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National
Skill Development
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Transforming the skill landscape

LSC
Logistics Skills Council

Participant Handbook

Sector
Logistics

Sub-Sector
Warehousing (Storage and Packaging)

Occupation
Operations (Quality)

Reference ID: **LSC/Q2313, Version 3.0**
NSQF Level 3

Warehouse Quality Checker

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This book is sponsored by

Logistics Sector Skill Council
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"Skilling is building a better India. If we have to move India towards development then Skill Development should be our mission."

Shri Narendra Modi
Prime Minister of India

Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK - NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

LOGISTICS SECTOR SKILL COUNCIL

for the

SKILLING CONTENT: PARTICIPANT HANDBOOK

Complying to National Occupational Standards of
Job Role/ Qualification Pack: **'Warehouse Quality Checker'** QP No. **'LSC/Q2313,V3.0 Level 3'**

Date of Issuance: 31/03/2022
Valid up to*: 31/03/2025

*Valid up to the next review date of the Qualification Pack
'Valid up to' date mentioned above (whichever is earlier)*

Authorized Signatory
(Logistics Sector Skill Council of India)

Acknowledgements

We wholeheartedly thank all the organizations who have immensely helped us in endorsing the contents of this Participant Handbook thus contributing towards Government of India's initiative in skilling based on the Qualification Pack (QP) & National Occupational Standards for a Warehouse quality checker.

About this Book

This Participant Handbook is designed to facilitate training to the Warehouse quality checker Qualification Pack (QP). Each National Occupational standard (NOS) is covered across Units. It provides the learners with the necessary knowledge of various tasks to be performed by a Warehouse quality checker.

After reading this book one would be able to understand all the requirements and various processes to be followed by a Warehouse quality checker.

Key characteristics of this handbook:

(i) It discusses concept of warehouse management in an easy to learn manner.

(ii) It presents warehousing concepts in interactive and professional way.

(iii) It gives opportunity to learners to visualize themselves in a professional warehouse set-up.

Key Learning Objectives for the specific NOS mark the beginning of the Units for that NOS. The symbols used in this book are described below.

Symbols Used


Key Learning Outcomes


Summary


Unit Objectives


Tips


Notes


Exercise

Table of Contents

The book on New Employability Skills is available at the following location:

https://eskillindia.org/NewEmployability

Scan the QR code below to access the ebook

Skill India
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Transforming the skill landscape

1. Introduction to Warehouse Quality Checker

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Key Learning Outcomes

At the end of this module, the participants will be able to:

1. Classify the components of the supply chain and logistics sector
2. Detail the various sub-sectors and the opportunities in them
3. Explain job roles in warehousing
4. Detail your job role as warehouse quality checker and its interface with other job roles
5. Explain various activities in warehousing
6. Discuss the documentation requirements in warehousing

Unit 1.1: Logistics and Supply Chain Management

Unit Objectives

At the end of this unit, the participants will be able to:

1. Define supply chain management
2. Define logistics management
3. Explain the important flows in supply chain management

1.1.1 Supply Chain and Logistics Management

"Supply chain is like nature; it is all around us." Dave Waters.

We start our day with toothpaste and end with a glass of milk. Everything that we consume throughout the day has unan derlying supply chain. The raw material is procured and transported to the factories to be converted into finished products. Finished products are then transported and warehoused at various locations till they reach hThe supply s a "chain" of organizations, activities, and people who manage the flow of "material" in the form of raw material, semi-finished-goods and finished goods across various "entities" like suppliers, manufacturers, warehouses, distributors and retailers to move goods from point of origin to point of consumption.

Fig. 1.1.1. Supply Chain Management

SCM is also called the art of management of providing the right product, At the right time, at the right place, at the right cost to the customer, in the right quantity and in the right quality.

Supply chain management is defined as *"The movement of materials as they flow from their source to the end customer. Includes purchasing, manufacturing, warehousing, transportation, demand & supply planning and inventory management. It is made up of people, activities, information and resources involved in moving a product from its supplier to customer."*

Supply Chain Council SCOR has given the following lucid depiction of supply chain.

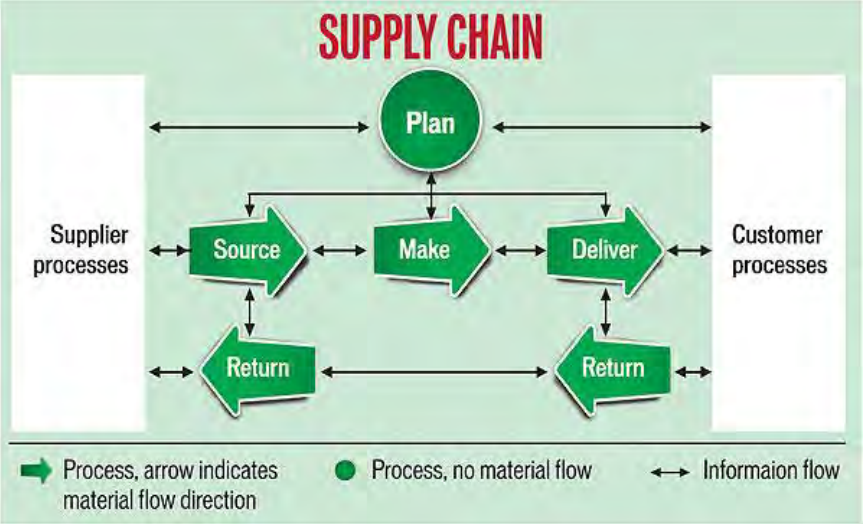


Fig. 1.1.2. Components of Supply Chain Management

As per SCOR, the five important components of supply chain management are -

PLAN - SOURCE- MAKE- DELIVER- RETURN

PLAN: This stage addresses how customer demand will be met through the supply. As can be seen in the picture, the plan function interacts with the customers to get demandforecaststst. This gets translated intoa supply plan and communicated to the supplier for sourcing rawmaterialsl.

SOURCE: This is the step where one must identify the various possible vendors for the raw materials required for the manufacturing. Just identifying suppliers will not be enough. It should also include the availability of products, the cost involved, ease in transporting goods and even the payment terms.

MAKE: The third component involve the activities like designing, producing, testing, packaging and then synchronizing all these activities for delivery. The raw material from suppliers are transformed to finished goods for the customer.

DELIVER: This stage involves the delivering the right product at the right place at the right time in the right quantity and at the right price. Here the supply chain transports the finished goods from factory to the warehouses, warehouse to distributors, distributors to retailers and finally retailers to final consumer.

RETURN: This is the last stage in supply chain which is becoming increasingly important. Here the defective, damaged or even the rejected goods are returned by the customer. The supply chain must respond to the customer quickly and return the goods by optimizing the cost.

Logistics Management

Logistics management is the part of supply chain management that plans, implements, and controls the efficient, effective forward, and reverse flow and storage of goods, services, and related information between point of origin and point of consumption to meet customer's requirements.

Logistics management includes activities such as warehousing, inventory control, and transportation management. Logistics management mainly focuses on the transportation and storage of goods within the supply chain.

Logistics management comprises two main activities:

Inbound logistics: Surrounds the activities related to procurement, storage and transportation of Raw Materials.

Outbound logistics: Involves the storage and delivery of final products to customers.

How is it different from Supply Chain Management?

SCM is an overarching concept and it includes logistics management as one of its components.

Logistics mainly deals with warehousing, inventory management, transportation, import and export management, track and trace and related processes.

SCM is a wider concept and is a tool to create competitive advantage for any company. Besides logistics, it carries various other functions like supply chain planning and strategy, forecasting and demand planning, production and supply planning, procurement and vendor management, collaborations and coordination with upstream and downstream partners, information flow management.

Notes

Unit 1.2: Sub sectors in Logistics Space - Key Activities

Unit Objectives

At the end of this unit, participant will be able to:

1. List the various sub-sectors in logistics
2. Explain various modes of transportation
3. Define warehouse

1.2.1 Sub-Sectors of logistics space

As seen in the previous section, transportation and warehousing are the two key activities in logistics management.

Transportation can be by various modes – air, water and land.

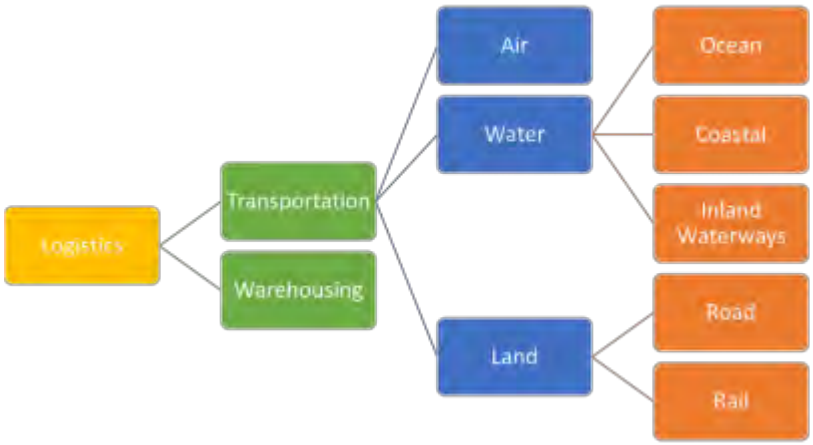


Fig. 1.2.1. Transportation activities

Transportation is the lifeline for any country and keeps its economy going. Transportation can also be international, when goods are exchanged between countries.

Air Transportation

Air transport is the fastest means of transportation. It reduces the distances by minimizing the travel time. Air transport acts as a key enabler in achieving economic progress and growth. Air transport provides vital connectivity within the country and allows the integrations of any country with the global economy. It helps generate trade, promote tourism, and create employment opportunities. Air transportation is most suitable for high value cargo which are susceptible to faster transit times. Air transport is normally used for smaller cargoes, though even big shipments are moved by air depending on its urgency and criticality.

The main activities it undergoes can be divided as:

a) Activities at the point of origin

b) Activities at point of discharge.

Point of origin: Once the cargo is ready for shipment, one of the most important aspect is the packing of cargo. Packing should be according to the cargo and designed for its mode and duration of transportation.

The packed cargo is taken to the airport for the customs formalities to be completed and after successful completion it is handed over to respective airlines. Airline does the loading of the cargo as per their loading plan. Each cargo will be accompanied by an individual set of documents which contains all details of this cargo.

Point of destination: On arrival, cargo is handed over to the customs authority who in turn will hand over the cargo to the respective buyers after customs formalities are done. Airlines facilitate this movement by giving necessary assistance in taking delivery of the cargo.

Fig. 1.2.2. Air transportation activities

Water Transportation

Among all modes of transportation, water is the cheapest mode and accounts for the largest share of the international cargo movement. Also known as maritime transportation, water transportation is movement of cargo and passengers over water. Among all modes of transport, water is the most environment friendly with least usage of fuel and emissions. Further there are no highways to be built, rail tracks or airports to be laid to use this lode. Water is naturally available, and just have to float over it.

Water transportation can further be divided into ocean transportation, coastal shipping and inland waterways.

Ocean Transportation: This is the transportation over long distance across seas and oceans. They are realized through ships and vessels and mainly used for international Trade. They can further be classified as bulk and containerized.

Bulk: In case of bulk ocean movement, bulk commodities like ore, gas, crude oil, chemicals, steel are stored in bulk in the vessel and moved over long distances.

Containerized transportation: In this case, cargo is stored in standardized containers and containers are moved using specialized container carrying vessels. This mode of transportation has made a huge progress in the last 50 years and now accounts for one of the largest shares of international transportation.

Coastal Shipping: Also known as short sea transportation, this is a transportation within a country using its coastal lines. For example, movement from Kolkata to Chennai using the Bay of Bengal or from Mumbai to Cochin using Arabian Sea. This can again be in bulk or containerized. This is mainly used for low value commodities where the cost of moving by road or rail is much higher.

Inland Waterways: This is the movement of cargo using rivers and canals. Wherever this mode is available, is the most economical mode of transportation. India has 111 official national waterways and out of them, two on Ganga and Brahmaputra are the longest.

Port and Port Yard: Cargoes are received at the Sea port. This is the place where the cargo is handed over to the shipping lines, loaded on to the vessel after completing all customs formalities. At the port of destination, the buyer can receive their cargoes from the port after completing all necessary formalities.

In land locked destinations or due to any other reasons the authorities can designate a separate place for handling of cargoes. These places are known as Internal Container Depot (ICD), Container Freight Station (CFD) or just a port yard. These port yards also undertake all activities of a port.

Land Transport: Land transport is the transport or movement of people and goods from one location to another location on land. The two main forms of land transport are rail transport and road transport.

Road Transportation: As the name suggests, it is the transportation using roads. It is used for transportation of goods and people. Cargo can be transported using roads by trucks, trailers, vans, auto, bikes and even animals. Various classes of roads exist from a local two-lane to state highways to national highways to freeways. Modern roads carry lanes and signages to manage the traffic. There are trucking companies which mainly specialize in road transportation.

Rail Transportation: Rail transport is a means of transporting passengers and goods on wheeled vehicles running on rails, which are located on tracks. In contrast to road transport, where vehicles run on a prepared flat surface, rail vehicles (rolling stock) are directionally guided by the tracks on which they run. Rail is an extraordinarily strong means of mass transportation, both cargo and passenger.

Warehousing: An important component of logistics management is warehousing. Warehouses are commercial buildings used by manufacturers and traders to store raw material, finished goods, work in process inventory or spares till they are either consumed or sold. Warehouse provides the buffer between demand and supply. Wheat is harvested in April but consumed throughout the year. This is only possible through storage in the warehouses. There are other goods where demand is once a year and supply/production is throughout the year. Winter clothes, air conditioners, diwali goods are required only during a time period but produced throughout the year. This is again possible only through warehouses which house them till they are sold.

Notes

Unit 1.3: Introduction to Warehousing

Unit Objectives

At the end of this unit, participant will be able to:

1. Explain the role of warehousing in the supply chain
2. List the various activities carried out inside a warehouse
3. Detail your job role as warehouse quality checker and its interface with other job roles

1.3.1 Warehouse Activities

Warehouses play a pivotal role in supply chain management. As the word indicates, supply chain consists of various links and warehouse is one of its strongest links. As mentioned earlier, the biggest challenge of supply chain is the ever-widening gap between the demand and supply. Warehouse plays the role of a stabilizer during these fluctuations. Warehouse can be called as a place for everything and everything in its place.

Some of the major roles of warehouse are:

1. ***Facilitating regular and constant flow of goods:*** This is done by balancing between the demand forecast and supply constraints.
2. ***Provide safe custody of goods:*** In supply chain goods are always exposed to various risks. A warehouse can mitigate these risks by playing the role of an intermediary.
3. ***Consolidation of cargo:*** Volume always provides cost benefit. The goods can be procured from various sources. Warehouse is a place where these goods can be stored for maximization of various cost benefits.
4. ***Break bulk point*:** While consolidation can be one advantage, then even breaking the bulk can also provide much benefit. In this case, bigger shipments can be customized thus making it easier for the supplier and the customer.
5. ***Value added services*:** The strength of supply chain is in adding value at every step in the process. It is difficult to add value while the goods are in motion or in transit. Warehouse is an ideal place for many value additions for the goods.
6. ***Managing seasonal supplies*:** This is one big challenge many of the stake holders face. Seasonal goods demand many facilities which will vary from season to season. A warehouse can act as a transshipment point where all such facilities can be tailor made.
7. ***Product Mixing*:** Product mixing gives great cost benefit to the supplier who in turn can pass on this benefit to the end user. Warehouse is a place where different products can be gathered and stored. Thus, it becomes the ideal place for the companies to mix their products for maximization of profits.
8. ***Defining the time to market*:** Markets always demand the right product at right place in right quantity for the right price. The unreliable production, unpredictable transits and unforeseen constraints during movement of goods makes this a difficult task. However, this can be easily achieved by holding the right amount of inventory at the warehouse.
9. ***Specialized services*:** Warehouse also provide many specialized services like customs bonding and so on.

Fig. 1.3.1. Warehouse activities

After goods are received and before goods are shipped, a series of internal warehouse activities should take place, to ensure an effective flow of inventories (goods) throughout the warehouse and to organize and maintain company inventories. The following list includes the activities found in most of the warehouses -

- **Receiving** - schedule transporter, unload vehicle, inspect for damage
- **Put away** - identify bin location, move products, update records
- **Storage** - storage location logic. Equipment for storage, cycle and physical count
- **Order Picking** - customer order processing. Pick list generation, location identification, picking
- **Shipping** - schedule transporter, load vehicle, bill of transport, record update

1.3.2 Introduction to Warehouse Quality Checker

Warehouse Quality Checkers are also known as Warehouse Quality Assessors or Quality Inspectors. Individuals in this role are accountable for inspecting the quality and checking compliance with the specifications of inbound as well as outbound goods, segregating goods that do not meet the demands and documenting the results.

This job requires the person to work well with his/her team and achieve the common goals. Individual should be able to set priorities and run tasks within planned time limits. The individual should be able to maintain high concentration levels throughout his/her shift.

Notes

Unit 1.4: Warehouse Organization Structure - Roles and Responsibilities

Unit Objectives

At the end of this unit, participant will be able to:

1. Details the various job roles which exist inside a warehouse
2. Describe the roles and responsibility of a warehouse Quality Checker and it's interface with other job roles

1.4.1 Warehouse People Management

Warehouse is all about the people who manage it. Staffing the warehouse with right number of people with right set of skills ensures the most efficient and effective warehouse operations.
Following is a typical organization chart within a warehouse:

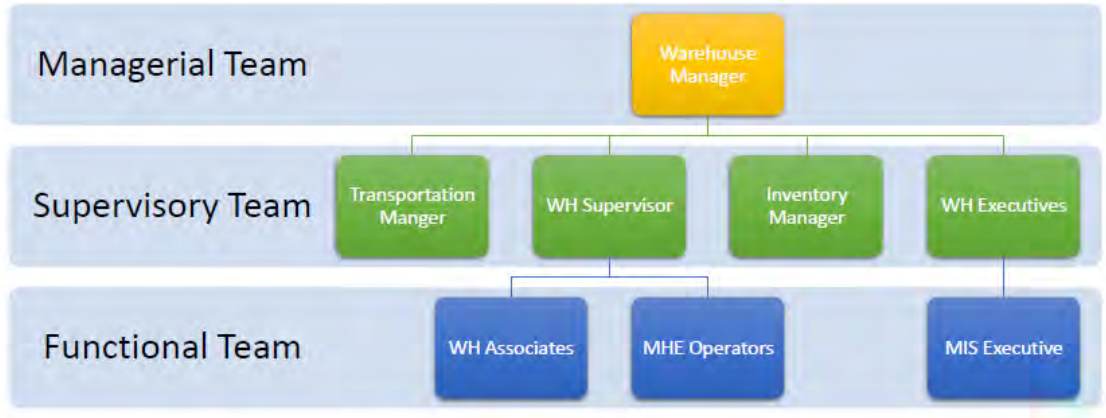


Fig. 1.4.1. The organization chart of a warehouse

The following section discusses in brief, the job description for the various positions inside the warehouse.

A. <u>Warehouse Manager (Site in charge)</u>

Key objective of this position: This position is focused on the management of warehouse operations with "Delivery of Promise".

B. Warehouse inventory & Transport manager

Key objective of this position: This position is responsible for managing all outbound transportations from the warehouse to the delivery location

C. Inventory, Materials Manager

Key objective of this position: This position is responsible for all the inventory inside the warehouse. This position needs to ensure that inventory is properly stacked, counted and always matching with system stock.

D. Warehouse Executive

Key objective of this position: This position operates on the computer and is responsible for system entries and Management Information System (MIS) of the warehouse operations including operating Warehouse Management System (WMS).

E. Warehouse Associate

Key objective of this position: This job role is responsible for managing the complete cycle of movement of material from unloading from inbound vehicle till loading onto outbound vehicle.

F. Warehouse Quality Checker

Key objective of this position: Warehouse Quality Checkers are also known as Warehouse Quality Assessors or Quality Inspectors.

Individuals in this role are responsible for inspecting the quality and checking conformance to specifications of inbound as well as outbound goods, segregating goods that do not meet requirements and documenting the results.

This job requires the individual to work well with his/her team and achieve joint goals. The individual must be able to prioritize and execute tasks within scheduled time limits. The individual should be able to maintain high concentration levels throughout his/her shift.

Notes

Unit 1.5 - Documentation in Warehousing

Unit Objectives

At the end of this unit, participant will be able to:

1. Explain the importance of documentation in warehousing.
2. Detail the various documents used in warehousing operations.

1.5.1 Types of Warehouse Documents

Documentation is another vital part of warehousing operations. The way, bank is the custodian of depositor's money, warehouse is also the custodian of the value in the form of inventory. Any loss to inventory is a loss of money.

Documentation carries following purposes in a warehouse:

Operations Management: Documents like pick list, Goods Receipt Check List (GRCL), Bill of Material (BOM) are several others which are essential to conduct warehousing operations on day to day basis. They facilitate the allocation of work, picking and put away of right quantities in a timely manner and correct processing of customer orders.

Record Keeping: The inventory stored in the warehouse carries economic value. One of the basic functions of stores is to account for every material received in stores by keeping proper records of any incoming, stored and outbound materials so that proper accounting and the audit trail is maintained.

Transit Documentation: Whenever the goods are transported from the warehouse to the consignee, they need to carry the transit documentation. Transit documents meet the regulatory requirements during transit in India and establish the consignor, consignee and nature of the goods being transported.

Audits: Warehousing are subject to frequent audits for inventory reconciliations, adherence to Standard Operating Procedures (SOP) and regulatory compliances. Documentation provide the complete history and trail of all the transactions which happened in the warehouse.

In section 1.4, the five stages in the warehousing operations is explained. Following are the key documents used during these five stages.

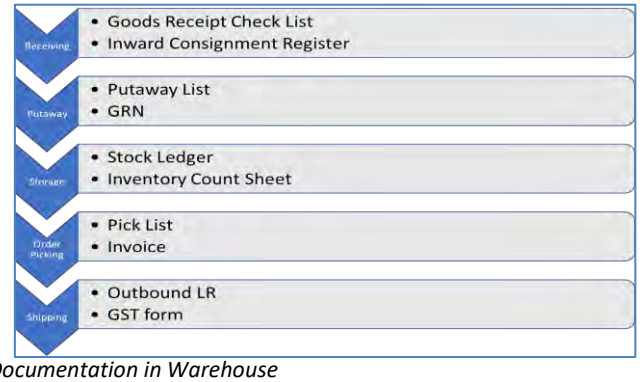


Fig. 1.6.1. Documentation in Warehouse

Inward Consignment Register

This is a register which is used to record all the incoming shipments into the warehouse.

Gate Inward Register

Sl no.	Material Receiving Date	Invoice Number	Invoice Date	Supplier Name	Name of Place / City	Material Description	Qty Received	Qty Delivered	Material Deliver's name	Invoice Details

Fig. 1.6.2. Inward Consignment Register

Put away List

This list also called as Binning list; guides associate to the appropriate bin of location where the incoming goods must be kept.

Putaway List

Warehouse	_____		Date	_____	
Supplier Invoice No.	_____		Time	_____	
Sr No.	Item Code	Item Description	UOM	Quantity	Bin Location

Fig. 1.6.3. Put away List

Goods Receipt Check List (GRCL)

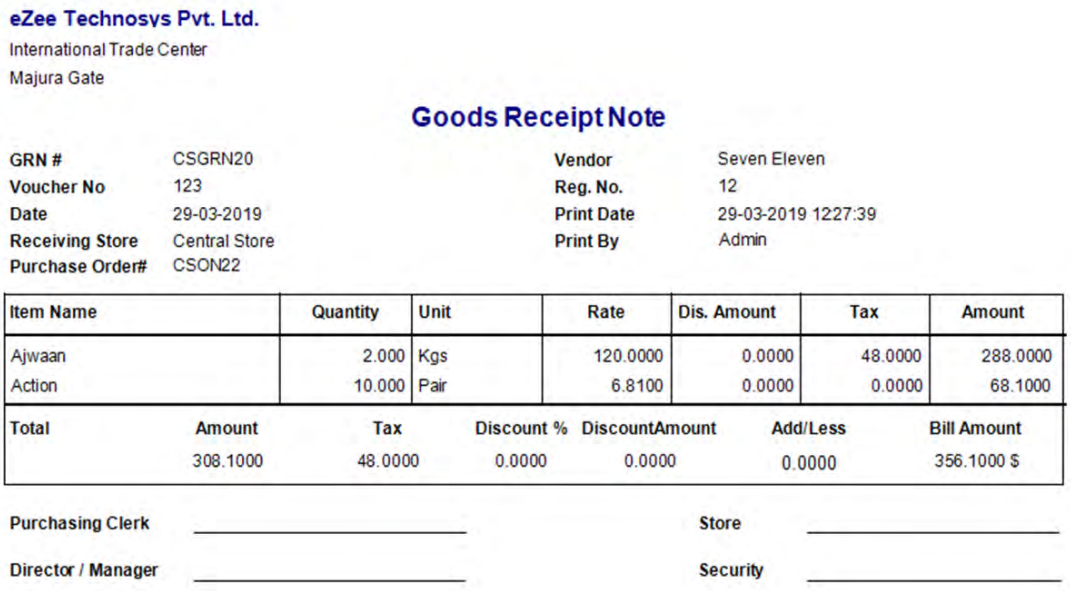
It is a check list to be followed at the time of receipt of material at the warehouse.

Sample Goods Receipt Check List				
Date and Time of Reporting		To be filled by Warehouse Associate/ Supervisor		
Vehicle Number				
Consignor Name				
Invoice No.				
Allowed for Unloading	Yes / No - If no, why:-			
Remarks				
Name				
Signature				
Security				
Gate Entry #		To be filled by Security		
Signature				
Date				
Time				
Blind Count				
Item Name		**Quantity**		
				To be filled by the person did blind count
			TOTAL QTY: -	
Blind Count Remarks				
Damage Remarks				
Name, Signature				
Date & Time				
Sample Quality and Compliance Check				
Legal Metrology Check		Yes / No		
Any Unit Damaged		Yes / No		
Any Unit Leaking		Yes / No		
Labels Check		Yes / No		
Packaging Check		Yes / No		
Sample Weight Check				
No. of Boxes				
Remarks				
Name, Signature				
Date & Time				
Scanning				
Qty.		To be filled by person who did Scanning		
Remarks				
Name, Signature				
Date & Time				
SAP Updation				
		Date	Time	Filled by person who did Data entry
GRN				
Remarks				
Sign and Signature				
(WAREHOUSE ASSOCIATE)			**(SUPERVISOR)**	

Fig. 1.6.4. Goods Receipt Checklist

Good s Receipt Note (GRN)

When the incoming shipment details are entered into the system, the computer system generates a document called Goods Receipt Note (GRN).



eZee Technosys Pvt. Ltd.
International Trade Center
Majura Gate

Goods Receipt Note

GRN #	CSGRN20	**Vendor**	Seven Eleven
Voucher No	123	**Reg. No.**	12
Date	29-03-2019	**Print Date**	29-03-2019 1227:39
Receiving Store	Central Store	**Print By**	Admin
Purchase Order#	CSON22		

Item Name	Quantity	Unit	Rate	Dis. Amount	Tax	Amount
Ajwaan	2.000	Kgs	120.0000	0.0000	48.0000	288.0000
Action	10.000	Pair	6.8100	0.0000	0.0000	68.1000

Total	Amount	Tax	Discount %	DiscountAmount	Add/Less	Bill Amount
	308.1000	48.0000	0.0000	0.0000	0.0000	356.1000 $

Purchasing Clerk _____ **Store** _____

Director / Manager _____ **Security** _____

Fig. 1.6.5. Goods Receipt Note (GRN)

Stock Ledger

This is a ledger which maintains the inwards and outward entries of various products and indicates the current stock level at any point of time.

STORE STOCK LEDGER

					Facility Code			
Name of facility					Item code			
Item Description					Unit of issue			
Date	Received From/Issued to:	Delivery note/ Issue V. No.	Batch no.	Expiry Date	Qty Received	Qty issued	Stock balance	Signature

Fig. 1.6.6. Stock Ledger

Inventory Count Sheet

This is a sheet used to count the physical stock of the warehouse, tally with the system stock and identify shortages or excess.

STOCK COUNT SHEET

Date

Name of facility

Sl No.	Product Code	Product Description	Unit of Mesaurement	Physical Good Stock	Physical Damage Stock	Total Physical Stock	Stock Balance as per System	Excess / Shortage	Remarks if Any
				A	B	C=A + B	D	C-D	10
Name & Signature of Associate			Signature Of Verifyng Officer				Signature of WH Manager		

Fig. 1.6.7. Inventory Count Sheet

Pick List

This document indicates the various products, their quantities and locations to process a customer order.

Pick List

Warehouse _____ Date _____

Order No. _____ Time _____

Sr No.	Item Code	Item Description	UOM	Required Quantity	in Hand	Location	Picked Quantity
1	ABCD01234	Plastic Pots	No.s	7	84	BIN 365	
2	XYZ78910	Compost	Kgs	10	95	BIN 789	

Fig. 1.6.8. Pick List

Sale Invoice

This is an important document evidencing the sale and transfer of ownership of items from warehouse to the buyer.

TAX INVOICE

ABC ENTERPRISES

123 B 20/8 XXXXXX
PUSA ROAD,NEW DELHI-110005
GSTIN No 07APAFD8245XXXX

Bill to	Place of Supply	INVOICE No	Dated
RK Electrical Works A-10 Rajouri Garden,New Delhi GSTIN No:-07BBUPS5252XXXX	RK Electrical Works A-10 Rajouri Garden,New Delhi	DD-TI-01	1-Jul-17

Description of Goods	HSN CODE	QTY	Units	RATE	Amount
LED LIGHTS	8501	50	pcs	200	10000
Bulbs	8501	5	Dozens	3000	15000
Total					**25000**
Less Discount 20%					5000
Taxable Value					**20000**
ADD CGST 6%				6%	1200
ADD SGST 6%				6%	1200
Total					**22400.00**

Amount Chargeable (in words)
Rupees Twenty Two Thousand Four Hundred only

Company's PAN: AAKFD6723D

Note-Please make cheques in favor of "DD Enterprises"

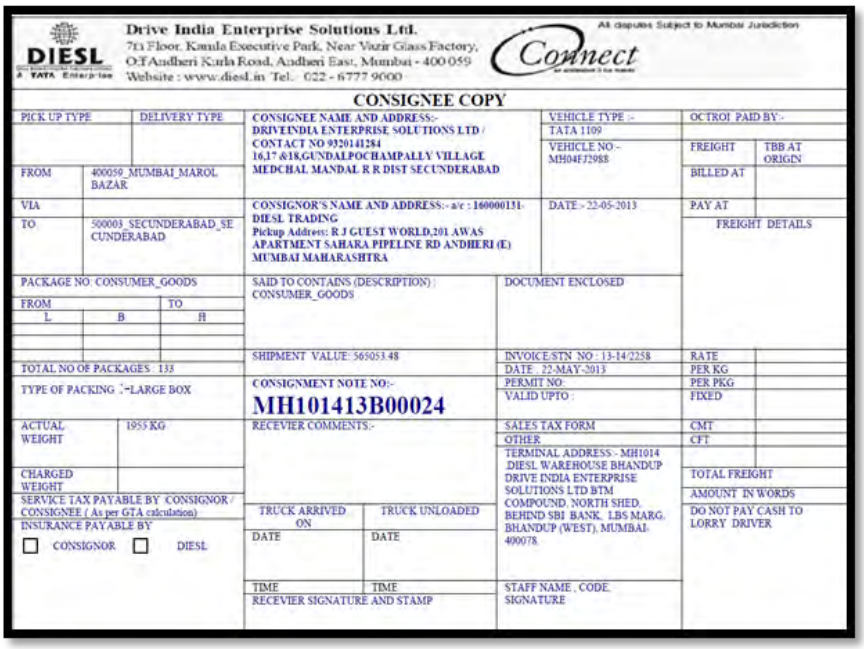
For ABC ENTERPRISES

Authorised Signatory

Fig. 1.6.9. Sale Invoice

Lorry Receipt (L/R)

It is an acknowledgement of goods given by the lorry owners (transport carriers) to people sending the goods, in this case the warehouse.



Drive India Enterprise Solutions Ltd.
7th Floor, Kamla Executive Park, Near Vazir Glass Factory,
Off Andheri Kurla Road, Andheri East, Mumbai - 400 059
Website : www.diesl.in Tel.: 022 - 6777 9000

All disputes Subject to Mumbai Jurisdiction

DIESL — A TATA Enterprise — Connect

CONSIGNEE COPY

PICK UP TYPE / DELIVERY TYPE	CONSIGNEE NAME AND ADDRESS:- DRIVEINDIA ENTERPRISE SOLUTIONS LTD / CONTACT NO 9320141284 16,17 &18,GUNDALPOCHAMPALLY VILLAGE MEDCHAL MANDAL R R DIST SECUNDERABAD	VEHICLE TYPE :- TATA 1109	OCTROI PAID BY:-	
FROM: 400059_MUMBAI_MAROL BAZAR		VEHICLE NO :- MH04FJ2988	FREIGHT / TBB AT ORIGN	
VIA			BILLED AT	
TO: 500003_SECUNDERABAD_SECUNDERABAD	CONSIGNOR'S NAME AND ADDRESS:- a/c : 160000131 DIESL TRADING Pickup Address: R J GUEST WORLD,201 AWAS APARTMENT SAHARA PIPELINE RD ANDHERI (E) MUMBAI MAHARASHTRA	DATE :- 22-05-2013	PAY AT	
			FREIGHT DETAILS	
PACKAGE NO: CONSUMER_GOODS — FROM / TO — L / B / H	SAID TO CONTAINS (DESCRIPTION) : CONSUMER_GOODS	DOCUMENT ENCLOSED		
TOTAL NO OF PACKAGES : 133	SHIPMENT VALUE: 565053.48	INVOICE/STN NO : 13-14/2258	RATE	
TYPE OF PACKING :-LARGE BOX	CONSIGNMENT NOTE NO:- MH101413B00024	DATE : 22-MAY-2013	PER KG	
		PERMIT NO:	PER PKG	
		VALID UPTO :	FIXED	
ACTUAL WEIGHT: 1955 KG	RECEVIER COMMENTS:-	SALES TAX FORM	CMT	
		OTHER	CFT	
CHARGED WEIGHT		TERMINAL ADDRESS:- MH1014 DIESL WAREHOUSE BHANDUP DRIVE INDIA ENTERPRISE SOLUTIONS LTD BTM COMPOUND, NORTH SHED, BEHIND SBI BANK, LBS MARG, BHANDUP (WEST), MUMBAI. 400078.	TOTAL FREIGHT	
SERVICE TAX PAYABLE BY CONSIGNOR / CONSIGNEE (As per GTA calculation)			AMOUNT IN WORDS	
INSURANCE PAYABLE BY: ☐ CONSIGNOR ☐ DIESL	TRUCK ARRIVED ON: DATE / TIME — TRUCK UNLOADED: DATE / TIME		DO NOT PAY CASH TO LORRY DRIVER	
	RECEVIER SIGNATURE AND STAMP	STAFF NAME , CODE. SIGNATURE		

Fig. 1.6.10. Lorry Receipt

Transit Documents

These are regulatory documents which are required during transit in India. These could be documents such as filled GST Transit forms.

Tips

To be a successful Warehouse Quality Checker

- Carry Achievement motivation
- Keen to learn.
- Train yourself to finish what you started.
- Dream big.
- Do not hesitate to ask for Help.
- Do not be afraid to make mistakes.
- Do not limit your working hours during the learning phase

Notes

Summary

The basics of Supply chain management is discussed at the ground level and the importance of logistics linkage in managing an efficient supply chain. Three main flows of supply chain management is clearly explained in this chapter. You will be able to understand the main roles of the individual as a warehouse associate with the set targets. This unit also discusses the necessity of a warehouse and different activities carried inside the warehouse.

Exercise

Multiple Choice Questions

1. The correct sequence of supply chain process is
   A. Plan – Make - Source – Make - Return
   B. Plan – Source – Make – Deliver – Return
   C. Plan – Make – Deliver – Source - Return
   D. Plan – Source – Deliver - Make – Return

2. Which of the following is not a category of equipment being used in the warehouse?
   A. Storage
   B. Safety
   C. Earth moving
   D. Material handling

3. Which of the following activity is part of the shipping activity in the warehouse process?
   A. Order processing
   B. Unload vehicle
   C. Cycle count
   D. Filling bill of transport

4. Which of the following is not a role played by the warehouse?
   A. Consolidation hub
   B. Break bulk
   C. Value added services
   D. None of the above

Fill in the Blanks

1. The movement of cargo over river and canals is called _____.
2. This position responsible for managing all outbound transportation from the warehouse is _____.
3. _____is an acknowledgement of goods given by the transporter to the warehouse at the time of dispatch of goods.
4. The document used to gather the material as demanded by the customer is called the _____.

True or False

1. Logistics management is part of supply chain management.
2. Among all modes, water is the cheapest mode of transport.
3. Audit is not one of the requirements for conducting documentation in the warehouse.
4. Security guards and warehouse quality checker are two independent set of people in the warehouse who hardly interact with each other.

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2. Preparation for testing

Unit 2.1 - Information Flow and types of testing

Unit 2.2 - Testing Equipment

LSC/N2327

Key Learning Outcomes

At the end of this module, participant will be able to:

1. Discuss the list of necessary information to be collected regarding work schedules, targets, inspection checklist, inbound/outbound items etc.
2. Detail the necessary information to be collected regarding customer such as requirements, product specifications, tolerances etc.
3. Explain the different types of inspection methods such as random sampling, stratified sampling, 100% inspection etc.
4. Determine the appropriate testing equipment based on the product type
5. Detail the necessary equipment to be collected before starting testing
6. List the steps involved in checking the testing equipment for proper functioning

UNIT 2.1: Information Flow and Types of inspection

Unit Objectives

At the end of this unit, participant will be able to:

1. Discuss the necessary information that has to be obtained from the supervisor.
2. Detail types of inspection and how to conduct same.

2.1.1 Types of Inspection and Information checklists

Quality is important during manufacturing and Supply Chain, whether monitoring the quality of material from the suppliers, checking the quality during the production line or checking the quality before it is delivered to the final customer.

In case of manufacturing the raw materials, one important area in examining quality is the inspection of goods that arrive at the facility from suppliers. Ensuring that components and raw materials are of the right quality or requirements before the item even enters the plant is key to ensure total quality of the finished goods.

In the case of trading too, the quality of the incoming shipment needs to be checked before it is supplied to the customer to avoid any claims and adverse effect on the client's relationship.

Though the quality department is responsible and equipped to check the quality of the material in terms of Chemical analysis, testing of physical properties and measurements, testing of mechanical properties and Regulatory testing, however, some part of quality checking may be allocated to the warehouse as it is the first point of contact of the material being received.

Some of the quality aspects that the warehouse may verify:

- The description and specifications of the material on the carton matching the one given in the Purchase Order.
- The packaging of the product matching the packaging specifications given in the Purchase order
- Any damage or leak in the product
- The expiry date of the incoming material
- Any infestation or rottenness in case of Agriculture products

The quality department will instruct the warehouse on how to deal with incoming materials. Not all parts incoming shipments need to be inspected. Some low-cost standard items may not require inspection at the time of receipt.

Quality of the material is critical for both customer experience and manufacturing process. When the Finished goods are delivered to the final customer no company can afford a damaged or a defective product. Similarly, during the manufacturing process, the Raw Material and parts must be of the right quality and specifications to ensure right final product.

The inspection of the material at the warehouse involves the following steps:

- Quantity Tallying
- Physical Inspection
- Legal Metrology Inspection
- Sampling
- Quality Inspection

2.1.2 Quantity Tallying

The first step in inspection of material is tallying the physical quantity with the quantity on the documents.

For the inbound shipment, lot of warehouses follow the system of blind count sheet. The security at the entry gate of the warehouse carries a blind count sheet. They will count the material as it is unloaded from the vehicle. When conducting the blind count, they have no clue on the total quantity expected or as per documents.

Once blind count sheet has been filled, it is tallied with the quantity as per documents. In case they match, next steps are taken, in case of any discrepancy, the physical material is counted again to check. If the discrepancy persists, then all the steps related with short receipt are initiated.

An alternate to blind count sheet is the tally sheet. For example, once the picker has picked the material for an outbound shipment, a supervisor or a security guard can count the material and check with the pick list or the tally sheet. If there is a discrepancy, then further steps are taken to correct it.

The usage of warehouse technology such as barcode scanners or RFID integrated with the Warehouse Management System (WMS) helps speed up counting and reduce errors.

2.1.3 Physical Inspection

Visual inspection of the goods to check the physical condition of the material. The material incoming/outgoing products should be free from any dents, damages, leaks etc. In the case of packaged products, ensure to check if the packaging is proper and not mutilated.

The warehouse may also check the following during the visual verification process:

- Description of goods matching the documents
- Product Code,
- Batch/Lot number,
- The temperature in case of temperature-controlled cargo
- Labelling,
- Weight of the cargo and
- Condition of cargo – whether damaged, dented or leaking or not.

At times warehouses are required to verify weight and dimensions of the incoming cargo. In such case, all the incoming cartons/pallets are weighed on the weighing scale before being moved inside. The actual weight is tallied with the documented weight to identify any discrepancies. At times, weight checking also highlights any theft or loss during transit to the warehouse. Weighing scales integrated with packet/pallet sizing systems and the warehouse management system are a great option for capturing all this information quickly and error-free.

One of the most time-consuming, labor-intensive, and critical tasks is counting and verifying damaged cargo. It is important to keep a record of all missing and damaged cargo and its supplier and carrier. Once data has been collected, receiving supervisors will use this data to make these companies, suppliers, and carriers aware of the problem.

For companies needing to prove to their suppliers the state and way cargo has been obtained, the use of digital cameras or CCTV cameras installed at unloading bays can help capture the cargo's images and lodge a claim with supplier or carrier in case of any damage or short received. The images may also be integrated with the WMS system.

2.1.4 Sampling

If a large quantity of the particular parts or material arrives at the warehouse, not every part needs to be checked. The quality department generally instructs to do random sampling and only the samples to be checked. As determined by the quality department, the sample size could be a function of the vendor's past performance, the nature of the material being received, the criticality of the part being received, and the quantity of the shipment being received.

Samples selected from the inbound shipment may undergo visual inspection or detailed quality check based on the quality department's instructions.

Random Sampling

The sampling technique in which each sample has an equal chance of being chosen is called random sampling. A sample can be chosen randomly and is meant to be an impartial representation of the total population.

Stratified sampling

Stratified is also a random sampling method in which, sampling that involves splitting of a population into smaller sub-groups known as strata is used. In stratified random sampling, or stratification, the strata are formed based on members' shared attributes or characteristics such as income or educational attainment.

Stratified random sampling is also called proportional random sampling or quota random sampling.

2.1.5 Legal Metrology Inspection of the material

Legal Metrology is the application of legal requirements for measuring instruments. Legal Metrology's objective is to ensure public guarantee from the point of view of security and accuracy of the weights and measurements.

The Legal Metrology Act, 2009 is an Act to establish and enforce standards of weights and measures, regulate trade and commerce in weights, measures and other goods sold or distributed by weight, measure or number and for matters connected in addition to that.

As per the Legal Metrology (Packaged Commodities) Rules, 2011 are applicable on 'pre-packaged commodity' as defined under the Act as, 'a commodity which without the purchaser being present is placed in a package of whatever nature, whether sealed or not, so that the product contained therein has a pre-determined quantity'. Certain mandatory declarations must be made on every package, as per the rules, which are:

- Name and address of the manufacturer/ packer/ importer.
- Country of origin in case of imported packages
- Common or generic name of the raw material contained in the package.
- Net quantity, in terms of standard unit of weight or measure or in number.
- Month and year of manufacture/ pack/ import along with best before or expiry date.
- Retail sale price in the form of Maximum Retail Price (MRP) Rs. Inclusive of all taxes.
- Consumer care details.

In case the Warehouse is storing pre-packaged goods, they need to verify all incoming and outgoing products as per the Legal Metrology (Packaged Commodities) Rules. Besides the above contents of the label on the products, there are rules regarding the font size and size of the labels also.

Warehouse also needs to verify is there has been any alteration, obliteration, and smudging on MRP declared on the packages.

2.1.6. Managing rejections

In case of rejection, the products may be returned to the supplier or reworked inside the warehouse based on the material's possibility and criticality. In some instances, poor quality may lead to credit note from the supplier as compensation for poor quality.

Several scenarios can be employed.

	Scenario	Action to be taken.
1	Reject the Shipment	Return the shipment back to the supplier.
2	Return for Replacement	Return the shipment to the supplier for him to replace the defective items. This is possible when the items are available with the suppliers, and quick turnaround is possible.
3	Rework the Parts	In case the supplier is far off and time does not permit return, and re-supply and quality and production team believe that they can rework on the parts and make them usable as per their specifications.
4	Accept with Discount	Procurement department can negotiate with the supplier to accept the elements with a price discount. If the vendor is reluctant, then the parts will be returned.

Table 2.1.6 Failing inspection

2.1.7 Quality Inspection

- This will depend upon the sort of work equipment, its use, and therefore the conditions to which it's exposed. this could be determined through risk assessment and taking full account of any manufacturer's recommendations. the recommendation of others, like trade associations and consultants, also as other sources like published advice on health and safety, can also be helpful. An inspection should target those safety-related parts necessary for the safe operation of labor equipment and, in some cases, this might require testing or dismantling. However, not all safety-critical features on a selected item of labor equipment may require inspection at identical intervals.
- An inspection can vary in its extent because the following demonstrates: weekly checks (e.g. presence of guarding, the function of safety devices, tyre pressures, and therefore the condition of windows, mirrors, and CCTV on the mobile plant) more extensive examinations, undertaken every few months or longer (e.g. general condition of a ladder, close examination of a security harness, portable appliance testing) Records don't seem to be typically required to be made for the only pre-use checks.
- The use of checklists can assist but these, and also the records made, should be tailored to the actual sort of work equipment to minimize the burden on what's strictly necessary for safety. Requiring excessive detail too often can result in inspection activity becoming burdensome with the chance of a superficial 'tick box' approach or, in some cases, the inspection activity ceasing altogether. you simply must inspect what's necessary for safety.

2.1.8. Obtain necessary information from the supervisor

Checker needs to understand the work schedule, daily targets and priorities (if any) from the supervisor. He needs to obtain the inspection checklist, list of inbound and outbound items to be checked, the customer requirements, product specifications (such as weight, size, functional aspects, etc.) and tolerances which need to be checked for conformity.

Quality checker needs to find out what inspection method (such as random sampling, stratified sampling, 100% inspection, etc.) is to be used from the set the shift schedule and the total number of packages required by the end of the day from supervisor.

UNIT 2.2: Testing Equipment

Unit Objectives

At the end of this unit, participant will be able to:

1. Discuss the testing process using equipment.
2. Get the testing equipment ready.

2.2.1. General testing equipment

3D Scanners

3D Scanners use optical, laser, or other methods to capture 3-dimensional information about objects. The resulting data can be used to reverse engineer an object, measure it, convert it to a digital image, and other applications.

Air Gages

Air gages use pneumatic pressure and flow to measure or sort dimensional attributes.

Calipers/DWM (Dimension and Weight Measuring) Machines

Calipers typically use a precise slide movement for inside, outside, depth or step measurements. Some caliper types are used for comparing or transferring dimensions. DWMs are modern technologies for weight and dimension in milliseconds.

Color Sensors

Color sensors register items by contrast, true color, or transparent index. True color sensors are built on one of the color patterns, most commonly the RGB model (red, green, blue).

Ultrasonic Instruments

Ultrasonic instruments use beams of high frequency, short wave signals to inspect, monitor, and measure materials and components.

Videoscopes

Videoscopes are equipped with a CCD chip and focusable lens assembly that relays images from bores and cavities to a display. The camera is embedded in the tip of the scope and uses CCD technology rather than optical relay components (borescopes) or fiber optics (fiberscopes).

2.2.2. Get the testing equipment ready

Quality checker needs to determine the testing equipment to be used for each product from the inspection checklist. He needs to collect any portable testing equipment required from the storage area.

Visual inspection is required for testing the equipment to see if it is fit for use and adjust any settings if required on the testing equipment. He/ she needs to conduct a trial to ensure that the testing equipment is ready to carry out inspection.

Tips 

To be a successful Warehouse Quality Checker

- Know the types of documentation in organization e.g. inspection checklist, damaged goods form, quarantined goods forms, etc.
- Read the risk and impact of not following defined procedures/work instructions
- Maintain records and know the implications of non-maintenance of the same
- Know the security procedures
- Learn the rules and regulations on the warehouse floor as per company's SOP

Notes 

Summary 

In this chapter we discussed the basics of quality checking and inspection processes. Daily activities of a quality checker and coordinating with supervisor. Description on testing equipment used and preparing them for testing.

Exercise

Fill in the Blanks

1. Quality checker must check the description and specifications of the material on the carton matching the one given in the _____
2. The inspection of the material at the warehouse involves _____,_____,_____,_____,_____,_____
3. The sampling technique in which each sample has an equal likelihood of being chosen is called _____
4. Quality Checker needs to understand the _____, _____ and _____ (if any) from the supervisor.
5. _____ is required for testing the equipment to see if it is fit for use and adjust any settings if required on the testing equipment.

Scan the QR code to see the related videos

https://youtu.be/ZdlHAHaeqXg

inspection

https://youtu.be/sYRUYJYOpG0

Sampling

https://youtu.be/zJTsg6-UGwM

Types of 3D Scanners

https://youtu.be/WY6Bj3f6piE

Ultrasonic Level Sensor

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3. Quality Testing

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Unit 3.1 Inbound and outbound process

Unit 3.2 Testing inbound goods

Unit 3.3 Testing outbound goods

LSC/N2328

Key Learning Outcomes

At the end of this module, participant will be able to:

1. Explain the process of deciding on the number of goods to tested based on inspection method and inbound lot size
2. List the steps to be performed after selecting the inbound goods
3. Discuss the usage of a testing equipment
4. Detail the various key checks to be done such as expiry date, product specifications, tolerances etc.
5. Determine if the inspection lot size of inbound goods has to be increased
6. Detail the steps to be performed for handling inbound goods that failed to meet product specifications and tolerances
7. Determine the number of goods to tested based on inspection method and outbound lot size
8. List the steps to be performed after selecting the outbound goods
9. Discuss the process of evaluating test results against customer specifications
10. Determine if the inspection lot size of outbound goods has to be increased
11. Detail the steps to be performed for handling outbound goods that failed to meet customer specifications

UNIT 3.1: Inbound and outbound process

Unit Objectives

At the end of this unit, participant will be able to:

1. Brief about the inbound and outbound process
2. Describe process involved in checking inbound and outbound goods.
3. Detail the steps to be performed for handling inbound and outbound goods that failed to meet product specifications and tolerances

3.1.1 Inbound and Outbound Logistics

Inbound logistics: Surrounds the activities related to procurement, storage and transportation of Raw Materials.

Outbound logistics: Involves the storage and delivery of final products to customers.

- ✓ Outbound
  - Order checking through mail or auto trigger from ERP.(Order receipt from Client through mail)
  - Order creation in the ERP
  - Pick List printing & handover to floor supervisor
  - Invoicing of the picked material in system.
  - Generation of E-way bills in the system
  - Doc finalization (Invoice + E-way bill) & hand over to floor supervisor
  - MIs preparation (Pick up TAT, Order execution % etc.)
- ✓ Inbound
  - Checking the documents (Compliance adherence – Gate Inward Process)
  - Checking PO availability in ERP & consultation with Client if any issue
  - Consultation with WM / Client (If any concern)
  - GRN of the material after confirmation from the inbound Supervisor
  - Outbound - Pick up TAT, Order execution %
  - Inbound – GRN TAT, Damage Reports

Types of documents includes pick list, BOM - (Bill of Materials), incoming truck schedules, inventory tracking sheet, product labels etc.

UNIT 3.2: Testing inbound goods

Unit Objectives

At the end of this unit, participant will be able to:

1. Discuss the steps to be performed after selecting the inbound goods.
2. Explain the steps to be performed for handling inbound goods that failed to meet product specifications and tolerances.

3.2.1 Testing inbound goods

Quality Checker needs to determine the number of goods to be tested based on the inspection method and the inbound lot size. The goods need to be tested from the inbound goods in the staging area. The latest version of reference manual needs to be referred before the inspection process is initiated. Testing needs to be prepared by fixing the sample goods onto the testing equipment or fitting the testing equipment into the sample volume (in case of liquids). The equipment used for testing needs to carry as per the inspection checklist and carry out checks on expiry date of inbound goods. Test results need to be compared with the desired product specifications and tolerances to determine if there are deviations. Damages, defects (if any) should be identified and determined if the inspection sample size needs to be increased.

Organizational guidelines including insurance procedure/LR etc. must be followed in case of damages. All samples are to be checked and goods that failed to meet the product specifications, tolerances need to be kept aside.

Supervisor must be informed about the damaged goods that need to be taken care of or moved. He should also be informed about the number of goods to be replaced by the supplier. Rest of the goods could be put away for storage in the warehouse and the details of the condition of the goods need to be noted.

3.2.2 Reporting Damages

Warehouse is an action-packed place. Goods are continuously coming in, getting stored and moving out. Despite all precaution there are still some chances of damage or breakage during warehouse operations (put away, picking, packing, returns etc.)

In case of any such incident, the associate is supposed to report immediately to the warehouse supervisor and fill in a damage report along with supervisor on immediate basis. Following figure is a small example of a damage report. The key thing in this report is to describe the event as it happened and what actions will be taken in the future to prevent it.

LOSS / DAMAGE REPORT

Format No.: Rev. No. : Rev. Date. :	☐ **Loss Report** ☐ **Damage Report**	Report No: Report Date:

Internal References

Shipment Ref. No.	Shipped Date	Order No.	Material ID	Material Qty	Values	BL No.

Description of Shipment

Destination	Nos. of Days	Insurance No.	Description of Insurance on Loss / Damage

Loss / Damage Date & Time	Responsible person	Authority	Details

Description of Loss / Damage

Item Loss / Damage

Particulars	Item Name	Qty	Value	Repair / Recovery / Loss / damage status

Investigation / Impact – Corrective Actions / Preventive Actions

Nature of Loss / Damage	Responsible Agency	Current Location of Material	Contacts

Remarks

	Prepared by
	Approved by

3.2.3 Exception Management

Receiving process of the key to efficiency and productivity of the warehouse. Any exception to this process need to be dealt with on immediate basis. There could be various kinds to exception which could happen during the process:

- Material arriving without an ASN.
- The incoming vehicle not carrying the complete set of documents.
- The quantity on the documents and physical quantity not matching.
- The product received in damaged condition.
- The goods not been properly labelled.
- Warehouse labour or equipment not available.
- Bunching of large incoming shipments.
- Warehouse running short of storage space

Exception	How to Handle
Material arriving without an ASN.	Two options - 1. Refuse cargo 2. Unload the Cargo and warn the supplier not to repeat in future
The incoming vehicle not carrying the complete set of documents.	The action needs to be taken based on the missing document. If it is a basic document like Invoice, it cannot be accepted. Alternatively, we can call/email supplier to scan and mail the documents before starting to unload.
The quantity on the documents and physical quantity not matching.	1. Inform Transporter about it. Put remarks on the LR. 2. Create the incident report. 3. Inform the supplier 4. Inform the senior management and action based on the feedback from supplier and the senior management.
The product received in damaged condition.	1. Inform Transporter about it. Put remarks on the LR. 2. Create the incident report. 3. Inform the supplier 4. Inform the senior management and action based on the feedback from supplier and the senior management.
The goods not been properly labelled.	1. Inform the supplier and ask for labels to be provided. 2. In case possible print in the warehouse and paste them.
Warehouse running short of storage space.	1. Request the Sales Team for more orders to create space. 2. Inform the higher authorities or Inventory Planner for advice.
The carton found to be open or tampered	Inform the seniors. Open the carton to check the condition of the contents. Count the number of units.
Material gets damaged during unloading Process.	Keep the units separately. Create incident report. Inform the Supervisor immediately and proceed with Insurance formalities. Decide preventive measures to avoid any such occurrence.
A liquid/Chemical leaks during unloading process.	The leak should be confined as far as possible. The leaked unit should be kept separately. In case it is a Chemical, MSDS should be immediately referred to take appropriate action. Inform the Warehouse Manager immediately about the incident. All Safety measured should be immediately taken.
Proper PPE not available	If WH Team finds that proper PPE is not available to unload the incoming cargo and unloading the cargo is a safety concern, they should inform the Supervisor and not undertake the unloading operations.
Bar code is Mutilated. Scanning not possible.	Inform the Supervisor immediately. The originating location need to be informed to provide the data so that Bar codes can be reprinted if possible. Keep such units separately.
The Putaway location already occupied	The putaway location given is already carrying cargo. The Associate should not, in such a case, unload at any other location. This will multiply the error. He should pause, hold unloading, inform the Supervisor and unload once he gets fresh instructions.

Table 3.2.3 Exception management

3.2.4. Steps involved in inbound goods that failed to meet product specifications and tolerances

1. SET CLEAR EXPECTATIONS WHEN CHOOSING SUPPLIERS

Spending some time to properly document the needs will go a long way in helping to choose the best supplier later. Evaluating such expectations with suppliers also helps to avoid needing costly corrective actions subsequently.

Product requirements

Product requirements should be considered before choosing a vendor. And the clearer the instructions are conveyed to the supplier, it is less likely to receive defective or unmarketable goods.

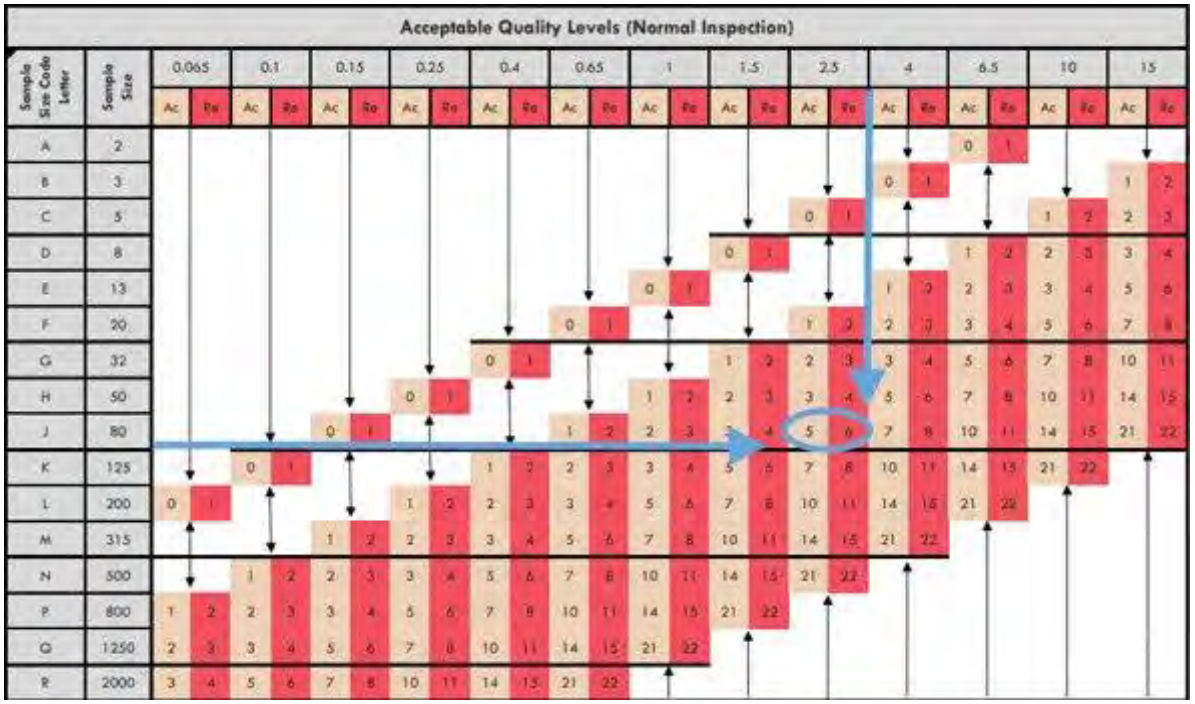
Fig 3.2.4 Steps involved in inbound goods

Product defect tolerances

The best way to categorize defects early is to create a detailed QC checklist showing analysis of possible product failure and how they should be graded (e.g. “minor”, “major” and “critical”). It’s also helpful to include photos, if possible, to differentiate defects that range in type and seriousness.

Defect breakdown		Critical	Major	Minor
1	Accessible sharp edges / points.	X		
2	Removable dirt, dust, oil or other contamination on item			X
3	Product with color variation (compare with approved sample)		X	X
4	Deformity, damage, scratch, dirt, chip, crack, dent		X	X
5	Unit wobbles	X		
6	Poor fitting with accessories		X	X
7	Missing or damaged parts / components / instruction manual / warrantee card / instruction leaflet / supply cord / others		X	

Once you've properly sorted various types of flaws into your checklist, it's time to quantify your tolerance for each. This is often expressed in terms of *acceptable quality limits*, or acceptable quality levels (AQL).



Define penalties for excessive quality defects

The suppliers may be asked for a partial or full refund for a order if a significant portion of the goods received do not pass quality check. Besides restricting the price tag to the importer for what they see as supplier's disregard, chargebacks can also reward quality improvement.

2.VERIFY NEW MANUFACTURERS OR VENDORS

Contacting multiple suppliers and debating the outlooks with them should shortlist the possibilities to work with. These will be suppliers that can provide the goods needed at a fair price while meeting your quality and delivery expectations.

Screen suppliers by evaluating their facilities

Coordinating with suppliers in person to evaluate them isn't for everyone. Depending on your experience and the number and location of the suppliers you plan to visit, doing so can be costly and ineffective. That's where hiring a local professional can be a preferred alternative.

Review product samples to further establish quality standards

You can learn a lot by evaluating a supplier's facility. Building a detailed QC checklist and reviewing it with a prospective supplier is good too. Getter their buy in and assurance that they understand and can meet your requirements is even better.

3. IDENTIFY AND ADDRESS DEFECTIVE PRODUCTS WITH INSPECTION

Raw material inspection

Part of what's often called *incoming quality control,* inspecting raw materials and components before production begins can reveal costly quality issues.

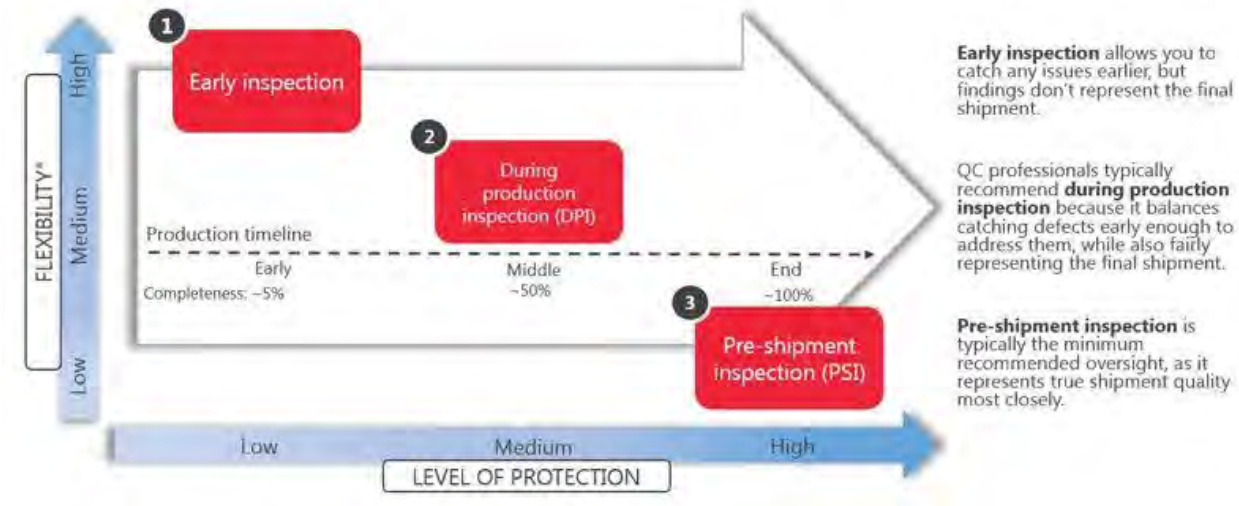
DUPRO inspection

A during production (DUPRO) inspection can help you find issues appearing in an order while production is underway. You or your inspector can pull samples of the product from different stages in production to identify any issues occurring during specific processes.
DUPRO inspection is especially helpful if you're dealing with:

- ✓ Shipments of large quantities of goods with ongoing production
- ✓ Products with numerous production stages; and
- ✓ Products susceptible to defects and other issues that can't be reworked or fixed later

Pre-shipment inspection

Pre-shipment inspection, or final inspection, occurs near the end of production, typically when 80 - 100 percent of an order of goods is finished and packaged. For many importers, pre-shipment inspection is the *bare minimum* quality oversight they want for an order.



4. PLAN FOR ANY DEFECTS THAT REMAIN IN FINISHED GOODS

Though importers' put every effort to catch and address defects early, a few quality issues may always remain in the final goods. Defects may be minor enough and in limited-enough quantities for the quality checker and customers to accept.

Account for defective products with additional inventory

The quality checker may anticipate a certain percentage of the finished goods bought may be defective or otherwise unsellable. And depending on the relationship with that supplier, they might be asked to send extra units, such as five percent of the total order size, to account for this.

Reworking on faulty goods

Product rework may be an option if the defects you find are the sort that can be remedied at the factory. But keep in mind that rework means additional handling, which can add more defects than it helps remove.

Destroy defective goods that can’t be fixed

You may have a large quantity of branded, defective products you cannot rework, sell or salvage. You don’t want to ship the goods. But you can’t just tell your supplier to discard them, either.

UNIT 3.3: Testing Outbound Goods

Unit Objectives

1. List the steps to be performed after selecting the outbound goods.
2. Discuss the process of evaluating test results against customer specifications.
3. Detail the steps to be performed for handling outbound goods that failed to meet customer specifications.

3.3.1 The Outbound Process

Outbound process is the critical process in the warehouse as it meets the need of the customer whose order must be processed or of the factory whose production must happen. Dispatch process starts with the generation of the pick list as per the order. Conducting the picking as per the pick list. Packing the picked material. Labeling the goods, arranging for the transporter to pick up the material, complete the documentation in terms of Invoicing, Lorry Receipt (LR) and other transit documents.

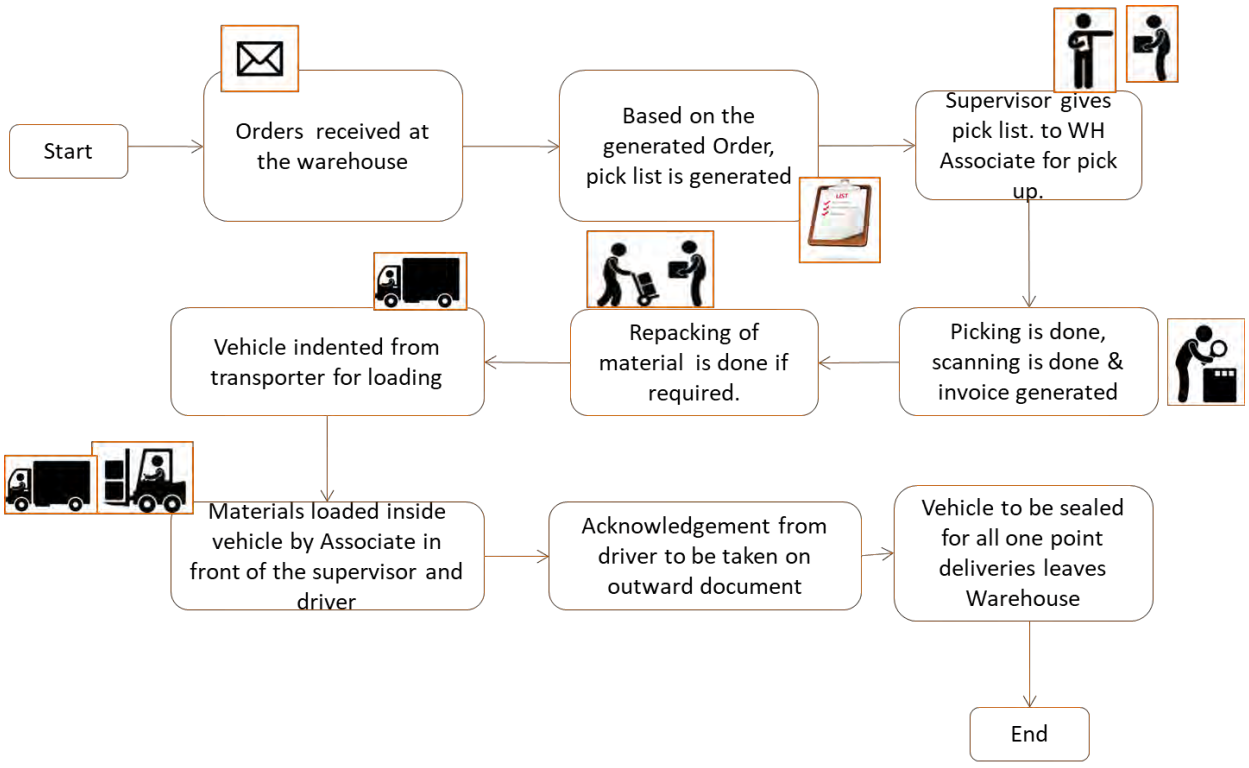


Fig. 3.2.1 Outbound process

3.3.2. Steps to improve outbound process when it fails to meet the requirements of customers

The "last mile," or the final stage of the delivery process, is included in outbound logistics. This particular step in the transportation process is frequently cited as one that can make or break client relations. Any company can gain a lot from regularly evaluating their outbound logistics performance because of its crucial role.

WHERE'S MY PRODUCT?

We agree that people and customers likewise dislike delayed product delivery or damaged products. Therefore, it can be understood that the shipping process is important not only for the customer, but also for the overall success and growth of the business. Therefore, we provide five important tips for improving logistics. The entire company benefits from effective and efficient logistics. Purchasing, procurement and supply chain managers in particular can benefit from evaluating our list.

Meeting growing demands and exceeding customer expectations includes mastering the following:

- Document and improve your operational processes.
- Open and efficient communication channels with warehouse personnel.
- Perform new technology solution assessments more often.
- Streamline B2B business processes and documentation with EDI.
- Boost customer happiness with consistent and accurate communication.

REVIEW

At the heart of logistics are seven areas we seek to do correctly every time we begin a shipment. They are known as the 7 R's of Logistics.

UPDATE PROCESSES

Start by creating a list of aspects of the current shipping process that seem to be taking a long time to ship. Next, define the steps to overcome the problems you have identified as the cause of the confusion or unexpected delay. If you don't have any internal tools available, read this post on how to derive these steps from scratch, or this guide on process optimization.

OPTIMIZE WAREHOUSE COMMUNICATION

Improve communications with critical warehouse personnel.

- Consistent Rapid response from warehouse is critical
- If warehouse supervisor is not reachable in moments, if not minutes, change that
- Mailing is a backup, text apps also should be used
- A real discussion helps remove ambiguity and gives a better chance to answer immediately

IMPROVE TECHNOLOGY

Use Technology to locate items and resources quicker.

- Every business must have a dependable way to identify accurately where each item is positioned
- Use latest technology devises.
- Devices combined with IOT will provide a return on capital spending
- Anti-tech policies will not persist to work in a long run
- Automate tasks that reduce human error to conserve time and expenses.

EDI

Make use of Electronic Data Interchange (EDI) which is a specification used by most new age carriers

- Reduces the difficulty of using paper-based system
- More efficient at storing and tracing documents
- Cost and time effective
- Major upgrade for lowering expenses and work when developing processes

SIMPLICITY

Plan on maintaining your customers updated always.

- Keep customer informed throughout the product transport
- Consistent updates eases customer.
- Transparency develops confidence and business interactions
- Heed key stages in the distribution method
- Allows consignment tracking utilizing smartphone and a tracking code
- Consignment tracking via SMS

3.3.3 Testing outbound goods

Quality Checker needs to determine the number of goods to be tested based on the inspection method and the outbound lot size. The goods need to be tested from the outbound goods in the staging area. The latest version of reference manual needs to be referred before the inspection process is initiated. Testing needs to be prepared by fixing the sample goods onto the testing equipment or fitting the testing equipment into the sample volume (in case of liquids). The equipment used for testing needs to carry as per the inspection checklist and carry out checks on expiry date of outbound goods. Test results need to be compared with the customer specifications and tolerances to determine if there are deviations. Damages, defects (if any) should be identified and determined if the inspection sample size needs to be increased. All samples are to be checked and goods that failed to meet the customer specifications, tolerances need to be kept aside.

Supervisor must be informed about the number of replacement goods that are required from the warehouse to complete the customer order. Other goods must be moved, packed and loaded onto trucks for shipping to customers.

Damaged goods that need to be taken care of or moved to be informed to supervisor and details of the condition of the goods should be noted down.

Tips

To be a successful Warehouse Quality Checker

- knowledge of suppliers and customers along with their respective products.
- organizational procedure for dealing with goods that failed the test.
- escalation matrix for reporting identified problems
- implications of improper quality inspection to the company
- knowledge of the desired specifications and tolerances for different goods.
- knowledge of different types of tests to be carried out on different products.

Notes

Summary

In this chapter we discussed the inbound and outbound processes. Testing of inbound goods and reporting process to supervisor were described. Handling damage and exception goods as per SOP. Outbound goods inspection process and we saw the steps to improve customer satisfaction.

Exercise

True and False

1.Inbound logistics surrounds the activities related to procurement, storage and transportation of Raw Materials.

2.Outbound logistics does not involve storage and delivery of final products.

3. Supervisor must be informed about the damaged goods that need to be taken care of or moved.

4. Damaged goods that need to be taken care of or moved to be informed to supervisor and details of the condition of the goods should be noted down.

5. Quality Checker should not determine the number of goods to be tested based lot size.

Scan the QR code to see the related videos

https://youtu.be/nz69i6l7SzI

Inbound Process

https://youtu.be/sGFweY53CPI

Outbound Operations

https://youtu.be/pspYPdFLmN4

inbound logistics

https://youtu.be/NIv-yDtgQrw

Logistics management

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Skill Development
Corporation
Transforming the skill landscape

4. Post Quality Assessment

LSC
Logistics Skills Council

Unit 4.1 - Housekeeping

Unit 4.2 - Post-Assessment Activities

LSC/N9904

Key Learning Outcomes

2. Explain the importance of cleaning the testing equipment
3. List the number of records to be maintained such as type of goods, lot size, inspection method etc.
4. Explain the escalation matrix for reporting deviation
5. Detail the necessary documents such as damaged goods form, inspection checklist, quarantined goods etc.
6. Report deviation as per the escalation matrix

UNIT 4.1: Inspect Housekeeping

Unit Objectives

At the end of this unit, participant will be able to:

1. Describe the importance of safety
2. Identify the consequence of non-compliance with safety standards
3. Explain the difference in safety requirements for different types of materials
4. Brief about the importance of housekeeping in warehouse
5. Identify the appropriate PPE for housekeeping
6. Get knowledge on the dos and don'ts in the usage of housekeeping materials

4.1.1 Housekeeping

Why is housekeeping activity required for a warehouse quality checker?

Good housekeeping is a foundation of safety in every workspace of every workplace. However, it's particularly important in the warehouse where a variety of workers are doing a variety of jobs with a variety of equipment. A warehouse quality checker is a person who spends most of the time walking around the warehouse area and maneuver between the storage location all the time. Thus, as a responsible person a checker has the chance to inspect the area which need attentions.

Workplace Housekeeping - Basic Guide

Why should we pay attention to housekeeping at work?

Effective housekeeping can eliminate some workplace hazards and help get a job done safely and properly. Poor housekeeping can frequently contribute to accidents by hiding hazards that cause injuries. If the sight of paper, debris, clutter and spills is accepted as normal, then other more serious health and safety hazards may be taken for granted. Housekeeping is not just cleanliness. It includes keeping work areas neat and orderly; maintaining halls and floors free of slip and trip hazards; and removing of waste materials (e.g., paper, cardboard) and other fire hazards from work areas. It also requires paying attention to important details such as the layout of the whole workplace, aisle marking, the adequacy of storage facilities, and maintenance. Good housekeeping is also a basic part of accident and fire prevention. Effective housekeeping is an ongoing operation: it is not a hit-and-miss cleanup done occasionally. Periodic "panic" cleanups are costly and ineffective in reducing accidents

What is the purpose of workplace housekeeping?

Poor housekeeping can be a cause of accidents, such as:

- Tripping over loose objects on floors, stairs and platforms
- Being hit by falling objects
- Slipping on greasy, wet or dirty surfaces
- Striking against projecting, poorly stacked items or misplaced material
- Cutting, puncturing, or tearing the skin of hands or other parts of the body on projecting nails, wire or steel strapping

To avoid these hazards, a workplace must "maintain" order throughout a workday. Although this effort requires a great deal of management and planning, the benefits are many.

What are some benefits of good housekeeping practices?

Effective housekeeping results in:

- Reduced handling to ease the flow of materials
- Fewer tripping and slipping accidents in clutter-free and spill-free work areas
- Decreased fire hazards
- Lower worker exposures to hazardous substances (e.g. dusts, vapours)
- Better control of tools and materials, including inventory and supplies
- More efficient equipment cleanup and maintenance
- Better hygienic conditions leading to improved health
- More effective use of space
- Reduced property damage by improving preventive maintenance
- Less janitorial work
- Improved morale
- Improved productivity (tools and materials will be easy to find)

What are the elements of an effective housekeeping program?

Dust and Dirt Removal In some jobs, enclosures and exhaust ventilation systems may fail to collect dust, dirt and chips adequately. Vacuum cleaners are suitable for removing light dust and dirt. Industrial models have special fittings for cleaning walls, ceilings, ledges, machinery, and other hard-to-reach places where dust and dirt may accumulate.

Fig 4.1.1 dust removal

Fig 4.1.2 Dirt Removal

Special-purpose vacuums are useful for removing hazardous substances. For example, vacuum cleaners fitted with HEPA (high efficiency particulate air) filters may be used to capture fine particles of asbestos or fiberglass.

Dampening (wetting) floors or using sweeping compounds before sweeping reduces the amount of airborne dust. The dust and grime that collect in places like shelves, piping, conduits, light fixtures, reflectors, windows, cupboards and lockers may require manual cleaning.

Compressed air should not be used for removing dust, dirt or chips from equipment or work surfaces.

4.1.2 Employee Facilities

Employee facilities need to be adequate, clean and well maintained. Lockers are necessary for storing employees' personal belongings. Washroom facilities require cleaning once or more each shift. They also need to have a good supply of soap, towels plus disinfectants, if needed.

Fig:4.1.3 Employee facilities

Fig:4.1.4 Employee facilities

If workers are using hazardous materials, employee facilities should provide special precautions such as showers, washing facilities and change rooms. Some facilities may require two locker rooms with showers between. Using such double locker rooms allows workers to shower off workplace contaminants and prevents them from contaminating their "street clothes" by keeping their work clothes separated from the clothing that they wear home.

Smoking, eating or drinking in the work area should be prohibited where toxic materials are handled. The eating area should be separate from the work area and should be cleaned properly each shift.

Surfaces

Floors: Poor floor conditions are a leading cause of accidents so cleaning up spilled oil and other liquids at once is important. Allowing chips, shavings and dust to accumulate can also cause accidents. Trapping chips, shavings and dust before they reach the floor or cleaning them up regularly can prevent their accumulation. Areas that cannot be cleaned continuously, such as entrance ways, should have anti-slip flooring. Keeping floors in good order also means replacing any worn, ripped, or damaged flooring that poses a tripping hazard.

Fig 4.1.5 Surfaces

Fig 4.1.6 Surfaces

Walls: Light-coloured walls reflect light while dirty or dark-coloured walls absorb light. Contrasting colours warn of physical hazards and mark obstructions such as pillars. Paint can highlight railings, guards and other safety equipment, but should never be used as a substitute for guarding. The program should outline the regulations and standards for colours

Fig 4.1.7 Walls

Fig 4.1.8 Walls

Maintain Light Fixtures

Dirty light fixtures reduce essential light levels. Clean light fixtures can improve lighting efficiency significantly.

Aisles and Stairways

Aisles should be wide enough to accommodate people and vehicles comfortably and safely. Aisle space allows for the movement of people, products and materials. Warning signs and mirrors can improve sight-lines in blind corners. Arranging aisles properly encourages people to use them so that they do not take shortcuts through hazardous areas.

Fig 4.1.10 Aisles and Stairway

Fig 4.1.11 Stairway

Keeping aisles and stairways clear is important. They should not be used for temporary “overflow” or “bottleneck” storage. Stairways and aisles also require adequate lighting

Spill Control

The best way to control spills is to stop them before they happen. Regularly cleaning and maintaining machines and equipment is one way. Another is to use drip pans and guards where possible spills might occur. When spills do occur, it is important to clean them up immediately. Absorbent materials are useful for wiping up greasy, oily or other liquid spills. Used absorbents must be disposed of properly and safely

Fig 4.1.12 Spill ControL

Fig 4.1.13 Spill ControL

Tools and Equipment

Tool housekeeping is very important, whether in the tool room, on the rack, in the yard, or on the bench. Tools require suitable fixtures with marked locations to provide orderly arrangement, both in the tool room and near the work bench. Returning them promptly after use reduces the chance of being misplaced or lost. Workers should regularly inspect, clean and repair all tools and take any damaged or worn tools out of service.

Maintenance

The maintenance of buildings and equipment may be the most important element of good housekeeping. Maintenance involves keeping buildings, equipment and machinery in safe, efficient working order and in good repair. This includes maintaining sanitary facilities and regularly painting and cleaning walls. Broken windows, damaged doors, defective plumbing and broken floor surfaces can make a workplace look neglected; these conditions can cause accidents and affect work practices.

So it is important to replace or fix broken or damaged items as quickly as possible. A good maintenance program provides for the inspection, maintenance, upkeep and repair of tools, equipment, machines and processes

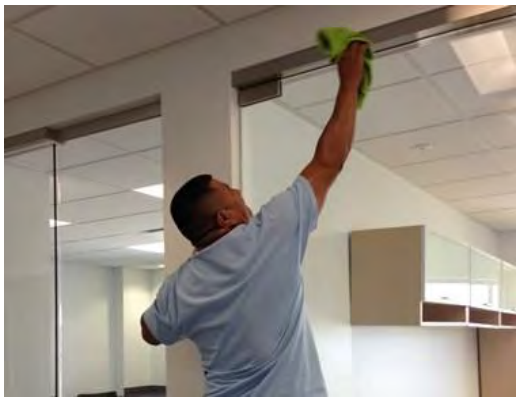

Fig 4.1.14 Maintenance

Fig 4.1.15 Maintenance

Waste Disposal

The regular collection, grading and sorting of scrap contribute to good housekeeping practices. It also makes it possible to separate materials that can be recycled from those going to waste disposal facilities

Fig 4.1.16 Waste Disposal

Fig 4.1.17 Waste Disposal

Allowing material to build up on the floor wastes time and energy since additional time is required for cleaning it up. Placing scrap containers near where the waste is produced encourages orderly waste disposal and makes collection easier. All waste receptacles should be clearly labelled (e.g., recyclable glass, plastic, scrap metal, etc.).

Storage

Good organization of stored materials is essential for overcoming material storage problems whether on a temporary or permanent basis. There will also be fewer strain injuries if the amount of handling is reduced, especially if less manual materials handling is required. The location of the stockpiles should not interfere with work but they should still be readily available when required. Stored materials should allow at least one metre (or about three feet) of clear space under sprinkler heads.

Stacking cartons and drums on a firm foundation and cross tying them, where necessary, reduces the chance of their movement. Stored materials should not obstruct aisles, stairs, exits, fire equipment, emergency eyewash fountains, emergency showers, or first aid stations. All storage areas should be clearly marked.

Flammable, combustible, toxic and other hazardous materials should be stored in approved containers in designated areas that are appropriate for the different hazards that they pose. Storage of materials should meet all requirements specified in the fire codes and the regulations of environmental and occupational health and safety agencies in your jurisdiction.

Some of the common risks that are identified by a warehouse picker are as follows

Fig 4.1.18 stock rack beam damage

Fig4.1.19 Storage rack beam damage

One have to ensure that all the machines, materials and the work place surface are in good conditions and safe for working. For industrial usages there are number of housekeeping materials are available. Some of them are given below for reference

Fig 4.1.20 Rope obstructing workforce

Different materials have different form of nature, like some might be very sensitive to electricity and other chemical agents might have other effect while using them. In such case it is mandatory to use required personal protective equipment while handling it.

After equipping yourself and while carrying out the housekeeping activity, inform other people on the shop floor that cleaning process is on progress by placing some caution signages.

Fig 4.1.21 House Keeping Material

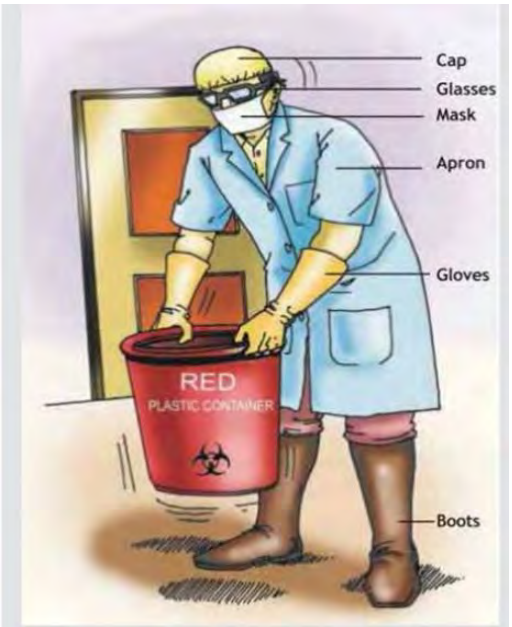

Fig 4.1.22 PPE for House Keeping

Fig 4.1.23 Safety Signages

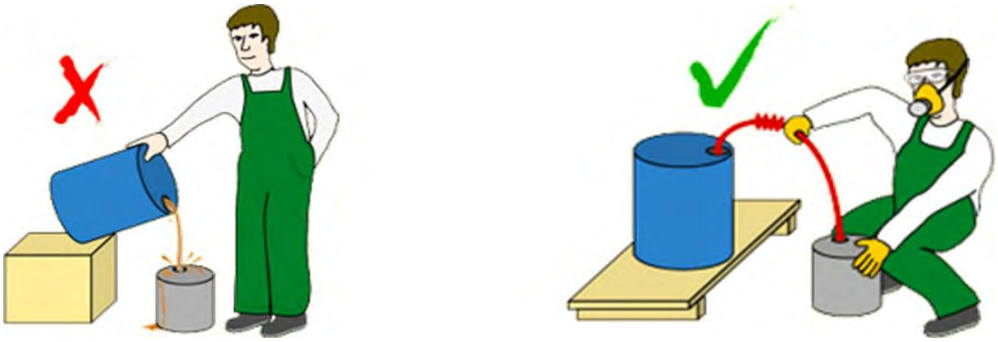

Fig 4.1.24 Do's and Dont's in Housekeeping

Use correct cleaning methods for the respective work area, the type of soiling and the surface because sometime even incorrect housekeeping might cause risks.

Fig 4.1.25 Do's and Dont's in Maintenance

Fig 4.1.2 6 Do's and Don'ts in Housekeeping

Any accidental damage if any caused while carrying out the work should be dealt. Report to the appropriate person any difficulties in carrying out your work and if any additional cleaning is required that is outside one's responsibility.

It is most important to know that certain cleansing products, which are safe when used alone, can sometimes cause unsafe fumes or other chemical reactions when mixed with other products. It is never recommend mixing two different drain cleaners or even using one right after the other. Please read the direction given for mixing particular products with another before using it.

The most important thing is to dispose the collected waste in a proper place that doesn't affects environments and to human in appropriate manner. Also it is equally important to dispose the used and unused solutions according to the manufacturer's instructions in a safe place.

Fig 4.1.27 Best Practices in Disposal

Fig 4.1.2 8 Returning House Keeping Material

Finally after completing the cleaning process the picker should return the equipment, materials and personal protective equipment that were used to the right places allocated for storing housekeeping materials making sure they are clean, safe and securely stored for future uses.

4.1.3 Inspection of Work Area

A Warehouse is an active place and its fast-paced nature often leads to injuries. The safety management program should ensure safety of the employees at all times.

The warehouse must continually inspect all areas of the warehouse, identify unsafe operating conditions and properly correct them for safe operation. Tools and equipment should be checked, cleaned and repaired regularly, and damaged or worn tools should not be used.

- The stored materials must not block corridors, stairs, exits, fire extinguishers, emergency wells, emergency showers or first aid stations. All storage areas must be clearly marked.
- Check the fire hoses and fire extinguishers regularly. Remove all obstacles and make these articles available immediately. Only personnel trained in appropriate firefighting methods should handle this equipment.
- Ensure that approved containers are used to store flammable, combustible, toxic and other hazardous materials in designated areas.
- Make sure that all power cables are disconnected by holding the connector and pulling it gently. Never pull on the rope. If the power cord is broken or the cables are exposed, take it out of service.

- Warehouse should not store highly combustible chemicals in a warehouse. There should be a separate location for it.
- Inspect the dock area daily to ensure that fire extinguishers are not blocked or damaged.
- Check the conveyor belts regularly to ensure that they are not damaged and in a safe condition.
- Check the sprinkler systems every month and conduct flow and alarm testing. Document inspections.
- If pulleys or hoists are used lift heavy material, inspect pulley and hoisting slings. Ensure that hook latches and appropriate PPE are available.
- Inspect all ladders on weekly basis for any damage. All types of ladders, whether wooden, metal, or fiberglass, should be checked frequently for possible defects resulting from prolonged wear and necessary repairs and/or replacements must be made.

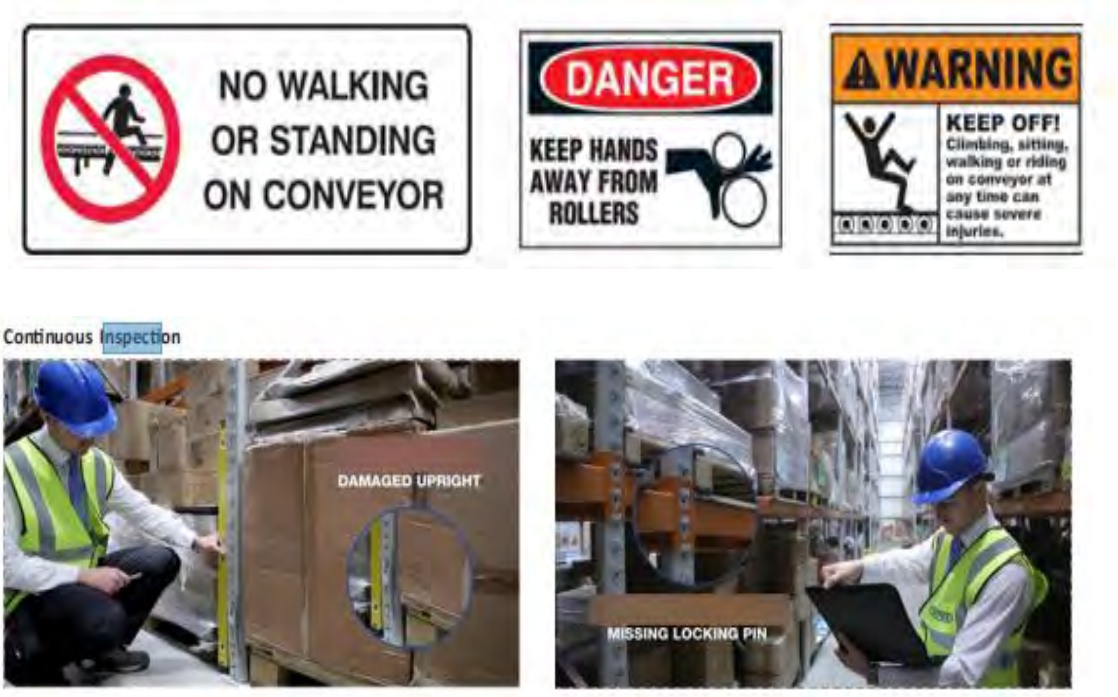

Fig 4.1.29 Inspection of Work area and Equipment

General unsafe working environment

- Slip or trip of the employee caused by spillages or wet floors.
- Uncovered power cords or hoses.
- Working overtime, much beyond scheduled hours can also cause accident due to fatigue.
- Lack of proper ventilation.
- Broken windows, damaged doors, defective plumbing and broken floor surfaces can cause accidents and affect work practices.

- No proper usage of PPE by the employees while carrying out warehousing activities. It is Warehouse quality checker's responsibility to ensure that all the workers are using all the required Personal Protective Equipment (PPE) for safe working.

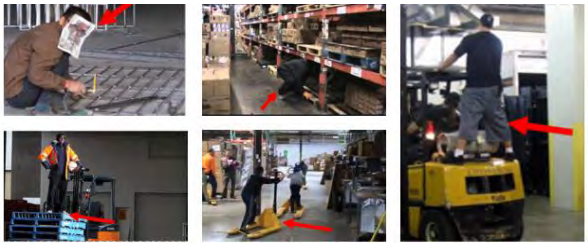

Fig 4.1.30 Unsafe work practice

Notes

UNIT 4.2: Post-Assessment Activities

Unit Objectives

At the end of this unit, participant will be able to:

1. Discuss Handling/ storing testing equipment post inspection.
2. Describe how to do documentation and reporting to management

4.2.1 Handling/ storing testing equipment

Quality checker needs to ensure that the housekeeping staff follow the below steps:

- Move the goods that failed to meet requirements to the quarantine area for rework or for disposal.
- clean the testing equipment as well as any spillage or breakages that occurred while testing.
- return any portable testing equipment to the storage area

Carry out a basic visual inspection of the work area to ensure that it is clean and safe.

4.2.2 The Pre- and Post-Operation Equipment Inspection

The Pre- and Post-Operation Equipment Inspection Checklist

- Check equipment for damage or unusual wear and clear away remains. A machine can be shambled by the inadequacies of the tires or tracks it sits on. Detect and report any damage or potential damage.
- Check fluid levels – engine and hydraulic oil, diesel and diesel exhaust fluid (DEF), and coolant. Liquids are the essence of each machine and require particular levels to operate properly. A sudden dip in liquid levels may point to any number of problems with the machine that require urgent action (blown hoses, leaking filter, etc.).
- Clear any accrued debris around the engine components. The engine is made of moving parts and belts that generate heat and friction – and systems designed to cool the engine compartment require room to breathe. It's important to check and remove any clutter or material from the jobsite that may have found its way into the engine compartment.

4.2.3 Preparing a daily inventory report and highlighting discrepancies

The physical count is always a blind count. The Warehouse quality checker will fill in the SKU code and details and handover the inventory sheet to the Warehouse Supervisor and Associate.

The Supervisor will conduct the count and bring back the sheet to the Warehouse quality checker. He will now fill in the ERP stock from the system for each SKU.

The system stock will be mapped against the physical counted stock.

In case of any variance, the Warehouse quality checker will ask the Supervisor to recount the material. If the difference persists, the Warehouse quality checker and supervisor will report to the Warehouse Manager for further action.

Notes

Scan the QR code to see the related videos

https://youtu.be/qPlRi-RWNlY
House Keeping

https://youtu.be/KtAf3JlbKFI
Employee Facilities

https://youtu.be/tMbJ-Mn3ugE

testing equipment

https://youtu.be/6Y_VT14aYSE

Equipment Inspection

Summary

Important concepts of post inspection processes are discussed in this chapter. How to check housekeeping activities and cleaning work floor are explained in this chapter. We've discussed Cleaning and storing of testing equipment.

Exercise

Multiple Choice Questions

1. Which of the following is not a result of House Keeping?

    A. Loss of materials
    B. Fewer tripping and slipping accidents in clutter-free and spill-free work areas
C. Decreased fire hazards
D. Lower worker exposures to hazardous substances (e.g. dusts, vapors)

2. Returning tools promptly to storage after use reduces the chance of being _____.

    A. misplaced or lost
    B. greasy
    C. malfunctioning
    D. discoloring

3. The physical count is always a _____.

    A. Right number
    B. Writing alphabets
    C. blind count
    D. wrong method

4. If the difference persists in stock, the Warehouse quality checker and supervisor will report to the _____for further action.
    A. Loading executive
    B. Warehouse Manager
    C. Housekeeping staff
    D. MHE operator

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Unit 5.1 - Implementing Safety in Warehouse

Unit 5.2 - Handling Dangerous and Hazardous Goods

Unit 5.3 - 5S Concept

Unit 5.4 - Managing Breach of Safety, Accidents and Emergency Situations

LSC/N9905

Key Learning Outcomes

At the end of this module, participant will be able to:

1. Discuss the importance of safety.
2. Explain how to ensure safety during various warehouse activities.
3. Describe how to maintain safe working conditions.
4. Demonstrate the procedure for handling hazardous goods.
5. Explain the concept and implementation of 5S in the warehouse.
6. Describe how to manage any breach of safety.

UNIT 5.1: Implementing Safety in the Warehouse

Unit Objectives

At the end of this unit, participant will be able to:

1. Discuss the criticality of safety.
2. Describe the various safety precautions to be undertaken.
3. Explain the importance of training to warehouse team.

5.1.1 Safety and its Criticality

"Nothing is more important than the safety of the people and goods stored inside the warehouse".

Working in warehouse creates several health and safety risks. If not controlled, it may lead to accidents, injury to people, illness, high employee turnover, lost working hours and at worst even fatalities. Safety rules and procedures are often disregarded to save money, cut corners, lack of focus or insufficient time. Well implemented safety procedures lead to minimum risk of injury, fewer disruptions, lesser absenteeism, higher employee satisfaction and finally better productivity.

As discussed in earlier chapters, companies store their finished goods inventory in the warehouse, they store raw materials on the manufacturing side. The nature of the products stored in the warehouse determine the rules and practices to be adopted to save the people from injuries or mishaps.

As a corporate, companies are also officially bound to implement and maintain safety procedures. The safety procedures should protect the workers from any danger and ensure that they operate in a safe and comfortable environment. However, the companies should maintain safety procedures not just for legal compliance; well implemented safety rules indicate the concern the company carries for its employees well-being.

Safety Rules in a Warehouse -

1. Ensure safety equipment is used at all times.
2. Eliminate any potential safety hazards.
3. Clearly label designated hazardous zones.
4. Always use safe lifting techniques.
5. Provide training and refresher courses.
6. Promote safety awareness in the warehouse.

5.1.2 Safety Procedures to be observed in a Warehouse

A. Vehicle Safety -

When forklifts and reach trucks are used in the warehouse, it is essential to prevent any injury due to impact or crush. It is observed that most of the times the accidents happen while reversing. Following are some of the safety procedures for using Forklifts:

Fig. 5.1.1. Rules for Forklift Safety

B. Slips, Trips, and Falls -

Various reports indicate slips and falls are the single biggest reason for work related injuries across the world.

To prevent slips, trips, and falls, company should follow the tips mentioned:

Fig. 5.1.2. Rules for Slips

C. Lifting -

Lifting can be done both manually and using MHE. Both the situations pose safety hazards if not done properly.

To minimize lifting risks, Company should follow the tips mentioned

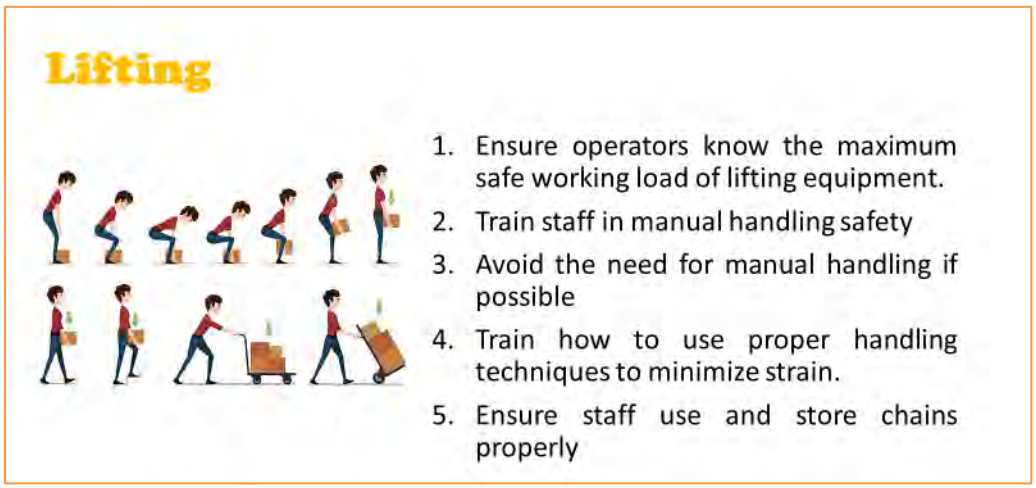


Fig. 5.1.3. Rules for Lifting

D. Fire Safety -

Fire is the biggest hazard warehouse faces. Along with loss of valuable material stored in the warehouse, Fire can even lead to injuries or fatalities to the people working there.

To maintain fire safety, company should follow the tips mentioned

Fig. 5.1.4. Rules for Fire Safety

E. Charging Stations -

Charging stations in warehouse facilities are used to recharge forklifts, BOPT and other power equipment. If proper guidelines are not followed, fires and explosions can occur.

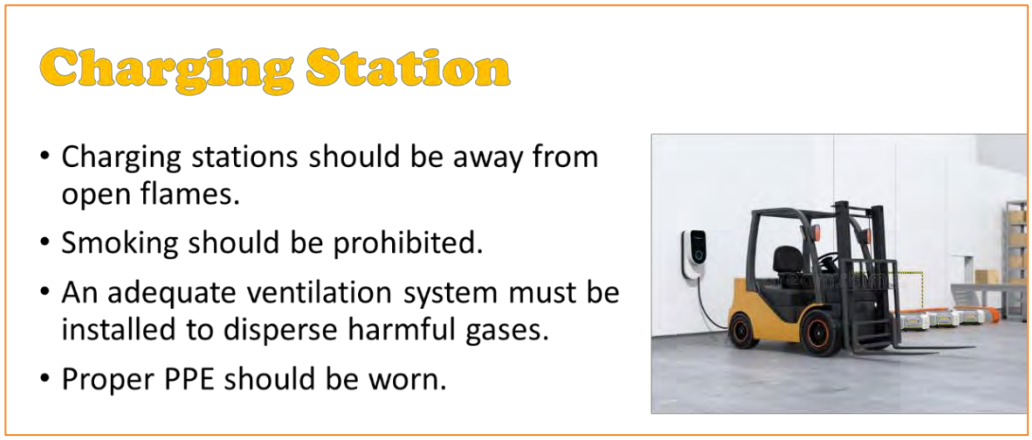


Fig. 5.1.5. Rules for Charging Station

F. Conveyors -

Conveyor equipment is commonly used in warehouse facilities to move goods within the premise. However, conveyors pose serious dangers to workers including getting caught in equipment and being struck by falling objects. To remain safe, it is important to:

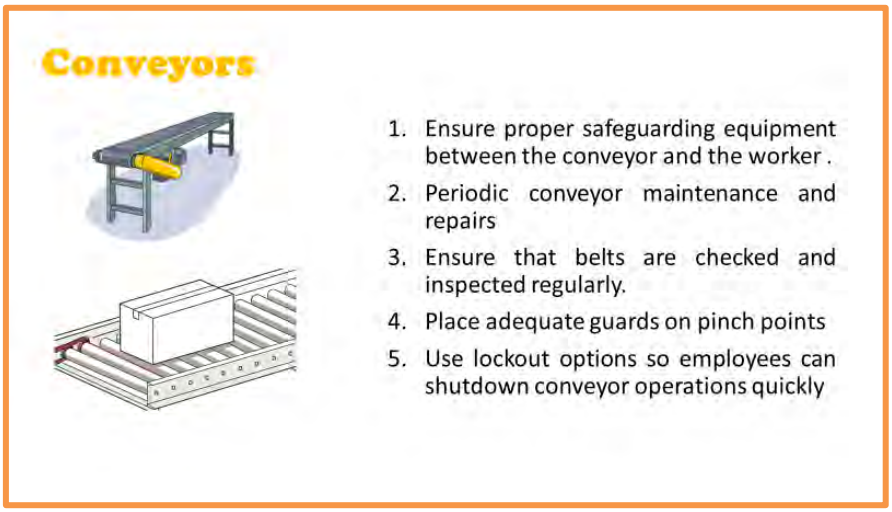


Fig. 5.1.6. Conveyors

G. Docks -

Warehouses use docks to load and offload material from the trucks. The hazards that exist with docks include driving forklifts off docks and equipment accidents involving products improperly placed that fall on employees.

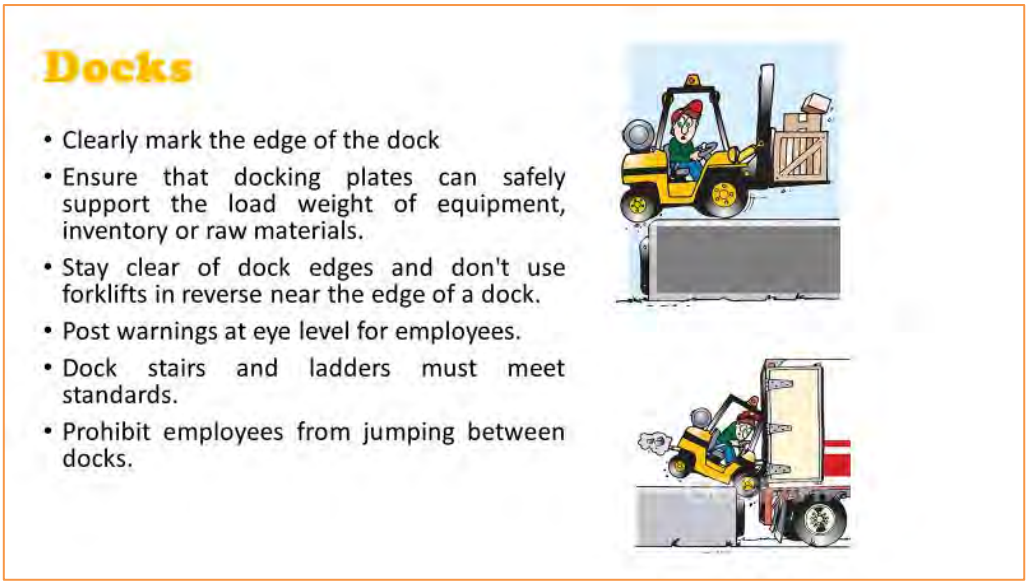


Fig. 5.1.7. Docks

Besides the above precautions, two important points in safety are usage of PPE and employee training.

H. Personal Protective Equipment -

Employees need to wear PPE all the time while working in the warehouse. If PPE is not worn and an accident occurs, it can lead to serious injuries or even fatalities.

It is seen in previous sections PPE to be used to protect head, fingers, feet, eyes and the rest of the body.

One need to assess the risks in the warehouse to determine which type of PPE the associates need to wear.

I. Training to Staff -

Sense of awareness about safety is the most important factor in safety implementation. Most of the companies run formal safety training programs where all safety related measures are explained and formally practiced. There are regular refresher courses to further reinforce the concept of safety.

- Ensure that all employees are trained and carry up to date knowledge on safety procedures

- Employee should be educated about the consequences which originate by following unsafe work practices
- Any employee not following safety procedures should be strongly dealt including terminating services if required.
- All staff members should be encouraged to be constantly aware of what is around them and to communicate where they are to ensure the avoidance of collision accidents.
- Companies may implement incentives for zero-accidents and zero near-misses.

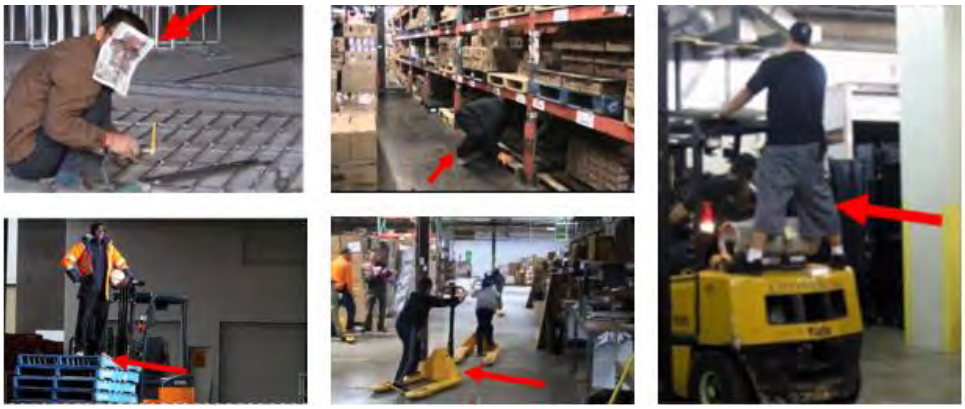


Fig. 5.1.8. Unsafe work practices

Notes

UNIT 5.2: Handling Dangerous and Hazardous Goods

Unit Objectives

At the end of this unit, participant will be able to:

1. Classify the hazardous materials.
2. Explain the concept of safety data sheet.
3. Describe the various do's and don'ts in handling hazardous chemicals.

5.2.1 Handling Procedures for Dangerous Goods

Dangerous and hazardous materials require special handling and attention whenever they are stored in warehouse. A specific Standard Operating Procedure (SOP) is set for each type of such cargo and strict adherence to it to ensure safety of the employees and the warehouse. Following are some of the key points that should be taken care of when dangerous goods are kept in warehouse. Material Safety Data Sheets (MSDS) and container labels will be the basis of reference to conduct the evaluation

All articles or substances considered as dangerous goods must be identified, classified, and assigned to one of the standard names used in the transport and storage of dangerous goods.
Warehouse must identify the material which cannot be stored together and create separate designated places for them.

Hazardous materials are generally assigned to one or more of the following classifications.

- Flammable Liquid - any liquid having a flash point below 37 degrees Centigrade.
- Combustible Liquid - any liquid having a flash point between 37 and 94 degrees Centigrade and the liquid produces enough vapors to ignite if exposed to an ignition source.
- Flammable Solid - a substance that can cause a fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, will burn so vigorously that it creates a hazard.
- Oxidizer - a substance that readily yields oxygen to stimulate the combustion of organic matter.
- Corrosive - a liquid that corrodes steel (SAE 1020) at a rate greater than 0.250 inches at a test temperature of 130 degrees Fahrenheit or has a PH less than 2 or greater than 12.5.
- Organic Peroxide - an organic compound containing the chemical bond, oxygen joined to oxygen.
- Poison - a substance so toxic that it presents a risk to life or health.
- Compressed Gas - a substance in gas or liquid form contained in a vessel under pressure. This includes cylinders, lecture bottles, and aerosol cans. These substances may be flammable, non-flammable, or poisonous.

- Cryogenics - substances that are extremely cold such as liquid nitrogen, liquid helium, and dry ice. These substances may also become asphyxiation hazards if spilled in non-ventilated areas.
- Radioactive - any material having a specific activity greater than 0.002 microcuries per gram (uCi/g).
- Biomedical - tissues, organs, and blood from humans and primates.

Fig. 5.2.1. Dangerous goods classification

Safety Data Sheet -

Safety Data Sheet (SDS), Material Safety Data Sheet (MSDS) or Product Safety Data Sheet (PSDS) is a document that contains information on safety and health protection when working with various substances and products.

• Safety data sheet (formerly known as material safety data sheet) contains information such as the properties of each chemical. Risks to health, and the environment; Safety measures; and precautions when handling, storing, and transporting the chemical.

Provides clues for each chemical:

1. Personal protective equipment (PPE)
2. First aid procedure
3. Spill cleaning procedure

All employees must be trained to read, understand, and access safety data sheets.

The safety rules and procedures to be followed in a hazardous cargo warehouse:

Hazardous material is one which is capable of producing effects such as fire, explosion, sudden release of pressure and may cause acute health effects like burns, injuries, convulsions or even organ damage. In spite of several challenges hazardous material is required in various stages of manufacturing and need to be stored in a warehouse.

Following are some of the suggestions for handling hazardous material in the warehouse:

Have the right procedures and that works according to the current regulations -

Procedures are made to ensure that the company requirements are met in warehouse. The requirements for safety, to prevent cargo damage, to ensure correct and punctual delivery of goods from warehouse. Meeting all of these requirements is what makes procedures right. Ensure the warehouse is operating the right procedures for cargo and organization requirements.

Staff needs to be certified for handling dangerous goods:

The storage and transport of dangerous goods is a complex practice. It requires detailed understanding and knowledge of the relevant regulations.

The people in the warehouse need to the have the knowledge and skills for dealing with the transportation and security of hazardous materials/dangerous goods -

Only proper trained staff is able to successful apply rules concerning the transport and storage of dangerous goods. Trained staff with the right knowledge and skills know about the risks involved and how to work with these risks, and without training it is extremely difficult to achieve a detailed understanding of the regulations.

Some hazardous goods need to be stored separately as per their classification:

Many dangerous goods are incompatible with other substances. Knowing this is one thing, working in a way that ensures these substances are safely and separately stored is something else. It is a legal requirement that dangerous goods which are not compatible with other substances are stored and handled separately. Avoid interaction that creates serious risks for incidents. A good warehouse and organization know this and uses a barrier or a suitable separation distance to avoid problems.

Documentation should be up-to-date and available to staff at all locations to enable them to perform their role in the quality system:

The people in the warehouse should be aware of the cargo and goods that are stored at any minute. Nobody expects an incident involving dangerous goods but in case it happens, it is better be prepared. Having precautionary statements near the dangerous goods everybody knows that to do when an incident happens. And with proper work instruction cards every employee, even those who are less trained, can follow instruction. Avoid a surprise and have documentation complete.

Below is a ready checklist for associate to refer while conducting the inspection for dangerous /hazardous cargo in warehouse –

Hazardous Material Check List		
1	Product Name	
2	Hazard Class	
3	PPE required to handle	
4	Engineering Controls/ Ventilation	
5	Special Handling Procedures	
6	Storage Requirements	
7	Special Containment	
8	Accident Procedures	
9	Waste Disposal	
10	Special Precautions	
11	Decontamination	
12	Designated Areas	
13	Approved by	

Fig. 5.2.2. Checklist for Dangerous cargo inspection

Notes

UNIT 5.3: 5S Concept

Unit Objectives

At the end of this unit, participant will be able to:

1. Explain the concept of 5S at workplace.

5.3.1 5S at Workplace

5S is a system for organizing workplaces that allows employee to work efficiently, effectively and safely. This system is designed to put everything-in-its-place and keep the workplace clean so that people can make their jobs easier without wasting time or risk of injury.

The term 5S comes from five Japanese words:

- Seiri
- Seiton
- Seiso
- Seiketsu
- Shitsuke

In English, these words are often translated to:

- Sort
- Set in Order
- Shine
- Standardize
- Sustain

Each S represents part of a five-step process that can improve the overall function of the operating location.

The 5S methodology offers many benefits, including:

- Low cost
- High quality
- Increased efficiency
- Increase staff satisfaction
- A safer work environment

5S involves assessing all available areas, deleting unnecessary items, organizing things logically, performing cleaning tasks, and maintaining this cycle. Organize, clean, repeat. Let's take a closer look at each part of the 5S.

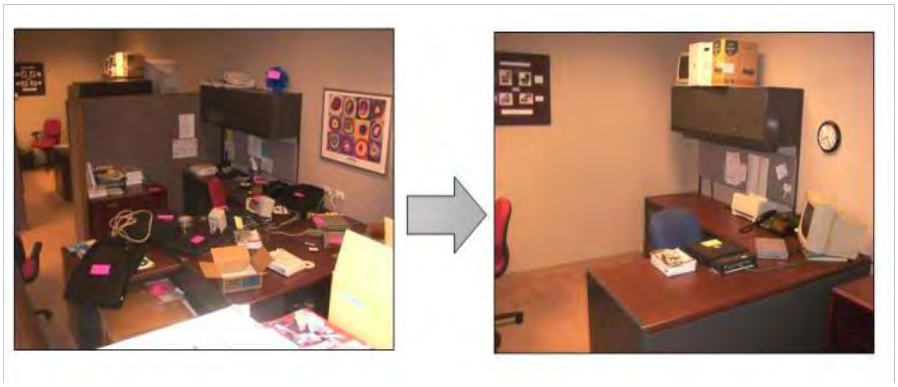


Fig. 5.3.1. 5S at Workplace

Fig.5.3.2. 5S at Workplace

1. **Sorting -** The act of discarding away all unwanted, unnecessary, and unrelated materials in the warehouse.

- Classify & sort out
- Remove unnecessary items
- Store as per frequent use/ rare use/ not used at all
- Designate locations for storage
- Monitor progress

Examples: Waste strapping patti and clip, broken pieces of wooden pallets, torn boxes, waster packing material, peeled off BOPP tapes, shrink/stretchable wraps, waste office stationery, waste paper.

2. **Set in Order / Stabilize** - It consists of putting everything in a designated place so that everything can be quickly accessed and quickly returned to the same place.

- Position the items in the warehouse according to their frequency of use.
- Put the frequently used items next to the workplace
- Keep uncommon parts away from the operating location

Examples: GRN, invoice, STN, POD, road permit, LOI and agreement etc. Equipment and assets like HPT, stackers, forklifts, fresh stocks, DOA stocks, restricted and unrestricted stocks, FEs, dust bin, etc. Electrical wiring and fittings should be in intact conditions.

3. **Shine / Cleaning-** It consists of cleaning up the workplace and giving it a 'shine'.

- Cleaning must be done by everyone in the warehouse, from associate to managers (regarding their workplace)
- Every person should ensure that his surrounding place is clean and tidy.
- It works best if every area of the workplace is assigned to a person or a group for cleaning.

Examples: Office area, security area, outside premises, loading and unloading dock/bay, shutters, windows and safety grills, operation table and area, toilets, pantry, DG & meter room, cobwebs, dusting of racks and stock boxes, corners and flooring of warehouse, desks, computers, dustbins, etc.

4. **Standardize** - Standardize is the result that exists when the First Three 'S' - Sort, Set in Order and Shine are properly maintained.

- Proper symmetry (regularity) should be maintained for labeling, nomenclature (categorization), filing, report names, stock boards, signage's, safety posters, stationery management, packing material, pallet size, white boards, address boards, etc.
- Provide a means for preventing recurrence of errors and minimizing variability.

5. **Sustain/Discipline** - Sustain means making a habit of properly maintaining correct procedures.

- Self-awareness and discipline are necessary to carry out and support all activities.
- A checklist should be drawn up to monitor any activity under 5S
- Make sure everyone follows the rules and makes it a habit
- Creates a common understanding about 5s
- Training for all standards development and success monitoring

Notes

_____

_____

_____

_____

UNIT 5.4: Managing Breach of Safety, Accidents and Emergency Situations

Unit Objectives

At the end of this unit, participant will be able to:

1. Describe how to handle emergency situations.
2. Explain the steps to be taken in case of any accident.
3. Describe the documentation to be followed in case of any accident.
4. Explain the details on evacuation plan and safe assembly point.

5.4.1 Protocol in case of Emergency Situations

In ideal warehouse should try to prevent accidents from happening as far as possible. Despite all precautions, if accidents still occur, following action needs to be taken.

At the time of incident

- Take control at the scene and try to restore order.
- First aid and emergency calls. Provide immediate assistance to the injured; else call for help. Caring for injured personnel is the top priority.
- Monitor any secondary accidents. This includes banning people who should not be on area. For example, if the spill happened, other employees need not pass by.
- Identify people and conditions on the scene. The people are the witnesses to the event.
- Keep material evidence. Protect the scene and control access again. You do not want to modify or delete any evidence.

Once the immediate emergency is stabilized, the following measures must be taken:

- Assess how much damage is, how severe it can be, and that you need additional resources to investigate.
- Make proper notifications. Make sure senior management is aware. Also call the affected families, any regulatory agencies you need, and your insurance companies.

Other Actions

- The initial report should be completed and submitted for all assessments within 24 hours of the accident.
- Subsequent reports, including recommended actions, should be completed within 48 hours and 30 days.

Finally

- If an accident occurs, it is best to follow a written procedure and learn about the process from staff and management.
- The learning from the incident and how to prevent it in future should be clearly documented.

Below is the standard protocol to be implemented in case of any emergency situation -

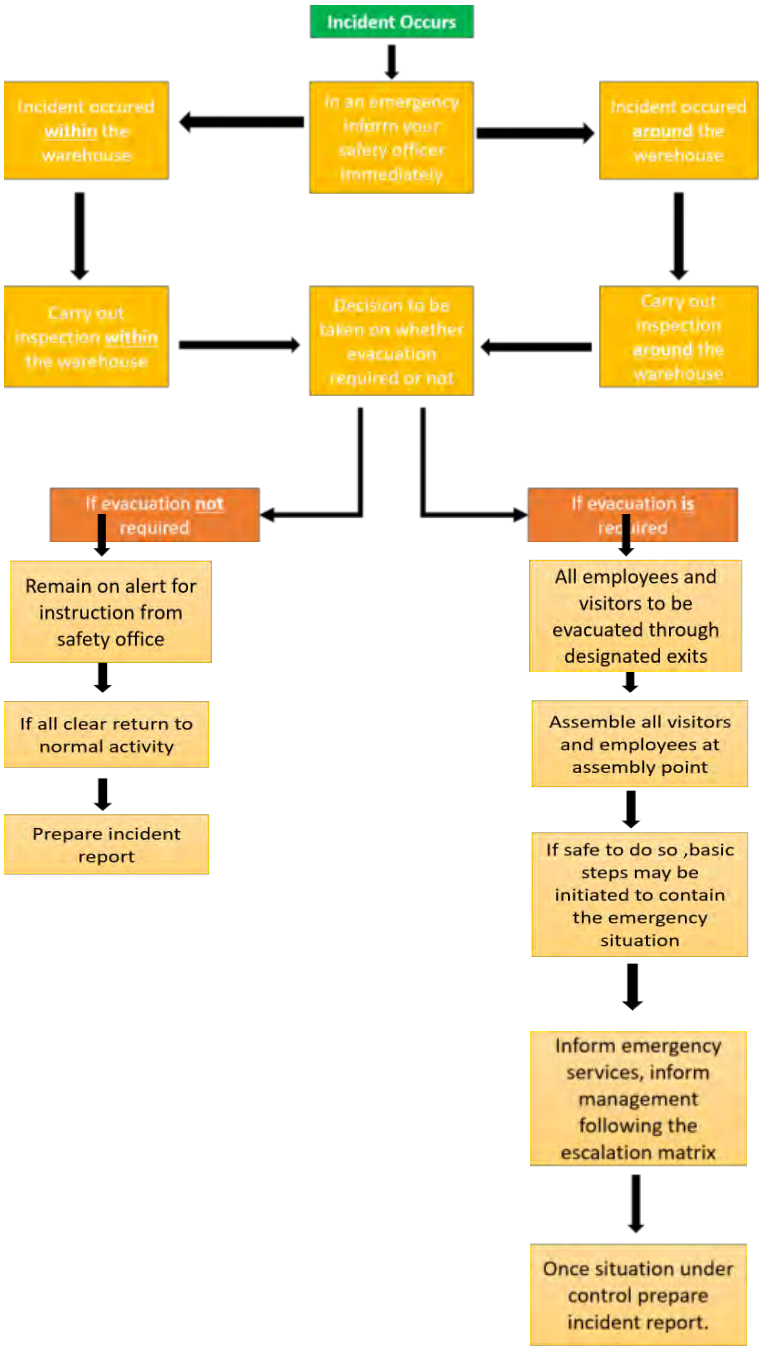
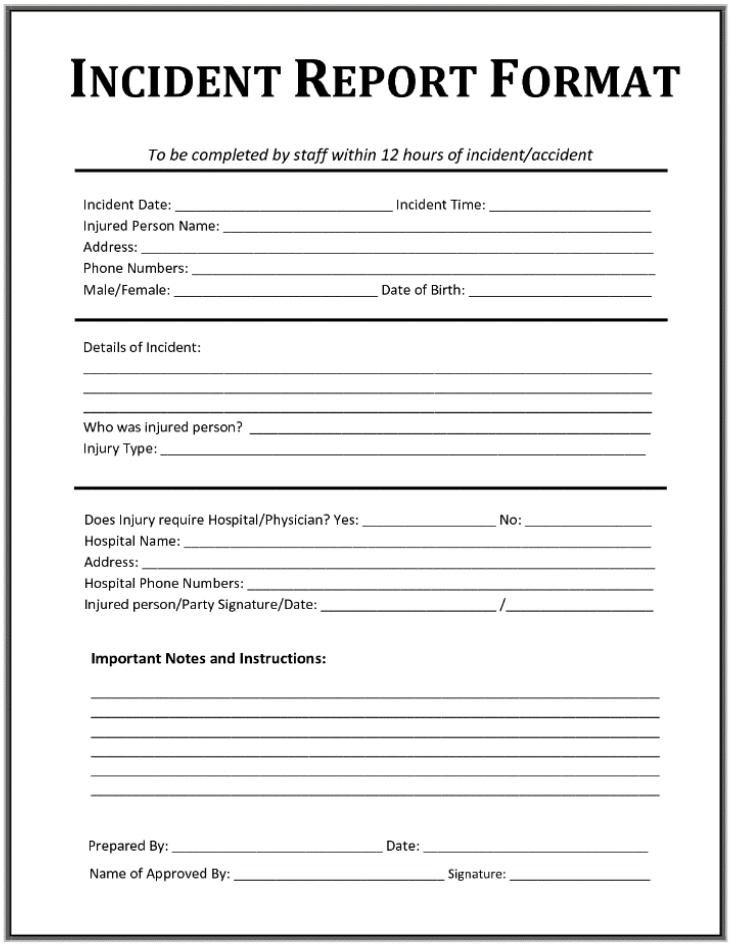


Fig 5.4.1. Flowchart for emergency situation



INCIDENT REPORT FORMAT

To be completed by staff within 12 hours of incident/accident

Incident Date: _____ Incident Time: _____
Injured Person Name: _____
Address: _____
Phone Numbers: _____
Male/Female: _____ Date of Birth: _____

Details of Incident:
_____
_____
_____
Who was injured person? _____
Injury Type: _____

Does Injury require Hospital/Physician? Yes: _____ No: _____
Hospital Name: _____
Address: _____
Hospital Phone Numbers: _____
Injured person/Party Signature/Date: _____ /_____

Important Notes and Instructions:

_____
_____
_____
_____
_____
_____

Prepared By: _____ Date: _____
Name of Approved By: _____ Signature: _____

Fig. 5.4.2. Incident Report Format

Managing Deviations in Health, Safety and Security -

Warehousing with its whole range of activities can result in various hazards and risks. An effective safety and health management system tries to assess to assess every possible safety risk and tries to put in measures to prevent them. By doing this the management is trying to protect its most valuable asset, employees, as well as other members of the public from harm. Safety measures not only protect premises, goods, equipment but the reputation too.

- There should be regular inspection with regards to safety and security of the warehouse.
- A periodic checklist should be asked to fill in by the employees with regards to following the safety procedures and their personal hygiene.
- Any employee, if seen violating health and safety norms should be immediately warned. In case if he still does not improve, appropriate actions may be taken.

Tips

- Following healthy and hygienic practices every day will make you feel good mentally and physically.
- Hygiene is two-thirds of health – so good hygiene will help stay strong and healthy!

Notes

Summary

This chapter deals with the health, safety and security norms to be followed within the warehouse to avoid any accidents. 5S is clearly explained and is a helpful tool in organizing the warehouse. Process to be followed while handling hazardous goods is very crucial.

Exercise

Multiple Choice Questions

1. Which of the following is not an activity to maintain fire safety in the warehouse?
   A. Banning the entry of any match boxes and lighters
   B. Building an emergency response team
   C. Identify the escape routes
   D. Regular inspection and maintenance of forklifts

2. Assigning every area of the workplace to a person or a group for cleaning is part of which S in the 5S methodology
   A. Set in Order
   B. Shine
   C. Standardize
   D. Sort

3. Which of the below is not a part of material safety data sheet?
   A. Properties of the chemical
   B. Storage and handling instructions of the chemical
   C. Price of the chemical
   D. Risk to health of the chemical

4. Which of the following is not a safety hazard?
   A. Employee working for long hours much beyond the shift hours
   B. Employee not being trained on safety procedures
   C. Safety signs not being displayed in the warehouse
   D. Not holding a sunrise or sunset huddle meeting

Fill in the Blanks

1. _____ are the single biggest reason for work related injuries across the world.
2. Removing unnecessary items if the part of _____ S in the 5S at the warehouse.
3. _____in warehouse facilities are formal locations used to recharge Forklifts, BOPT and other Power Equipment.
4. An employee not following safety procedures should be _____.

True and False

1. On the job learning on how to operate a Forklift is good enough for an Associate to operate Forklifts.
2. Material Safety Data Sheet will carry instructions to clean in case of any spill
3. Conveyors are simple set of rollers and do not pose any threat to the safety of the people working near.
4. It is optional to send an incident report after an accident as long as all the steps have been taken and everything is restored to normal.

Annexure – QR Codes

S.No.	Chapter No.	Unit No.	Topic Name	URL	Page No.	QR Code (s)
1	Chapter 2- Preparation for testing	Unit 2.1- Information Flow and Types of inspection	2.1.1 Types of inspection and Information checklists	https://youtu.be/ZdlHAHaeqXg	34	inspection
2	Chapter 2- Preparation for Operations	Unit 2.1- Information Flow and Types of inspection	2.1.4 Sampling	https://youtu.be/sYRUYJYOpG0	34	Sampling
3	Chapter 2- Preparation for testing	Unit 2.1- Information Flow and Types of inspection	2.2.1. General testing equipment	https://youtu.be/zJTsg6-UGwM	34	Types of 3D Scanners
4	Chapter 2- Preparation for testing	Unit 2.1- Information Flow and Types of inspection	2.2.1. General testing equipment	https://youtu.be/WY_6Bj3f6piE	34	Ultrasonic Level Sensor
5	Chapter 3- Quality Testing	Unit 3.1- Inbound and outbound process	3.1.1 Inbound and Outbound Logistics	https://youtu.be/nz6_9i6l7SzI	50	Inbound Process
6	Chapter 3- Quality Testing	Unit 3.1- Inbound and outbound process	3.1.1 Inbound and Outbound Logistics	https://youtu.be/sGFweY5_3CPI	50	Outbound Operations

S.No.	Chapter No.	Unit No.	Topic Name	URL	Page No.	QR Code (s)
7	Chapter 3- Quality Testing	Unit 3.1- Inbound and outbound process	3.1.1 Inbound and Outbound Logistics	https://youtu.be/pspYPdFLmN4	50	Logistics Management
8	Chapter 3- Quality Testing	Unit 3.2: Testing inbound goods	3.2.1 Testing inbound goods	https://youtu.be/NIv-yDtgQrw	50	Inbound Logistics
9	Chapter 4- Post Quality Assessment	Unit 4.1 - Housekeeping	4.1.1 Housekeepi ng	https://youtu.be/qPl Ri-RWNlY	66	House Keeping
10	Chapter 4- Post Quality Assessment	Unit 4.1 - Housekeeping	4.1.2 Employee Facilities	https://youtu.be/KtAf3JlbKFI	66	Employee Facilities
11	Chapter 4- Post Quality Assessment	Unit 4.2 Post-Assessment Activities	4.2.1 Handling/ storing testing equipment	https://youtu.be/tM bJ-Mn3ugE	66	Testing equipment
12	Chapter 4- Post Quality Assessment	Unit 4.2 Post-Assessment Activities	4.2.2 The Pre- and Post-Operation Equipment Inspection	https://youtu.be/6Y_VT14aYSE	66	Equipment Inspection

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