Model Curriculum

Mason Form Finished & Special Concrete

SECTOR: Construction
SUB-SECTOR: Real Estate and Infrastructure Construction
OCCUPATION: MASONRY
REF ID: CON/Q0108, V1.0
NSQF LEVEL: 4

Skill India

Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

CONSTRUCTION SKILL DEVELOPMENT COUNCIL OF INDIA

for the

MODEL CURRICULUM

Complying to National Occupational Standards of Job Role/ Qualification Pack: 'Mason Form Finished & Special Concrete' QP No. 'CON/ Q0108 NSQF Level 4'

Date of Issuance: January 31st, 2016

Valid up to: May 23rd , 2017

*Valid up to the next review date of the Qualification Pack

Authorised Signatory
(Construction Skill Development Council of India)

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Mason Form Finished & Special Concrete

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a "Mason Form Finished & Special Concrete", in the "Construction" Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	**Mason Form Finished & Special Concrete**		
Qualification Pack Name & Reference ID	CON/Q0108, v1.0		
Version No.	1.0	**Version Update Date**	23-05-2017
Pre-requisites to Training	Preferably 8th standard with 8 years site experience in same occupation / 3 years site experience as a certified General Mason for trained worker		
Training Outcomes	**After completing this programme, participants will be able to:** • **Gain insight in to job role of Form Finished & Special Concrete:-**Introduction to the roles and responsibilities of the job role, its career progression and expected outcome • **Place, level and finish concrete for form finished concrete structures and work with self-compacting concrete:** Selection of tools and material and carrying out placing, levelling and finishing of concrete for form finished concrete structures and work with self-compacting concrete • **Carry out concreting in extreme environment as per requirement:** Selection of tools and material and carrying out concreting in extreme environment as per requirement • **Carry out concreting on complex structures including slip form concreting:** Selection of tools and material and carrying out concreting on complex structures including slip form concreting • **Work effectively in a team to deliver desired results at the workplace :–** Introduction to team working and effective communication procedures to be followed at construction sites • **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 aspect and measures to be followed at work site		

This course encompasses 6 out of 6 National Occupational Standards (NOS) of "Mason Form Finished & Special Concrete" Qualification Pack issued by "Construction Skill Development Council of India".

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	**Introduction** **Theory Duration** (hh:mm) 08:00 **Practical Duration** (hh:mm) 00:00	**Understand the concept of:-** • Introduction to QP/NOS of Mason Form Finished and Special Concrete • 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. Classroom having seating requirement for 30 people. 2. Projector 3. Toilet/Urinals (Separate for gents and Ladies) 4. Blackboard 5. Trade specific charts and other teaching aids
2	**Place, level and finish concrete for form finished concrete structures and work with self-compacting concrete** **Theory Duration** (hh:mm) 138:00 **Practical Duration** (hh:mm) 116:00 **Corresponding NOS Code** CON/N0123	**Theory: -** **Understand the concept of:-** • standard sizes of all masonry concreting tools • basic principles of measurement • procedure to provide cover as per size of reinforcement bars • basic properties of concrete • different grades of concrete and nominal mixes • different type of high quality concrete finish • sequence of pouring process • variation of slump w.r.t rate of pour • whether or not the concrete requires compaction • different type of vibrators used(internal/external vibrators) • accessibility of vibrators and their influence area • appropriate technique for vibrating of concrete • vibration in congested areas • knowledge of construction joints • cold joints in concrete and ways to avoid them • appropriate technique and extent to which control joints must be cut • avoiding color banding and junction cracks in concrete • technique for patching tie hole	1. Hammer, 2. Brick chisel 3. Stone chisel 4. Comb chisel 5. Bolster 6. Masonry hand saw 7. Steel trowel, Float wooden/metal) 8. Straight edge (Aluminium) 9. Wood/rubber mallet, Spade (Phawda) 10. Mortar pan (Ghamela) 11. Corner trowel 12. Pointer trowel 13. Tuck pointing trowel 14. Line and pins 15. Screed board 16. Jointers 17. Steel lever 18. Plumb bob 19. Line string (line Dori) 20. Try square, 21. Spirit level 22. Measuring tape 23. Steel or wooden scale 24. Tapered rule 25. Gauge box 26. Plate compactor 27. Concrete vibrator 28. Grouting

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		Demonstration/Practical:- • Demonstrate reading and interpretation of details & specifications provided in relevant structural drawings • Demonstrate reading and interpretation of method statement for concreting of form finished structure • Demonstrate reading understanding of schedule of concrete pour • Demonstrate performing visual checks to ensure safe condition of access and sufficient work space around concrete pouring point • Demonstrate check to ensure formwork is clean prior to commencement of work • point out any misalignment in formwork/reinforcement prior to pour • Demonstrate check to ensure that cover blocks are adequately provided • Demonstrate check to ensure that release agents is applied evenly and is not coming into contact with reinforcement, pre-stressing tendons and anchorages in case of contamination due to release agents, ensure it is removed prior to placing of concrete • visually assess the workability and usability of concrete • Demonstrate adherence to method statement and scheduled time line for concreting activity • ensure concrete is poured in specified layers • ensure concrete pour is continuous and uninterrupted • Demonstrate checks to ensure placing ,leveling & compaction activities take place in a synchronized manner w.r.t the rate of pour • maintain correct vibration depth and ensure that the previous layer is not affected during vibration	29. machine (Manual) 30. Dewatering machine(VDF) 31. Groove cutting machine 32. Cement , Sand (Medium) 33. Plasticizers 34. Common burnt clay brick (2nd class) 35. Coarse aggregates 36. Rubble stone (Natural stone) 37. Water proofing compound with primer 38. Glass stiffs, Scaffold set (Including all components) 39. Lifting , appliances (wheel and rope, shackles, sling, belts) 40. Wheel barrows 41. Wooden sleepers 42. Rhombus mesh 43. expanded metal mesh) 44. Mixing plat form (3'x5') 45. Red oxide 46. Helmet 47. Face shield 48. Safety goggles 49. Safety shoes 50. Safety belt 51. Ear defenders 52. Particle masks 53. Overalls Knee pad 54. Reflective jackets 55. Pencil

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		• maintain sufficient and uniform compaction of concrete with efficient use of equipment to avoid air voids • avoid over vibration and formation of laitance and cold joints • ensure pouring takes place within specified time • re-vibrate the top of a vertical pour after specified time to eliminate color banding at top • provide construction joints as per specification • carry out remedial work by patching tie holes as per specification & as per requirement • Demonstrate the use of sealant efficiently to improve weathering/maintenance as per requirement • Demonstrate pouring of the self - compacting concrete (SCC) at a fast rate to avoid setting • Demonstrate pouring of the SCC from a specified height to avoid air to be entrained • Demonstrate checks to ensure sealing of forms after pouring	
3	**Carry out concreting in extreme environment as per requirement** **Theory Duration** (hh:mm) 44:00 **Practical Duration** (hh:mm) 00:00 **OJT** (hh:mm) 44:00 **Corresponding NOS Code** CON/N0124	**Theory: -** **Understand the concept of:-** • sketches of the area / surface on which Form Finished & Special Concrete is to be done • standard specification of all masonry tools ,equipment and materials along with their care and maintenance of tools and equipment • basic principles of measurement along with simple geometry that may be required for laying of stones • how to read drawing and specifications related to concreting • different grades of concrete and nominal mixes • different type of heater used for cold weather concreting • different type of vibrators used(internal/external vibrators)	1. Hammer, 2. Brick chisel 3. Stone chisel 4. Comb chisel 5. Bolster 6. Masonry hand saw 7. Steel trowel, Float wooden/metal) 8. Straight edge (Aluminium) 9. Wood/rubber mallet, Spade (Phawda) 10. Mortar pan (Ghamela) 11. Corner trowel 12. Pointer trowel 13. Tuck pointing trowel 14. Line and pins 15. Screed board 16. Jointers 17. Steel lever

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		• accessibility of vibrators and their influence area • appropriate technique for vibrating of concrete • vibration in congested areas • uses and application of construction joints • cold joints in concrete and methodologies to avoid them • appropriate technique and extent to which control joints must be cut • types of hardening and sealing components to cure surfaces • type of finishes of concrete surfaces • how to screed the concrete to correct levels and grades • different types of concrete shrinkage • advantages of using pumping method of concrete pouring • major risks associated with hot and cold weather concrete pouring • wind breaks, wind velocity and their effect on concrete • delayed finishing and early curing in concreting • methods to supply moisture to concrete surface **Demonstration/Practical:-** • read & interpret specifications, standards and GFC drawing for relevant work ensure use of windproof and weather proof heated enclosures for placing concrete • visually check the workability and usability of concrete • ensure preparation of concrete mix as per specified slump with minimal water cement ratio by using appropriate admixtures for decreasing setting time on cold surfaces • cover the finished concrete with curing / insulation blankets as per requirement • monitor curing using live steam/liquid membrane forming compound for	18. Plumb bob 19. Line string (line Dori) 20. Try square, 21. Spirit level 22. Measuring tape 23. Steel or wooden scale 24. Tapered rule 25. Gauge box 26. Plate compactor 27. Concrete vibrator 28. Grouting 29. machine (Manual) 30. Dewatering machine(VDF) 31. Groove cutting machine 32. Cement , Sand (Medium) 33. Plasticizers 34. Common burnt clay brick (2nd class) 35. Coarse aggregates 36. Rubble stone (Natural stone) 37. Water proofing compound with primer 38. Glass stiffs, Scaffold set (Including all components) 39. Lifting , appliances (wheel and rope, shackles, sling, belts) 40. Wheel barrows 41. Wooden sleepers 42. Rhombus mesh 43. expanded metal mesh) 44. Mixing plat form (3'x5') 45. Red oxide 46. Helmet 47. Face shield 48. Safety goggles 49. Safety shoes 50. Safety belt 51. Ear defenders 52. Particle masks

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		early curing as per specification or as per applicability • ensure gradual cooling of concrete to limit rapid temperature changes in concrete & to prevent thermal cracking • moisten the surface receiving concrete, steel reinforcement and form work prior to concrete placement • ensure usage of sunshades or windbreaks around the pour area to reduce possible harsh conditions on concrete • visually check the workability and usability of concrete prior to concrete pour • ensure concrete used is of specified consistency suitable for rapid placement and consolidation • protect the concrete surface during placement using plastic sheet or evaporative retarder to maintain moisture in concrete mixture • work efficiently considering the rapid setting of concrete during hot weather conditions • place the concrete with control joints spaced at specified intervals • ensure finished concrete is sufficiently moist during curing period	53. Overalls Knee pad 54. Reflective jackets 55. Pencil
4	**Carry out concreting on complex structures including slip form concreting** **Theory Duration** (hh:mm) 74:00 **Practical Duration** (hh:mm) 00:00 **OJT** (hh:mm) 74:00 **Corresponding NOS Code** CON/N0128	**Theory: -** **Understand the concept of:-** • simple and complex technical drawings and principles relevant to concreting works • principles of measurement • types of hardening and sealing components to cure surfaces • different type of vibrators used(internal/external vibrators) • accessibility of vibrators and their influence area • appropriate technique for vibrating of concrete • vibration in congested areas	1. Hammer, 2. Brick chisel 3. Stone chisel 4. Comb chisel 5. Bolster 6. Masonry hand saw 7. Steel trowel, Float wooden/metal) 8. Straight edge (Aluminium) 9. Wood/rubber mallet, Spade (Phawda) 10. Mortar pan (Ghamela) 11. Corner trowel 12. Pointer trowel

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		• cold joints in concrete and ways to avoid them • appropriate technique and extent to which control joints must be cut • types of hardening and sealing components to cure surfaces • type of finishes of concrete surfaces • how to screed the concrete to correct levels and grades • different types of concrete shrinkage • advantages of using pumping method of concrete pouring • concreting on inclined surface • proper curing of concrete • use of retarders • method of placement of concrete in case of inclined surfaces • method of placement of concrete in case of inclined surfaces and slip form concreting **Demonstration/Practical:-** **For mosaic flooring** • Demonstrate checks to ensure slump of concrete is within specified limit • visually check the workability and usability of concrete prior to concrete pour • Demonstrate checks to ensure uniform rate of pour of concrete • carry out rapid placement of concrete to avoid cold joints • Demonstrate checks to ensure that concrete placement is to begin from lowest point of form and proceed towards highest point • work effectively with the designed slump maintaining completion of entire member prior to setting of concrete • maintain sufficient and uniform compaction of concrete with efficient use of equipment to avoid air voids • Demonstrate checks to ensure slump of concrete is within specified limit • visually check the workability and usability of concrete	13. Tuck pointing trowel 14. Line and pins 15. Screed board 16. Jointers 17. Steel lever 18. Plumb bob 19. Line string (line Dori) 20. Try square, 21. Spirit level 22. Measuring tape 23. Steel or wooden scale 24. Tapered rule 25. Gauge box 26. Plate compactor 27. Concrete vibrator 28. Grouting 29. machine (Manual) 30. Dewatering machine(VDF) 31. Groove cutting machine 32. Cement , Sand (Medium) 33. Plasticizers 34. Common burnt clay brick (2nd class) 35. Coarse aggregates 36. Rubble stone (Natural stone) 37. Water proofing compound with primer 38. Glass stiffs, Scaffold set (Including all components) 39. Lifting , appliances (wheel and rope, shackles, sling, belts) 40. Wheel barrows 41. Wooden sleepers 42. Rhombus mesh 43. expanded metal mesh) 44. Mixing plat form (3'x5') 45. Red oxide 46. Helmet 47. Face shield

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		• Demonstrate checks to ensure uniform rate of pour of concrete and carry out placement of concrete in synchronized manner • Demonstrate checks to ensure that rate of placement of concrete is to be uniform to avoid cold joints • Demonstrate checks to ensure that concrete placement is to begin from lowest point of form and proceed towards highest point • Demonstrate checks to ensure proper compaction of concrete using specified equipment • carry out curing for specified length of time • carry out concrete pouring at a uniform rate • Demonstrate checks to ensure placing of concrete in layers of uniform thickness • Demonstrate checks to ensure proper compaction of concrete using specified equipment • Demonstrate checks to ensure that rate of pour should be with respect to the speed of movement of slip form	48. Safety goggles 49. Safety shoes 50. Safety belt 51. Ear defenders 52. Particle masks 53. Overalls Knee pad 54. Reflective jackets 55. Pencil
5	**Work effectively in a team to deliver desired results at the workplace** **Theory Duration** (hh:mm) 74:00 **Practical Duration** (hh:mm) 00:00 **OJT** (hh:mm) 74:00 **Corresponding NOS Code** CON/N8001	**Theory: -** **Understand the concept of :-** • Method of oral and written communication skills with co-workers, trade seniors while handling and carrying out visual checks on materials, ,tools and equipment • How to interpret scope of Form Finished & Special Concrete works, 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 good behaviour with co-workers	1. Classroom having seating requirement for 30 people. 2. Toilet/Urinals (Separate for gents and Ladies) 3. Projector 4. Blackboard

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		Demonstration/ Practical (D/P) :- 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 Form Finished & Special Concrete and providing instructions to subordinates for the same. • Handling of tools, equipment and materials for various types of Form Finished & Special Concrete works including efficiently communicating with co-workers for desired requirement as per specification • Carrying out concreting in complex shaped structures works while working as a team to ensure optimum utilization of material and resources • Carrying out concreting in slip form utilizing the effort of co-workers. • Undertaking visual checks to assess the quality of material and check line, level and alignments of work, etc. • Provide information to sub ordinates and seniors in case of change because of inadequacy of design	
6	**Plan and organize work to meet expected outcomes** **Theory Duration** (hh:mm) 74:00 **Practical Duration** (hh:mm) 00:00 **OJT** (hh:mm) 74:00 **Corresponding NOS Code** CON/N8002	**Theory: -** **Understand the concept of :-** • To plan various types of concreting 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 various types of concreting works • Requisition of resources, reporting for requirement of resources orally and in written to concerned authority - (T/P)	1. Classroom having seating requirement for 30 people. 2. Toilet/Urinals (Separate for gents and Ladies) 3. Projector 4. Blackboard

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		Demonstration/ Practical (D/P) :- 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 various tools, material, fixtures and device for various types of concreting works • Prioritize all works/ activities • Planning concreting in slip form and in complex structures as per scope and schedule. • Carrying out various types of concreting works by optimum utilization of material and resources • Optimum use of resources while performing task • Adherence to stipulated timelines for completion of various types of concreting works	
7	**Work according to personal health, safety and environment protocol at construction site** **Theory Duration** (hh:mm) 24:00 **Practical Duration** (hh:mm) 00:00 **OJT** (hh:mm) 24:00 **Corresponding NOS Code** CON/N9001	**Theory: -** **Understand the concept of :-** • Types of hazards involved in construction sites • Types of hazards involved in concreting works • Reporting procedures in case of hazards and accidents • Emergency response system and evacuation procedures • Safe working practices in case of façade installation work as per EHS guidelines • Concept of: - 1. First Aid process 2. Use of fire extinguisher 3. Classification of fires and fire extinguisher 4. Safety drills 5. Types and use of PPEs as per safety norms • Basic ergonomic principles • Safe Disposal of waste ,harmful and hazardous materials	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 12.Reflective jackets 13.Fire Extinguisher 14.Fire prevention kit 15.First Aid box 16.Safety tags 17.Safety Notice board

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		• Safety awareness programs like tool box talks, mock drills • Handling of construction materials, tools and tackles • Statutory compliance requirement related to working at height **<u>Demonstration/ Practical: -</u>** 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 various types concreting works • handling, storing, stacking and shifting of tools and equipment for concreting works • Analysis of hazards involved in concreting works and taking necessary steps or informing to seniors. • Identify hazards, risks, safety violations at construction sites and in various types of concreting works • Demonstrate emergency and evacuation response procedures • Demonstrate safe work practices while performing various types of concreting works • Identification of locations, situations/ circumstances, malpractices which can be hazardous for general or various types of concreting 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	
	Total Duration **Theory Duration 504:00** **Practical Duration**	**Unique Equipment Required:** 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,	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	60:00	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 stiffs, 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, Safety Helmets, Face shield, Overalls, Knee pads, Safety shoes, Safety belts, Safety harness, Safety Gloves, Safety goggles, Particle masks, Ear Plugs, Reflective jackets, Fire Extinguisher, Fire prevention kit, First Aid box, Safety tags, Safety Notice board **Infrastructure** Class room for theory and assessment with 30 study chairs ,Workshop/Mock-up yard for practical training and assessment ,Toilet/Urinals (Separate for gents and Ladies), 3 phase power supply points , Single phase power supply points, Fire extinguishers (mechanical foam, DCP, CO2 and sand buckets with stand), First aid kit, Tool box with lock and key	

Grand Total Course Duration: **600 Hours, 0 Minutes**

(This syllabus/ curriculum has been approved by ***Construction Skill Development Council of India)***

Trainer Prerequisites for Job role: "Mason Form Finished & Special Concrete" mapped to Qualification Pack: "CON/Q0108, v1.0"

Sr. No.	Area	Details
1	**Description**	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack "CON/Q0108".
2	**Personal Attributes**	Aptitude for conducting training, and pre/ post work to ensure competent, employable candidates at the end of the training. Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for quality and for developing others; well-organised and focused, eager to learn and keep oneself updated with the latest in the mentioned field
3	**Minimum Educational Qualifications**	ITI/12th standard pass
4a	**Domain Certification**	Trainer/Assessor- 70% in each NOS of Qualification Pack "CON/Q0108" & 80% overall , Lead trainer/Lead Assessors- 70% in each NOS of Qualification Pack "CON/Q0108" & 90% overall
4b	**Platform Certification**	Trainer/Assessor-80% in each NOS of Qualification Pack "MEP/Q0102" or "MEP/Q0104", Lead trainer/ Lead Assessors- 90% in each NOS of Qualification Pack "MEP/Q0101" or "MEP/Q0103"and overall 90%
5	**Experience**	i. Technical Degree holder with minimum three years of Field experience and preferably two years of teaching experience or, ii. In case of a Diploma Holder five years of field experience and preferably two years of teaching experience or, iii. In case of ITI/12th pass minimum eight years of field experience and preferably two years of teaching Experience.

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role	Mason Form Finished & Special Concrete
Qualification Pack	CON/Q0108
Sector Skill Council	Construction

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 Bodies subject to approval by SSC
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 centre based on assessment criteria.
5. The passing percentage for each QP will be 70%. To pass the Qualification Pack, every trainee should score a minimum of 70% 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 NOSs, the trainee is eligible to take subsequent assessment on the balance NOSs 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.

				Marks Allocation	
Assessment outcomes	Assessment Criteria for outcomes	**Total Mark**	**Out Of**	**Theory**	**Skills Practical**
CON/N0123: Place, level and finish concrete for form finished concrete structures and work with self-compacting concrete	PC1. read and interpret details & specifications provided in relevant structural drawings	**100**	6	2	4
	PC2. read and understand method statement for concreting of form finished structure		7	2	5
	PC3. read and understand schedule of concrete pour		7	2	5
	PC4. perform visual checks to ensure safe condition of access and sufficient work space around concrete pouring point		1.5	0.5	1
	PC5. check and ensure formwork is clean prior to commencement of work		1.5	0.5	1
	PC6. point out any misalignment in formwork/reinforcement prior to pour		1.5	0.5	1
	PC7. check that cover blocks are adequately provided		1.5	0.5	1
	PC8. check that release agents is applied evenly and is not coming into contact with reinforcement, pre-stressing tendons and anchorages		1.25	0.25	1
	PC9. in case of contamination due to release agents, ensure it is removed prior to placing of concrete		1.25	0.25	1
	PC10. visually assess the workability and usability of concrete		1.5	0.5	1
	PC11. adhere to method statement and scheduled time line for concreting activity		3	1	2
	PC12. ensure concrete is poured in specified layers		3	1	2
	PC13. ensure concrete pour is continuous and uninterrupted		3	1	2
	PC14. ensure placing ,leveling & compaction activities take place in a synchronized manner w.r.t the rate of pour		7	2	5
	PC15. maintain correct vibration depth and ensure that the previous layer is not affected during vibration		7	2	5
	PC16. maintain sufficient and uniform compaction of concrete with efficient use of equipment to avoid air voids		3	1	2
	PC17. avoid over vibration and formation of laitance and cold joints		4	1	3
	PC18. work efficiently considering the setting time of concrete while pouring and ensure pouring takes place within specified time		6	2	4
	PC19. re-vibrate the top of a vertical pour after specified time to eliminate color banding at top		3	1	2
	PC20. provide construction joints as per specification		4	1	3

	PC21. carry out remedial work by patching tie holes as per specification & as per requirement		4	1	3
	PC22. use sealant efficiently to improve weathering/maintenance as per requirement		3	1	2
	PC23. pour the self - compacting concrete (SCC) at a fast rate to avoid setting		9	2	7
	PC24. pour the SCC from a specified height to avoid air to be entrained		6	2	4
	PC25. ensure sealing of forms after pouring		5	2	3
		Total	**100**	**30**	**70**
CON/N0124: Carry out concreting in extreme environment as per requirement	PC1. read & interpret specifications, standards and GFC drawing for relevant work	**100**	7	2	5
	PC2. ensure use of windproof and weather proof heated enclosures for placing concrete		6	1	5
	PC3. visually check the workability and usability of concrete		7	2	5
	PC4. ensure preparation of concrete mix as per specified slump with minimal water cement ratio by using appropriate admixtures for decreasing setting time on cold surfaces		8	3	5
	PC5. cover the finished concrete with curing / insulation blankets as per requirement		7	2	5
	PC6. monitor curing using live steam/liquid membrane forming compound for early curing as per specification or as per applicability		7	2	5
	PC7. ensure gradual cooling of concrete to limit rapid temperature changes in concrete & to prevent thermal cracking		8	3	5
	PC8. moisten the surface receiving concrete, steel reinforcement and form work prior to concrete placement		4	1	3
	PC9. ensure usage of sunshades or windbreaks around the pour area to reduce possible harsh conditions on concrete		7	2	5
	PC10. visually check the workability and usability of concrete prior to concrete pour		6	2	4
	PC11. ensure concrete used is of specified consistency suitable for rapid placement and consolidation		5	2	3
	PC12. protect the concrete surface during placement using plastic sheet or evaporative retarder to maintain moisture in concrete mixture		7	2	5
	PC13. work efficiently considering the rapid setting of concrete during hot weather conditions		7	2	5
	PC14. place the concrete with control joints spaced at specified intervals		7	2	5
	PC15. ensure finished concrete is sufficiently moist during curing period		7	2	5

		Total	**100**	**30**	**70**
CON/N0128: Carry out concreting on complex structures including slip form concreting	PC1. ensure slump of concrete is within specified limit	**100**	3	1	2
	PC2. visually check the workability and usability of concrete prior to concrete pour		6	2	4
	PC3. ensure uniform rate of pour of concrete		3	1	2
	PC4. carry out rapid placement of concrete to avoid cold joints		8	2	6
	PC5. ensure that concrete placement is to begin from lowest point of form and proceed towards highest point		3	1	2
	PC6. work effectively with the designed slump maintaining completion of entire member prior to setting of concrete		7	2	5
	PC7. maintain sufficient and uniform compaction of concrete with efficient use of equipment to avoid air voids		6	2	4
	PC8. carry out curing for specified length of time		4	1	3
	PC9. ensure slump of concrete is within specified limit		4	1	3
	PC10. visually check the workability and usability of concrete		7	2	5
	PC11. ensure uniform rate of pour of concrete and carry out placement of concrete in synchronized manner		7	2	5
	PC12. ensure that rate of placement of concrete is to be uniform to avoid cold joints		7	2	5
	PC13. ensure that concrete placement is to begin from lowest point of form and proceed towards highest point		6	2	4
	PC14. ensure proper compaction of concrete using specified equipment		6	2	4
	PC15. carry out curing for specified length of time		3	1	2
	PC16. carry out concrete pouring at a uniform rate		6	2	4
	PC17. ensure placing of concrete in layers of uniform thickness		4	1	3
	PC18. ensure proper compaction of concrete using specified equipment		4	1	3
	PC19. ensure that rate of pour should be with respect to the speed of movement of slip form		6	2	4
		Total	**100**	**30**	**70**
CON/N8001: Work effectively in a team to deliver desired results at the workplace	PC1. pass on work related information/ requirement clearly to the team members	**100**	7	2	5
	PC2. inform co-workers and superiors about any kind of deviations from work		7	2	5
	PC3. address the problems effectively and report if required to immediate supervisor appropriately		10	3	7
	PC4. receive instructions clearly from superiors and respond effectively on the same		7	2	5
	PC5. communicate to team members/subordinates for appropriate work technique and method		10	3	7

	PC6. seek clarification and advice as per the requirement and applicability		7	2	5
	PC7. hand over the required material, tools tackles, equipment and work fronts timely to interfacing teams		27	8	19
	PC8. work together with co-workers in a synchronized manner		27	8	19
		Total	**100**	**30**	**70**
CON/N8002: Plan and organize work to meet expected outcomes	PC1. understand clearly the targets and timelines set by superiors	**100**	7	2	5
	PC2. plan activities as per schedule and sequence		7	2	5
	PC3. provide guidance to the subordinates to obtain desired outcome		10	3	7
	PC4. plan housekeeping activities prior to and post completion of work		7	2	5
	PC5. list and arrange required resources prior to commencement of work		10	3	7
	PC6. select and employ correct tools, tackles and equipment for completion of desired work		10	3	7
	PC7. complete the work with allocated resources		10	3	7
	PC8. engage allocated manpower in an appropriate manner		10	3	7
	PC9. use resources in an optimum manner to avoid any unnecessary wastage		10	3	7
	PC10. employ tools, tackles and equipment with care to avoid damage to the same		7	2	5
	PC11. organize work output, materials used, tools and tackles deployed,		7	2	5
	PC12. processes adopted to be in line with the specified standards and instructions		7	2	5
		Total	**100**	**30**	**70**
CON/N9001: Work according to personal health, safety and environment protocol at construction site	PC1. identify and report any hazards, risks or breaches in site safety to the appropriate authority	**100**	7	2	5
	PC2. follow emergency and evacuation procedures in case of accidents, fires, natural calamities		7	2	5
	PC3. follow recommended safe practices in handling construction materials, including chemical and hazardous material whenever applicable		10	3	7
	PC4. participate in safety awareness programs like Tool Box Talks, safety demonstrations, mock drills, conducted at site		7	2	5
	PC5. identify near miss , unsafe condition and unsafe act		7	2	5

	PC6. use appropriate Personal Protective Equipment (PPE) as per work requirements including: • Head Protection (Helmets) • Ear protection • Fall Protection • Foot Protection • Face and Eye Protection, • Hand and Body Protection • Respiratory Protection (if required)		10	3	7
	PC7. handle all required tools, tackles , materials & equipment safely		7	2	5
	PC8. follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines		7	2	5
	PC9. install and apply properly all safety equipment as instructed		13	4	9
	PC10.follow safety protocol and practices as laid down by site EHS department		13	4	9
	PC11. collect and deposit construction waste into identified containers before disposal, separate containers that may be needed for disposal of toxic or hazardous wastes		7	2	5
	PC12.apply ergonomic principles wherever required		7	2	5
		Total	**100**	**30**	**70**