

MASON GENERAL - NSQF LEVEL: 4

CURRICULUM / SYLLABUS – Duration: 68 Hours Bridge Course

Qualification Pack Name & Reference ID. - CON/Q0103

Aim: This program is aimed at training candidates for the job of a “Mason General”, in the “Construction” Sector/Industry and aims at building the following key competencies amongst the learner

Training Outcomes

After completing this programme, participants will be able to:

- Gain insight into Mason General job role and its career progression: - Role of a Mason General in construction industry along with the future possible career development provisions.
- Construct masonry structure using Brick/block :- Select and use tools and equipment for constructing masonry structure using brick/block
- Execute plaster on internal & external surfaces of masonry & RCC structure:- Select & use tools and equipment for carrying out plastering on internal and external surfaces of masonry & RCC structures
- Carry out waterproofing works for structures using cementitious materials: - Select and use tools, materials and equipment for carrying out brush bond waterproofing and brick bat coba course for waterproofing works.
- Build structures using random rubble masonry :- Select and use tools, materials and equipment for construction of structure using random rubble masonry
- Carry out IPS / Tremix flooring :- Select and use tools, materials and equipment for construction of IPS/Tremix flooring works
- Work effectively in a team to deliver desired results at the workplace :- Organised working procedure within a team at site
- Plan and organize work to meet expected outcomes :- Prioritizing activities and organising resources to meet desired outcome
- Work according to personal health, safety and environment protocol at construction site: -Importance of Health & Safety aspects & measures to be followed while working

S.No.	Module	Key Learning Outcomes	Equipment Required
1	Introduction to Mason General job role Theory Duration (hh:mm) 01:00 Practical Duration (hh:mm) 00:00	<ul style="list-style-type: none">• Role description/ functions of the job role• Expected personal attributes from the job role• Brief description about course content, mode of learning and duration of course• Future possible progression and career development provisions on completion of the course	1. Projector 2. Blackboard
2	Construct masonry structures using brick / block Theory Duration (hh:mm) 2:00 Practical Duration (hh:mm) 12:00	Theory:- <ul style="list-style-type: none">• Brief about the measurement and conversion of units of measurement• Reading of drawing for Brick/Block work• Types of tools used for brick/ block work• How to select and use tools for masonry works• Type of raw material like cement, sand, aggregate, bricks/blocks• Visual checks performed for assessing the brick• Basic levelling instruments like spirit level and water levelling, its setting and use	1.Hammer 2.Brick chisel 3.Stone chisel 4. Masonry hand saw 5.Steel trowel, Float wooden/metal) 6.Straight edge (Aluminium) 7.Wood/rubber mallet 8. Spade (Phawda)

MASON GENERAL - NSQF LEVEL: 4

CURRICULUM / SYLLABUS – Duration: 68 Hours Bridge Course

<p>Corresponding NOS Code CON/N0110</p>	<ul style="list-style-type: none"> • Determining vertical and horizontal alignment using thread line, spirit level, plum bob etc. • 3-4-5 method for squaring corners • Method of carrying out checks for preparatory works like surface preparation • Techniques for cutting, chiselling of bricks as per closure using appropriate tools • Basic knowledge of water cement ratio. • Brief of English, Flemish, stretcher and header bond • Process of laying and fixing brick/blocks in position with uniform joints • Various adhesives used in block work • Marking and layout of tread and risers for staircase • Laying and fixing of bricks in staircase • Different components of arch and its terminology • Importance of providing proper joint spacing and gauging in arches • Various method of curing of masonry structure • Demonstration/ Practical : - • Read and understand sketches / basic working for brick/block • Selection and use of hand and power tools for measuring, marking, cutting and fixing brick/block • Setting out the layout as per drawing/instruction and transferring levels as per layout • Performing visual checks for brick/block, cement, aggregate • Build brick/block wall as per standards tolerance as per relevant drawing. • Demonstrate checks for maintaining line and level of each course of brick/block wall • Demonstrate setting out of 90° corners using builders square or 3 - 4 -5 method. • Demonstrate raking and cleaning of joints as specified prior to drying of bonding mortar • Demonstrate preparation of lime/cement mortar for pointing as per specification • Demonstrate filling of joints with mortar to obtain specified type of pointing using appropriate tools. • Demonstrate set out of tread and riser for staircase • Demonstrate building of staircase maintaining bond, alignment and plumb. • Demonstrate building of manhole as per required drawing as per specifications • Demonstrate fixing of paver blocks • Demonstrate installations and fixing of arch elements for building arches. 	<ol style="list-style-type: none"> 9. Mortar pan (Ghamela) 10. Line dori and pins 11. Plumb bob 12. Try square 13. Spirit level 14. Measuring tape 15. Gauge box 16. Lifting , appliances (wheel and rope, shackles, sling, belts) 17. Wheel barrows 18. Mixing plat form (3'x5') 19. Helmet 20. Face shield 21. Safety goggles 22. Safety shoes 23. Safety belt 24. Ear defenders 25. Reflective jackets
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MASON GENERAL - NSQF LEVEL: 4

CURRICULUM / SYLLABUS – Duration: 68 Hours Bridge Course

		<ul style="list-style-type: none"> • Demonstrate building of arches, cutting creepers around corners and filling of joints for arches. • Demonstrate removal of deteriorated elements from masonry works using appropriate tools. • Demonstrate reinstallation of bricks to match adjacent surfaces. • Demonstrate proper filling and raking of repaired work and it's bonding and matching with adjacent surfaces 	
3.	<p>Execute plaster on internal & external surfaces of masonry & RCC structure</p> <p>Theory Duration (hh:mm) 2:00</p> <p>Practical Duration (hh:mm) 12:00</p> <p>Corresponding NOS Code CON/N0116</p>	<p>Theory:-</p> <ul style="list-style-type: none"> • Standard practices for plastering works. • Brief about Drawings /sketches relevant to plastering works • Tools and equipment used for plastering works and their standard specifications. • Basic levelling tools used in masonry works • Process of carrying out layout marking and levelling for plastering works • Different material used for plastering and various ratios of mix proportion used for plastering on internal and external surfaces. • Process of performing various visual checks on materials and surface for plastering • Gradation of sand for internal plastering works • Different type of plasters such as sand faced plaster, rough cast plaster pebbled cast plaster, smooth cast plaster • Procedures and techniques for plastering internal and external masonry and RCC structures • Procedure for determining the horizontal and vertical alignment using plumb bob <p>Demonstration/ Practical :-</p> <ul style="list-style-type: none"> • Reading and interpreting the sketches/basic working drawing for plastering • Selecting tools and performing checks to confirm their workability • Setting out the layout as per drawing/instruction and transferring levels as per layout • Performing visual checks for sand, cement and surface to be plastered • Estimate the quantity of material required for work. • Checking and ensuring that the cement mortar mix to confirm to specified proportion. • Demonstrate placing of dummy dots (level pads) for a levelled plastering work. • Demonstrate application of cement slurry and cement mix for obtaining desired thickness of plaster using appropriate tools. • Demonstrate checks for vertical and horizontal alignment using appropriate tools of plastered surface. 	<ol style="list-style-type: none"> 1. Hammer, 2. Brick chisel 3. Steel trowel, Float wooden/metal) 4. Straight edge (Aluminium) 5. Spade (Phawda) 6. Mortar pan (Ghamela) 7. Corner trowel 8. Line dori and pins 9. Screed board 10. Plumb bob 11. Try square 12. Spirit level 13. Measuring tape 14. Gauge box 15. Scaffold set (Including all components) 16. Lifting , appliances (wheel and rope, shackles, sling, belts) 17. Wheel barrows 18. Wooden sleepers 19. Sieves mesh 20. Mixing plat form (3'x5') 20. Helmet 21. Face shield 22. Safety goggles 23. Safety shoes 24. Safety belt 25. Ear defenders 26. Reflective jackets

MASON GENERAL - NSQF LEVEL: 4

CURRICULUM / SYLLABUS – Duration: 68 Hours Bridge Course

		<ul style="list-style-type: none"> • Demonstrate setting out of 90° at corners is required. • Demonstrate maintaining slope/fall in case of floor plastering. • Store tools properly after use 	
4	<p>Carry out waterproofing works for structures using cementitious materials</p> <p>Theory Duration (hh:mm) 1:00</p> <p>Practical Duration (hh:mm) 4:00</p> <p>Code CON/N0112</p>	<p>Theory:-</p> <ul style="list-style-type: none"> • Standard practices for waterproofing works. • Drawings /sketches relevant to waterproofing works • Tools and equipment used for waterproofing works and their standard specifications. • Different material used for waterproofing and various ratios of mix proportion used for cement mortar mix for waterproofing works. • Process of performing various visual checks on materials and surface for waterproofing • Different type of defects present on concrete surfaces such as caulking etc. • Different surface preparation method prior to waterproofing such as • Prime coating • Filling holes or depressions by cementitious material • Hacking of existing RCC surface • Chipping / scraping of protrusions • Cleansing free of dust • Priming or sealing of surface • Different type of waterproofing works • Different type of waterproofing compounds used for waterproofing works • Procedure for laying out cementitious waterproofing course • Procedure for checking water leakage in waterproofed surface • Procedure for carrying out horizontal and vertical alignment of waterproofed course • Procedure for transferring levels on floor for maintaining desired slope. • Procedure for carrying out brick bat coba waterproofing • Various methods and techniques used to protect waterproofing of the surface from damage as per the site requirements. <p>Demonstration/ Practical :-</p> <ul style="list-style-type: none"> • Identifying common defects in concrete surface prior to waterproofing • Demonstrate preparation of surface prior to waterproofing works • Performing visual checks for sand, cement, waterproofing material and surface to be waterproofed. 	<ol style="list-style-type: none"> 1. Hammer 2. Stone chisel 3. Steel trowel, Float wooden/metal) 4. Straight edge (Aluminium) 5. Spade (Phawda) 6. Mortar pan (Ghamela) 7. Corner trowel 8. Trowel 9. Line dori and pins 10. Screed board 11. Steel lever 12. Plumb bob 13. Try square 14. Spirit level 15. Measuring tape 16. Helmet 17. Face shield 18. Safety goggles 19. Safety shoes 20. Safety belt 21. Ear defenders 22. Reflective jackets

MASON GENERAL - NSQF LEVEL: 4

CURRICULUM / SYLLABUS – Duration: 68 Hours Bridge Course

		<ul style="list-style-type: none"> • Demonstrate marking and transferring of required levels for maintaining slope in waterproofing works. • Checking and ensuring that the cement mortar mix to confirm to specified proportion. • Demonstrate application of waterproofing cementitious to the prepared surface using appropriate tools. • Perform checks for detecting leakage on the waterproofed surface • Demonstrate preparation of cement mortar in appropriate ratio including addition of <ul style="list-style-type: none"> • Waterproofing admixture • Demonstrate laying of brick bat coba course for waterproofing works • Demonstrate filling of all gaps in brick bat coba course using appropriate cement mortar up to specified thickness. 	
5.	Build structures using random rubble masonry Theory Duration (hh:mm) 1:00 Practical Duration (hh:mm) 4:00 Code CON/N0113	Theory:- <ul style="list-style-type: none"> • Standard specifications of all tools and equipment required for rubble masonry along with care and maintenance • Different type of coursed and un-coursed rubble masonry works. • Different types of plasters and mortar requirements for the rubble masonry works as per the specification and aesthetic requirements • Basic methods of stone work and finishing in rubble masonry • Procedure for cutting stones to prepare for sides, edges and bed of random rubble masonry works. • Procedure for building of wall in coursed and un-coursed random rubble masonry. • Importance of bond stones (through stones) and jambs at corners of random rubble masonry wall. • Procedure for laying course of dry rubble masonry works. • Procedure for preparation of lime/cement, mortar for pointing works. • Procedure for performing various pointing works on random rubble masonry, namely: <ul style="list-style-type: none"> • Flush pointing • Weathered pointing • Ribbon pointing Demonstration/ Practical :-	<ol style="list-style-type: none"> 1. Hammer 2. Stone chisel 3. Comb chisel 4. Bolster 5. Steel trowel, Float wooden/metal) 6. Spade (Phawda) 7. Mortar pan (Ghamela) 8. Pointer trowel 9. Line dori and pins 10. Screed board 11. Jointers 12. Plumb bob 13. Measuring tape 14. Gauge box 15. Lifting , appliances (wheel and rope, shackles, sling, belts) 16. Wheel barrows 17. Mixing plat form (3'x5') 32 18. Helmet 19. Face shield 20. Safety goggles 21. Safety shoes 22. Safety belt 23. Ear defenders 24. Reflective jackets

MASON GENERAL - NSQF LEVEL: 4

CURRICULUM / SYLLABUS – Duration: 68 Hours Bridge Course

		<ul style="list-style-type: none"> • Demonstrate preparation of the sides, edges, bed of stone to for both undressed and hammer dressed stones • Demonstrate laying and fixing of stones for both coursed and un -coursed Random Rubble Masonry. • Demonstrate the use of bond stone at corners and at jambs. • Demonstrate the checking of line and level of random rubble masonry work after regular interval • Demonstrate raking of joints, cleaning of joints for pointing works. • Demonstrate preparation of lime/cement mortar in required proportion for pointing works • Demonstrate filling of joints for obtaining appropriate type of pointing works. • Demonstrate laying of stone for dry random rubble masonry works. • Ensure proper curing for pointing 	
6.	<p>Carry out IPS / Tremix flooring Theory Duration (hh:mm) 1:00 Practical Duration (hh:mm) 8:00 Code CON/N0114</p>	<p>Theory:-</p> <ul style="list-style-type: none"> • Standard specifications of all tools and equipment required for Specialized tools for Trimix flooring such as : • Vacuum de-watering Pump • Floater Machine • Double beam Screen Vibrator • Procedure for preparation of sub base for waterproofing works by watering and ramming. • Procedure for marking reference level and transferring of levels. • Various type of aggregates, type and grade of cement used and effect of water /cement ratio. • Different grade of concrete • Procedure for manual mixing of concrete and nominal mix proportion. • Various admixtures used in concreting • Sequence of concrete pouring and placing. • Procedure for pouring concrete in alternate panels. • Procedure for carrying out vibration of poured concrete • Different type pf vibrators used for concrete curing, their influence are use. • Procedure for avoiding shrinkage cracks in concrete • Different construction and expansion joints 	<ol style="list-style-type: none"> 1. Hammer 2. Chisel 3. Groove Cutter 4. Roove Cutter 5. Double Beam 6. Screed Vibrator 7. Vacuum Pump 8. Power Tools 9. Power Trowel 10. Cum Floater 11. Float wooden/metal 12. Straight edge (Aluminium) 13. Spade (Phawda) 14. Ghamela 15. Line dori and Pin 16. Spirit level 17. Measuring tape 18. Gauge box 19. Plate compactor 20. Concrete vibrator 21. Grouting 22. Dewatering machine(VDF) 23. Cement , Sand 24. Plasticizers 25. Coarse aggregates 26. Mixing plat form (3'x5')

MASON GENERAL - NSQF LEVEL: 4

CURRICULUM / SYLLABUS – Duration: 68 Hours Bridge Course

		<ul style="list-style-type: none"> • Different tools used for grooving/providing expansion joints • Procedure for final trowelling of concrete for desired finish • Procedure for removal of excess water using Vacuum dewatered machine. • Use of screed vibrator • Different type of hardeners used in IPS / Tremix flooring. • Procedure of operating VDF in a narrow passage. <p>Demonstration/ Practical :-</p> <ul style="list-style-type: none"> • Demonstrate the checks to be carried out for inspection of area prior to concreting • Demonstrate checks for formwork to avoid leakage and deviation in slope and alignment • Demonstrate reporting of the misalignment in formwork/reinforcement and ensure proper cover for reinforcement. • Demonstrate marking and transfer of levels on floor for required thickness using appropriate tools. • Demonstrate checks to be performed for assessing the grade of cement, fine aggregate and concrete prior to use. • Demonstrate checks for assessing preparation of panels as per specified size and type. • Demonstrate fixing of glass, aluminium or brass strip in cement mortar with their tops at appropriate level and according to slope • Carry out pouring of concrete in alternate panels. • Carry out compaction and finishing of the concrete surface • Carrying of cutting of grooves for providing construction joints and expansion joints as per requirement • Carry out levelling of poured concrete to the specified levels maintaining required slope • Carry out Tremix/VDF Flooring by laying stone soling/boulder soling layer as first step. • Carry out laying of floor with slope as per requirement. • Carry out removal of excess water from top layer by VDF machine 	<ul style="list-style-type: none"> 27. Helmet 28. Face shield 29. Safety goggles 30. Safety shoes 31. Safety belt 32. Ear defenders 33. Reflective jackets
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MASON GENERAL - NSQF LEVEL: 4

CURRICULUM / SYLLABUS – Duration: 68 Hours Bridge Course

		<ul style="list-style-type: none"> • Carry out cutting of groves for construction joints • Ensure curing of the finished floor. 	
7.	<p>Work effectively in a team to deliver desired results at the workplace</p> <p>Theory Duration (hh:mm) 01:00</p> <p>Practical Duration (hh:mm) 4:00</p> <p>Corresponding NOS Code CON/N8001</p>	<p>Theory:-</p> <ul style="list-style-type: none"> • Method of oral and written communication skills with co-workers, trade seniors while handling and carrying out visual checks on materials, , tools and equipment • Reading and understanding of method statements, formats, permits, protocols, checklists for works • How to interpret scope of brick/block , rubble masonry, plastering, waterproofing and IPS/Tremix flooring activities, material/ tools handling by adhering to instructions or consulting with seniors • Method of providing instruction to subordinates or reporting to seniors clearly and promptly • Seek necessary support and complete assigned tasks within stipulated time duration • Keep good relation and maintain well behaviour with co-workers <p>Demonstration/ Practical :-</p> <ul style="list-style-type: none"> • The skills will be developed and practiced while carrying out following trade related activities in a predictable and familiar working condition • Selection of materials, tools or devices for defined purpose under masonry works and providing instructions to subordinates for the same. • Handling of tools, equipment and materials for brick/block work, plastering works, waterproofing, rubble masonry works and IPS/Tremix flooring including efficiently communicating with coworkers for desired requirement as per specification • Carrying out brick/block work, plastering works, waterproofing, rubble masonry works and IPS/Tremix flooring while working as a team to ensure optimum utilization of material and resources • Carrying out general masonry works utilizing the effort of co-workers. • Undertaking visual checks to assess the quality of material and check line, level and alignments of work 	<ol style="list-style-type: none"> 1. Projector 2. Black Board

MASON GENERAL - NSQF LEVEL: 4

CURRICULUM / SYLLABUS - Duration: 68 Hours Bridge Course

		<ul style="list-style-type: none"> • Selection and handing over of desired/ appropriate tools/ materials while assisting trade senior 	
8.	<p>Plan and organize work to meet expected outcomes</p> <p>Theory Duration (hh:mm) 01:00</p> <p>Practical Duration (hh:mm) 4:00</p> <p>Corresponding NOS Code CON/N8002</p>	<p>Theory:-</p> <ul style="list-style-type: none"> • To plan brick/block, rubble masonry, plastering, waterproofing and IPS/Tremix flooring activities within defined scope of work • Basic concept of productivity, sequence of working and implementation of safety and organizational norms while working • Upkeep, storing and stacking methods of tools, materials used for domain specific works • Requisition of resources, reporting for requirement of resources orally and in written to concerned authority - (T/P) <p>Demonstration/ Practical :-</p> <ul style="list-style-type: none"> • The skills will be developed and practiced while carrying out following trade related activities in a predictable and familiar working condition • Selection of materials, tools or devices for defined purpose in an optimum manner • Handling/organizing masonry tools, material, fixtures and device for brick/block, rubble masonry, plastering, waterproofing and IPS/Tremix flooring works. • Prioritize all works/ activities • Planning brick/block, rubble masonry, plastering, waterproofing and IPS/Tremix flooring works as per scope and schedule. • Carrying out cladding of natural stones ensuring optimum utilization of material and resources • Optimum use of resources while performing task • Adherence to stipulated timelines for completion of flooring and cladding activities/ tasks 	<ol style="list-style-type: none"> 1. Projector 2. Blackboard
9.	<p>Work according to personal health, safety and environment protocol at construction site</p> <p>Theory Duration (hh:mm) 02:00</p> <p>Practical Duration (hh:mm) 8:00</p>	<p>Theory:-</p> <ul style="list-style-type: none"> • Types of hazards involved in construction sites • Types of hazards involved in masonry works • Emergency safety control measures and actions to be taken under emergency situation • Concept of :- <ul style="list-style-type: none"> ○ First Aid process 	<ol style="list-style-type: none"> 1. Safety Helmets 2. Face shield 3. Overalls 4. Knee pads 5. Safety shoes 6. Safety belts 7. Safety harness 8. Safety Gloves 9. Safety goggles 10. Particle masks 11. Ear Plugs

MASON GENERAL - NSQF LEVEL: 4

CURRICULUM / SYLLABUS – Duration: 68 Hours Bridge Course

	<p>Corresponding NOS Code CON/N9001</p>	<ul style="list-style-type: none"> ○ Use of fire extinguisher ○ Classification of fires and fire extinguisher ○ Safety drills ○ Types and use of PPEs as per general safety norms ○ Reporting procedure to the concerned authority in emergency situations ● Standard procedure of handling, storing and stacking material, tools and accessories ● What is safe disposal of waste, type of waste and their disposal ● Type of cutting tools, their standards and area of application Demonstration/ Practical: - ● The skills will be developed and practiced while carrying out following trade related activities in a predictable and familiar working condition. ● Selection of PPEs and use them appropriately as per working need of brick/block, rubble masonry, plastering, waterproofing and IPS/Tremix flooring operations, handling, storing, stacking and shifting of stones, tools and devices ● Selection of PPEs and use them appropriately as per working need of brick/block work, cutting and shaping stones for rubble masonry works, waterproofing and plastering works ● Analysis of hazards involved in cutting and fixing stone for rubble masonry works/ fixing brick/block and stone for masonry works or informing to seniors regarding hazardous conditions ● Identification of locations, situations/ circumstances, malpractices which can be hazardous for works ● Selection of fire extinguisher based on classification of fire, standard practice of storing & stacking firefighting equipment/ materials at work locations ● Disposal of waste materials as per their nature and effects on weather 	<ul style="list-style-type: none"> 12. Reflective jackets 13. Fire Extinguisher 14. Fire prevention kit 15. First Aid box 16. Safety tags 17. Safety Notice board
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MASON GENERAL - NSQF LEVEL: 4

CURRICULUM / SYLLABUS – Duration: 68 Hours Bridge Course

	<p>Total Duration 68 Hrs. Theory Duration 12 Hrs. Practical Duration 56 Hrs</p>	<p>Unique Equipment Required:</p> <ul style="list-style-type: none">• 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 , 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 , <p>Helmet , Face shield , Safety goggles , Safety shoes ,Safety belt, Ear defenders , Particle masks , Overalls , Knee pad, Reflective jackets, Pencil, Infrastructure Class room for theory and assessment with 30 study chairs , Workshop/Mock-up yard for practical training and assessment, Masonry wall (For plastering), Toilet/Urinals (Separate for gents and Ladies), 3 phase power supply points , Single phase power supply points, Fire extinguishers (mechanical foam, CO2 and sand buckets with stand), First aid kit, Tool box with lock and key</p>
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Grand Total Course Duration: 68 Hours 0 Minutes