

TRANSNATIONAL SKILL STANDARDS FOR ELECTRONICS SECTOR

<p>Scope</p>		<p>Overview</p>	<p>and limitations of different types of consumer electrical and electronic products and systems and their associated modules and components.</p> <ul style="list-style-type: none"> • be able to apply the correct methods and procedures when identifying and rectifying faults in consumer electrical and electronic products and systems
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Competency Mapping

Performance Criteria - Indian NOS	Performance Criteria - UK NOS	Gaps in Indian NOS
Attend to service complaints – washing machine	Identify and rectify faults in consumer electrical and electronic products and systems	
PC1. diagnose the fault in the unit as per customer interaction and initial inspection		
PC2. identify the cycle(fill/wash and rinse/spin and drain) during which the problem occurs based on customer interaction	P1. obtain clear and detailed information about the reported fault(s) in the product(s) and/or system(s) from relevant: P1.1 sources of information P1.2 service and/or maintenance records P1.3 manual and visual checks	None
		P2. advise the relevant people clearly and accurately about the potential disruption and consequences of carrying out the processes and procedures for the identification and rectification of faults
		P3. confirm a program of work with the relevant people in accordance with organizational procedures
		P4. produce a risk assessment and method statement, as required, for the work to be carried out, including the identification and use of personal protective equipment
		P5. verify that job and product(s) and/or system(s) information and documentation is current and relevant and that, as required, the access equipment and tools are fit for purpose

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Performance Criteria - Indian NOS	Performance Criteria - UK NOS	Gaps in Indian NOS
		P6. confirm that the supplies available are compatible with the product(s) and/or system(s)
		P7. interpret relevant data, diagrams and drawings for the product(s) and/or system(s)
		P9. select materials, accessories, components and/or modules needed to complete the fault identification, rectification and repair activity, and confirm that they are: P9.1 of the right type and size P9.2 fit for purpose in accordance with the product(s) and/or system(s)'s design P9.3 suitable for the working environment
PC3. ensure that the unit is unplugged before carrying out any tests	P10. complete safe-isolation as and when required to ensure the safe identification and rectification of faults in the products and/or systems and their associated components	None
		P11. comply with industry practices and organizational procedures to ensure the co-ordination, as required, of the activities of other persons in the work location affected by: P11.1 the identification and location of the fault(s) P11.2 the rectification of the fault(s)
PC4. inspect basic parts such as valve strainers, fill hose, drain line, pressure tube, water valves, pressure sensor	P12. identify, locate, analyze and rectify faults	None

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Performance Criteria - Indian NOS	Performance Criteria - UK NOS	Gaps in Indian NOS
PC5. carry out basic tests such as power supply inspection, volt ampere test and continuity test		None
PC6. Dis-assemble the washing machine and check for faults in the control/service panel, lid switch, temperature selector switch, water level control switch, timer, etc.		None
PC7. follow the electrical circuit path and inspect each component in that sequence in order to identify any electrical faults in the unit		
PC8. ensure that all parts such as motors, transformer, pulley and belt system, motor starting switch, solenoid, clutch lining have been inspected		
PC9. send to factory for in depth diagnosis, if unable to identify problem at site		
PC10. if the fault identified is due to a problem in the water source, ensure that water supply is turned on and that there are no kinks in the hoses	P12. identify, locate, analyze and rectify faults	None
PC11. if the problem is due to soap deposition inside the machine, clean the same and run the machine through a complete wash cycle	P12. identify, locate, analyze and rectify faults	None
PC12. if the fault identified is due to damage of components such as water inlet valve, capacitor, fuse, circuit breaker or door knob, timer replace immediately	P13. repair, remove and replace, as required, in accordance with industry recognized methods, techniques and procedures: P13.1 cables /flexes/hoses	None

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Performance Criteria - Indian NOS	Performance Criteria - UK NOS	Gaps in Indian NOS
PC13. if the dysfunctional module/part is specialized and cannot be replaced immediately, remove and replace during second visit with a functional one as collected from the service center	P14. ensure, if the fault(s) cannot be corrected immediately, the safety of the product(s) and/or system(s) and their associated modules and components	None
		P15 inspect and test, as appropriate, and in accordance with industry recognized methods and practices, the repaired and/or replaced modules and components
PC15. reassemble the unit		
PC16. switch on power supply and confirm that the unit is functioning as per specifications	P16. perform tests, as required, on the product(s) and/or system(s) to ensure it is fault free and operates in accordance with: P16.1 the product(s) and/or system(s)'s design P16.2 manufacturer's instructions	None
PC17. demonstrate and confirm functionality of the unit with the customer		
PC18. collect necessary payments from the customer		
PC19. fill in customer acknowledgement form	P17.4 the completion of relevant documentation and recording of product(s) and/or system(s) data/information on the completion of the fault rectification activity	None
PC20. complete other documentation procedures to record complaint closure		None
PC21. secure repairs completion receipt from customer		
PC22. educate customer on washing machine maintenance in order to avoid further problems		
PC23. ensure damage free handling of the unit		

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Performance Criteria - Indian NOS	Performance Criteria - UK NOS	Gaps in Indian NOS
PC24. optimize the time taken to fix the dysfunctional washing machine		
PC25. rectify to avoid repeat fault in the washing machine		
PC26. meet daily target for attending to number of complaints		
PC27. record 100% customer satisfaction on feedback form, post service		
PC28. make sale of related products or annual maintenance contracts		
PC29. interact with service technicians from time to time in order to understand problems faced on field		
PC30. educate junior level technicians about commonly occurring problems and diagnosis procedures		
Knowledge & Understanding; Organisational Context	Knowledge & Understanding	Gap
KA1. company's policies on: incentives, delivery standards and personnel management and customer service standards		
KA2. reporting and documentation processes	P11.4 the completion of relevant documentation and recording of product(s) and/or system(s) data/information on the completion of the fault rectification activity	None
KA3. washing machine manufacturing capabilities of the organization		
KA4. importance of the individual's role in the system		
KA5. reporting structure		

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Performance Criteria - Indian NOS	Performance Criteria - UK NOS	Gaps in Indian NOS
Technical Knowledge	Technical Knowledge	Gap
KB1. different cycles in the machine running process and possible symptoms of faults in respective cycles	K1. the applications, operation, operating principles, advantages and limitations of different product(s) and/or system(s) and their associated components	None
KB2. controls and features of different washing machine models of the company		
KB3. faults common to all types of washing machines and faults specific to different models		
		K2. how to obtain clear and detailed information about the reported fault(s) and any modules or components which need to be repaired or replaced from relevant: K2.1 sources of information K2.2 services and/or maintenance records K.3 manual product(s) and/or system(s) checks
		K3. the organizational procedures and industry practices when carrying out the processes for the identification and rectification of faults for: K3.1 advising the relevant people about the potential disruption and consequences of the work activity K3.2 confirming a program of work with the relevant people K3.3 producing a risk assessment and method statement

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Performance Criteria - Indian NOS	Performance Criteria - UK NOS	Gaps in Indian NOS
		K4. how to verify that job information and documentation is current and relevant and that the instruments, access equipment and tools are fit for purpose
		K5. how to interpret relevant data, diagrams and drawings
		K6. the correct procedures for safe-isolation
KB5. fundamentals of electricity such as ohms law, difference between ac and dc, calculation of energy consumption of the appliance, understanding of domestic wiring, understanding of series and parallel connections		
KB6. basics of gears, behavior of gear mechanism, understanding of linear and angular movements, concepts such as rpm, torque etc.	K1. the applications, operation, operating principles, advantages and limitations of different product(s) and/or system(s) and their associated components	None
KB7. troubleshooting knowledge with respect to washing machine	K7. the methods, techniques and processes for identifying, locating, analyzing and rectifying faults K8. the methods, techniques and procedures for repairing, removing and replacing, as required: K8.1 cables/flexes/hoses K8.2 product(s) and/or system(s) modules and components	None
KB8. types of switches such as thermal, mechanical, electronic, magnetic, electromagnetic, electromechanical, pressure optical and bimetal	K1. the applications, operation, operating principles, advantages and limitations of different product(s) and/or system(s) and their associated components	None

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Performance Criteria - Indian NOS	Performance Criteria - UK NOS	Gaps in Indian NOS
KB9. fundamentals of motors, types of motors and their working methods		
KB10. functioning of components and parts such as solenoids and plungers		
		K9. the tests and testing procedures to ensure that the product(s) and/or system(s) is fault free and operates in accordance with: P9.1 the product(s) and/or system(s)'s design P9.2 manufacturer's instructions
		K10. how to ensure, if the fault(s) cannot be corrected immediately, the safety of the product(s) and/or system(s) and their associated modules and components
		K11 organizational procedures for: K11.1 handing over the product(s) and/or system(s) to the customer/client K11.2 informing relevant people about issues outside the limitations of your responsibility K11.3 the safe transport and/or disposal of unwanted products, material, substances and/or liquids in accordance with suppliers' and manufacturers' instructions K11.4 the completion of relevant documentation and recording of product(s) and/or system(s) data/information on the completion of the fault rectification activity

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Performance Criteria - Indian NOS	Performance Criteria - UK NOS	Gaps in Indian NOS
KB11. hazards, their causes and prevention/personal safety		
KB12. frequently occurring faults such as noise, water not filling/over filling, water not draining their causes and solutions		
KB13. components/modules of the washing machine and their prices		
KB14. other products of the company		

NOS Mapping Descriptions			
Indian QP Title	Field Engineer RACW	UK Qualification	Technician Consumer Electronics
Indian QP Code	ELE/Q3105	UK Qualification Code	None
Indian NOS Code	ELE/N9901	UK NOS Code	Coordinate a work site in the building services engineering sector
Indian NOS	Interact with colleagues	UK NOS	SUMBSE03
Scope	This unit is about the individual's level of communication with colleagues and other departments within the organization. It determines the ability to work as a team member to achieve the required deliverables on schedule.	Overview	This standard is for people who are required to coordinate the work site for the installation and/or maintenance activities associated with building services engineering systems and is appropriate to the air conditioning, consumer electrical and electronic products, domestic heating, electro technical, heating & ventilation, plumbing and refrigeration industries. The person

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Scope		Overview	<p>undertaking the responsibility for the coordination of the work site must be able to oversee, as relevant, the work of other operatives and/or other contractors, and in accordance with relevant industry standards and regulations, the specification, working practices, the working environment and the natural environment confirm:</p> <p>the work to be undertaken</p> <ul style="list-style-type: none"> • a program of work with relevant people • the organization of the appropriate resources • that equipment, accessories and components are fit-for-purpose • that work is carried out safely • all relevant documentation is completed accurately <p>The person carrying out this work should know and understand the extent of their role and responsibilities, including how best to motivate, monitor and communicate with others in accordance with organizational procedures.</p>

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Competency Mapping

Performance Criteria - Indian NOS	Performance Criteria - UK NOS	Gaps in Indian NOS
Interact with colleagues	Coordinate a work site in the building services engineering sector	
PC1. understand work requirements, targets and incentives	P1. produce a risk assessment and method statement for the work to be carried out on the identified building services engineering system	None
PC2. learn about new product models, their features and functions		
		P2. allocate duties and responsibilities to operatives, when appropriate, to make best use of their competence
		P3. instruct the operatives, where relevant, about their duties and responsibilities clearly and concisely
PC3. report problems identified in the field	P4. confirm that any instructions given are understood	None
PC4. escalate customer concerns that cannot be handled on field		
PC5. resolve personnel issues	P5. coordinate effectively, when relevant, the work of other contractors	None
PC6. receive feedback on work standards and customer satisfaction	P6. monitor, as appropriate, that the work of operatives is safe, fit-for-purpose, cost effective and in accordance with: P6.1 industry recognized working practices P6.2 the specification P6.3 the current versions of appropriate industry standards and regulations	None
PC7. communicate any potential hazards at a particular location	P7. ensure that safe and appropriate action is taken promptly where a non-	

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Performance Criteria - Indian NOS	Performance Criteria - UK NOS	Gaps in Indian NOS
	compliance is identified during the program of work	
PC8. meet given targets		
		P8. ensure that all documentation associated with the installation and/or maintenance work is in accordance with: P8.1 organizational procedures P8.2 the current versions of appropriate industry standards and regulations
PC9. deliver work of expected quality despite constraints		
PC10. Have feedback from a happy and satisfied customer		
		P10. verify that the equipment, accessories and components are: P10.1 compatible to the working environment P10.2 in accordance with the specification P10.3 of the required and correct type P10.4 delivered on time and undamaged P10.5 suitable and safely stored
PC11. resolve inter-personnel conflicts and achieve smooth workflow	P9. liaise with the relevant people to resolve issues which are outside the scope of your job role	None
		P11. confirm that the installation and/or maintenance work completed is in accordance with: P11.1 the specification P11.2 the current versions of appropriate industry standards and regulations
PC12. receive spares from tool room or stores		

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Performance Criteria - Indian NOS	Performance Criteria - UK NOS	Gaps in Indian NOS
PC13. deposit faulty modules and tools to stores		
PC14. pass on customer complaints to colleagues in a respective geographical area		
PC15. assist colleagues with resolving field problems		
PC16. clearly demarcate roles of each team member		
Knowledge & Understanding; Organisational Context	Knowledge & Understanding	Gaps in Indian NOS
KA1. company's policies on: incentives, delivery standards, and personnel management	K2. how to interpret organizational procedures and monitor changing conditions at the work site	None
		K1. your role and responsibilities in relation to: K1.1 monitoring and implementing health and safety on the work site K1.2 the work to be undertaken K1.3 allocating roles and responsibilities K1.4 monitoring the work of operatives K1.5 liaising with relevant people
KA2. importance of the individual's role in the workflow		
KA3. reporting structure		
Technical Knowledge	Technical Knowledge	Gaps in Indian NOS
KB1. how to communicate effectively	K4. how to communicate effectively with relevant people	None
KB2. how to build team coordination	K3. how to coordinate operatives you are responsible for in relation to: K3.1 supervision and motivation K3.2 identification of competence K3.3 planning work allocations, duties and responsibilities	None

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Performance Criteria - Indian NOS	Performance Criteria - UK NOS	Gaps in Indian NOS
		K5. the current versions of appropriate industry standards and regulations relevant to the identified building services engineering system
		K6. the organizational procedures for: K6.1 completing the necessary documentation K6.2 agreeing a programmer of work with relevant people K6.3 confirming that the installation and/or maintenance work is completed K6.4 identification of competence
		K7. methods that will verify that the equipment, accessories and components are: K7.1 compatible to the working environment K7.2 in accordance with the specification K7.3 of the required and correct type K7.4 delivered on time and undamaged K7.5 suitable and safely stored
		K8. how to manage the available storage facility at the work site

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NOS Mapping Descriptions			
Indian QP Title	Field Engineer RACW	UK Qualification	Technician Consumer Electronics
Indian QP Code	ELE/Q3105	UK Qualification Code	None
Indian NOS Code	None	UK NOS Code	Apply health and safety and environmental legislation in the building services engineering sector
Indian NOS	None	UK NOS	SUMBSE01
Scope		Overview	<p>This standard is about establishing and maintaining working practices and procedures across a specified range of building services engineering sector installation and/or maintenance activities that give consideration to health and safety, the natural environment and the working environment. This would include identifying hazards and risks, applying appropriate procedures and working practices to protect yourself and others.</p> <p>This work may be carried out in the context of plumbing, electro technical, refrigeration and air conditioning, heating and ventilation, or consumer electrical and electronic products.</p> <p>The person carrying out this work must</p>

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<p>Scope</p>		<p>Overview</p>	<p>possess the skills and knowledge to be able to use building services engineering sector equipment, components, materials and substances effectively, efficiently, in accordance with the specification giving consideration to the natural environment and the working environment in terms of waste materials and if appropriate water usage.</p>
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Competency Mapping

Performance Criteria - Indian NOS	Performance Criteria - UK NOS	Gaps in Indian NOS
	Apply health and safety and environmental legislation in the building services engineering sector	
		P1. identify the appropriate industry standards and regulations
		P2. apply relevant organizational procedures
		P3. identify hazards and risks
		P4. complete documentation in accordance with the requirements of the organizational procedures
		P5. review the organizational procedures to ensure that they will not cause potential hazards and risks
		P6. implement organizational procedures, suppliers' and manufacturers' instructions appropriate to the safe use, maintenance, handling, transport and storage of: P6.1 tools, plant and access equipment P6.2 equipment and components P6.3 materials and substances
		P7. report to the relevant people in accordance with organizational procedures: P7.1 potential hazards and risks P7.2 potentially harmful materials and substances
		P8. ensure that the conduct of people when undertaking the installation and/or maintenance activity does not cause potential hazards and risks

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		<p>P9. comply with organizational procedures in the event of:</p> <p>P9.1 injuries to self and/or others</p> <p>P9.2 emergencies</p> <p>P9.3 evacuation procedures</p>
		<p>P10. implement organizational procedures for the safe transport and/or disposal of waste material, substances and liquids in accordance with suppliers' and manufacturers' instructions</p>
Knowledge & Understanding; Organisational Context	Knowledge & Understanding	Gap
		<p>K1. appropriate industry standards and regulations</p>
		<p>K2. your responsibilities in accordance with organizational procedures</p>
		<p>K3. the application, advantages and limitations of different working practices</p>
		<p>K4. how to recognize materials and substances that can potentially be harmful</p>
		<p>K5. the documentation associated with the organizational procedures' requirements</p>
		<p>K6. the organizational procedures for dealing with the presence of harmful materials and substances</p>
		<p>K7. where and how to locate relevant health and safety information needed to complete the installation and/or maintenance activity in accordance with organizational procedures</p>
		<p>K8. what constitutes a hazard or risk</p>

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		K9. the methods for handling of hazardous materials and substances in accordance with organizational procedures
		K10. The organizational procedures, suppliers' and manufacturers' instructions for safe use, maintenance, handling, transport and storage of: K10.1 tools, plant and access equipment K10.2 equipment and components K10.3 materials and substances
		K11. the warning signs for hazardous materials and substances
		K12. the methods for the safe transport and/or disposal of waste material, substances and liquids in accordance with: K12.1 organizational procedures K12.2 suppliers' and manufacturers' instructions
		K13. the organizational procedures relevant to reporting issues relating to: K13.1 health and safety K13.2 harmful substances and material K13.3 emergencies on site

***General Note:** In the NOS, Range statement is not separated out. It is integrated holistically into the PCs and technical knowledge within the QPs.