

Revised Application Documentation: Version 5 /22 May, 2015

QUALIFICATION FILE – CONTACT DETAILS OF SUBMITTING BODY

Name and address of submitting body:

Construction Skill Development Council of India

Address:- 204, Aashirwad Complex, D-1, Green Park, New Delhi - 110016

Tel: +91-11-46584466

Name and contact details of individual dealing with the submission

Name: Ms. Jancy Mathew

Position in the organisation: Head Standards and Research

Address if different from above

Same as above

Tel number(s): +91-11-46584466

E-mail address: standards@csdcindia.org

List of documents submitted in support of the Qualifications File

1. Career Map of Assistant Electrician- Annexure 1
2. QP CON/Q0602- Annexure 2

3. QUALIFICATION FILE SUMMARY

Qualification Title	Assistant Electrician - CON/Q0602		
Body/bodies which will assess candidates	<ul style="list-style-type: none"> • MCG • Star Projects 		
Body/bodies which will award the certificate for the qualification.	CSDCI		
Body which will accredit providers to offer the qualification.	CSDCI		
Occupation(s) to which the qualification gives access	Construction Electrician		
Proposed level of the qualification in the NSQF.	3		
Anticipated volume of training/learning required to complete the qualification.	400 hours		
Entry requirements / recommendations.	10th standard		
Progression from the qualification.	Construction Electrician - LV		
Planned arrangements for RPL.	Work is under progress		
International Comparability	Compared with UK NOS		
Formal structure of the qualification			
Title of unit or other component (include any identification code used)	Mandatory/ Optional	Estimated size (learning hours)	Level
CON/N0602: Select and use hand, power tools and electrical devices relevant to construction electrical works	Mandatory	48	3
CON/N0603: Install temporary lighting arrangement at construction sites	Mandatory	96	3
CON/N0604: Install LV electrical wiring at permanent structures	Mandatory	96	3
CON/N0605: Assemble, install and maintain temporary LV electrical panels (distribution boards) at	Mandatory	96	3
CON/N8001: Work effectively in a team to deliver desired results at the workplace	Mandatory	24	3
CON/N8002: Plan and organize work to meet expected outcomes	Mandatory	16	3
CON/N9001: Work according to personal health, safety and environment protocol at construction site	Mandatory	24	3

Please attach any document giving further detail about the structure of the qualification – eg a Curriculum or Qualification Pack.

Give details of the document here:

1. QP CON/Q 0602- Annexure 2

SECTION 1

ASSESSMENT

Name of assessment body:

If there will be more than one assessment body for this qualification, give details.

- MCG
- Star Projects

Will the assessment body be responsible for RPL assessment?

Give details of how RPL assessment for the qualification will be carried out and quality assured.

The RPL assessment will be carried out through screening, identifying the skills gaps, provide bridge training to cover the competency gap and then conduct final assessment of the candidates

Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, consistent and fair and show that these are in line with the requirements of the NSQF:

Assessment is done through third parties who are affiliated to CSDCI as Assessment Body. Assessors are trained & certified by CSDCI through Training of Trainers program. The assessment involves two processes. The first process is gathering the evidence of the competency of individuals. The second part of the assessment process is the judgement as to whether a person is competent or not. The assessment plan contains the following information:

- What will be assessed, i.e. the competency based on each NOS
- How assessment will occur i.e. methods of assessment
- When the assessment will occur
- Where the assessment will take place i.e. context of the assessment (workplace/simulation)
- The criteria for decision making i.e. those aspects that will guide judgements and

Where appropriate, any supplementary criteria used to make a judgement on the level of performance.

The assessment is conducted through theory, viva voce and practical.

Please attach any documents giving further information about assessment and/or RPL.

Give details of the document(s) here:

ASSESSMENT EVIDENCE

Complete the following grid for each grouping of NOS, assessment unit or other component as per the assessment criteria. Insert the required number of rows.

CRITERIA FOR ASSESSMENT OF TRAINEES

Assistant Electrician

CON/Q0602

Construction Skill Development Council Of India

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 theory part will be based on knowledge bank of questions created by the SSC
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria
5. To pass the Qualification Pack, every trainee should score a minimum of 70% individually in theory and practical for every NOS.
6. the trainee should score 100% marks individually in theory and practical for safety related NOS and performances criteria as and where applicable in each qualification pack.
7. The Assessor shall check the final outcome of the practices while evaluating the steps performed to achieve the final outcome
8. 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.
9. after the certain number of iteration the trainee is marked as fail, scoring zero marks for the procedure in the activity (practical's)
10. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

		Marks Allocation			
Assessable Outcome	Assessment criteria	Total Mark	Out Of	Theory	Skills Practical
1. CON/ N 0602: Select and use hand, power tools and electrical devices relevant to construction electrical works	PC1. select and handle appropriate hand and power tools for establishing/ terminating electrical connections as per requirement	100	7	2	5
	PC2. select appropriate electrical measuring devices to examine electrical units for power interruptions/ continuity		3	1	2
	PC3. select appropriate tools and measuring devices to trace out short circuits/ faults and leakages in electrical wiring		10	3	7
	PC4. select electrical devices such as starters, circuit breakers, relays as per equipment/ wiring installation rating, current rating		3	1	2
	PC5. follow operating procedure and standards set by manufacturer while handling and using power tools and measuring devices		7	2	5

	PC6. perform basic checks on power tools prior to use		10	3	7
	PC7. use measuring instruments to measure size and dimension of wires, conduits as per electrical installation or maintenance work requirement		13	4	9
	PC8. use hand and power tools to cut, and bend wire and conduit as per electrical installation or maintenance work requirement		10	3	7
	PC9. use right tools to splice wires by stripping insulation from terminal leads and twisting wires together		7	2	5
	PC10. use appropriate hand and power tools to thread conduit ends, connect couplings, and fabricate and secure conduit support brackets		7	2	5
	PC11. use appropriate hand, power tools and diagnostic devices like digital ammeter, multimeter, tong tester, earth tester or similar devices to install, repair power connections		10	3	7
	PC12. maintain and upkeep of relevant tools and devices after use		7	2	5
	PC13. work safely as per standard practices, manufacturer's specifications and guidelines, electrical / organization safety norms while carrying out any electrical work		7	2	5
		Total	100	30	70
CON/ N 0603: Install temporary lighting arrangement at construction sites	PC1. check and select cable, conduits , lights, sockets, temporary power distribution panels at power source and other required fixtures and accessories as per manufacturer's guidelines and specification	100	7	2	5
	PC2. assist in /carry out laying of cables through ducts or conduits, underground or through poles (overhead) as per plans and instructions		7	2	5
	PC3. select the type and wattage of lights considering illumination requirement at worksite and install them at secured positions		7	2	5
	PC4. fix lights and its accessories, brackets, bulkheads with screws and bolts or by other standard means, pull wires through conduit leading to connection boxes, temporary panels/ distribution boards or other temporary electrical terminals		7	2	5
	PC5. extend/ join LV electrical cable using straight through joints, splicing them together and secure joints by applying PVC insulation tapes, caps or by other safe method as and when necessary		7	2	5
	PC6. carry out termination of LV cables selecting the right method as per standard practice		7	2	5

	PC7. work safely as per electrical safety guidelines provided by manufacturer, standard safety practice or organizational safety norms while establishing or disconnecting live electrical connections		3	1	2
	PC8. upkeep of all relevant key electrical tools and fixtures		3	1	2
	PC9. tag embedded, exposed electrical lines and other key equipment appropriately		3	1	2
	PC10. repair and replace light arrangements as per instruction or requirement		7	2	5
	PC11. replace burned out bulbs, light units and ballast in light fixtures as needed		7	2	5
	PC12. carry out relevant tests to trace out power interruptions/ continuity at lighting arrangements		10	3	7
	PC13. replace damaged cable, other relevant parts as and when necessary		7	2	5
	PC14. shift light at various locations during construction activity as per requirement		7	2	5
	PC15. replace faulty circuit breakers, fuses, switches, electrical and electronic components and wire as per requirement		10	3	7
	PC16. perform preventive maintenance on diesel generators at site provided for temporary lighting (if any) at scheduled intervals as per direction of concerned authority		3	1	2
		Total	100	30	70
CON/ N 0604: Install LV electrical wiring at permanent structures	PC1. identify and select house wiring components (such as wires, flexible and rigid conduits, PVC raceways, wooden battens, clamps etc.) according to their specification / size	100	7	2	5
	PC2. read and interpret single phase LV wiring diagram		10	3	7
	PC3. carry out necessary linear measurement to cut, bend, join conduits and cables and use them as per requirement or instruction		7	2	5
	PC4. lay conduit through RCC structures (slabs, beams, walls) or through chased wall (brick wall) surface as per instruction		7	2	5
	PC5. lock conduit pipe in its location by means of clamp or other standard means as per instruction		7	2	5
	PC6. pull, push wires through conduits in order to expose them at desired locations as per requirement		7	2	5
	PC7. perform drilling, cutting work as and when necessary using appropriate hand and power tools		10	3	7
	PC8. handle and shift electrical fixtures, fittings as per instructions within workplace		7	2	5

	PC9. assist in fixing of electrical fixtures and fittings as per instruction		7	2	5
	PC10. carry out termination of cables safely as per instruction		7	2	5
	PC11. carry out necessary tests to electrical circuit during and post wiring activity using appropriate tools as per direction of electrician		10	3	7
	PC12. assist in carrying out electrical earthing work by installing earthing components as per instruction		10	3	7
	PC13. work safely according to manufacturer guidelines, specification, standard electrical safety practices or organizational safety and as per direction of superior authority		7	2	5
		Total	100	30	70
CON/ N 0605: Assemble, install and maintain temporary LV electrical panels (distribution boards) at construction site	PC1. read relevant SLDs, instructions, safety guidelines, manufacturer's specifications prior to assemble temporary panel/ distribution boards	100	10	3	7
	PC2. select and install required fixtures like power sockets, switches, wires, MCBs of appropriate specification as per circuit load requirement		10	3	7
	PC3. ensure tightness and safe working condition of wires, fixtures prior to connect the assembly with power source		3	1	2
	PC4. connect DB to main power cable and undertake standard tests to ensure its safe and desired working		7	2	5
	PC5. place and secure the distribution board against water, fire and other external damaging agents		7	2	5
	PC6. carry out proper termination of cables as per standard practice while connecting to the sockets of the panel		7	2	5
	PC7. carry out earthing of the panels as per standard procedure		10	3	7
	PC8. work safely as per manufacturer's guidelines, specifications, standard electrical practices or organizational safety norms whichever applicable		3	1	2
	PC9. check and ensure necessary tagging, barricading near to the live/ active electrical distribution boards		3	1	2
	PC10. carry out visual inspection of the live/ active board regularly to ensure safe working condition of all components		3	1	2
	PC11. ensure that the live connections get discontinued after completion of daily construction works in order to minimize energy wastage and enhance working efficiency of electrical units		3	1	2
	PC12. respond promptly on failure/ damage or malfunctioning of panel or any of its component		7	2	5
	PC13. carry out necessary tests in order to determine root cause of failure		10	3	7

	PC14. report, notify concerned authorities prior to shut down, deactivate or repair the electrical unit		3	1	2
	PC15. replace, repair faulty components as per SLD, instruction, safety guideline, manufacturer's specification		7	2	5
	PC16. carry out necessary documentation, keep records relevant to maintenance/repairing of panels as per organizational norms		3	1	2
	PC17. isolate the panel safely and shift to another location as and when necessary		3	1	2
		Total	100	30	70
CON/ N 8001: 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 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 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
CON/ N 8002: 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/ N 9001: 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 authorities	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	

SECTION 2

EVIDENCE OF NEED

What evidence is there that the qualification is needed?

Please refer to the attached list of job roles and occupations as per the attachment and their career paths as per Annexure 1, which have been derived through extensive industry interactions facilitated from 10 workshops and site visits conducted and interaction with 500+representatives from different organizations all over the country.

What is the estimated uptake of this qualification and what is the basis of this estimate?

The incremental Manpower Gap between 2008 and 2022 is 14,19,000 under Bar Bending Occupation

What steps were taken to ensure that the qualification(s) does/do not duplicate already existing or planned qualifications in the NSQF?

QPs for Job Roles of various related SSC's were studied to ensure that there is no duplicity

What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?

The comments, feedback and suggestions were collected through interaction with industry during August'14 to Feb'15. The same will be compiled and justifiable changes will be incorporated in the next/updated version of the QP. This QP is set to be revised post 23rd March 2017.

Please attach any documents giving further information about any of the topics above.

Give details of the document(s) here:

SECTION 3

SUMMARY EVIDENCE OF LEVEL

Summary of Direct Evidence:

Justify the NSQF level allocated to the QP by building upon the five descriptors of NSQF. Explain the reasons for allocating the level to the QP.

Generic NOS is/are linked to the overall authority attached to the job role.

Assistant Electrician- CON/Q0602

Process required	Professional Knowledge	Professional Skills	Core Skills	Responsibility	Level
<p>The job holder is expected to select and use specific tools and devices to carry out basic routine tasks of less complexity under familiar working conditions as per requirement of construction activities at project sites and permanent structures. The functions require application of electrical theories and implementation of details provided either by documented sources or verbal instructions on regular basis at workplace. Considering the nature of works the job roles is pegged at level 03.</p>	<p>The job holder is expected to be aware of basic facts related to principle of electricity and its flow in LV electrical circuits, common factors and their technical terminologies which have influence in electrical circuits, electrical units of measurements and their relations. The individual of this job role also expected to have knowledge of tests and inspections to be undertaken to carry out basic maintenance at electrical circuits. The knowledge includes understanding and application of basic facts and principle of electrical works. Hence considering the type of knowledge the job holder can be placed at level 03</p>	<p>The job holder is expected to be able to check and decide the physical condition of the electrical tools, materials, devices to be used for establishing or repairing basic LV electrical connections available at workplace, inspect electrical units to ensure their safe working and report to superior promptly in case of work requires higher level of competency to be resolved. The outcomes are repetitive and require narrow range of application. Hence, the job holder can be placed at level 03</p>	<p>The job holder is expected to communicate clearly and concisely to the co-workers and prepare test reports, notes or technical details as per work requirement. The individual of this job role is also expected to apply arithmetic and geometric principle while reading drawings, carrying out measurement or related activities, adheres to guidelines and statutory instructions provided by authorised body or organisations and general/ trade specific safe work procedures while performing tests/ inspections or installations. Considering the skill sets the job holder can be placed at level 03</p>	<p>The job holder is expected to complete assigned tasks as per instruction from concerned superior, adhering electrical safety norms and standard work methodology applicable to own field of work. The completed works needed to be checked and verified by superior having higher level of competency. Hence the individual working in this job role has partial responsibility of quality of his own work and can be placed at level 3</p>	<p align="center">3</p>

Level 3	Level 3	Level 3	Level 3	Level 3	
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OTHER EVIDENCE OF LEVEL [This need only be filled in where evidence other than primary outcomes was used to allocate a level] (**Optional**)

Summary of other evidence (if used):

SECTION 4

EVIDENCE OF RECOGNITION OR PROGRESSION

What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?

Please refer to attached career path as per annexure 1 which clearly defines the career path.

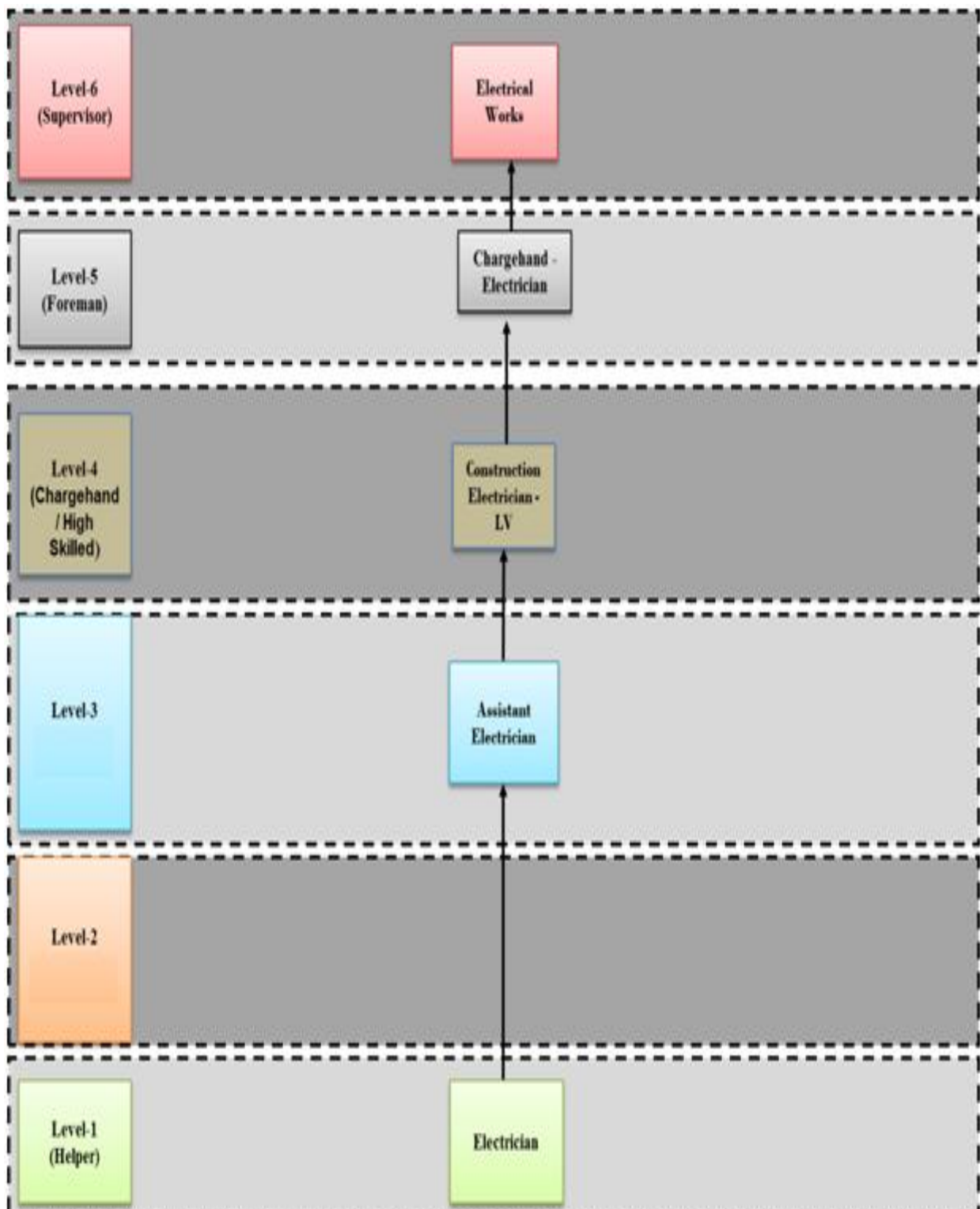
Please attach any documents giving further information about any of the topics above.

Give details of the document(s) here:

1. Career Map of Assistant Electrician - Annexure 1
2. QP CON/Q 0602- Annexure 2

Annexure 1

Career Map



Annexure 2- QP CON/Q 0602