the market, to address all the challenges faced by the workers in the unorganized sector This course is created to impart the skills necessary for working as a Helper Mason in Construction sector.

This course book is designed for the training model known as work integrated learning. Trainees will be imparted with knowledge through lectures in the construction site premises for a fixed duration every day. For the remaining time trainees will be working in a construction site. The trainer will be providing guidance for limited duration as and when required to ensure the trainee is acquiring the required skills to function as a independently as a helper mason in construction industry.

The advantage of this model is that the trainee will be learning in the working environment and not many new facilities are required for training delivery, except sparing of the tools and equipment for on-the job training under the guidance of the supervisor along with need based periodic intervention from the trainer.

This course for helper mason is designed to ensure that the trainee will be able to meet all the performance, knowledge and core skills criterion specified in the draft Qualification Pack for Helper Mason (Construction) vide Reference ID: CON/Q0101 published by NSDC.

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# Course Details

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<b>Course Name</b>	<b>Helper Mason</b>
<b>Course Code</b>	<b>LN CON HMA L1 ENG TG VER 1.00</b>

This course is designed for upgrading the knowledge and basic skills to take up the job of 'Helper Mason' in 'Construction' sector. All the activities carried out by a helper mason are covered in this course. Upon successful completion of this course the candidate will be eligible to work as helper mason.

This course is designed to provide the necessary knowledge and skill inputs for a helper mason to work in an organized and disciplined manner by following safe working practices, good housekeeping, effective communication, documentation and work ethics. Knowledge inputs are provided through participative lectures and other training methodologies like group discussion, role play and other activities to ensure effective learning. The methodology followed to impart the skill in helper mason is 'on the job training' under guidance of the supervisor along with need based periodic intervention from the trainer. Formative assessment is carried out by the trainer as per the schedule in the assessment guide and summative assessment is carried out by external assessor.

. Courseware consists of the following as per NSDC quality guidelines.

- Curriculum as well as Course Hand Book
- Trainers Guide
- Participants Guide
- Assessment Guide
- Training Delivery Plan
- Training Aids

### **Further Learning Opportunities:**

Upon successful completion of this course the candidate will be eligible for attending advanced courses in Construction Supervision

# 1. Key Competencies

**Key competencies are derived from the QP**

**Upon successful completion, the Learners will be able to:**

1. Describe and follow Health, Safety & Environment requirements
2. Identify and use basic tools, equipment and materials
3. Practice correct methods of Material Handling and Storing
4. Practice correct methods of preparation of cement mortar and concrete mix
5. Use different types of bonds in basic brickwork
6. Erect and dismantle 3.6 meter temporary Scaffold
7. Perform Cutting, Filling, Leveling and Compaction of Earth

<b>Course Duration</b>					
<b>No. of Days</b>	<b>26 Days(1 Month)</b>				
<b>No. of Hours Per day (hrs)</b>	8	<b>Total No. Hours (GLH)</b>	120	Theory	13
				Practical	27
<b>Total No. Hours (Assessment)</b>			8	Theory	*
				Practical	*

\*Refer Assessment Guide for actual hours. Maximum 3 hours allotted for Formative Assessment and 2 hours of Summative Assessment.

<b>Eligibility Criteria</b>	
<b>Age</b>	18 years
<b>NVEQF/NVQF level</b>	1
<b>Minimum Educational Qualifications</b>	Preferably equivalent to 5 <sup>th</sup> Standard (Normal literacy of reading, writing and understanding)
<b>Maximum Educational Qualifications</b>	10 <sup>th</sup> Standard
<b>Experience</b>	Nil

## 2. Module wise duration

<b>Module Wise Duration</b>				
Sl.No	Module Name	Guided Learning Hours (GLH)		
		Training		
		Theory	Practical	OJT
1	Overview on construction industry and role of helper mason	1 Hr	2 Hr	-
2	Health, Safety and Environment	3 Hrs	1 Hrs	3 Hrs
3	Identification and use of basic tools ,equipment and material	1 Hr	4 Hrs	12 Hrs
4	Material Handling and Storing	2 Hrs	4 Hrs	12 Hrs
5	Preparation of cement mortar and concrete mix	2 Hrs	4 Hrs	12 Hrs
6	Different types of bonds in basic brick works	2 Hrs	4 Hrs	12 Hrs
7	Erect and dismantle 3.6 meter temporary Scaffold	1 Hr	4 Hrs	12 Hrs
8	Cutting, Filling, Leveling and Compaction	1 Hr	4 Hrs	12 Hrs
	Total	13 Hrs	27 Hrs	75 Hrs
	Total GLH	118 Hrs		
	Total Duration	<b>120 Hrs</b>		

Refer Assessment Guide for actual hours. Maximum 3 hours allotted for Formative Assessment and 2 hours for Summative Assessment

The trainer should prepare a plan for the OJT after discussing with the training coordinator/supervisor. In general the OJT should follow the sequence of modules provided above. The trainees will practice the activities demonstrated during practical training at the end of each module as part of OJT under the guidance of the supervisor along with need based periodic intervention from the trainer.

### 3. Training Centre Requirements

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#### Physical Requirements

1. Room to accommodate 30 Trainees
2. Black Board/White Board with writing and erasing materials
3. Computer and Projector for Power Point presentation

Teaching Materials	LabourNet provides the following material to the Centres
	<ul style="list-style-type: none"> <li>• Course Hand Book/Syllabus-Curriculum</li> <li>• Power point presentation</li> <li>• Trainers Guide</li> <li>• Participant Guide</li> <li>• Assessment Guide</li> </ul>

Trainers Qualification	Graduate or Diploma holder in Civil Engineering with 2/4 years of experience in masonry related activities
Evaluation team	Separate team form LabourNet with qualified and experienced personnel.

#### Instruction to faculty-

The faculty should follow all the Guides for training/ work/demonstrations/practical/on the job training

## 4. General Instructions for Trainers

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### Pre training:

- Trainer is provided with the training content for reference. For e.g. the topics you have to train in this program.
- Before leaving for the training site Trainer should make sure that the trainees have been informed about the training.
- Trainers should make sure they have route map to reach the training site without any difficulties.
- By any chance if Trainer is getting delayed make sure that he/she should inform the site supervisor that you are getting delayed.
- As soon as the Trainer reaches the training site he/she should meet training coordinator/supervisor (to make sure of the training facilities are available-onsite, offsite).
- Please make sure you have all the required training tools and materials for conducting the training session (learning cards, sketch pens, raw materials etc.).
- Check your training equipments such as laptop, projector and camera, relevant tools (depending on the training site).
- Reach 15 minutes before to arrange for the training session

### During the training

- Start the session with an icebreaker to settle the participants for the session.
- Welcome and Recap the previous days learning s and clarify the doubts if any.
- Mark attendance for the trainees at the beginning and the end of the training
- Follow the session plan strictly.
- Encourage the trainees to ask questions, explore ideas etc.
- Close the session with positive strokes

### Specific instructions for Trainers - Course

- Use case stories (live examples) pertaining to the respective course training.
- Stop and check in between the sessions whether the learners are learning!!
- Ask the participants to draw a simple action plan with respect to the course to implement the learning's from the days training programme.
- Use current version of the curriculum/training package linked from the Course training manual of **LabourNet course page**.
- Ensure the delivery and assessment strategies are consistent with those outlined in the Course **Training and Assessment Strategy**
- Discover how to Anchor positive states to gestures, words and pictures pertaining to Course trade during the onsite training.
- Appropriate paper based document repository with respect to course should be used.
- Assess group and individual needs verbally (actively listening) and/or in writing.



- Establish trustworthiness with the group.
- Establish ground rules and/or reiterate them as needed, modelling and promoting protection of confidentiality, demonstrating consideration for other's feelings, and acknowledging occasions when trainees may have unintentionally broken a ground rule or offended someone.
- Acknowledge in advance possible feelings or differences of opinion that a session may generate.
- Trainers should get away from unclear thinking and unclear structure before they start the presentation.
- Trainers must communicate effectively with any audience, energy, voice and body to enhance presence, reputation and power.
- Become less dependent upon content and script, freeing up your creativity and passion!

**Post training:**

- **Share/Report the observations found in the training site with the concerned person (coordinator/supervisor)**
- Record on-going formative assessment results

## 5. Session Plan for each Module

### Module 1- Overview of construction industry and role of helper Mason

#### Module Overview

This module introduces the trainees to the scope, reach, size and impact of the construction industry. Basics of construction such as the parts of a building, common tools and materials used are also explained. The Roles of a helper mason are covered in the end of this module.

#### Module Objectives

By completing this module the trainee would have gained knowledge about:

- Construction industry in India
- Parts of a building
- Commonly used construction tools and materials
- Roles of a helper Mason

#### Underpinning Knowledge/ Theory/ Principle

- No prior knowledge is required
- Following information is based on India's construction industry and job roles are explained as per the occupational standards

#### Module Design

Session no.	Session Topics	Method	Duration	Training Aids, Tools and Equipment
1.	Introduction to construction and role of helper mason	Interactive Lecture/Ice Breaker, site visit	180 mins	PPT, PPE, commonly used construction materials and tools
<b>TOTAL</b>			<b>3 Hrs</b>	

## Session Plan 1- Introduction to construction and role of helper mason

### Session Objectives

At the end of the session, the trainee will be able to:

- Explain the importance of construction industry
- List and describe parts and functions of a building
- Describe common tools and materials used in construction
- Describe methods of measurement, unit conversion and calculate areas and volumes of simple elements
- Describe the roles of a Mason

### Duration

S.no.	Sub – Topics	Duration	
		Theory	Practical
1.1	Overview of construction industry	60 mins	120 Mins
1.2	Parts of a building		
1.3	Building materials and quality standards		
1.4	Construction measurements and calculations		
1.5	Basic tools used in construction		
1.6	Roles of a helper mason		
<b>TOTAL</b>		<b>1 Hr</b>	<b>2Hrs</b>

### Instructions to the Trainer

- Follow instructions given in the activity section
- Ensure all the task is done in sequence as given
- Gather all the materials and information required in well advance
- Keep the class energetic and motivated to learn

### Materials/ Equipment Required

- Room to Accommodate 30 Trainees
- Black Board/White Board with Writing and Erasing Materials
- Computer and Projector for Power Point Presentation
- PPT and Participant Guide

### Tips for Trainer

- Be energetic while introducing yourself to the trainees.

- Be aware of the timing required to complete the activity
- Training materials should be used at the right time and in the right way
- Maintain the flow of the module from start to finish
- Making sure that the Trainees are comfortable and eager to learn.

### Slide No: 1-33



### Activity 1

**Objective:** To provide knowledge on construction industry, parts of a building, measurements, construction tools, materials and job roles of a helper mason.

### Methodology:

#### Interactive Lecture

- Overview on construction industry
- Parts of a building, measurements, calculations, materials and tools
- Job roles of a helper mason

**Material required:** PPT, Participants Guide

**Outcome:** The trainees will be able to describe parts of a building, measurements, construction tools, materials and job roles of a helper mason.

### Activity 2

**Objective:** To provide practical knowledge about the parts of a building, measurements, construction tools, materials and job roles of a helper mason.

### Methodology:

#### Site visit

- Identify parts of a building, demonstrate measurement methods, perform calculations, identify materials and tools
- Job roles of a helper mason

**Material required:** PPE for all participants, pen, pencil, notebook, construction tools and materials

**Outcome:** The trainees will be able to identify and describe the parts of a building, construction tools, materials and job roles of a helper mason.

**Activity 3**

Further practice of activities demonstrated in activity 2, as part of OJT

**Debrief:**

The trainer will recap by asking one of the participants to name few job roles as a helper mason

**Assessment**

1. What are the job duties of help mason?
2. Who is called “Helper Mason”?

**Module 2- Health, Safety and Environment****Module Overview**

This module provides the trainees the skills and knowledge required to work responsibly by following health, safety and environmental measures in a construction site.

**Module Objectives**

By completing this module the trainee would have gained knowledge about:

- Demonstrating and using the right PPE for the right type of work they are doing on the site.
- Practicing safe working at heights and following safety measures on site.
- Practicing first aid, ensuring waste disposal and following safety related activities in steel.
- Practicing safe systems of work and demonstrating correct methods of lifting and hauling.

**Underpinning Knowledge/ Theory/ Principle**

- Knowledge about the construction industry in India
- Knowledge of the parts of a building, measurements and calculations
- Knowledge of common materials, tools and the roles of a helper mason

**Module Design**

Session no.	Session Topics	Method	Duration	Training Aids, Tools and Equipment
2.	Health, safety and environment	Interactive Lecture, site visit	240 mins	PPT, PPE , First aid kit, different types of bandages,

				dressing materials, pen, pencil, notebook
TOTAL			<b>4 Hrs</b>	

## Session Plan 2- Health, Safety and Environment

### Session Objectives

At the end of the session, the trainee will be able to:

- Demonstrate and use Personal Protective Equipment meant to protect a worker's head, feet, face, eyes, ears, hands and body. Demonstrate and use respiratory protection and fall protection as necessary.
- Follow and deed the Do's and Don'ts during working at heights
- Carry out safety measures and drills with action and roles in normal times and emergency by mock drills.
- Practice first aid with identification and use of basic dressing materials and bandages, resuscitation practices and actions
- Ensure waste disposal and pollution control with organic and inorganic waste disposal methods, sound and noise control and protection methods.
- Carry out Environment, Health and Safety performance.
- Follow safety related activities in steel, bars open in work area, while cutting, bending the same and the measures to avoid accidents.
- Practice safe system in work area or clear plan on safety action
- Demonstrate lifting operations manually, pallets and using slings for crane operations.

### Duration

S.no.	Sub – Topics	Duration	
		Theory	Practical
2.1	PPE	180 Mins	60 Mins
2.2	Working at heights		
2.3	Safety measures and drills		
2.4	First Aid		
2.5	Waste disposal		
2.6	Environment, health and safety		
2.7	Generic Skills		
TOTAL		<b>3 Hrs</b>	<b>1 Hr</b>

## Instructions to the Trainer

- Follow instructions given in the activity section
- Ensure all the task is done in sequence as given
- Gather all the materials and information required in well advance
- Keep the class energetic and motivated to learn

## Materials/ Equipment Required

- Room to Accommodate 30 Trainees
- Black Board/White Board with Writing and Erasing Materials
- Computer and Projector for Power Point Presentation
- PPT and Participant Guide

## Tips for Trainer

- Be energetic while introducing yourself to the trainees.
- Be aware of the timing required to complete the activity
- Training materials should be used at the right time and in the right way
- Maintain the flow of the module from start to finish
- Making sure that the Trainees are comfortable and eager to learn.

## Slide No: 34-128



## Activity 1

**Objective:** To provide knowledge on PPE use, safe methods of working at heights, safe systems of work, first aid, waste disposal, safe methods of steel work and safe lifting operations

## Methodology:

### Interactive Lecture

- PPE, Working at heights
- Safety and first aid
- Waste disposal
- Safety in steel
- Lifting operations

- Soft skills

**Material required:** PPT, Participants Guide

**Outcome:** The trainees will be able to demonstrate and use PPE, describe safe methods of working at heights, safe systems of work, first aid, waste disposal, safe methods of steel work and safe lifting operations

### Activity 2

**Objective:** To demonstrate and use PPE, describe safe methods of working at heights, safe systems of work, first aid, waste disposal, safe methods of steel work and safe lifting operations

**Methodology:**

#### Site visit

- Demonstrate how to use PPE
- Demonstrate safe methods of working at heights
- Demonstrate first aid methods and correct waste disposal
- Demonstrate working with steel and safe lifting operations

**Material required:** PPE for all participants, first aid kit, different types of bandages, dressing materials, pen, pencil, notebook, stacks of rebar and other construction materials

**Outcome:** The trainees will be able to demonstrate and use PPE, describe safe methods of working at heights, safe systems of work, first aid, waste disposal, safe methods of steel work and safe lifting operations

### Activity 3

Further practice of activities demonstrated in activity 2, as part of OJT

**Debrief:** The trainer will recap by summarizing the entire module in brief

#### Assessment

1. What is PPE and what are the requirements with regards to wearing PPE?
2. List any 2 do's and Don'ts of working at heights?
3. Name any 3 types of bandages and its purpose?
4. What is a roller bandage and list 3 steps when using roller bandage?



## Module 3: Identification and use of basic tools, equipment and materials

### Module Overview

This module provides the trainees the skills and knowledge required to identify and use basic tools, equipment and materials at the construction site

### Module Objectives.

By completing this module the trainee would have gained knowledge about:

- Identification and use of basic tools, equipment and materials by helper mason in the construction site.

### Underpinning Knowledge/ Theory/ Principle

- Knowledge about the construction industry in India
- Knowledge of the parts of a building, measurements and calculations
- Knowledge of common materials, tools and the roles of a helper mason
- Knowledge required to work responsibly by following health, safety and environmental measures in a construction site.

### Module Design

Session no.	Session Topics	Method	Duration	Training Aids, Tools and Equipment
3.	Identification and use of basic tools, equipment and materials	Interactive Lecture, site visit	300 mins	PPT, PPE, trowel, shovel, mortar board, cement pan, bucket, fine aggregates, coarse aggregates, cement, water, bricks, wood, paint, scale/ruler ,pen/pencil to take notes.
TOTAL			<b>5 Hrs</b>	

## Session Plan 3- Identification and use of basic tools, equipment and material

### Session Objectives

At the end of the session, the trainee will be able to:

- Identify, select and use of hand and measuring tools such as mason trowel, brick hammer, bluster chisel, comb hammer, straight edge, plumb bob, spirit level etc.
- Identify, select and use of construction materials such as bricks, fine aggregates, course aggregates, cement, wood, paint and water.
- Identify and select basic power tools such as drill machines, compactor, vibrator, stone cutting machine etc

### Duration

S.no.	Sub – Topics	Duration	
		Theory	Practical
3.1	Masonry tools	60 Mins	240 Mins
3.2	Construction materials		
3.3	Power tools		
TOTAL		1 Hr	4 Hrs

### Instructions to the Trainer

- Follow instructions given in the activity section
- Ensure all the task is done in sequence as given
- Gather all the materials and information required in well advance
- Keep the class energetic and motivated to learn

### Materials/ Equipment Required

- Room to Accommodate 30 Trainees
- Black Board/White Board with Writing and Erasing Materials
- Computer and Projector for Power Point Presentation
- PPT and Participant Guide

### Tips for Trainer

- Be energetic while introducing yourself to the trainees.
- Be aware of the timing required to complete the activity
- Training materials should be used at the right time and in the right way
- Maintain the flow of the module from start to finish
- Making sure that the Trainees are comfortable and eager to learn.

Slide No: 129-183



## Activity 1

**Objective:** To provide knowledge on identification and selection of basic masonry tools, construction materials, and basic power tools used at the construction site.

### Methodology:

#### Interactive Lecture

- Masonry tools (trowel and its different types)
- Identification of building materials (cement, sand, brick, aggregates)
- Selection and types of different grades of cement
- Selection of fine and coarse aggregates
- Basic power tools (hand drill, compactor and stone cutting machine)

**Material required:** PPT, Participants Guide

**Outcome:** The trainees will be able to and use masonry tools, describe and identify construction materials, methods of checking surface and water levels, and identification of basic power tools

## Activity 2

**Objective:** To Demonstrate how to use masonry tools, construction materials and power tools on the construction site.

### Methodology:

#### Site visit

- Demonstrate how to use masonry tools
- Demonstrate on how to identify and select construction materials
- Demonstrate on how to identify and select types /grades of cement
- Demonstrate on how to identify and select basic power tools

**Material required:** PPE for all participants, pen, pencil, notebook, and other construction materials

**Outcome:** The trainees will be able to demonstrate and identify masonry tools, construction materials and power tools on the construction site.

**Debrief:** The trainer will recap by summarizing the entire module in brief

### Activity 3

Further practice of activities demonstrated in activity 2, as part of OJT

#### Assessment:

1. Name some of the masonry tools and its uses?
2. What is a plumb bob and where is the plumb bob used?
3. What are the qualities of good brick?
4. Name the different grades of cement?

## Module 4: Material Handling & Storing

### Module Overview

This module provides the trainees the skills and knowledge required to handle and store the construction materials on site.

#### Module Objectives.

By completing this module the trainee would have gained knowledge about:

- Manual handling, loading and unloading construction materials, proper storing and stacking materials, methods to lift tools and materials individually and in a team and handle loose and fluid materials in the construction site.

#### Underpinning Knowledge/ Theory/ Principle

- Knowledge about the construction industry in India
- Knowledge of the parts of a building, measurements and calculations
- Knowledge of common materials, tools and the roles of a helper mason
- Knowledge required to work responsibly by following health, safety and environmental measures in a construction site.
- Knowledge to identify and select masonry and power tools, building materials

#### Module Design

Session no.	Session Topics	Method	Duration	Training Aids, Tools and Equipment
4.	Material handling and storing	Interactive Lecture, site visit	360 mins	PPT, PPE, fine aggregates, coarse aggregates, cement, water, bricks, wood, paint, scale/ruler ,pen/pencil to take notes.

TOTAL		6 Hrs	
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## Session Plan 4- Material handling and storing

### Session Objectives

At the end of the session, the trainee will be able to:

- Lift & shift the materials by involving push and pull in accordance with workplace EHS requirement.
- Follow methods and sequence of loading, unloading of materials such as cement, steel, sand, aggregate, paint and wood etc.
- Maintain proper Storing and stacking of cement, steel, wood, aggregate, paints, inflammable and other construction materials.
- Handle and lift different materials such as sand, bricks, blocks & metals
- Recognize individual work and team work for lifting, loading and unloading of materials
- Carry loose and fluid materials like chemicals, form-oil, fuel & admixtures.

### Duration

S.no.	Sub – Topics	Duration	
		Theory	Practical
4.1	Lift and shift the materials in accordance with workplace EHS requirement	120 Mins	240 Mins
4.2	Methods and sequence of loading, unloading of materials		
4.3	Storing and stacking of construction materials		
4.4	Individual work and team work for lifting, loading and unloading materials		
4.5	Handling loose and fluid materials		
TOTAL		2 Hrs	4 Hr

### Instructions to the Trainer

- Follow instructions given in the activity section

- Ensure all the task is done in sequence as given
- Gather all the materials and information required in well advance
- Keep the class energetic and motivated to learn

## Materials/ Equipment Required

- Room to Accommodate 30 Trainees
- Black Board/White Board with Writing and Erasing Materials
- Computer and Projector for Power Point Presentation
- PPT and Participant Guide

## Tips for Trainer

- Be energetic while introducing yourself to the trainees.
- Be aware of the timing required to complete the activity
- Training materials should be used at the right time and in the right way
- Maintain the flow of the module from start to finish
- Making sure that the Trainees are comfortable and eager to learn.

Slide No: 184- 239



## Activity 1

**Objective:** To provide knowledge on material handling and storage of construction materials.

**Methodology:**

## Interactive Lecture

- Lift and shift materials as per EHS requirement
- Follow methods to load and unload construction materials
- Storing and stacking of construction materials
- Individual work for lifting and unloading materials
- Carry loose and fluid materials at construction site

**Material required:** PPT, Participants Guide

**Outcome:** The trainees will be able to demonstrate lift and shift of materials, individual and team work lifting, describe methods to load and unload materials, methods of storing and stacking, and carry loose and fluid materials.

### Activity 2

**Objective:** To demonstrate lift and shift of materials, methods of loading and unloading, storing and stacking, perform individual and team work lifting and carry loose and fluid materials at the construction site.

### Methodology:

#### Site visit

- Demonstrate on how to lift and shift materials
- Demonstrate on how to load and unload construction materials
- Demonstrate on how to stack and store construction materials
- Demonstrate on individual and team work lifting
- Demonstrate to carry loose and fluid materials

**Material required:** PPE for all participants, pen, pencil, notebook, and other construction materials

**Outcome:** The trainees will be able to demonstrate lift and shift of materials, methods of loading and unloading, storing and stacking, perform individual and team work lifting and carry loose and fluid materials at the construction site

### Activity 3

Further practice of activities demonstrated in activity 2, as part of OJT

**Debrief:** The trainer will recap by summarizing the entire module in brief

#### Assessment:

1. What is 5S principle and Name all the 5 principles?
2. What are the safety precautions for handling construction materials?
3. Name any 2 points to keep in mind when storing and stacking cement?
4. Name any 3 points to keep in mind when storing steel and wood?
5. List any 4 points when handling flammable liquids?

## Module 5: Preparation of cement mortar and concrete mix

### Module Overview

This module provides the trainees the skills and knowledge required to prepare, move and place cement mortar and concrete mix in a construction site.

**Module Objectives.**

By completing this module the trainee would have gained knowledge about:

- Selecting proper mixing platform, preparing, moving and placing cement mortar and concrete mix in a construction site.

**Underpinning Knowledge/ Theory/ Principle**

- Knowledge about the construction industry in India
- Knowledge of the parts of a building, measurements and calculations
- Knowledge of common materials, tools and the roles of a helper mason
- Knowledge required to work responsibly by following health, safety and environmental measures in a construction site.
- Knowledge to identify and select masonry and power tools, building materials
- Knowledge required to handle and store construction materials on site.

**Module Design**

Session no.	Session Topics	Method	Duration	Training Aids, Tools and Equipment
5.	Preparation of cement mortar and concrete mix	Interactive Lecture, site visit	360 mins	PPT, PPE, trowel, shovel, mortar board, cement pan, bucket, cement, fine and coarse aggregates, water scale/ruler, pen/pencil to take notes
TOTAL			<b>6 Hrs</b>	

## **Session Plan 5- Preparation of cement mortar and concrete mix**

**Session objectives**

At the end of the session, the trainee will be able to:

- Select Proper mixing platform by ensuring surface to be clean, dry, smooth and hard.
- Measure the dry ingredients correctly by using appropriate measuring / weighing scales



- Open use & stack cement bag properly.
- Mix the mortar or concrete uniformly within stipulated time.
- Make 0.245 cum cement mortar mix in 30 minutes with one helper
- Move, place and operate the hand operated concrete mixtures
- Pour the material into the concrete mixtures
- Place and transport the concrete
- Make 0.25 cum cement concrete mix in 30 minutes with one helper.
- Do curing for the elements for the minimum stipulated time.
- Maintain the site tidiness accordingly.

### Duration

S.no.	Sub – Topics	Duration	
		Theory	Practical
5.1	Surface preparation	120 Mins	240 Mins
5.2	Cement stacking and storing at site		
5.3	Mortar mix		
5.4	Hand operated concrete mixer		
5.5	Transport and place concrete		
5.6	Mix proportion to make 0.25 cum concrete		
5.7	Curing of concrete or mortar		
5.8	Construction site clean up		
TOTAL		2 Hrs	4 Hr

### Instructions to the Trainer

- Follow instructions given in the activity section
- Ensure all the task is done in sequence as given
- Gather all the materials and information required in well advance
- Keep the class energetic and motivated to learn

### Materials/ Equipment Required

- Room to Accommodate 30 Trainees
- Black Board/White Board with Writing and Erasing Materials
- Computer and Projector for Power Point Presentation
- PPT and Participant Guide

### Tips for Trainer

- Be energetic while introducing yourself to the trainees.
- Be aware of the timing required to complete the activity

- Training materials should be used at the right time and in the right way
- Maintain the flow of the module from start to finish
- Making sure that the Trainees are comfortable and eager to learn.

Slide No: 240-287



### Activity 1

**Objective:** To provide knowledge on proper mixing platform, preparing moving and placing cement mortar and concrete mix in a construction site.

**Methodology:**

#### Interactive Lecture

- Surface preparation
- Weighing dry ingredients
- Storing and stacking of cement
- Mortar mix
- Hand operated concrete mixer
- Transport and placing concrete
- Curing
- Construction site clean up

**Material required:** PPT, Participants Guide

**Outcome:** The trainees will be able to describe proper mixing platform, preparing moving and placing cement mortar and concrete mix in a construction site.

### Activity 2

**Objective:** To demonstrate how to maintain clean platform before mixing materials, weighing dry ingredients, storing and stacking of cement, preparing to make mortar and concrete mix, operate hand concrete mixer, transport, place and cure concrete and maintain construction site housekeeping activities.

**Methodology:**

### Site visit

- Demonstrate how to clean platform before mixing materials.
- Demonstrate how to weigh dry ingredients and stack cement
- Demonstrate how to make mortar and concrete mix.
- Demonstrate operating hand concrete mixer
- Demonstrate how to transport, place and cure concrete and maintain site housekeeping activities

**Material required:** PPE for all participants, pen, pencil, notebook, and other construction materials

**Outcome:** The trainees will be able to demonstrate on how to maintain clean platform before mixing materials, weighing dry ingredients, storing and stacking of cement, prepare to make mortar and concrete mix, operate hand operated concrete mixer, transport, place and cure concrete and maintain construction site housekeeping activities.

### Activity 3

Further practice of activities demonstrated in activity 2, as part of OJT

**Debrief:** The trainer will recap by summarizing the entire module in brief

### Assessment:

1. List any 2 major differences between concrete and mortar?
2. What are the components used for mixing cement mortar? What is the ratio of the mix?
3. Define a hand operated concrete mixer?
4. What are the components used for mixing cement concrete? What is the ratio of the mix?
5. What is curing? List any 3 methods of curing?

## Module 6: Different types of bonds in basic brickworks

### Module Overview

This module provides the trainees the skills and knowledge required to use different types of bonds in basic brickworks.

### Module Objectives.

By completing this module the trainee would have gained knowledge about:

- Using different types of bonds in basic brickworks and construction of brick wall layer by layer in a construction site.

### Underpinning Knowledge/ Theory/ Principle

- Knowledge about the construction industry in India
- Knowledge of the parts of a building, measurements and calculations
- Knowledge of common materials, tools and the roles of a helper mason
- Knowledge required to work responsibly by following health, safety and environmental measures in a construction site.
- Knowledge to identify and select masonry and power tools, building materials
- Knowledge required to handle and store construction materials on site.
- Knowledge required to prepare, move and place cement mortar and concrete mix in a construction site.

### Module Design

Session no.	Session Topics	Method	Duration	Training Aids, Tools and Equipment
6.	Different types of bonds in basic brickworks.	Interactive Lecture, site visit	360 mins	PPT, PPE, trowel, hammer, stone chisel, measuring tape, straight edge, calculator, cement, water, bricks, fine aggregates, scale/ruler ,pen/pencil to take notes
TOTAL			<b>6 Hrs</b>	

## Session Plan 6- Different types of bonds in basic brickworks.

### Session Objectives

At the end of the session, the trainee will be able to:

- Arrange, shift, and stack the required materials, tools and tackles.
- Mark the header/ stretcher/ English bond layout.
- Set out 90 degree using building square or 3-4-5 method for corners
- Make the Dry bon ding
- Assist to Construct the brick wall by making layer by layer to avoid vertical joints with appropriate closures.
- Follow the trade safety & construction techniques up to completion.
- Aware of overall length of wall, heights of wall, regular joint thickness, plumb and

wall alignment as per the requirement.

- Complete the task as per the Productivity and housekeeping requirement..

### Duration

S.no.	Sub – Topics	Duration	
		Theory	Practical
6.1	Shift and stack required materials	120 Mins	240 Mins
6.2	Mark header/stretcher/bond layout		
6.3	Setting out 90 degree (3-4-5 method)		
6.4	Dry bonding		
6.5	Safety precautions		
TOTAL		2 Hrs	4 Hr

### Instructions to the Trainer

- Follow instructions given in the activity section
- Ensure all the task is done in sequence as given
- Gather all the materials and information required in well advance
- Keep the class energetic and motivated to learn

### Materials/ Equipment Required

- Room to Accommodate 30 Trainees
- Black Board/White Board with Writing and Erasing Materials
- Computer and Projector for Power Point Presentation
- PPT and Participant Guide

### Tips for Trainer

- Be energetic while introducing yourself to the trainees.
- Be aware of the timing required to complete the activity
- Training materials should be used at the right time and in the right way
- Maintain the flow of the module from start to finish

Making sure that the Trainees are comfortable and eager to learn

Slide No: 288- 324



## Activity 1

**Objective:** To provide knowledge required to use different types of bonds in basic brickworks.

### Methodology:

#### Interactive Lecture

- Shift and stack materials
- Header, stretcher, bond layout
- 3-4-5 method procedure
- Dry bonding
- Construct brick wall
- Safety construction tips
- Wall measurements
- Wall construction safety

**Material required:** PPT, Participants Guide

**Outcome:** The trainees will be able to describe different types of bonds in basic brickworks.

## Activity 2

**Objective:** To demonstrate how to shift and stack materials, marking header/stretcher and bond layout, setting out 90 degree (3-4-5 method), dry bonding, constructing brick wall, hazards and safety with regards to brickwork.

### Methodology:

#### Site visit

- Demonstrate how to shift and stack materials.
- Demonstrate how to mark header/stretcher and bond layout
- Demonstrate how to set 90 degree (3-4-5 method).
- Demonstrate dry bonding
- Demonstrate how to construct brick wall and safety measures with regards to brickwork.

**Material required:** PPE for all participants, pen, pencil, notebook, and other construction materials

**Outcome:** The trainees will be able to demonstrate how to shift and stack materials, marking header/stretcher and laying out brick bond, setting out 90 degree ( 3-4-5 method), dry bonding, constructing brick wall, hazards and safety with regards to brickwork.

### Activity 3

Further practice of activities demonstrated in activity 2, as part of OJT

**Debrief:** The trainer will recap by summarizing the entire module in brief

### Assessment

1. List any 4 points to lift, store and stack materials
2. Define header and stretcher in brickwork?
3. What is English bond? List the rules followed to perform English bond?
4. List all the steps required to set 90 degree (3-4-5) for the corners.
5. Briefly describe how to measure the length and breadth of wall?

## Module 7: Erect and dismantle 3.6 meter temporary scaffold

### Module Overview

This module provides the trainees the skills and knowledge required to erect and dismantle a 3.6 meter temporary scaffold

### Module Objectives

By completing this module the trainee would have gained knowledge about:

- Erecting and dismantling 3.6 meter temporary scaffold

### Underpinning Knowledge/ Theory/ Principle

- Knowledge about the construction industry in India
- Knowledge of the parts of a building, measurements and calculations
- Knowledge of common materials, tools and the roles of a helper mason
- Knowledge required to work responsibly by following health, safety and environmental measures in a construction site.
- Knowledge to identify and select masonry and power tools, building materials
- Knowledge required to handle and store construction materials on site.
- Knowledge required to prepare, move and place cement mortar and concrete mix in a construction site
- Knowledge required to construct different types of bonds in brickworks.

**Module Design**

Session no.	Session Topics	Method	Duration	Training Aids, Tools and Equipment
7.	Erect and dismantle 3.6 meter temporary scaffold.	Interactive Lecture, site visit	300 mins	PPT, PPE, Sole plates:, Screw jacks, Standard size frames, Cross Braces, Toe Boards:, Tubes, Right angle couplers:, Height couplers:, Deck planks:. Nail,. Spanner set, adjustable wrench, hammer, screw driver set, spirit level, plum bob
OTAL			<b>5 Hrs</b>	

## Session Plan 7- Erect and dismantle 3.6meter temporary scaffold

**Session Objectives**

At the end of the session, the trainee will be able to:

- Arrange, shift, and stack the required materials, tools and tackles at the identified location.
- Use the required safety gadgets
- Follow the trade safety in erecting and dismantling 3.6 meter temporary scaffold.
- Erect and dismantle 3.6 meter temporary scaffold
- Shift the materials such as brick, sand, mortar, concrete, etc. from the bottom level of temporary scaffolding to the landing of temporary scaffolding
- Complete the task within the time limit.
- Maintain the site tidiness accordingly

**Duration**

S.no.	Sub – Topics	Duration	
		Theory	Practical
7.1	Scaffold and its parts	60 Mins	240 Mins
7.2	Erection and dismantling		
7.3	Scaffold hazards and Safety		



TOTAL	1 Hr	4 Hr
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### Instructions to the Trainer

- Follow instructions given in the activity section
- Ensure all the task is done in sequence as given
- Gather all the materials and information required in well advance
- Keep the class energetic and motivated to learn

### Materials/ Equipment Required

- Room to Accommodate 30 Trainees
- Black Board/White Board with Writing and Erasing Materials
- Computer and Projector for Power Point Presentation
- PPT and Participant Guide

### Tips for Trainer

- Be energetic while introducing yourself to the trainees.
- Be aware of the timing required to complete the activity
- Training materials should be used at the right time and in the right way
- Maintain the flow of the module from start to finish

Making sure that the Trainees are comfortable and eager to learn

Slide No: 325-348

#### Erect and Dismantle 3.6m scaffold

##### Scaffold and its parts

- A Scaffold is a temporary structure consisting of standards (verticals) and ledgers (horizontal) generally of bamboo, timber or metal, erected to provide a working platform for workers, tools and materials in the course of construction.
- There are several types of scaffolds which are erected for different purposes, each capable of handling different types of loads and equipment. Scaffolds can be built to reach any height, if properly planned, designed and erected.
- One of the simplest types of metal scaffold that can be easily erected to a height of 3.6 meters is the frame scaffold, which has been covered in this section.

LabourNet

### Activity 1

**Objective:** To provide knowledge required to erect and dismantle 3.6 meter temporary scaffold

**Methodology:**

### Interactive Lecture

- Definition and terminology
- Erect and dismantle 3.6m scaffold

- Stacking, storing and scaffold Safety

**Material required:** PPT, Participants Guide

**Outcome:** The trainees will be able to describe how to erect and dismantle 3.6 meter temporary scaffold.

### Activity 2

**Objective:** To demonstrate how to erect and dismantle 3.6 meter scaffold and safe methods of working with scaffold and its tools

**Methodology:**

#### Site visit

- Demonstrate how to erect and dismantle 3.6 meter scaffold
- Demonstrate safe methods of working with scaffold and its tools

**Material required:** PPE for all participants, Sole plates: 3nos, Screw jacks: 6nos, Standard size frames: 6nos, Cross Braces: 8nos, Toe Boards: 4nos, Tubes: 8nos, Right angle couplers: 7nos, Height couplers: 12nos, Deck planks: 4nos. Nails: 1 box. Spanner set, adjustable wrench, hammer, screw driver set, spirit level, plum bob, PPE.

**Outcome:** The trainees will be able to demonstrate how to erect and dismantle 3.6 meter scaffold and safe methods of working with scaffolding and its tools.

### Activity 3

Further practice of activities demonstrated in activity 2, as part of OJT

**Debrief:** The trainer will recap by summarizing the entire module in brief

#### Assessment:

1. List any 4 points to be noted to lift, store and stack scaffolding materials
2. Define scaffolding, brace, bay length and ledger?
3. Briefly describe the steps to erect and dismantle 3.6m scaffold?
4. List the risks associated with scaffold in confined area
5. List all safe work practices when erecting and dismantling scaffold

## **Module 8: Cutting, filling, levelling and compaction**

### **Module Overview**

This module provides the trainees the skills and knowledge required to cut, fill, level and compact earth.

## Module Objectives

By completing this module the trainee would have gained knowledge about:

- Cutting, filling, levelling and compaction of earth.

## Underpinning Knowledge/ Theory/ Principle

- Knowledge about the construction industry in India
- Knowledge of the parts of a building, measurements and calculations
- Knowledge of common materials, tools and the roles of a helper mason
- Knowledge required to work responsibly by following health, safety and environmental measures in a construction site.
- Knowledge to identify and select masonry and power tools, building materials
- Knowledge required to handle and store construction materials on site.
- Knowledge required to prepare, move and place cement mortar and concrete mix in a construction site
- Knowledge required to construct different types of bonds in brickworks.
- Knowledge required to erect and dismantle 3.6m scaffold.

## Module Design

Session no.	Session Topics	Method	Duration	Training Aids, Tools and Equipment
8.	Cutting, filling, levelling and compaction	Interactive Lecture, site visit	300 mins	PPT, PPE, pen, pencil, notebook, tools such as hoe, shovel, pick axe, wheelbarrow , pan ,hand operated roller.
TOTAL			<b>5 Hrs</b>	

## Session Plan 8- Cutting, filling, levelling and compaction

### Session Objectives

At the end of the session, the trainee will be able to:

- Identify Tool & tackles required for the job

- Cut & fill the earth as per the markings and layout
- Leveling & compaction of earth at desired level & location.
- Operate the hand roller.
- Help & support to the concerned tradesman prevent the collapse of the trench.
- Use of PPE & take protective action before and after during hazards.

### Duration

S.no.	Sub – Topics	Duration	
		Theory	Practical
8.1	Cutting, filling and levelling	60 Mins	240 Mins
8.2	Compaction		
8.3	Trenching safety		
TOTAL		1 Hr	4 Hr

### Instructions to the Trainer

- Follow instructions given in the activity section
- Ensure all the task is done in sequence as given
- Gather all the materials and information required in well advance
- Keep the class energetic and motivated to learn

### Materials/ Equipment Required

- Room to Accommodate 30 Trainees
- Black Board/White Board with Writing and Erasing Materials
- Computer and Projector for Power Point Presentation
- PPT and Participant Guide

### Tips for Trainer

- Be energetic while introducing yourself to the trainees.
- Be aware of the timing required to complete the activity
- Training materials should be used at the right time and in the right way
- Maintain the flow of the module from start to finish

Making sure that the Trainees are comfortable and eager to learn

Slide No: 343-375

### Cutting, filling, levelling and compaction

#### Cutting, filling and levelling

Cutting is the process of removing earth from one place to make ground surface level.

Filling is the process of adding earth to one place to make the ground surface level.

Levelling is the process of preparing the ground by removing/ adding earth (cutting and filling) in order to make the ground surface of the construction site completely free of undulations/uneven surfaces, ready for construction.

LabourNet

### Activity 1

**Objective:** To provide knowledge required to cut, fill, level and compact earth.

**Methodology:**

#### Interactive Lecture

- Cutting Filling and Levelling
- Compaction
- Trenching Safety

**Material required:** PPT, Participants Guide

**Outcome:** The trainees will be able to describe how to cut, fill, level and compact earth

### Activity 2

**Objective:** To demonstrate how to cut, fill, level and compact earth

**Methodology:**

#### Site visit

- Demonstrate how to cut and fill earth
- Demonstrate how to level and compact earth

**Material required:** PPE for all participants, pen, pencil, notebook, tools such as shovel, pick axe, wheelbarrow, hoe and pan.

**Outcome:** The trainees will be able to demonstrate how to cut, fill, level and compact earth.

### Activity 3

Further practice of activities demonstrated in activity 2, as part of OJT

**Debrief:** The trainer will recap by summarizing the entire module in brief.

**Assessment:**

1. List any 3 hand operated and machine operated tools for earthwork
2. Briefly describe excavation and embankment of earthwork?
3. List all the steps required to prevent collapse of trench during excavation
4. List any 3 purposes for levelling and compaction
5. Define a hand operated roller and its use?

PREVIEW