ROAD CONSTRUCTION CRAFTSMAN

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Source: National competency Standard

(Competency Standards Code No: F45S010

National Certificate at NVQ Levels in the occupation of ROAD CONSTRUCTION CRAFTSMAN will be awarded to those who are competent in

units 1+2+3+4+6 - F45S010Q1L2 - **NVQ Level 02**

units 1+2+3+4+7 - F45S010Q2L2 - **NVQ Level 02**

units 1+2+3+4+8 -F45S010Q3L2 - **NVQ Level 02**

units 1+2+3+4+5 -F45S010Q4L3 - **NVQ Level 03**

(Record of achievement will be awarded to those who are competent in unit 09.)



NATIONAL APPRENTICE AND INDUSTRIAL TRAINING AUTHORITY,

No.971, Sri Jayawardanapura Mawatha, Welikada,

Rajagiriya.

Telephone.0112888782-7 **Email: naitaitd@yahoo.com**

Unit Of Competencey	Elements	Module Number & Module	Task Number & Task
(1)Perform activities related to excavation in road construction and site clearing **(F45S010U01)**	1. Carryout work related to manual / machine excavation for road site clearing	**M-01 Site clearing and excavation in road**	**A1**.Receive instruction from the immediate superior about site clearing / excavation
	2. Carryout work related to organizing traffic arrangements and safety & hygienic measures		**A2.**Inspect the site
			A3. Identify the works to be carried out
			A4.Inform and request labour, tools, implements,equipment and machinery requirement to immediate superior
			A5.Collect required tools, equipment, implements and machinery from the stores
			A6.Identify the marked / defined boundaries
			A7.Assign the resources for work identified
			A8.Fix individual / group work targets
			A9.Guide and assist the work team on
			superior on the work activities /situation
			A10.Check and ensure the cleanliness of
			the areas concerned
			A11.Observe the hindrance of the area
			concerned
			A12.Instruct the workers to clean tools
			, equipment, implements and machinery
			A13.Arrange the return of tools, equipment, implements
			A14.Report daily outcome to the superior
			A15.Assist the Quantity Surveyor to take the
			measurement of the work performed
			A16.Assist the Quality Assurance (QA) / Quality Controlling (QC) staff for sampling and field tests
			A17.Maintain the safety arrangements adopted
			A18.Guide and assist flagmen
			A19.Guide and assist workmen on safety and hygienic measures
			A20.Report accidents to the superior if any
			A21.Asses the machinery outcomes

(2)Perform activities related to coordination of soil improvement and compaction work in preparing road sub grade (F45S010U02)	1. Carryout work related to coordination of soil improvement and soil compaction in road sub grade preparation	**M-02 Preparing road sub grade and sub base**	**B1** Assist immediate superior / Lab staff to identify the material to be removed / replaced
	2. Carryout work related to organizing traffic arrangements and safety & hygienic measures in road sub grade preparation		**B2** Guide and assist the team for blending / stabilizing materials
			B3 Guide and Assist the operator / team to maintain, the levels & lines, layer thickness of sub grade / sub base
			B4 Assess moisture content of soil through informal tests
			B5 Deploy the rollers for the compaction
			B6 Maintain the required moisture level of the soil
			B7 Decide the compaction level through informal methods
(3)Perform activities related to preparation of road sub base **(F45S010U03)**	1. Carryout work related to mixing, spreading and compacting sub-base material for road sub base preparation 2. Carryout work related to demarcating boundaries and levels in road sub base preparation 3. Carryout work related to organizing traffic arrangements and safety & hygienic measures during road sub base preparation		
(4)Perform activities related to laying and compacting of base material in preparing road base. **F45S010U04**	1. Carryout work related to laying and compacting base material in preparing road base	**M-03 Construction of aggregate base**	**C1.**Get confirmation of the approval for the previous layer from the immediate superior
	2. Carryout work related to demarcating boundaries and levels as required for preparing road base		**C2**.Assess the quality of the recommended material

	3. Carryout work related to organizing traffic arrangements and safety & hygienic measures during road base preparation		**C3.**Assign suitable machinery for spreading
			C4. Guide and assist the team for blending / mixing base materials
			C5 Guide and assist the operator / team to maintain the levels & lines of base
			C6.Assess moisture content of base materials through informal tests
			C7 Maintain the required moisture level of base materials
			C8. Deploy the rollers for the base compaction
			C9.Decide the compaction level of the base through informal methods
			C10 Get the approval of compaction for the base surface
			C11 Assign the workers for cleaning the base surface
			C12 Arrange resources for priming
			C13 Barricade the primed surfaces
(5)Perform activities related to spreading and laying Asphalt concrete in making road surface **(F45S010U05)**	(1)Carryout work related to preparation of base for laying of surface	**M-04 Laying asphalt concrete**	D1 Assign work team to clean the existing / prepared road surface
	(2)Carryout work related to demarcating boundaries and levels as required for making road surfaces		D2 Guide and assist the team for mending surface defects
	(3)Carryout work related to organizing traffic arrangements and safety & hygienic measures in making road surfaces		D3 Get conformation of supply of surfacing material from the immediate superior
	(4)Carryout work related to spreading, laying and compacting Asphalt concrete for making road		D4 Assist survey team to set out the level and lines
			D5 Deploy team for applying tack coats
			D6 Assign paving team
			D7.Guide and assist the paving team to pave asphalt
			D8.Carry out paving process while maintaining given levels
			D9.Rectify short comings during paving process
			D10.Monitor the compaction process

			D11.Guide and assist the team to trim, level and compact joints / edges
06) Perform activities related to metalling and tarring in making road surface (F45S010U06)	(1) Carryout work related to organizing traffic arrangements and safety & hygienic measures in	**M-05 Surface treatment**	E1 Check the quality of the surfacing material visually
	(2) Carryout work related to demarcating bounda ries and levels as required for making road surfaces		E2 Guide and assist the team to clean the surfacing material
	(3) Carryout work related topreparation of base for laying of surface material in road construction		E3 Guide and assist the team to pre-coat of surfacing material
	(4) Carryout work related to spreading, laying and Treatment (SBST) & Double Bituminous Surface Treatment (DBST) in road surface preparation		E4 Assign spreading team
			E5 Guide and assist the spreading team to spread material
(7) Perform activities related to metalling and tarring in making road surface (F45S010U07)	(1)Carryout work related to organizing traffic arrangements and safety & hygienic measures in making road surfaces	**M-06 Metalling and tarring**	F1.Guide and assist the team to pack materials
	(2)Carryout work related to demarcating bound aries and levels as required for making road surfaces		F2.Guide and assist the team to spread materials manually
	(3)Carryout work related to preparation of base for laying of surface material in road construction		F3.Compact the spreaded materials
	(4)Carryout work related to metalling and tarring in road surface preparation		F4.Check the undulation of the surface
			F5.Rectify the undulations
			F6.Prepare the binder materials
			F7.Apply binder material on the rolled surface
			F8.Apply blinding material over the surface
(8)Perform activities related to construction of structures and drainage facilities during road (F45S010U08)	(1)Carryout work related to organizing traffic arrangements and safety & hygienic measures during construction of structures and facilities in road	**M-07 Construction of structures and drainage**	G1.Receive information & details of structures
	(2)Carryout work related to setting out in constructing structures and drainage facilities during road construction work		G2.Arrange team for clearing and excavation
	(3)Carryout work related to excavation for road structures during road construction work		

	(4)Carryout work related to laying concrete for road structures Carryout work related to back filling for road structures		G3.Check finished work with given lines and levels G4.Guide and assist the team to erect formwork G5.Guide and assist the team to fabricate & lay steel bars G6.Guide and assist the team to construct base & structure G7.Deploy workmen and guide to construct components using Rubble / Concrete / Gabion wall or Abutment G8.Ensure the provisions for weep holes G9.Deploy workmen for dismantling formwork G10.Check and rectify the defects on the concrete surface G11.Guide and assist the work team for arranging filter material and aggregate backfilling G12.Guide workmen to backfill with suitable soil G13.Guide and assist to provide guard stones & parapet wall G14.Guide and arrange workmen to cast and place cover slabs on drains
(9)Perform activities related to erection of road signs and adding road furniture & road markings during road construction work F45S010U09	(1)Carryout work related to organizing traffic arrangements and safety & hygienic measures (2)Carryout work related to adding road furniture during road construction (3)Carryout work related tofixing road sign boards and name boards (4)Carryout work related to marking road signs	**M-08** **Road signs & markings**	H1.Identify the locations and road signs as per the drawings and superior's instructions H2.Collect the road signs as per the instructions given by superior H3.Take precautions to avoid damages while transporting the road signs H4.Place the road signs at the instructed locations H5.Guide and assist workers for erecting the road signs

			H6.Maintain the road signs already placed
			H7.Guide and assist the work team to fix kerb stone and paving slabs
			H8.Establish the road marks as per the superior's instructions
			H9.Prepare the road marking materials as per superior's instructions
			H10.Apply road marking materials on the roads
			H11.Check the accuracy of the road markings
			H12.Fix road studs / bollards / guard rails / kilometer (km) stone / boundary markers / Reflectors