

# **MATERIAL MANAGEMENT**

**Material management** involves in controlling the type, amount, location, movement , timings of purchase of various materials etc. used in industrial concern.

It also deals with the controlling and regulating the flow of material in relation to changes in variables like demand, prices , availability ,quality ,delivery schedule etc.

Material Management begins with the determination of material quality , quantity and ends with the production of goods to meet customers demand as per the production schedules at the lowest price.

# **FUNCTIONS OF MATERIAL MANAGEMENT**

1. Materials planning
2. Procurement of materials
3. Receiving and ware-housing of materials
4. Storage and store administration
5. Inventory control
6. Standardization , simplification and value analysis
7. Transportation and Materials handling
8. Disposal of scrap ,surplus and their value analysis

# **OBJECTIVES OF MATERIAL MANAGEMENT**

1. To minimize material cost
2. To procure materials of desired quality and quantity at possible minimum cost
3. To reduce investment in inventories
4. To purchase ,receive , transport and store materials efficiently to reduce related cost.
5. To ensure continuous supply of materials at reasonable rates
6. To report changes in market conditions
7. To train personnel in the field of management in order to increase operational efficiency.
8. Efficient record keeping and prompt reporting

# **PURCHASE ORGANISATION**

Purchase Organisation is the pattern of ways in which a large number of people are engaged in the purchase department in a systematic way for the accomplishment of mutually agreed purposes.

Purchase Organisation is the structure that enables the persons to work effectively together in the purchase department.

The Purchase Organisation is a line Organisation.

A typical Purchase Organisation given:

The Purchase Organisation can be divided into three major subheads:

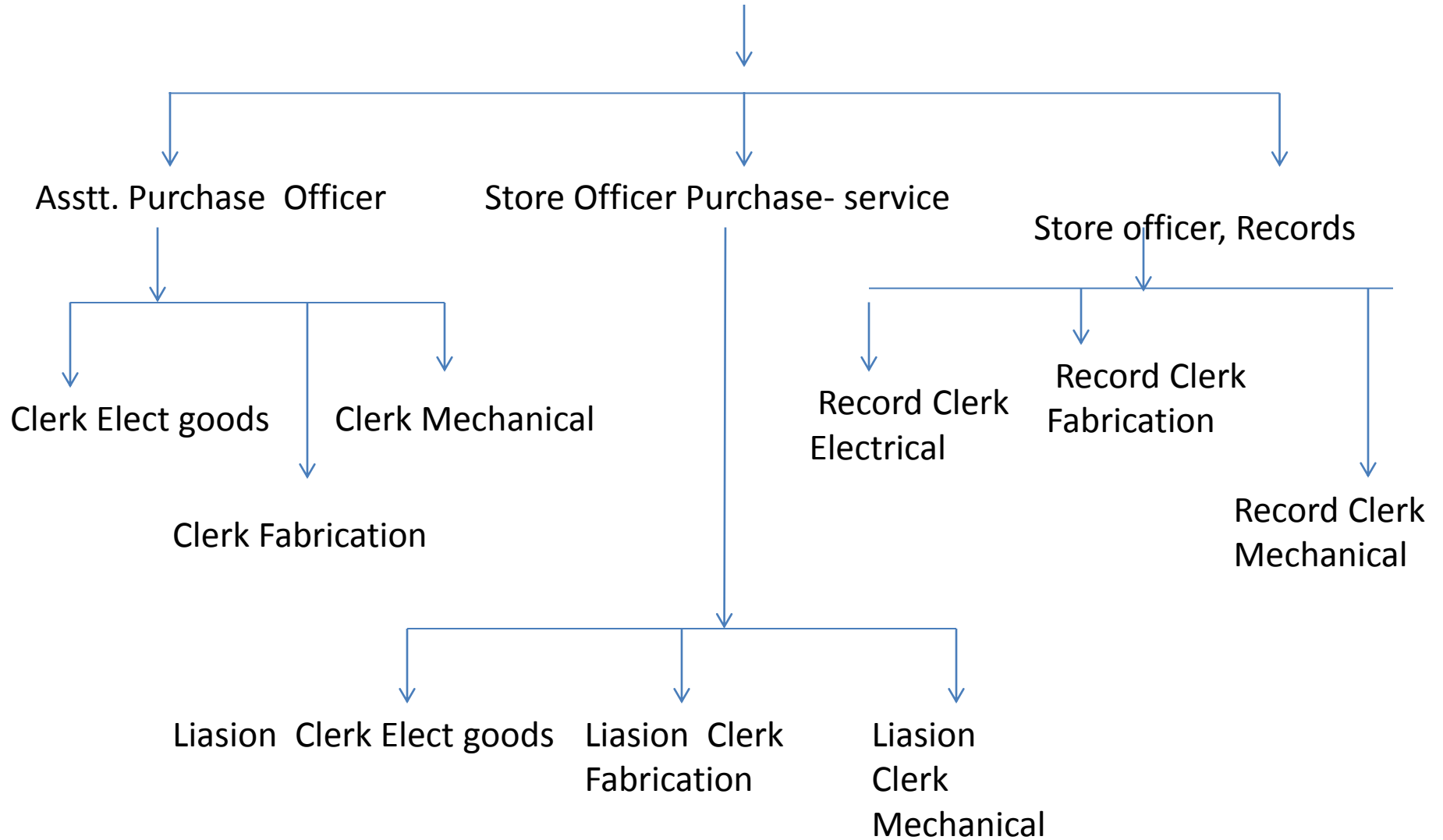
1. Purchasing
2. Purchasing service
3. Records

Purchasing Section headed by Assistant Purchase Officer places order with vendors.

Purchasing Service Section: Ensures timely receipt of the material in firm.

The record section maintains the record of all types of tools, equipment and raw materials received and available record of quotations, costs, purchases etc.

- Purchase Officer



# **CENTRALISED PURCHASE ORGANISATION**

There is Central Purchase Organization. All the other departments forward their requirement to Central Purchase Department which purchases the materials , equipments and other materials to the departments.

## **ADVANTAGES OF CENTRALISED PURCHASE ORGANISATION**

1. Makes more efficient ordering of materials
2. Forms a basis to gain bargaining advantage
3. Decreases the volume of paper work is reduced due to reduction in number of small orders and greater standardization of purchase procedure.
4. Helps procuring uniform and consistent materials
5. Simplifies purchasing procedure
6. Simplifies the payment of invoice etc.
7. Uniform purchasing policies and procedures

# **LIMITATIONS OF CENTRALISED PURCHASE ORGANISATION**

1. Delay in delivery of materials to the company's wildly Scattered plants.
2. Difficult to achieve proper control and vendor service
3. Specific requirements of different branches may be ignored.
4. It is slower and more cumbersome than decentralized purchasing.



# **DECENTRALISED PURCHASE ORGANISATION**

In large Organization or firms there are many branches , sections and departments. If each department or section purchase its own materials , this purchasing is Decentralized Purchasing.

## **ADVANTAGES OF DECENTRALISED PURCHASE ORGANISATION**

1. Faster purchasing
2. Improved efficiency
3. Control over purchase is no longer remote
4. Decentralized operations are more flexible

## **DISADVANTAGES OF DECENTRALISED PURCHASE ORGANISATION**

1. Less quantity discounts
2. Involves duplication of efforts

# **BUYING TECHNIQUES**

Materials can be brought/purchased by one of the following techniques:

1. Spot quotation
2. Floating the limited enquiry
3. Tenders
4. Closed tender or limited tender

## **SPOT QUOTATION**

The buyer can go to the market and collect minimum (3)three quotations for purchasing one material from different suppliers. The material is purchased from the supplier quoting the lowest rates. Sometimes , it is necessary to take a **SPOT** decision, pay cash and purchase the material.

# QOUTATION FORM

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**Ref..NITJSR/ S&P/Quot/123/2020**

**Date**

**From**

**Store & Purchase Officer**

**NIT Jamshedpur**

**To**

**M/s Classic Metals Ltd**

**Jamshedpur.**

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Dear Sir,

Please submit your quotations for the materials listed below so as to reach the office of undersigned by 20.4.2020 at 3.00PM. Please send full details, specifications.

Please note the terms and conditions mentioned below:

1. Please mention (Enquiry No----- and Date on which due...) on the top of envelop.
2. Submit quotations in duplicate.

3. Preferably quote in the same order as in the enquiry letter.
4. Price each item separately.
5. Quotations should be valid for at least one month from the date of opening
6. GST should be mentioned for each case.
7. Quotations should be sent in sealed covers (envelopes).
8. The right is reserved to accept or reject quotations on each item separately or as a whole.

The quotations will be opened on.....at..... in the office of the undersigned.

No.	Description	Quantity	Unit	Price	Discount	Total Net Price
1						
2						

Yours faithfully  
Store Purchase Officer

# COMPARATIVE STATEMENT

Department /Section .----- Enquiry Letter No. .... Last Date of Receiving Quotations .....	Dated .....
Date of Opening Quotations ..... Account on which the expenditure is debitable.....	

S. No.	Description of materials required	Quantity to be purchased	Supplier 1	Supplier 2	Supplier 3	
			Rates			
1.	.....	.....	.....	.....	.....	
2.	.....	.....	.....	.....	.....	
			TERMS AND CONDITIONS			
			1.*	1.*	1.*	
			2.	2.	2.	
			3.	3.	3.	
			4.	4.	4.	
			5.	5.	5.	

1. Delivery date
2. Place of delivery
3. Term of payment
4. Taxes

## Signatures of the Departmental Purchase Committee

After getting quotations from vendors, the quotations are opened and a *comparative statement* prepared as per the terms and conditions of the tender. The comparative statement helps studying and comparing different quotations at a glance and a quick decision can be taken as with whom to place the order.

# Tenders

A tender or quotation in the form of a written letter or a published in newspapers. The aim to find the price for procuring certain materials or to get a particular work done within the desired period and under specified conditions.

*Types of:* The tenders may be of the following three types:

- Single tender
- Open tender
- Closed tender or limited tender
- **Single tender.** Tender is invited from one reliable supplier only. Single tender is called under following conditions:
  - Proprietary items.
  - High quality items.
  - ‘C’ class items such as clips, pins, pencils, etc.
  - When items are required comparatively urgently.



- **Open tender.** Open tender which is also called *press tender* is published in Newspaper, Trade Journals etc., for procuring materials of desired specifications.
  - It is open to everybody; any vendor (reliable or unreliable) can furnish the quotations.
  - Open tender gets very wide publicity.
  - A vendor has to deposit as earnest money with the tender information. This is just to ensure that the vendor does not back out from the rates etc., which he submits.
  - Given below (Fig. 2) is a typical example of tender notice published in Newspaper:

**A.P. STATE ELECTRICITY BOARD  
(PROCUREMENT CIRCLE - A)  
TENDER NOTICE**

**SEALED Tenders in triplicate are invited for the supply of following items. The copy of the specifications (non-transferable) can be had from the office of the undersigned by remitting rupees as indicated against each item Bank drafts in favour of the Accounts Officer, A. P. State Electricity Board, Hyderabad. The tenders will be received up to 2.30 p.m. and will be opened at 3.00 p.m. on the dates as indicated hereunder.**

<b>S. No.</b>	<b>Specification No.</b>	<b>Particulars</b>	<b>Date of opening</b>	<b>Earnest money</b>	<b>Cost of specifications (or tender)</b>
<b>1.</b>	<b>AP-661</b>	<b>110 KVA distribution transformers</b>	<b>5-8-2020</b>	<b>Rs. 10000</b>	<b>Rs. 500</b>
<b>2.</b>	<b>AP-662</b>	<b>500 KVA distribution transformers</b>	<b>12-8-2020</b>	<b>Rs. 7500</b>	<b>Rs. 500</b>

**Purchase of specifications is essential for the tenderers. The tender received without earnest money will not be considered. Earnest money shall be retained pertaining to the supplier furnishing lowest rates and it (i.e., earnest money) shall automatically stand converted into security deposit. For other suppliers, the earnest money shall be refunded.**

**Chief Engineer**

## **Earnest Money**

Earnest money is demanded from the supplier who quotes the tender so that later on he does not back out from the rates he quotes for supplying the material or goods.

## **Security Deposit**

After selecting the supplier to whom to give the tender, either on the basis of lowest rates quoted by him or otherwise, he is asked to make a security deposit so that in case the supplier fails to furnish the goods properly and in time, the security deposit can be forfeited.

# 1. QUANTITY AND QUALITY STANDARDS

## 1.1. Quantity Standards

- There are four important QUANTITY STANDARDS, namely
  - (i) Maximum inventory,
  - (ii) Minimum inventory,
  - (iii) Standard order, and
  - (iv) Reorder point.

# Quality Standards

*Quality.* In purchasing context, QUALITY refers to the suitability of a commodity for its intended use.

Therefore, in purchasing, the best is not necessarily the highest quality; the best quality can be even a lower quality.

*Quality Standard.* A quality standard is the description of an acceptable level of quality of a particular item.

- Quality standards establish the quality objectives (of a commodity) to be measured or evaluated.
  - In the past three decades, industry has seen a tremendous advance in the preciseness of its quality standards; quality has changed from a generic art to a specific science with definite quality standards and instruments to measure and compare the characteristics of a product against the quality standards set.

- The necessary *quality standards* for a particular product are stated on the drawing in terms of dimensional tolerances or written into the test *Specifications*.

The manufacturing department then makes products as per these standards and the inspection division inspect the products to the same standards.

- *Drawings* show the shape and the exact dimensions and the tolerances permitted on the product whereas *Specifications* describe such characteristics as colour, chemical composition, mechanical properties (i.e., tensile strength, hardness), kind of raw material, etc.
- Specifications can be in the form of,
  1. *Dimensional and material specifications*. They must consist of list of physical or chemical properties desired in the product. Raw materials, oils and paints are specified this way.

2. *Performance specifications.* They indicate the performance or use of the purchased item, for example, a component may be specified as capable of bearing a reverse bend at 100°C temperature.

3. *Blue prints.* Blue print is the most precise and probably the most accurate of all types of descriptions and it finds applications where close tolerances or high degree to mechanical perfection is desired.

– Both drawings and specifications describe what the product should be like after it has been made.

*Quality standards are dictated by the following requirements*

1. The efficiency with which the product can perform its function.
2. The cost and the estimated life of the product.
3. The quality of interchange ability and the ease of making assembly.
4. Appearances and FEEL of the production in use.

# STORES AND MATERIALS CONTROL

## Introduction

- Materials and supplies constitute the most important assets in the majority of business enterprises. The success of the business, besides other factors, depends to a large extent on the efficient storage and material control.
- Material pilferage, deterioration of material and careless handling of stores lead to reduced profits.
- Even losses can be incurred by concerns in which the store-room is available to all employees without check as to the quantities and purpose for which materials are to be used.



# **Requirements of a Material Control System**

- Proper coordination of departments such as purchase, receiving, testing, storage, accounting, etc.
- Making economy in purchase and use of materials.
- Operating an internal check to verify all transactions involving materials, supplies, equipments, etc.
- Storing materials and supplies properly in a safe place.
- Operating a system of perpetual inventory to find at any time the amount and value of each kind of material in stock.
- Setting of quantity standards.
- Operating a system to see that right material is available to a department at the time of its need.
- Keeping proper record of all material transactions.

# Stores Management

Stores management take care

- That the required material is never out of stock;
- That no material is available in (much) excess than required;
- To purchase materials on the principle of economic order quantity so that the associated costs can be minimized;
- To protect stores against damage, theft, etc.
  - This can be achieved through
    - A proper purchasing practice (i.e. when to order materials).
    - An adequate procedure of receipt and issue of materials.
    - Proper methods of storing materials.
    - An effective system of physical control of materials.
    - A proper method of keeping store records.

# Function of Stores Departments and the Duties of the Storekeeper

- To receive materials, goods and equipment, and to check them for identification.
- To receive parts and components which have been processed in the factory.
- To record the receipt of goods.
- To correct positioning of all materials and supplies in the store.
- To maintain stocks safely and in good and conditions by taking all precautions to ensure that they not suffer from damage, pilfering or deterioration.
- To issue items to the users only on the receipt of authorised stores requisitions.

- To record and update receipts and issues of materials.
- To check the bin card balances with the physical quantities in the bins.
- To make sure that stores are kept clean and good order.
- To prevent unauthorized persons from entering the stores.
- To make sure that materials are issued promptly to users.
- To plan store for optimum utilisation of the cubic space (i.e., length, breadth and height).
- To ensure that the required materials are located easily.
- To initiate purchasing cycle at the appropriate time so that the materials required are never out of stock.
- To coordinate and cooperate to the full extent with the purchasing, manufacturing, inspection and production planning and control departments.

# Location and Layout of Store

## Location:

1. Location of the store should be carefully decided and planned so as to ensure maximum efficiency.
2. The best location of the store is one that minimizes total handling cost and other cost related to stores operation and at the same time provides the needed protection for stored items and materials.
3. Store location depends upon the nature and value of the items to be stored and the frequency with which the items are received and issued.

4. In general ,stores are located close to the points of use. Raw materials are stored near the first operation, in-process materials close to the next operation, finished goods near the shipping area and tools and supply in location central to the personal.
5. All departments should have easy access to the stores.
6. In big Industries sub-stores are situated to serve different departments.

# Receipts and Issue of Materials

## **Receipts:**

Materials are received by the receiving department.

The receiving departments unpacks the goods received and checks their quantities and conditions and compare these with the packing slips and purchase orders.

All the materials are inspected and tested to ensure that the purchase order specifications have been met.

Results of inspection and tests are indicated in special testing report.

On basis of this , clearance and rejection report is made and these reports are sent to **Purchase, Production and Accounting departments** .

# MATERIAL RECEIVED REPORT

From.....

Purchase Order No-----

Vendor Address.....

S.L. No

Description

Quantity  
of goods  
received

Condition of goods

1

2

Counted by.....

Approved by.....

Inspected by.....



# Issue of Materials

- Materials should be issued to the different departments/sections by the store keeper only upon receipt of Material issue requisition which is a properly authorized withdrawal form.

# MATERIAL REQUISITION

				Requisition	No.....		
Material required for( Job).....						Date .....	
Department.....							
S. No.	Description	Code No.	Quantity	Rate	Amount	Entered on Register Page No.	
			Demanded	Supplied			
Requisitioned by		Approved by		Material Issued by			Received by
.....		.....		.....			.....

- Material requisition is prepared in duplicate by the Foreman or the Manager depending upon the nature and amount of goods and materials to be withdrawn.
- Both the copies are sent to storekeeper for issuing the materials.
- Both the copies are then forwarded to **Material Accounting division** for pricing and entry in the Stock Ledger.
- One copy is retained by stock Ledger clerk
- The second copy goes to the Foreman.

# PHYSICAL VERIFICATION OF STORES ( STOCK TAKING)

- **NECESSITY OF PHYSICAL VERIFICATION STORS**
- **Physical verification is essential to :**
- i) to ensure the correctness of stocks by comparing them with the balance in ledger of store.
- ii) to check losses in inventory due to pilferage, deterioration etc.
- lii) to calculate the values of stock
- Iv) to check improper issue of materials

# METHODS OF PHYSICAL VERIFICATION

- 1. Annual Physical Verification
- 2. Periodic Checking
- 3. Continuous Check of balance ( Perpetual Inventory Verification)

# Annual Physical Verification

- In this method, in end of year, the stores and plants are closed for some days.
- A team of stores inspectors physically check each
- Damaged and obsolete items can also be traced and recorded.
- Disadvantage of this method is that this method is tiresome and cumbersome.

# Periodic Checking

- In Periodic Checking all Inventories are grouped by type and at various locations. The items are regularly checked at fixed interval of 3 months, 6 months etc.
- The verification depends upon the importance of value of particular items.

# Continuous Check of balance ( Perpetual Inventory Verification)

- The stock verification is an continuous activity rather than an year end verification. In this method stocks balance are recorded after every receipt and issue.
- All the items are verified in rotation on the continuous basis.
- Irregularities due to incorrect entries ,breakage , pilferage, over-issue, placing of items in wrong bins are investigated and corrected accordingly.
- Every item is checked at least twice or thrice.
- In this method plant is not required to be shut down for stock verification.



- This method is cheaper less tiring , less cumbersome and hence it is more accurate.
- Discrepancies are readily discovered and corrected properly.
- Through continuous check it ensures that stock doesn't go below minimum level Hence, it helps to maintain optimum inventory level.