

**NSDA Code**

**2020/SEC/DGT/03737**

**CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE**

Directorate General of Training (DGT)  
Government of India, Ministry of Skill Development and Entrepreneurship,  
1st and 2nd Floor, CIRTES Building  
Next to Pusa ITI, Pusa Campus  
New Delhi – 110012.

**Name and address of submitting body:**

Directorate General of Training (DGT)  
Government of India, Ministry of Skill Development and Entrepreneurship,  
1st and 2nd Floor, CIRTES Building  
Next to Pusa ITI, Pusa Campus  
New Delhi – 110012.

**Name and contact details of individual dealing with the submission**

Name: Shri Deepankar Mallick

Position in the organisation: Deputy Director General (C & P)

Address if different from above:

Tel number(s): 011-25847035

E-mail address: deepankar.mallick60@nic.in

**List of documents submitted in support of the Qualifications File**

1. Competency-based curriculum with following details:

Model Curriculum to be added which will include the following:

- a. Indicative list of tools/equipment to conduct the training: Enclosed with curriculum
- b. Trainers qualification: Indicated in the curriculum
- c. Lesson Plan: All DGT curricula are designed indicating specific practical to be carried out during training along with details of trade theory. Based on this the concerned instructor prepares the Lesson Plan and demonstration plan with support of IMPs developed by NIMI,DGT.
- d. Distribution of training duration into theory/practical/OJT component: Indicated in the curriculum.

2. Curriculum for Core Skill (Employability Skill).

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• **SUMMARY**

1	<b>Qualification Title</b>	<b>'FIRE TECHNOLOGY AND INDUSTRIAL SAFETY MANAGEMENT'</b>
2	<b>Qualification Code, if any</b>	DGT/1029
3	<b>NCO code and occupation</b>	3119.1000- Fire Fighters 5411.9900- Fire Inspector
4	<b>Nature and purpose of the qualification (Please specify whether qualification is short term or long term)</b>	Prepare skilled Technician to inspect and categorize different structures to ensure compliance with relevant central/state government laws and with approved plans, specifications and fire safety standards or inspect fire prevention systems and investigate fire sites to determine cause of fire, plan and execute fire protection measures based on construction and occupancy etc. It is long term qualification.
5	<b>Body/bodies which will award the qualification</b>	Directorate General of Training (DGT)
6	<b>Body which will accredit providers to offer courses leading to the qualification</b>	Directorate General of Training (DGT) accredits the Training providers (ITIs/ NSTIs/ MSTIs/ BTCs/BTPs / Industries / Establishments)
7	<b>Whether accreditation/affiliation norms are already in place or not , if applicable (if yes, attach a copy)</b>	Yes. The accreditation/ affiliation norms and any amendments made from time to time are available on DGT web portal.
8	<b>Occupation(s) to which the qualification gives access</b>	<ul style="list-style-type: none"> <li>• 3119.1000- Fire Fighters</li> <li>• 5411.9900- Fire Inspector</li> </ul>
9	<b>Job description of the occupation</b>	<b>Fire Technology and Industrial Safety Management Technician</b> will be able to inspect and categorize different structures to ensure compliance with relevant central/state government laws and with approved plans, specifications and fire safety standards or inspect fire prevention systems and investigate fire sites to determine cause of fire, plan and execute fire protection measures based on construction and occupancy etc.
10	<b>Licensing requirements</b>	NOT REQUIRED
11	<b>Statutory and Regulatory requirement of the relevant sector (documentary evidence</b>	NOT APPLICABLE

## NSQF QUALIFICATION FILE

Approved in 24<sup>th</sup> NSQC, dated: 27<sup>th</sup> Feb, 2020

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	to be provided)		
12	Level of the qualification in the NSQF	Level 4	
13	Anticipated volume of training/learning required to complete the qualification	<b>Sl. No.</b>	<b>Course Element</b>
		1	Professional Skill (Trade Practical)
		2	Professional Knowledge (Trade Theory)
		3	Employability Skills
			<b>Notional Training Hours</b>
			1200
			240
			160
		Total	1600
14	Indicative list of training tools required to deliver this qualification	As per Annexure I of curriculum.	
15	Entry requirements and/or recommendations and minimum age	<p>a. Passed class 10<sup>th</sup> class Examination.</p> <p>b. The minimum physical requirements are</p> <p>i. Height - 165 cm</p> <p>ii. Weight - 52 kg</p> <p>iii. Chest - Normal 81 cm - Expanded 85 cm</p> <p>iv. A registered MBBS doctor must certify that the candidate is medically fit to undertake the course.</p> <p>Minimum age 14 years as on first day of academic session</p>	
16	Progression from the qualification (Please show Professional and academic progression)	An Individual can proceed for	
		Professional <ul style="list-style-type: none"> <li>• Technician</li> <li>• Senior Technician</li> <li>• Supervisor</li> <li>• Manager</li> <li>• Entrepreneur</li> </ul>	Technical / Academic 
17	Arrangements for the Recognition of Prior learning (RPL)	<ul style="list-style-type: none"> <li>• Yes (For more details refer "Guidelines for Private candidate" in DGT website MIS portal).</li> </ul>	
18	International comparability where known (research evidence to be provided)	-	
19	Date of planned review of the qualification.	5 Yrs. from the Date of Approval	

<b>20</b>	<b>Formal structure of the qualification</b>			
	<b>Mandatory components</b>			
	<b>Title of component and identification code/NOSs/ Learning Outcomes</b>	<b>Estimated size (learning hours)</b>		<b>Level</b>
		<b>Skills</b>	<b>Knowledge</b>	
<b>TRADE SPECIFIC</b>				
(i)	Identify and select suitable chemicals (industrial, inflammable liquid) usable on the workplace following safety precautions.	90	18	3
(ii)	Identify, select and execute the application of different types of extinguishers, hoses and hose fittings.	60	12	3
(iii)	Select and prepare the hydrant and pump system for proper application.	60	12	4
(iv)	Plan and execute the concept of hydraulics in workplace.	30	6	4
(v)	Select and categorize electrical hazard and risk and its mitigation.	30	6	4
(vi)	Identify and select methods of using ladder in practical field.	30	6	4
(vii)	Select the BA set and its application in appropriate place.	30	6	4
(viii)	Identify and use small and special gears.	30	6	4
(ix)	Plan and execute elementary treatment at any incidental spot.	30	6	4
(x)	Utilize knots and hitches in different special job and fire.	30	6	4
(xi)	Plan and execute to uplift various gears with proper techniques, carry out Hazard and Risk evaluation selecting the proper method of rescue and F.F.	30	6	4
(xii)	Analyze the concept of accident caused and prevention, accident investigation, analysis and safety management.	30	6	4

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(xiii)	Select and apply provisions related to safety, health and welfare in respect of Factory Act, 1948.	30	6	4
(xiv)	Assess available resources and their proper use.	30	6	4
(xv)	Interpret appropriate techniques of CPR.	30	6	4
(xvi)	Identify the importance of lighting, ventilation, work related stress and its measurement.	30	6	4
(xvii)	Plan and execute fixed firefighting installations for their effective utilization.	30	6	4
(xviii)	Select and use PPE, demonstrate its care and maintenance.	30	6	4
(xix)	Select Automatic Fire Detection cum Alarm System to plan their effective utilization.	30	6	4
(xx)	Plan and execute fire station administration.	30	6	4
(xxi)	Identify communication system in different organization and their scope of use.	30	6	4
(xxii)	Get accustomed with different fire situations and firefighting using extinguishers.	30	6	4
(xxiii)	Plan and execute disaster response practices, IRS/JRT and salvage technique.	60	12	4
(xxiv)	Select and apply correct rescue method.	30	6	4
(xxv)	Categorize building construction that can ensure fire and life safety.	30	6	4
(xxvi)	Plan and execute fire protection measures based on construction and occupancy.	90	18	4
(xxvii)	Plan and survey Airport and Aircraft, port and ship for rescue system and firefighting system on it.	60	12	4
(xxviii)	Identify occupational hazards associated with different dangerous chemicals, dust, gases, mist, vapours etc. to plan and execute rescue operations in these cases.	30	6	4
(xxix)	Comply with safety precautions while working at height, confined place and work permit system.	30	6	4
(xxx)	Identify the characteristics of various fire suppression agents including water and safety in manual and mechanical handling of materials.	30	6	4

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(xxx)	Demonstrate hazard evaluation and risk analysis exercise	60	12	4
<b>CORE SKILL</b>				
<b>EMPLOYABILITY SKILLS</b>				
(i)	Apply safe working practices.	-	20	4
(ii)	Comply with environment regulation and housekeeping.	-	20	3
(iii)	Interpret & use formal and technical communication.	-	20	4
(iv)	Apply the concept in productivity & quality management in day to day work to improve productivity & quality.	-	20	4
(v)	List and interpret various acts of labour welfare legislation.	-	20	3
(vi)	Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.	-	20	3
(vii)	Explain personnel finance, entrepreneurship and manage/organize related task in day to day work for personal & societal growth.	-	20	3
(viii)	Utilize basic computer applications and internet to take benefit of IT developments in the industry.	-	20	4
	<b>Total</b>		1600	-

**SECTION 1**  
**ASSESSMENT**

21	<p><b>Body/Bodies which will carry out assessment:</b>          Controller of Examinations, DGT</p>
22	<p>DGT will carry out the RPL assessment following the below mentioned eligibility criteria for Trainee:</p> <p>Applicants aspiring to appear as Private Candidates in the AITT under CTS for award of NTC, have been categorized based on their educational background and experience. Subsequently 'Private Candidates' may be admitted under one of the following categories. Category wise 'eligibility criteria' for appearing as 'Private Candidate' in AITT under CTS has been listed below:</p> <p>Category I: Ex-trainees (successful pass-outs) of ITI</p> <p>A. Ex-trainees of ITI who already possess NTC in one of the trades under CTS, are eligible for applying as Private candidate for an allied trade, provided he/ she fulfils all the conditions regarding educational qualification etc. prescribed for that allied trade.</p> <p>B. In addition, the applicant should possess minimum of 1 year experience (as on date of submission of application) post the date of AITT result declaration in the desired allied trade in establishments implementing Apprenticeship Training Scheme (ATS)/ establishments registered under the Apprenticeship portal or registered MSMEs or Entities registered with any government/local authorities / shops covered under Factories Act 1948 and Shops and Establishments Act applicable for the concerned State.</p> <p>Category II: 'Ex-trainees (successful pass-outs) and current trainees under CoE scheme</p> <p>A. The applicant should have the minimum prescribed entry qualification and should fulfil eligibility criteria for the desired trade under CTS, in which he/she intends to appear for AITT as Private Candidate. CoE candidates must register as 'Private Candidate' under CTS in the relevant/mapped CTS trade only.</p> <p>B. There should be a minimum gap of 1 year between successful completions of CoE training i.e. from the date of result declaration to the date of submission of application for 'Private Candidate' certification.</p> <p>C. During this gap of 1 year, the candidate must have undergone Industry training or gained experience in desired trade in establishments implementing Apprenticeship Training Scheme (ATS)/ establishments registered under the Apprenticeship portal or registered MSMEs or Entities registered with any government/local authorities / shops covered under Factories Act 1948 and Shops and Establishments Act applicable for the concerned State.</p> <p>Category III: SCVT Candidates (admitted till August 2018 session)</p>



	<p>A. No special provisions have been made for SCVT Trainees to enrol as 'Private Candidate'. Going forward, SCVT trainees have been granted equivalence vide G.S.R 186(E) dated 2nd March 2017 for undergoing apprenticeship training under the Apprentices Act 1961 to obtain 'NAC'.</p> <p>B. Only for SCVT trainees admitted till August 2018 batch, provision has been made for obtaining NTC by appearing in AITT under 'Private Candidate'. Such trainees will continue to be governed by old guidelines for 'Private Candidate'.</p> <p>Category IV: Other Candidates (candidate not falling in any of the above 3 categories, including SCVT trainees enrolled from admission session 2019 onwards)</p> <p>A. The applicant should have the minimum prescribed entry qualification and should fulfil eligibility criteria for the relevant trade under CTS, in which he/she desires to appear for AITT as Private Candidate.</p> <p>B. Applicant should be minimum 21 years of age on the date of submission of application. There is no upper age limit.</p> <p>C. The applicant should possess minimum of 3 years' experience (on the date of submission of application) in the relevant trade in establishments implementing Apprenticeship Training Scheme (ATS)/ establishments registered under the Apprenticeship portal or registered MSMEs or Entities registered with any government/local authorities / shops covered under Factories Act 1948 and Shops and Establishments Act applicable for the concerned State.</p> <p>For detail and updated information please refer to DGT web portal.</p>
<p><b>23</b></p>	<p><b>Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF.</b></p> <p><b>(1) Assessment process:</b></p> <p>The assessment for the qualification is carried out by conducting formative assessments, and end of year examinations (Summative). The formative assessments in respect of each Learning Outcome for practical and related theory are conducted by the concerned instructors for evaluating the knowledge and skill acquired by trainees and the behavioural transformation of the trainees. This formative assessment is primarily carried out by collecting evidence of competence gained by the trainees by evaluating them at work based on assessment criteria, asking questions and initiating formative discussions to assess understanding and by evaluating records and reports. Summative assessment is carried out by All India Trade Test on Trade Theory, Trade practical and Employability Skills. The question papers for the theory Examinations contain objective type questions.</p>

The marking pattern and distribution of marks for the qualification are as under:

Sl. No.	Type of assessment	Subject for the trade test	Marks
1	Summative Assessment	Practical	250
2		Trade Theory	100
5		Employability Skills	50
6	Formative assessment based on Learning Outcomes		200
TOTAL:			600

**(2) Minimum pass marks:**

The minimum pass percent for Trade Practical and Formative assessment is 60% & for all other subjects is 33%. There will be no Grace marks.

**Testing and certifications for the course:**

Controller of examinations, DGT carries out the assessment and issues National Trade Certificate (NTC) following the norms and guidelines issued by the Directorate from time to time.

**Overall assessment strategy:**

Assessment of the qualification evaluates trainees to show that they can integrate knowledge, skills and values for carrying out relevant tasks as per the defined learning outcomes and assessment criteria. The trainees may choose the preferred language for assessment. The underlying principle of assessment is fairness and transparency. While assessing the trainee, assessor is directed to assess as per the defined assessment criteria against the learning outcomes. The evidence of the competence acquired by the trainees can be obtained by conducting theory and practical examinations, observing the trainees at work, asking questions and initiating discussions to assess, understand and evaluate records and reports. The ultimate objective of the assessment is to assess the

	<p>candidates as per the defined assessment criteria for the learning outcomes.</p> <p><b>Specific Arrangements for assessment:</b></p> <ul style="list-style-type: none"> <li>• Assessment is outcome-based.</li> <li>• There are formative and summative assessments in Theory and Practical.</li> <li>• Assessment is carried out in Trade theory, Trade Practical and Employability Skills.</li> <li>• While Trade Theory and Trade Practical are used for assessing Trade-related jobs and Employability skills is used to test the communication, professional language, leadership, entrepreneurship and team-work abilities of the trainee.</li> <li>• In addition to demonstration of theory and practical knowledge, trainees get a chance to present total personality.</li> </ul> <p><b>Quality assurance activities:</b></p> <p>Question papers are set by external paper setters/ software generated. Evaluation of Theory Examinations in Trade and Employability Skill is done by third-party agency. Trade Practical is examined by External Examiner.</p>
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## 24. Assessment evidences

### Title of Component: Formative Assessment Breakup

(on half yearly average of the learning assessment covered)

#### Means of assessment

Assessment will be evidence based comprising the following for each Learning Outcome:

Serial No.	Terminal Competency	Maximum Weightage (%)
1	Safety consciousness	15
2	Workplace hygiene	5
3	Attendance/ Punctuality	10
4	Ability to follow Manuals/ Written instructions	5
5	Application of Knowledge	10
6	Skills to handle tools / equipment/ Instruments/ Devices	10
7	Economical use of materials	5
8	Working Strategy	10
9	Quality in workmanship/ Performance	15
10	VIVA	15
	Total Maximum Weightage (%)	100

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**Pass/Fail**

The minimum pass percentage is 60% marks for formative assessment.

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**LEARNING OUTCOME WITH ASSESSMENT CRITERIA:**

<b>LEARNING OUTCOME (TRADE SPECIFIC)</b>	
<b>LEARNING OUTCOME</b>	<b>ASSESSMENT CRITERIA</b>
1. Identify and select suitable chemicals (industrial, inflammable liquid) usable on the workplace following safety precautions.	Identify various types of acids in the trade.
	Identify the type of acids and their uses in the place.
	Select the suitable acids on the workplace.
	Analyze the effect of acids on the suitable jobs
2. Identify, select and execute the application of different types of extinguishers, hoses and hose fittings.	Identify of fire and types of extinguishers.
	Install the wall fitting and test it.
	Technique of fire extinction smoothing cooling and Starvation.
	Observe the safety/precaution during the operation Extinguisher.
	Identify type of suction and delivery hoses.
	Causes of hose decay & its prevention
	Use of percolating & non-percolating hose
	Identify of hose reel, causes of decay and its care & maintenance.
	Importance of hose reel hose in first aid firefighting in buildings and industries.
	Plan of work in compliance with standard tests of delivery hoses.
	Standard test of Suction hose
	Identify the different groups of hose fitting.
	Measure of deep lift suction fittings.
	Type of Breechings and its uses.
Identify the hose ramps, care and maintenance of hose fittings.	
3. Select and prepare the hydrant and pump system for proper application.	Knowledge of Hydrant and Water supplies,
	Identify the hydrant gear and equipment.
	Observe the making of hydrants and testing.
	Prepare the care and maintenance of operation.
	Identify the common type in use.
	Methods of priming.
	Select and testing fault finding.
	Working of centrifugal pump.
Observe care and maintenance of pump.	

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4. Plan and execute the concept of hydraulics in workplace.	Check the hydraulic system
	Check the pressure
	Calculate the water capacity of tank
	Check the working of flow meter
5. Select and categorize electrical hazard and risk and its mitigation.	Identify common causes of electrical fire
	Select remedial measures
	Identify electrical hazards
	Apply PPE
	Follow the electrical document for safety.
6. Identify and select methods of using ladder in practical field.	Select the appropriate ladder.
	Pitching of ladder.
	Pitching of ladder.
	Climbing the ladder.
	Use leg Lock.
7. Select the BA set and its application in appropriate place.	Identify and operate B. A. set and relevant drill
	Donning & doffing of SCBA.
	SCBA Operation & Emergency Procedures.
	Inspection and Maintenance of SCBA.
8. Identify and use small and special gears.	Identify, select and operate different small and special gears.
	Drill with different small and special gears.
9. Plan and execute elementary treatment at any incidental spot.	Donning, running and Rescue of casualty through tunnel.
	Apply Sylvester's Method, Holgar Nielsen Method, Rocking Stretcher Method, Emerson Method
	Perform Mouth to Mouth Respiration.
10. Utilize knots and hitches in different special job and fire.	Practical use of different knots and hitches in rescue & fire fighting
	Testing of different type of lines.
	Care and maintenance.
11. Plan and execute to uplift various gears with proper techniques, carry out Hazard and Risk evaluation selecting the proper method of rescue and F.F.	Causes, Identification, Evaluation & Control of hazard and risk.
	Hauling up gears and combined drill

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12. Analyze the concept of accident caused and prevention, accident investigation, analysis and safety management.	Identify different industrial accidents.
	Prepare accident reports.
	Identify Methods Adopted for Reducing Accidents.
	Investigation and analysis of Accidents.
	Safety Slogans, Safety Precautions adopted in the Plant.
13. Select and apply provisions related to safety, health and welfare in respect of Factory Act, 1948.	Apply Safety Management, Safety Policy, Safety Committee, , Responsibility of Management, Safety Officers Duties & Responsibilities, Safety Targets, Objectives, Standards, Practices and Performances in work place.
	Select & apply provisions related to safety.
14. Assess available resources and their proper use.	Observation of provisions of the legislation applicable to different factories.
	Identify and select various types of Fire Fighting Small and Special rescue gear at Fire Service Station.
	Practical Use of equipments like cutting tools Lifting tools Maintenance of tools.
15. Interpret appropriate techniques of CPR.	Identify techniques of CPR.
	Apply appropriate techniques of CPR.
	Identify and apply Methods for rescue without equipment
16. Identify the importance of lighting, ventilation, work related stress and its measurement.	Measurement of illumination by Photo meter.
	Measurement of number of air changes in a room
	Measurement of vibration of machine and equipments.
17. Plan and execute fixed firefighting installations for their effective utilization.	Identify Sprinkler System and their care and maintenance and operational Procedure
	Plan and execute fixed firefighting installation.
	Utilize fixed fire fighting
	Identify Elementary requirements of Drenchers, Rising Mains, Hose Reels and Down-comer, Fire pump control panel.
	Install Fixed Foam.
18. Select and use PPE, demonstrate its care and maintenance.	Identify various Personal Protective Equipments.
	Select and use Respiratory and Non-respiratory Personal Protective Equipment, their Care & Maintenance.
	Observe standard and regulation related to PPE.

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19. Select Automatic Fire Detection cum Alarm System to plan their effective utilization.	Identify various types of detectors.
	Select Automatic Fire Detection cum Alarm System as per need.
	Plan Automatic Fire Detection cum Alarm Systems effective utilization.
20. Plan and execute fire station administration.	Identify various important duties of a fire station.
	Drill with ladder and water tender
	Foam Drill with FBI0X single delivery.
	Foam Drill with FB5X single delivery.
	Wet Drill with double delivery.
	Dry Drill with double delivery.
21. Identify communication system in different organization and their scope of use.	Identify different communication required at various fire service departments.
	Identify, select and apply various lines, communication Equipment in Fire Service.
	Select & use Method of receiving report of emergencies.
	Identify and use Radio Communication and VHF.
	Practices Writing of Occurrence Book, Duty Card/ Register, Log Book, Hose Book, Stock Register and their maintenance.
	Apply fire affected room searching techniques.
22. Get accustomed with different fire situations and firefighting using extinguishers.	Perform Live fire extinction using all kind of extinguisher.
	Identify Fire Hazards in rural areas and cause of fire.
	Identify, select and apply Method of Firefighting in rural areas.
	Identify Difficulties in dealing with Rural fires.
23. Plan and execute disaster response practices, IRS/JRT and salvage technique.	Identify Natural and Man-made Disaster.
	Use various agencies, first responders, control of situation.
	Identify different types of disasters.
	Simulated Practices to control life and properties damages from natural disaster.
	Perform Water relay drill (All types).
	Identify and select Equipment for Salvage & working at Fires
	Use salvage sheets & equipments and there care & maintenance.
	Identify, select and apply Methods of entry into building.
	Identify, select and apply Different searching methods to locate & rescue a trapped causality.
24. Select and apply	Observe safety Precautions when working in smoke laden



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correct rescue method.	buildings.
	Identify, select and apply various Emergency methods of rescue.
	Identify hazards associated with various rescue operations.
	Select & apply various rescue equipments.
25. Categorize building construction that can ensure fire and life safety.	Familiarization at construction site.
	Identify building materials.
	Plan escapes routine.
	Practical training about Care and maintenance of sprinklers.
	Use of Automatic fire alarm system, fire exit drill
26. Plan and execute fire protection measures based on construction and occupancy.	Classification of building in the country
	Identify Building materials and their behaviour under fire conditions
	Identify and apply various types of occupancies and firefighting techniques.
	Identify Important fire escapes with respect to there positioning.
27. Plan and survey Airport and Aircraft, port and ship for rescue system and firefighting system on it.	Identify Different types of Aircrafts, Aircraft firefighting and rescue procedures.
	Identify types of emergencies and apply method of dealing with each emergency.
	Recognize ship fire protection and firefighting & rescue from ship.
28. Identify occupational hazards associated with different dangerous chemicals, dust, gases, mist, vapours etc. to plan and execute rescue operations in these cases.	Identify HVAC system.
	Identify various equipments used in rescue of causality.
	Ladder Drill with Fireman Lift.
	Sewer Rescue drill.
	Stretcher drill.
	Identify Occupational Hazards & Dangerous Chemicals.
Identify Dangerous Properties of Chemicals, Dust, Gases, Fumes, Mist, Vapours, Smoke and Aerosols.	
29. Comply with safety precautions while working at height, confined place and work permit system.	Perform High elevation drill.
	Perform Confined space rescue.
	Observe safety precaution related to Scaffolds, Ladders, and Work at height including Roof Work.
30. Identify the characteristics of	Identify the characteristics of various fire suppression agents including water.

various fire suppression agents including water and safety in manual and mechanical handling of materials.	Perform Mechanical and Manual Material Handling.
	Observe Safety related to Mechanical and Manual Material Handling, Lifting Appliances, Transport / Earthmoving & Material Handling Equipments.
31. Demonstrate hazard evaluation and risk analysis exercise.	Perform exercise on Hazard evaluation and risk.
	Use safety belt, helmets, gloves and goggles.
	Identify Transportation and handling of dangerous chemicals and explosives.

<b>LEARNING OUTCOME(CORE SKILL)</b>	
<b>LEARNING OUTCOME</b>	<b>ASSESSMENT CRITERIA</b>
<b>EMPLOYABILITY SKILLS</b>	
1. Apply safe working practices.	Follow and maintain procedures to achieve a safe working environment in line with occupational health and safety regulations and requirements and according to site policy.
	Recognize and report all unsafe situations according to site policy.
	Identify and take necessary precautions on fire and safety hazards and report according to site policy and procedures.
	Identify, handle and store / dispose of dangerous goods and substances according to site policy and procedures following safety regulations and requirements.
	Identify and observe site policies and procedures in regard to illness or accident.
	Identify safety alarms accurately.
	Report supervisor/ Competent of authority in the event of accident or sickness of any staff and record accident details correctly according to site accident/injury procedures.
	Identify and observe site evacuation procedures according to site policy.
	Identify Personal Protective Equipment (PPE) and use the same as per related working environment.
	Identify basic first aid and use them under different circumstances.
	Identify different fire extinguisher and use the same as per requirement.
2. Comply with environment regulation and	Identify environmental pollution & contribute to the avoidance of instances of environmental pollution.
	Deploy environmental protection legislation & regulations

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housekeeping.	Take opportunities to use energy and materials in an environmentally friendly manner.
	Avoid waste and dispose waste as per procedure
	Recognize different components of 5S and apply the same in the working environment.
3. Interpret & use formal and technical communication.	Obtain sources of information and recognize information.
	Use and draw up technical drawings and documents.
	Use documents and technical regulations and occupationally related provisions.
	Conduct appropriate and target oriented discussions with higher authority and within the team.
	Present facts and circumstances, possible solutions & use English special terminology.
	Resolve disputes within the team.
	Conduct written communication.
4. Apply the concept in productivity & quality management in day to day work to improve productivity & quality.	Explain the concept of productivity and apply during execution of job.
	Explain the concept of quality tools and apply during execution of job.
5. List and interpret various acts of labour welfare legislation.	Explain basic concept of labour welfare legislation, adhere to responsibilities and remain sensitive towards such laws.
	Knows benefits guaranteed under various acts.
6. Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.	Explain the concept of energy conservation, global warming, pollution and utilize the available resources optimally & remain sensitive to avoid environment pollution.
	Explain standard procedure for disposal of waste.
7. Explain personnel finance, entrepreneurship and manage/organize related task in day to day work for personal & societal growth.	Explain personnel finance and entrepreneurship.
	Explain role of various schemes and institutes for self-employment i.e. DIC, SIDA, SISI, NSIC, SIDO, Idea for financing/ non-financing support agencies to familiarize with the policies/ programmes, procedure & the available scheme.
	Prepare a report to become an entrepreneur for submission to financial institutions.
8. Utilize basic computer applications and internet to take benefit of IT developments in the industry.	Explain the basic hardware of personal computer.
	Use common application software viz., word, excel, power point etc., in day to day work.
	Awareness about useful internet websites, search relevant information pertaining to the assigned tasks.

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**SECTION 2**  
**25. EVIDENCE OF LEVEL**

**OPTION A**

Title/Name of qualification/component: Fire Technology and Industrial Safety Management		Level: 4	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relate to the NSQF level descriptors	NSQF Level
Process	<p><b>Familiar, Predictable, Routine Situations of Clear Choice</b></p> <ul style="list-style-type: none"> <li>Identify and select methods of using ladder in practical field.</li> <li>Identify and select suitable chemicals (industrial, inflammable liquid) usable on the workplace following safety precautions.</li> <li>Select the BA set and its application in appropriate place.</li> <li>Analyze the concept of accident caused and prevention, accident investigation, analysis and safety management.</li> <li>Select and apply provisions related to safety, health and welfare in respect of Factory Act, 1948.</li> <li>Select and use PPE, demonstrate its care and maintenance.</li> </ul>	<p>In the learning outcomes for example 'Identify and select methods of using ladder in practical field' and 'Identify and select suitable chemicals (industrial, inflammable liquid) usable on the workplace following safety precautions', the learner will be required to choose appropriate tools, equipments, procedures as per the requirement of the job. The work will however be done within a familiar, predictable and routine range of situations to achieve desired standard demanded as per the job.</p> <p>Thus, the learner requires to demonstrate ability to work in familiar, predictable, routine, situation of clear choice.</p> <p>And the NSQF level as per this descriptor will be 4.</p>	4

Title/Name of qualification/component: Fire Technology and Industrial Safety Management		Level: 4	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relate to the NSQF level descriptors	NSQF Level
	<ul style="list-style-type: none"> <li>Select Automatic Fire Detection cum Alarm System to plan their effective utilization.</li> </ul>		
Professional knowledge	<p><b>Knowledge of facts in the field of work or study</b></p> <ul style="list-style-type: none"> <li>Classification of Fire &amp; Extinguishers</li> <li>Foam &amp; Foam Making Equipment</li> <li>Hydrant &amp; Fittings</li> <li>Source of water supply, Water distribution system, Rural water supply, Determining Static, Residual and Flow Pressure</li> <li>Pump &amp; Pump Operation</li> <li>Pressure and Head, pressure and Flow, mensuration, Nozzle's discharge, calculation of water capacity of tank, requirement for specific fire size.</li> <li>Fundamentals of electricity, Generation and Distribution, Common causes of electrical fire and its remedial measures, electrical hazards including static electricity and protective measures and fire-fighting procedure, Elementary knowledge of Fire</li> </ul>	<p>The learner will need to be well versed with factual knowledge of field of fire technology and industrial safety for example 'Classification of Fire &amp; Extinguishers, Source of water supply, Water distribution system, Rural water supply, Determining Static, Residual and Flow Pressure, Fundamentals of electricity, Generation and Distribution, Common causes of electrical fire and its remedial measures, electrical hazards including static electricity and protective measures and fire-fighting procedure, Elementary knowledge of Fire Protection and fire-fighting in different premises, electrocution' etc.</p> <p>Hence NSQF Level is 4 for this descriptor.</p>	4

Title/Name of qualification/component: Fire Technology and Industrial Safety Management		Level: 4	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relate to the NSQF level descriptors	NSQF Level
	Protection and firefighting in different premises, electrocution.		

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<b>Title/Name of qualification/component: Fire Technology and Industrial Safety Management</b>		<b>Level: 4</b>	
<b>NSQF Domain</b>	<b>Outcomes of the Qualification/Component</b>	<b>How the outcomes relate to the NSQF level descriptors</b>	<b>NSQF Level</b>
Professional skill	<ul style="list-style-type: none"> <li>Identify, select and execute the application of different types of extinguishers, hoses and hose fittings.</li> <li>Select and prepare the hydrant and pump system for proper application.</li> <li>Plan and execute the concept of hydraulics in workplace.</li> <li>Select and categorize electrical hazard and risk and its mitigation.</li> <li>Categorize building construction that can ensure fire and life safety.</li> <li>Plan and execute elementary treatment at any incidental spot.</li> </ul>	<p>The learner after the training will be able to work independently and recall and demonstrate practical skill, routine and repetitive in narrow range of application using appropriate rule and tool as per the job given to them. The learner will also be responsible for own quality of work and will have to use quality tools to check own work to ensure conformance to requirements of the job as evident in learning outcomes like” Categorize building construction that can ensure fire and life safety” etc.</p> <p>Hence NSQF Level is 4 for this descriptor.</p>	4
Core skill	<p><b>Language to communicate written or oral with required clarity</b></p> <ul style="list-style-type: none"> <li>Interpret &amp; use formal and technical communication.</li> <li>Utilize basic computer applications and internet to take benefit of IT developments in the industry.</li> </ul> <p><b>Basic understanding of social political and natural environment</b></p>	<p>The work of Fire Technology and Industrial Safety Management involves various tasks which require competence in written language with required clarity in order to understand the work enlisted in the job card/service card. The learner will also need to communicate with team supervisor to understand the job and explain ones work which requires competence in oral language with required clarity and to have basic</p>	4



Title/Name of qualification/component: Fire Technology and Industrial Safety Management		Level: 4	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relate to the NSQF level descriptors	NSQF Level
	<ul style="list-style-type: none"> <li>• Explain energy conservation, global warming and pollution.</li> <li>• Comply with environment regulation and housekeeping.</li> </ul>	<p>understanding of social, political and natural environment as mentioned in the learning outcome for example 'Comply with environment regulation and housekeeping' etc.  Hence NSQF Level is 4 for this descriptor.</p>	
Responsibility	<ul style="list-style-type: none"> <li>• Select and apply provisions related to safety, health and welfare in respect of Factory Act, 1948.</li> <li>• Plan and execute fixed firefighting installations for their effective utilization.</li> <li>• Categorize building construction that can ensure fire and life safety.</li> <li>• Plan and execute fire protection measures based on construction and occupancy.</li> <li>• Demonstrate hazard evaluation and risk analysis exercise.</li> </ul>	<p>The Fire Technology and Industrial Safety Management technician has to perform the learning outcomes like 'Plan and execute fixed firefighting installations for their effective utilization, Demonstrate hazard evaluation and risk analysis exercise, Plan and execute fire protection measures based on construction and occupancy' etc.independently and as per requirements of the job and hence is responsible for own work and learning.   Hence NSQF Level is 4 for this descriptor.</p>	4

**SECTION 3**

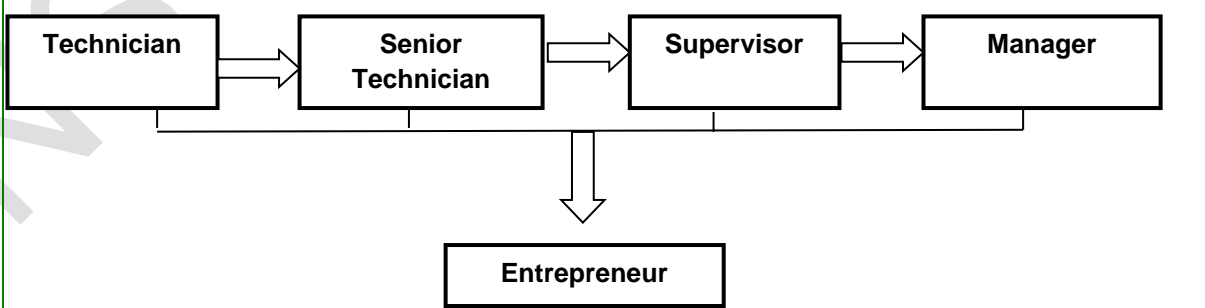
**EVIDENCE OF NEED**

<p><b>26</b></p>	<p><b>What evidence is there that the qualification is needed? What is the estimated uptake of this qualification and what is the basis of this estimate?</b></p> <table border="1"> <thead> <tr> <th data-bbox="339 568 625 712"> <p><b>Basis</b></p> </th> <th data-bbox="625 568 1385 712"> <p><b>In case of other Awarding Bodies (Institutes under Central Ministries and states departments)</b></p> </th> </tr> </thead> <tbody> <tr> <td data-bbox="339 712 625 1070"> <p>Need of the qualification</p> </td> <td data-bbox="625 712 1385 1070"> <p><b>Safety and Security</b> Sector has a significant presence of organized as well as unorganized skilled manpower requirement. This sector is poised to grow exponentially in the years to come and is highly labour intensive and there are many emerging trends in this sector. Hence the qualification has been designed keeping in view to cater to the ever-increasing demand of skilled manpower in consultation with stakeholders.</p> </td> </tr> <tr> <td data-bbox="339 1070 625 1473"> <p>Industry Relevance</p> </td> <td data-bbox="625 1070 1385 1473"> <p>The job role defined for the qualification is as per the National Classification of Occupations 2015 which is developed by Employment Directorate under the ministry of Labour and Employment in collaboration with different industry partners and as per ILO guidelines. Moreover, the training is imparted in ITIs/NSTIs/MSTIs/BTC/ BTPs/ Industries / Establishments etc. where such requirement is available. This justifies the qualification is very much relevant for industry.</p> </td> </tr> <tr> <td data-bbox="339 1473 625 1592"> <p>Usage of the qualification</p> </td> <td data-bbox="625 1473 1385 1592"> <p>The Proposed qualification will create skilled Technician for various establishments in different Sectors.</p> </td> </tr> <tr> <td data-bbox="339 1592 625 1664"> <p>Estimated uptake</p> </td> <td data-bbox="625 1592 1385 1664"> <p>The present seating capacity is 7150.</p> </td> </tr> </tbody> </table>	<p><b>Basis</b></p>	<p><b>In case of other Awarding Bodies (Institutes under Central Ministries and states departments)</b></p>	<p>Need of the qualification</p>	<p><b>Safety and Security</b> Sector has a significant presence of organized as well as unorganized skilled manpower requirement. This sector is poised to grow exponentially in the years to come and is highly labour intensive and there are many emerging trends in this sector. Hence the qualification has been designed keeping in view to cater to the ever-increasing demand of skilled manpower in consultation with stakeholders.</p>	<p>Industry Relevance</p>	<p>The job role defined for the qualification is as per the National Classification of Occupations 2015 which is developed by Employment Directorate under the ministry of Labour and Employment in collaboration with different industry partners and as per ILO guidelines. Moreover, the training is imparted in ITIs/NSTIs/MSTIs/BTC/ BTPs/ Industries / Establishments etc. where such requirement is available. This justifies the qualification is very much relevant for industry.</p>	<p>Usage of the qualification</p>	<p>The Proposed qualification will create skilled Technician for various establishments in different Sectors.</p>	<p>Estimated uptake</p>	<p>The present seating capacity is 7150.</p>
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<p><b>27</b></p>	<p><b>Recommendation from the concerned Line Ministry of the Government/Regulatory Body. To be supported by documentary evidences.</b></p> <p>The qualification, originally designed for Craftsman Training Scheme is in existence for many years and approved by DGT (Regulatory Body) under Ministry of Skill Development and Entrepreneurship, Govt. of India.</p>										

<p><b>28</b></p>	<p><b>What steps were taken to ensure that the qualification(s) does (do) not duplicate already existing or planned qualifications in the NSQF? Give justification for presenting a duplicate qualification</b></p> <p>The qualification is originally designed and approved by DGT for the Craftsman Training Scheme and is in existence for many years. No such duplicate qualification of same duration and competencies exists.</p>
<p><b>29</b></p>	<p><b>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? Specify the review process here</b></p> <ul style="list-style-type: none"> <li>• The research wing of CSTARI &amp; DGT reviews and updates the qualification, in consultation with industries and other stakeholders, on a regular basis by conducting trade committee meetings.</li> <li>• DGT will monitor any duplicity by comparing existing qualifications with upcoming ones in the National Qualifications Register (NQR) and relevant sectors.</li> </ul>

**SECTION 4**

**EVIDENCE OF PROGRESSION**

<p><b>30</b></p>	<p><b>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? Show the career map here to reflect the clear progression</b></p> <p>On completion of the training the trainee will have an opportunity to move in vertical/horizontal pathways to promote to higher designations. The learner can further undergo other specialised courses to excel in the relevant field.</p>  <pre> graph LR     A[Technician] --&gt; B[Senior Technician]     B --&gt; C[Supervisor]     C --&gt; D[Manager]     B --&gt; E[Entrepreneur]             </pre>
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