

## CHAPTER 3

## AS 2: VALUATION OF INVENTORIES

1. **Measurement of Inventories:** Initially measured at cost; and subsequently are measured as follows:
- A. **Finished goods and WIP** shall be valued at **Lower of:**
- Cost Price
  - Net realizable value
- on item by item basis.
- Such items either can be on individual basis or group basis.
  - The objective of such valuation is no adjustment of loss one item with the profit of another item.

- (a) **Cost:** Cost of inventories comprises all
- |  |     |
|--|-----|
| Costs of purchase  | XXX |
| (+) Costs of conversion  | XXX |
| (+) Other costs incurred in bringing the inventories to their present location and condition. (E.g. the costs of designing products for specific customers in the cost of inventories) | XXX |
|  | XXX |

**Cost of Purchase:** The costs of purchase of inventories comprise the

- purchase price, non-refundable taxes, transport, handling and other costs directly attributable to the acquisition of finished goods, materials and services.
- Reduced by any trade discounts, rebates.

**Conversion Cost:** The costs of conversion of inventories include

- costs directly related to the units of production, such as direct labour
- **Variable production overheads** are allocated to each unit of production on the basis of the actual use of the production facilities.
- **Fixed overhead** are allocated to each unit of production on the basis of recovery rate.

**Recovery Rate** = Fixed overhead / (normal or actual production whichever is higher)

**Allocation of cost to joint products and by-products:** Costs should be allocated on a consistent and rational basis in the case of joint products, whereas the net realizable value of by-products and the net proceeds from the sale of scrap should be deducted from the total cost of the main product.

**Excluded in Cost:**

- abnormal amounts of wasted materials, labour or other production costs;
  - storage costs, unless the production process requires such storage; (e.g.: In case of wine, it has to be stored as a part of the production process)
  - administrative overheads that do not contribute to bringing inventories to their present location and condition; and
  - selling and distribution costs.
- (b) **Net Realisable Value:** Expected selling price – expected selling expenses – expected cost of completion (In case of WIP).
- Estimates of NRV are based on the most reliable evidence available at the time the estimates are made, of the amount the inventories are expected to realise.

## B. Valuation of Raw Material

- (a) At CP: If Finished Goods SP  $\geq$  Finished goods cost price.
- (b) At CP or Replacement Price whichever is lower: In other cases

2. Other Techniques for the measurement of cost: The standard cost method or the retail method, may be used for convenience if the results approximate cost.

- (i) Standard costs: take into account normal levels of materials and supplies, labour, efficiency and capacity utilisation. They are regularly reviewed and, if necessary, revised in the light of current conditions. It is a predetermined cost.
- (ii) The retail inventory method: This method is used for where the inventories are generally large and volatile.  
Cost = Retail price - Gross Margin.

## 3. Other Relevant points

- (i) Inventories do not include spare parts, servicing equipment and standby equipment which meet the definition of PPE as per AS 10, PPE.
- (ii) Treatment of Borrowing Costs: on the basis of the requirement of AS 16.
- (iii) Treatment of Normal Loss and Abnormal Loss
  - (A) Normal Loss – Part of the cost
  - (B) Abnormal Loss – Charged into P & L Account at cost.
- (iv) Is Packing Material is a part of Cost of Inventory?
  - (A) Primary packing material is one which is essential to bring an item of inventory to its saleable condition e.g. bottles, cans etc., in case of food and beverages industry. It is included in the cost as it is considered part of the production process.
  - (A) Secondary packing and publicity material required for transporting and forwarding the material will normally be in the nature of secondary packing material. Therefore, they cannot be included in the cost of production.

## PRACTICAL QUESTIONS

1. Mr. Mehul gives the following information relating to items forming part of inventory as on 31-3-2017. His factory produces Product X using Raw Material A.
  - (i) 600 units of Raw material A (purchased @ Rs. 120). Replacement cost of raw material A as on 31-3-2017 is Rs. 90 per unit.
  - (ii) 500 units of partly finished goods in the process of producing X and cost incurred till date Rs. 260 per unit. These units can be finished next year by incurring additional cost of Rs. 60 per unit.
  - (iii) 1500 units of finished Product X and total cost incurred Rs. 320 per unit. Expected selling price of Product X is Rs. 300 per unit.

Determine how each item of inventory will be valued as on 31-3-2017. Also calculate the value of total inventory as on 31-3-2017.

**Solution:** As per AS 2 (Revised) "Valuation of Inventories", materials and other supplies held for use in the production of inventories are not written down below cost if the finished products in which they will be incorporated are expected to be sold at cost or above cost. However, when there has been a decline in the price of materials and it is estimated that the cost of the finished products will exceed net realisable value, the materials are written down to net realisable value. In such circumstances, the replacement cost of the materials may be the best available measure of their net realisable value. In the given case, selling price of product X is Rs. 300 and total cost per unit for production is Rs. 320.



Hence the valuation will be done as under:

- (i) 600 units of raw material will be written down to replacement cost as market value of finished product is less than its cost, hence valued at Rs. 90 per unit.
- (ii) 500 units of partly finished goods will be valued at 240 per unit i.e. lower of cost (Rs. 260) or Net realisable value Rs. 240 (Estimated selling price Rs. 300 per unit less additional cost of Rs. 60).
- (iii) 1,500 units of finished product X will be valued at NRV of Rs. 300 per unit since it is lower than cost Rs. 320 of product X.

**Valuation of Total Inventory as on 31.03.2017:**

(Rs.)

	Units	Cost	NRV/Replacement cost	Value = units x cost or NRV whichever is less
Raw material A	600	120	90	54,000
Partly finished goods	500	260	240	1,20,000
Finished goods X	1,500	320	300	4,50,000
Value of Inventory				6,24,000

2. The closing stock of finished goods at cost of a company amounted to Rs. 4,50,000. The following items were included at cost in the total:
  - (a) 100 coats, which had cost Rs. 2,200 each and normally sold for Rs. 4,000 each. Owing to a defect in manufacture, they were all sold after the balance sheet date at 50% of their normal selling price.
  - (b) 200 skirts, which had cost Rs. 50 each. These too were found to be defective. Remedial work in April cost Rs. 2 per skirt, and selling expenses for the batch totalled Rs. 200. They were sold for Rs. 55 each.
  - (c) Shirts which had cost Rs. 50,000, their net realizable value at Balance sheet date was Rs. 55,000. Commission @ 10% on sales is payable to agents.

What should the inventory value be according to AS 2 after considering the above items?

**Solution:**

**Valuation of closing stock**

Closing stock at cost	Rs. 4,50,000
Less: Adjustment for 100 coats (Working Note 1)	(20,000)
Value of inventory	4,30,000

**Working Notes:**

**(1) Adjustment for Coats**

Cost included in Closing Stock	Rs. 2,20,000
NRV of Coats	2,00,000
Adjustment to be made as NRV is less than Cost	20,000

- (2) No adjustment required for skirts and shirts as their NRV is more than their cost which was included in value of inventory.

3. A Ltd. purchased 1,00,000 MT for Rs. 100 each MT of raw material and introduced it in the production process to get 85,000 MT as output. Normal wastage is 5%. In the process, company incurred the following expenses:

Direct Labour	Rs. 10,00,000
Direct Variable Overheads	Rs. 1,00,000
Direct Fixed Overheads (Including interest Rs. 40,625)	Rs. 1,00,000

Of the above 80,000 MT was sold during the year and remaining 5,000 MT remained in closing stock. Due to fall in demand in market the selling price for the finished goods on the closing day was estimated to be Rs. 105 per MT. Calculate the value of closing stock.

**Answer:**

**Calculation of cost for closing inventory**

Particulars	Rs.
Cost of Purchase (1,00,000 x 100)	1,00,00,000
Direct Labour	10,00,000
Variable Overhead	1,00,000
Fixed Overhead (1,00,000 - 40,625)	<u>59,375</u>
Cost of Production for normal output i.e. 95,000 MT	<u>1,11,59,375</u>

Cost of closing inventory per unit (Rs. 1,11,59,375/95,000) Rs. 117.47 (approx)  
 Net Realisable Value per unit Rs. 105

Since, net realisable value is less than cost, closing inventory will be valued at Rs. 105. Therefore, closing inventory is Rs. 5,25,000 (5,000 x 105).

**Note:** Abnormal wastage of 10,000 MT i.e. 10,000 MT x Rs. 117.47 = Rs. 11,74,670 will be separately accounted for in the books.

4. Calculate the value of raw materials and closing stock based on the following information:

Raw material X	500 units
Closing balance	Rs per unit
Cost price including excise duty	200
Excise duty (Cenvat credit is receivable on the excise duty paid)	10
Freight inward	20
Unloading charges	10
Replacement cost	150
Finished goods Y	1200 units
Closing Balance	Rs per unit
Material consumed	220
Direct Labour	60
Direct overhead	40

Total Fixed overhead for the year was Rs 2,00,000 on normal capacity of 20,000 units.

Calculate the value of the closing stock when:-

- (i) Net Realizable value of the Finished Goods Y is Rs 400.
- (ii) Net Realizable Value of the Finished Goods Y is Rs 300.

**Solution:**

**Statement showing valuation of Raw Material and Finished Goods at cost**

<b>Raw Material X</b>	<b>Rs.</b>
Cost Price	200
Less: CENVAT credit	(10)
	190
Add: Freight Inward	20
Unloading charges	10
Cost	220
<b>Finished goods Y</b>	<b>Rs.</b>
Materials consumed	220
Direct labour	60
Direct overhead	40
Fixed overheads (2,00,000/20,000)	10
Cost	330

**(i) When Net Realisable Value (NRV) of the Finished Goods Y is Rs. 400**

NRV is greater than the cost of Finished Goods Y i.e. Rs. 330

Hence, Raw Material and Finished Goods will be valued at cost

Accordingly, value of closing stock will be:

	Qty	Rate	Amount (Rs.)
Raw Material X	500	220	1,10,000
Finished Goods Y	1,200	330	3,96,000
Total cost of closing stock			5,06,000

**(ii) When Net Realisable Value of the Finished Goods Y is Rs. 300**

NRV is less than the cost of Finished Goods Y i.e. Rs. 330

Hence, Raw Material is to be valued at replacement cost and Finished Goods are to be valued at NRV.

Accordingly, value of closing stock will be:

		Qty	Rate	Amount (Rs. )
Raw Material	X	500	150	75,000
Finished Goods	Y	1,200	300	3,60,000
Total cost of closing stock				4,35,000

**Note:** It has been assumed that Raw Material X is used for production of Finished Goods Y.

5. Well Wear Limited is a Textile Manufacturing Company and engaged in the production of Polyester (P) and Nylon (N). While manufacturing the main products, a by-product Fiber (F) is also produced. Details of the cost of production are as under:

**Purchase of Raw Material for manufacturing process of**

30,000 units	₹ 3,50,000
Wages paid	₹ 1,60,000
Fixed overheads	₹ 1,20,000
Variable overheads	₹ 60,000

**Output:**

Polyester (P)	12,500 Units
Nylon (N)	10,000 Units
Fiber (F)	3,200 Units

**Closing Inventory:**

Polyester (P)	1,600 Units
Nylon (N)	400 Units

Average market price of Polyester and Nylon is ₹ 100 and ₹ 60 per unit respectively, by-product Fiber is sold @ ₹ 40 per unit. There is a profit of ₹ 8,000 on sale of by-product after incurring separate processing expenses of ₹ 10,000 and packing charges of ₹ 9,000. ₹ 5,000 was realized from sale of scrap.

On the basis of the above information, you are required to compute the value of closing inventory of Polyester and Nylon.

**Solution:** As per para 10 of AS 2 'Valuation of Inventories', most by-products as well as scrap or waste materials, by their nature, are immaterial. They are often measured at net realizable value and this value is deducted from the cost of the main product.

**1. Calculation of net realizable value of by-product, Fiber (F)**

	Rs.
Selling price of by-product BP (3,200 units X Rs. 40 per unit)	1,28,000
Less: Separate processing charges of by-product Fiber (F)	(10,000)
Packing charges	(9,000)
Net realizable value of by-product BP	1,09,000

**2. Calculation of cost of conversion for allocation between joint products Polyester (P) and Nylon (N)**

	Rs.	Rs.
Raw material (30,000 Units)		3,50,000
Wages		1,60,000
Fixed overhead		1,20,000
Variable overhead		<u>60,000</u>
		6,90,000
Less: NRV of by-product Fiber (F) ( See calculation 1)	(1,09,000)	
Sale value of scrap	<u>(5,000)</u>	<u>(1,14,000)</u>
Joint cost to be allocated between Polyester (P) and Nylon (N)		<u>5,76,000</u>

**3. Determination of basis for allocation and allocation of joint cost to Polyester (P) and Nylon (N)**

	<b>Polyester (P)</b>	<b>Nylon (N)</b>
Output in units (a)	12,500 units	10,000 units
Sales price per unit (b)	Rs. 100	Rs. 60
Sales value (a x b)	Rs.12,50,000	Rs.6,00,000
Ratio of allocation	125	60
Joint cost of Rs. 5,76,000 allocated in the ratio of 125:60 (c)	Rs. 3,89,189	Rs. 1,86,811
Cost per unit [c/a]	Rs. 31.13512	Rs. 18.6811

**4. Determination of value of closing inventory of Polyester (P) and Nylon (N)**

	<b>Polyester (P)</b>	<b>Nylon (N)</b>
Closing inventory in units	1,600 units	400 units
Cost per unit	Rs. 31.13512	Rs. 18.6811
Value of closing inventory	Rs. 49,816	Rs. 7,472

**6. Particulars**

	<b>Kg.</b>	<b>Rs.</b>
Opening Stock: Finished Goods	1,000	25,000
Raw Materials	1,100	11,000
Purchases	10,000	1,00,000
Labour		76,500
Overheads (Fixed)		75,000
Sales	10,000	2,80,000
Closing Stock: Raw Materials	900	
Finished Goods	1200	

The expected production for the year was 15,000 kg of the finished product. Due to fall in market demand the sales price for the finished goods was Rs. 20 per kg and the replacement cost for the raw material was Rs. 9.50 per kg on the closing day. You are required to calculate the closing stock as on that date.

**Solution: Calculation of cost for closing stock**

<b>Particulars</b>	<b>Rs.</b>
Cost of Production $\{(1,100 + 10,000 - 900) \times 10\}$	1,02,000
Direct Labour	76,500
Fixed Overhead $[(75,000 / 15,000) \times 10,200]$	51,000
Cost of Production	2,29,500
Cost of closing stock per unit $(2,29,500/10,200)$	Rs. 22.50
Net Realisable Value per unit	Rs. 20.00

Since net realisable value is less than cost, closing stock will be valued at Rs. 20.

As NRV of the finished goods is less than its cost, relevant raw materials will be valued at replacement cost i.e. Rs.9.50.

Therefore, value of closing stock: Finished Goods $(1,200 \times 20)$	Rs. 24,000
Raw Materials $(900 \times 9.50)$	Rs. 8,550
	<b>Rs. 32,550</b>

**7. XYZ Limited is engaged in a business of manufacturing and supply of lubricants. For manufacturing of lubricant, company generally requires two types of raw material i.e. 1) Base Oil & 2) Additives.**

For Base Oil procurement, the company's cost structure per litre is as follows:

- (1) Material Cost (Base Oil) - Rs. 100 per Litre
- (2) Custom Duty – 5% on Material Cost.
- (3) Storage Tank Rent – Rs. 2 per litre.
- (4) Custom House Agent charges – Rs. 1 per litre
- (5) Inward Freight (i.e. Transportation cost for transferring the goods from Shore Tanks to Plants) – Rs. 3 per litre.

Costing manager informed you the following facts:

- (1) We have purchased a 100 Litres of Base Oil from one of our Group Company situated in Singapore.
- (2) Base Oil material is duly arrived at port and goods have been duly unloaded in storage tanks.



(3) Due to Covid 19 Lockdown, Base Oil is still lying in storage tanks as at 31.03.2020. Costing Manager requires your assistance at what value Base Oil should be recorded as Inventory.

**Solution:**

Particulars	Amount	Remarks
Material Cost	10,000	(100 Quantity x Rs. 100)
Custom Duty	500	(5% of Material Value)
Storage Tank	200	(100 Quantity x Rs. 2)
CHA Charges	100	(100 Quantity x Rs. 1)
Inward Freight	0	<Not yet incurred>
<b>Total</b>	<b>10,800</b>	

As per AS 2, the cost of inventories shall comprise all costs of purchase, costs of conversion and other costs incurred in bringing the inventories to their present location and condition.

As per AS 2, the costs of purchase of inventories comprise the purchase price, import duties and other taxes (other than those subsequently recoverable by the entity from the taxing authorities), and transport, handling and other costs directly attributable to the acquisition of finished goods, materials and services. Trade discounts, rebates and other similar items are deducted in determining the costs of purchase.

In above case, all the expenses (i.e. Custom duty, Storage Tank, CHA Charges) are directly attributable to the acquisition of material. Though, inward freight cost is directly attributable to the acquisition but it will be incurred once movement of goods happened between the Storage Tanks to plant, as at year end, the goods are still lying at Shore Tanks and hence such inward freight cost is not directly attributable to the acquisition of materials and hence considered as NIL.

8. Sun Ltd. has fabricated special equipment (solar power panel) during 2014-2015 as per drawing and design supplied by the customer. However due to a liquidity crunch, the customer has requested the company for postponement in delivery schedule and requested the company to withhold the delivery of finished goods products and discontinue the production of balance items.

As a result of the above, the details of customer balance and the goods held by the company as work-in-progress and finished goods as on 31-3-2016 are as follows:

(i) Solar power panel (WIP)	Rs. 85 lakhs
(ii) Solar power panel (finished products)	Rs. 55lakhs
(iii) Sundry debtors (solar power panel)	Rs. 65 lakhs

The petition for winding up against the customer has been filled during 2015-2016 by Sun Ltd.

Comment with explanation on provision to be made of Rs. 205 lakhs included in sundry Debtors, finished goods and WIP in the financial statement of 2015-16.

**Solution:** From the fact given in question it is obvious that Sun Ltd. is a manufacturer of solar power panel. As per AS-2, "Valuation of Inventory" Inventories are assets (a) Held for sale in the ordinary course of business; (b) in the process of production for such sale; or (c) in the form of materials /supplies to be consumed in the production process/rendering of services. Therefore, solar power panel held in its stock will be considered as its inventory. Further, as per the standard, inventory at the end of the year are to be valued at lower of cost or NRV.

As the customer has postponed the delivery schedule due to liquidity crunch the entire cost incurred for solar power panel which were to be supplied has been shown in Inventory. The solar power panel are in the possession of the Company which can be sold in the market. Hence company should value such inventory as per principle laid down in AS 2 i.e. lower of cost or NRV. Though, the goods were produced as per specifications of buyer of the company should determine the NRV of these goods in the market and value the goods accordingly. Change in value of such solar panel should be provided for in the books. In the absence of NRV of WIP and Finished product given in the question, assuming that cost is lower, the company shall value its inventory as per AS 2 for Rs. 140 lakhs [i.e. solar power panel (WIP) Rs. 85 lakhs + Solar power panel (finished products ) Rs. 55 lakhs].

Alternatively, if it is assumed that there is no buyer for such fabricated solar power panel, then the NRV will be Nil. In such a case, full value of finished goods and WIP will be provided for in the books.

As regards Sundry Debtors balance, since the Company has filed a petition for winding up against the customer in 2015-16, it is probable that amount is not recoverable from the party. Hence, the provision for doubtful debts for Rs. 65 lakhs shall be made in the books against the debtors amount.