



# Model Curriculum

**QP Name: Cold Chain Implementation Specialist**

**QP Code: LSC/Q8602**

**QP Version: 1.0**

**NSQF Level: 5.5**

**Model Curriculum Version: 1.0**

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## Training Parameters

<b>Sector</b>	Logistics
<b>Sub-Sector</b>	Cold Chain Logistics Solutions
<b>Occupation</b>	Projects
<b>Country</b>	India
<b>NSQF Level</b>	5.5
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/1324
<b>Minimum Educational Qualification and Experience</b>	<p>Completed 4-year UG program (Mechanical/ Electrical/ Electronics/ Refrigeration Engineering/ Food Technology/ Pharma/ Relevant trade) with 1 Year of experience in cold storage operations</p> <p>OR</p> <p>Completed 3-year UG degree (In Food technology/ Pharma) with 2 Years of experience in cold storage operations</p> <p>OR</p> <p>Completed 2-year diploma (after 12th Grade) in Mechanical/ Electrical/ Electronics/ Refrigeration Engineering/ Food Technology/ Pharma/ Relevant trade with 3 Years of experience in cold storage operations</p> <p>OR</p> <p>Previous relevant Qualification of NSQF Level (5) with 3 Years of experience in cold storage operations</p>
<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	23
<b>Last Reviewed On</b>	15/03/2024
<b>Next Review Date</b>	15/03/2027
<b>NSQC Approval Date</b>	15/03/2024
<b>QP Version</b>	1.0
<b>Model Curriculum Creation Date</b>	06/05/2024
<b>Model Curriculum Valid Up to Date</b>	15/03/2027
<b>Model Curriculum Version</b>	1.0
<b>Minimum Duration of the Course</b>	510
<b>Maximum Duration of the Course</b>	510

## Program Overview

This section summarizes the end objectives of the program along with its duration.

### Training Outcomes

At the end of the program, the learner will be able to:

- Develop cold storage project plan and perform risk assessment
- Design cold storage facility layout and prepare costing details
- Implement cold storage facility construction and adhere to quality standards and timelines
- Assess and select vendor based on set evaluation criteria and manage vendor relationship
- Test and commission cold storage facility
- Describe the compliance with temperature control and process optimization of cold chain.
- Manage workplace for safe and healthy work environment by following and ensuring compliance to regulatory and safety norms

### Compulsory Modules

The table lists the modules, their duration and mode of delivery.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
<b>Bridge Module</b>	<b>10</b>	<b>20</b>			<b>30</b>
Module 1: Introduction to Cold Chain Implementation Specialist	20	10			30
<b>LSC/N8606 - Demand aggregation and planning cold storage set up V1.0 NSQF Level 5.5</b>	<b>20</b>	<b>30</b>	<b>10</b>		<b>60</b>
Module 2: Demand aggregation and plan cold storage setup	20	30	10		60
<b>LSC/N8602 - Design cold storage plant layout using CAD tools and prepare project costing V1.0 NSQF Level 5.5</b>	<b>20</b>	<b>30</b>	<b>10</b>		<b>60</b>
Module 3: Facility layout design and budgetary details	20	30	10		60
<b>LSC/N8603 - Execute cold storage plant set up V1.0 NSQF Level 5.5</b>	<b>20</b>	<b>30</b>	<b>10</b>		<b>60</b>

Module 4: Supervision of project Construction	20	30	10		60
<b>LSC/N8604 - Maintain vendor relationship V1.0 NSQF Level 5.5</b>	<b>20</b>	<b>30</b>	<b>10</b>		<b>60</b>
Module 5: Vendor relationship	20	30	10		60
<b>LSC/N8605 - Test and commission cold storage plant V1.0 NSQF Level 5.5</b>	<b>20</b>	<b>30</b>	<b>10</b>		<b>60</b>
Module 6: Test and commission cold storage plant	20	30	10		60
<b>LSC/N8607 - Cold chain compliance and optimization using IoT sensors and transmitters V1.0 NSQF Level 5.5</b>	<b>20</b>	<b>60</b>	<b>10</b>		<b>90</b>
Module 7: Cold chain compliance and optimization	20	60	10		90
<b>LSC/N9901 - Maintain food and personnel safety, health and hygiene in cold storage plant. V1.0 NSQF Level 5.5</b>	<b>10</b>	<b>20</b>			<b>30</b>
Module 8: Compliance to health, safety and security norms	10	20			30
<b>DGT/VSQ/N0102 Employability Skills</b>	<b>30</b>	<b>30</b>			<b>60</b>
<b>Total Duration</b>	<b>170</b>	<b>280</b>	<b>60</b>		<b>510</b>

## Module Details

### Module 1: Introduction to Cold Chain Implementation Specialist

#### *Mapped to Bridge Module*

#### Terminal Outcomes:

- Describe the basic structure and function of supply chain
- Detail the various functions of a Cold Chain Implementation Specialist

<b>Duration: 20:00</b>	<b>Duration: 10:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Classify the components of supply chain and logistics sector.</li> <li>• Detail the various sub-sectors and the opportunities in them.</li> <li>• Identify various activities in cold chain, warehousing, port yard, land, ship and air transportation.</li> <li>• Explain job roles in cold chain.</li> <li>• Detail your job role as cold chain implementation specialist and its interface with other job roles.</li> <li>• Discuss the documentation requirements in cold chain implementation.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the use of evaporators, compressor etc.</li> <li>• Identify the various documentation involved in cold chain maintenance operation</li> </ul>
<b>Classroom Aids</b>	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
<b>Tools, Equipment and Other Requirements</b>	
Computers with web camera, MS Project, MS Office, WMS (learning version).	

## Module 2: Demand aggregation and plan cold storage setup

Mapped to LSC/N8606, v1.0

### Terminal Outcomes:

- Detail the steps to be followed for development of cold storage project plan

<b>Duration: 20:00</b>	<b>Duration: 30:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• List the important parameters to be considered while understanding client requirements.</li> <li>• Describe the process of primary and secondary research to collect data on products, seasonality of products, product demand etc.</li> <li>• Explain the process to assess demand and supply of products.</li> <li>• Discuss the procedure for selecting products based on various factors such as profitability, market demand, cost of production and transport etc.</li> <li>• Calculate capacity of cold storage plant to meet present and future demands.</li> <li>• Explain the process of preparing market research and assessment reports.</li> <li>• Define project milestones and timelines.</li> <li>• Describe project execution plan.</li> <li>• Explain the process of risk assessment.</li> </ul>	<ul style="list-style-type: none"> <li>• Record client requirements on type of products, facility and services.</li> <li>• Analyse client requirement to check feasibility as per industry standards.</li> <li>• Perform primary and secondary research to collect data on products, seasonality of products, product demand etc.</li> <li>• Analyse data to assess demand and supply of products.</li> <li>• Select products based on various factors such as profitability, market demand, cost of production and transport etc.</li> <li>• Compute capacity of cold storage plant to meet present and future demands.</li> <li>• Prepare market research and assessment reports.</li> <li>• Set project milestones and timelines.</li> <li>• Develop project execution plan.</li> <li>• Perform risk assessment.</li> </ul>
<b>Classroom Aids</b>	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
<b>Tools, Equipment and Other Requirements</b>	
WMS (learning version), Project Management software, MS Office, Computer, Projector, TV, Stationery, Worksheets, Statistical Tools, market survey tools, design software	

## Module 3: Facility layout design and budgetary details

*Mapped to LSC/N8602, v1.0*

### Terminal Outcomes:

- Detail the steps to be followed for designing cold storage facility layout
- Demonstrate the process for estimating budgetary details

<b>Duration: 20:00</b>	<b>Duration: 30:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Discuss the factors to be considered while assessing site and space availability for refrigeration equipment, facility of loading etc.</li> <li>• Describe functional flow and movement of goods.</li> <li>• Explain the process of developing plan based on cold storage operations, office space requirement etc.</li> <li>• Explain the process of calculating product load for cold storage design.</li> <li>• Describe heat- load calculations for measuring ceilings, walls etc.</li> <li>• Explain the process of estimating cold storage plant specifications based on type of products, temperature required etc.</li> <li>• Determine type of products, temperature requirement etc.</li> <li>• Compute cost considering OPEX and CAPEX.</li> </ul>	<ul style="list-style-type: none"> <li>• Assess site and space availability for refrigeration equipment, facility of loading etc.</li> <li>• Analyse functional flow and movement of goods.</li> <li>• Develop plan based on cold storage operations, office space requirement etc.</li> <li>• Calculate product load for cold storage design.</li> <li>• Perform heat- load calculations for measuring ceilings, walls etc.</li> <li>• Estimate cold storage plant specifications based on type of products, temperature required etc.</li> <li>• Calculate cost considering OPEX and CAPEX.</li> </ul>
<b>Classroom Aids</b>	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
<b>Tools, Equipment and Other Requirements</b>	
WMS (learning version), MS Project, MS Office, Computer, Projector, TV, Stationery, Worksheets, Statistical Tools, design software such as CAD, 3D Max SketchUp, STAAD pro and CRO pro, structural software, architectural norms and standards, Budgeting tools, standards for cold storage equipment	



## Module 4: Supervision of project construction

Mapped to LSC/N8603, v1.0

### Terminal Outcomes:

- Detail the appropriate steps for supervision of project construction as per SOP

<b>Duration: 20:00</b>	<b>Duration: 30:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• List the steps to be followed for preparing detailed project construction plan.</li> <li>• Detail activity wise project execution plan.</li> <li>• Explain the process of planning activities for different team members as per stage of construction.</li> <li>• Discuss effective allocation of resources.</li> <li>• Discuss the standards for consumption of raw materials.</li> <li>• Review timely completion of activities.</li> <li>• Explain escalation matrix for resolving non compliance to timeline and quality.</li> <li>• Report status of project execution, quality management, risk management etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Prepare detailed project construction plan.</li> <li>• Perform activity wise project execution plan.</li> <li>• Plan activities for different team members as per stage of construction.</li> <li>• Perform allocation of resources</li> <li>• Solve personnel grievances.</li> <li>• Inspect the consumption of raw materials as per standards.</li> <li>• Review timely completion of activities.</li> <li>• Resolve non-compliance to timeline and quality using escalation matrix.</li> <li>• Report status of project execution, quality management, risk management etc.</li> <li>• Record expenses incurred and manhours utilized.</li> </ul>
<b>Classroom Aids</b>	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
<b>Tools, Equipment and Other Requirements</b>	
WMS (learning version), MS Project, MS Office, Computer, Projector, TV, Stationery, Worksheets, Statistical Tools, design software such as CAD, 3D Max Sketch Up, STAAD pro and CRO pro, structural software, architectural norms and standards, Budgeting tools, standards for cold storage equipment, ERP	

## Module 5: Vendor relationship

*Mapped to LSC/N8604, v1.0*

### Terminal Outcomes:

- Details the steps to be followed for effective vendor management and relationship.

<b>Duration: 20:00</b>	<b>Duration: 30:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Describe various steps involved in tendering process.</li> <li>• Explain the assessment method for vendor proposals.</li> <li>• List the important criteria's to be considered for vendor evaluation.</li> <li>• Discuss Statement of Work (SOW), service level agreement (SLA) etc.</li> <li>• Explain the method to prepare purchase orders as per company's standards.</li> <li>• Discuss the process of managing vendor invoices and documentation.</li> <li>• List the factors to be considered for evaluating vendor performance.</li> <li>• Discuss the importance of having effective vendor relationship.</li> </ul>	<ul style="list-style-type: none"> <li>• Perform the various steps involved in tendering process.</li> <li>• Assess vendor proposals as per terms of reference.</li> <li>• Select most suitable vendor as per company's evaluation criteria.</li> <li>• Negotiate and manage contract, Statement of Work (SOW), service level agreement (SLA) etc.</li> <li>• Prepare purchase orders as per company's standards.</li> <li>• Inspect shipments received.</li> <li>• Evaluate activities executed by vendor.</li> <li>• Manage vendor invoices and documentation.</li> <li>• Analyse vendor performance to take corrective actions.</li> <li>• Resolve vendor concerns to improve relationship.</li> </ul>
<b>Classroom Aids</b>	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
<b>Tools, Equipment and Other Requirements</b>	
WMS (learning version), MS Project, MS Office, Computer, Projector, TV, Stationery, Worksheets, Statistical Tools, ERP, standard formats	

## Module 6: Test and commission cold storage plant

Mapped to LSC/N8605, v1.0

### Terminal Outcomes:

- Demonstrate the steps to be performed for testing and commissioning of cold storage plant

<b>Duration: 20:00</b>	<b>Duration: 30:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the testing process of panels, vapour seals, control panels, refrigeration system etc as per company standards.</li> <li>• Discuss the inspection process for thermal conductivity of the insulation material as per supplier requirements.</li> <li>• Detail the essential checks to be done on temperature, rack systems, electricity supply, emergency alarms etc as per protocol.</li> <li>• Resolve technical issues in coordination with vendors and suppliers.</li> <li>• Detail the commissioning activities to ensure all systems and components of the plant are designed, installed, tested, operated and maintained as per the operational requirements.</li> <li>• Discuss the escalation matrix for failed test scenario.</li> </ul>	<ul style="list-style-type: none"> <li>• Perform testing of panels, vapour seals, control panels, refrigeration system etc as per company standards.</li> <li>• Inspect thermal conductivity of the insulation material as per supplier requirements.</li> <li>• Perform all essential checks on temperature, rack systems, electricity supply, emergency alarms etc as per protocol.</li> <li>• Resolve technical issues in coordination with vendors and suppliers.</li> <li>• Perform commissioning activities to ensure all systems and components of the plant are designed, installed, tested, operated and maintained as per the operational requirements.</li> <li>• Perform escalation of failed test scenario to stakeholders and re-test.</li> <li>• Collect statutory and insurance approvals.</li> </ul>
<b>Classroom Aids</b>	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
<b>Tools, Equipment and Other Requirements</b>	
WMS (learning version), MS Project, MS Office, Computer, Projector, TV, Stationery, Worksheets, Statistical Tools, testing standards, programmable logic controller equipment, packaging lines, dock levellers, advanced graders, alternate technologies, stacking system, modernization of insulation and refrigeration, cold storage setup, piping, etc	

## Module 7: Cold chain compliance and optimization

Mapped to LSC/N8607, v1.0

### Terminal Outcomes:

- Describe the compliance with temperature control and process optimization of cold chain.

<b>Duration: 20:00</b>	<b>Duration: 60:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>Explain the process of collecting and recording data on customer requirements and product's temperature requirements.</li> <li>Explain the use of integrated temperature sensor and IOT devices.</li> <li>Describe the ways to minimize the risk of spillage or damage during transit.</li> <li>Explain the regulations of FSSAI, CDSCO and BIS for the products.</li> <li>Discuss the SOP for handling perishable goods.</li> <li>Explain the process of performing internal audits.</li> <li>Describe the use of record keeping system of document the relevant information.</li> <li>List out the uses of automating data collection.</li> <li>Explain the use of AI-integrated temperature monitoring systems, GPS tracking, and real-time data analytics.</li> </ul>	<ul style="list-style-type: none"> <li>Perform data collection on customer requirements and product's temperature control requirements.</li> <li>Analyse the existing temperature monitoring system.</li> <li>Demonstrate the usage of integrated temperature sensors and IoT devices to collect and transmit real-time temperature data.</li> <li>Ensure the quality and reliability of operation as per BIS standards.</li> <li>Ensure the usage of proper packaging materials, temperature monitoring devices and transport vehicles per the standards.</li> <li>Demonstrate the streamline documentation using software.</li> <li>Communicate effectively with colleagues from different departments for inputs on optimization and process improvement.</li> </ul>
<b>Classroom Aids</b>	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
<b>Tools, Equipment and Other Requirements</b>	
WMS (learning version), MS Project, MS Office, Computer, Projector, TV, Stationery, Worksheets, Statistical Tools compressor, condenser, evaporator, temperature and humidity sensor, simulator, tools and tackles, consumables	

## Module 8: Compliance to health, safety and security norms

Mapped to LSC/N9901, v1.0

### Terminal Outcomes:

- Describe health, safety, and security procedures in cold storage plants
- Demonstrate the inspection procedure to ensure appropriate and safe conditions of activity area and equipment
- Illustrate the standard protocol to be followed during emergency situations, accidents and breach of safety

<b>Duration: 10:00</b>	<b>Duration: 20:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Detail health, safety and security procedures in cold storage plants.</li> <li>• Explain the inspection procedure to ensure appropriate and safe conditions of activity area and equipment.</li> <li>• Detail hygiene and sanitation standards as per regulatory bodies such as FSSAI, APEDA.</li> <li>• Evaluate protective devices, pipelines and cold storage areas as per SOP.</li> <li>• Detail the pest control methods to be followed to ensure zero pest infestation.</li> <li>• Describe the SOP for safe handling of goods.</li> <li>• Explain the protocol to be followed during accident, emergency etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Perform health and safety procedure in cold storage plants.</li> <li>• Follow safety precautionary methods.</li> <li>• Check the activity area and equipment for compliance to safety.</li> <li>• Check the pipeline and cold storage area are as per SOP.</li> <li>• Perform pest control as per SOP to avoid infestation.</li> <li>• Inspect adherence to standard operating procedures (SOP) while handling goods.</li> <li>• Implement standard protocol in case of emergency situations, accidents, and breach of safety.</li> </ul>
<b>Classroom Aids</b>	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser	
<b>Tools, Equipment and Other Requirements</b>	
WMS (learning version), LLMS (learning version), MS Project, MS Office, Computer, Projector, TV, Stationery, Worksheets, Statistical Tools compressor, condenser, evaporator, temperature and humidity sensor, simulator, tools and tackles, consumables	

## Module 9: Employability Skills

Mapped to DGT/VSQ/N0102, v1.0

### Terminal Outcomes:

- Discuss the Employability Skills required for jobs in various industries
- Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen
- Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan

Duration: 30:00	Duration: 30:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Discuss the Employability Skills required for jobs in various industries.</li> <li>• List different learning and employability related GOI and private portals and their usage.</li> <li>• Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen.</li> <li>• Discuss importance of relevant 21st century skills.</li> <li>• Describe the benefits of continuous learning.</li> <li>• Explain the importance of active listening for effective communication.</li> <li>• Discuss the significance of working collaboratively with others in a team.</li> <li>• Discuss the significance of escalating sexual harassment issues as per POSH act.</li> <li>• List the common components of salary and compute income, expenditure, taxes, investments etc.</li> <li>• Discuss the legal rights, laws, and aids.</li> <li>• Describe the role of digital technology in today's life.</li> <li>• Discuss the significance of displaying responsible online behaviour while browsing, using various social media platforms, e-mails, etc., safely and securely.</li> <li>• Explain the types of entrepreneurship and enterprises.</li> <li>• Discuss how to identify opportunities for potential business, sources of funding and</li> </ul>	<ul style="list-style-type: none"> <li>• Practice different environmentally sustainable practices.</li> <li>• Exhibit 21st century skills like Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life.</li> <li>• Demonstrate to use basic English sentences for everyday conversation in different contexts, in person and over the telephone.</li> <li>• Read and interpret text written in basic English.</li> <li>• Write a short note/paragraph / letter/e - mail using basic English.</li> <li>• Create a career development plan with well-defined short- and long-term goals.</li> <li>• Communicate effectively using verbal and nonverbal communication etiquette.</li> <li>• Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD.</li> <li>• Outline the importance of selecting the right financial institution, product, and service.</li> <li>• Demonstrate how to carry out offline and online financial transactions, safely and securely.</li> <li>• Operate digital devices and use the associated applications and features, safely and securely.</li> <li>• Create sample word documents, excel sheets and presentations using basic features.</li> </ul>

<p>associated financial and legal risks with its mitigation plan.</p> <ul style="list-style-type: none"> <li>• Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement.</li> <li>• Detail the significance of analyzing different types and needs of customers.</li> <li>• Explain the significance of identifying customer needs and responding to them in a professional manner.</li> <li>• Discuss the significance of maintaining hygiene and dressing appropriately.</li> <li>• Explain the significance of maintaining hygiene and confidence during an interview.</li> <li>• List the steps for searching and registering for apprenticeship opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Utilize virtual collaboration tools to work effectively.</li> <li>• Devise a sample business plan, for the selected business opportunity.</li> <li>• Create a professional Curriculum Vitae (CV)</li> <li>• Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively.</li> <li>• Perform a mock interview.</li> </ul>
<p><b>Classroom Aids</b></p>	
<p>Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser, UPS, LCD Projector, Computer Tables &amp; chairs</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Computer (PC) with latest configurations – and Internet connection with standard operating system and standard word processor and worksheet software (Licensed) (all software should either be latest version or one/two version below), Scanner cum Printer</p>	

# Annexure

## Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Any degree	Cold Chain	2	Cold Chain			

Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role: "Cold Chain Implementation specialist" mapped to QP: "LSC/Q8602, v1.0". Minimum accepted score is 80%	Recommended that the Trainer is certified for the Job Role: "Trainer (VET and Skills)", mapped to the Qualification Pack: "MEP/Q2601, V2.0" with minimum score of 80%



## Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
Any degree	Cold Chain	2	Cold Chain			

Assessor Certification	
Domain Certification	Platform Certification
Certified for Job Role: “Cold Chain Implementation Specialist” mapped to QP: “LSC/Q8602, v1.0”. Minimum accepted score is 80%	Recommended that the Assessor is certified for the Job Role: “Assessor (VET and Skills)”, mapped to the Qualification Pack: “MEP/Q2701, V2.0” with minimum score of 80%

## Assessment Strategy

The emphasis is on 'learning-by-doing' and practical demonstration of skills and knowledge based on the performance criteria. Accordingly, assessment criteria for each job role is set and made available in qualification pack.

The assessment papers for both theory and practical would be developed by Subject Matter Experts (SME) hired by Logistics Sector Skill Council or with the LSC accredited Assessment Agency as per the assessment criteria mentioned in the Qualification Pack. The assessments papers would also be checked for the various outcome-based parameters such as quality, time taken, precision, tools & equipment requirement etc.

Each NOS in the Qualification Pack (QP) is assigned a relative weightage for assessment based on the criticality of the NOS. Therein each Element/Performance Criteria in the NOS is assigned marks on relative importance, criticality of function and training infrastructure.

The following tools would be used for final assessment:

**1. Practical Assessment:** This comprises of a creation of mock environment in the skill lab which is equipped with all equipment required for the qualification pack.

Candidate's soft skills, communication, aptitude, safety consciousness, quality consciousness etc. is ascertained by observation and marked in observation checklist. The outcome is measured against the specified dimensions and standards to gauge the level of their skill achievements.

**2. Viva/Structured Interview:** This tool is used to assess the conceptual understanding and the behavioral aspects with regard to the job role and the specific task at hand. It also includes questions on safety, quality, environment, and equipment etc.

**3. On-Job Training:** OJT would be evaluated based on standard log book capturing departments worked on, key observations of learner, feedback and remarks of supervisor or mentor.

**4. Written Test:** Question paper consisting of 100 MCQs (Hard:40, Medium:30 and Easy: 30) with questions from each element of each NOS. The written assessment paper is comprised of following types of questions:

- i. True / False Statements
- ii. Multiple Choice Questions
- iii. Matching Type Questions.
- iv. Fill in the blanks
- v. Scenario based Questions
- vi. Identification Questions

### QA Regarding Assessors:

Assessors are selected as per the “eligibility criteria” laid down by LSC for assessing each job role. The assessors selected by Assessment Agencies are scrutinized and made to undergo training and introduction to LSC Assessment Framework, competency based assessments, assessors guide etc. LSC conducts “Training of Assessors” program from time to time for each job role and sensitize assessors regarding assessment process and strategy which is outlined on following mandatory parameters:

- 1) Guidance regarding NSQF
- 2) Qualification Pack Structure
- 3) Guidance for the assessor to conduct theory, practical and viva assessments
- 4) Guidance for trainees to be given by assessor before the start of the assessments.
- 5) Guidance on assessments process, practical brief with steps of operations  
practical observation checklist and mark sheet
- 6) Viva guidance for uniformity and consistency across the batch.
- 7) Mock assessments
- 8) Sample question paper and practical demonstration

## References

## Glossary

Term	Description
<b>Declarative Knowledge</b>	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
<b>Key Learning Outcome</b>	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
<b>OJT (M)</b>	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
<b>OJT (R)</b>	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
<b>Procedural Knowledge</b>	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work, or produce a tangible work output by applying cognitive, affective or psychomotor skills.
<b>Training Outcome</b>	Training outcome is a statement of what a learner will know, understand and be able to do <b>upon the completion of the training.</b>
<b>Terminal Outcome</b>	Terminal outcome is a statement of what a learner will know, understand and be able to do <b>upon the completion of a module.</b> A set of terminal outcomes help to achieve the training outcome.

## Acronyms and Abbreviations

Term	Description
QP	Qualification Pack
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards