Corporate Finance

Module 5

Working Capital

Components of Working Capital

Current Assets-Cash, Inventory, Receivables, prepayment, short term investments

Current Liabilities-Bills payables, creditors

Current Assets Management

Management of Cash

Management of Inventory

Management of Receivables/Credit /Payables

Sources of Working Capital Finance

Problems on Calculation of Operating Cycle

Prob 1:From following , compute the operating cycle

|  |  |
| --- | --- |
| Period covered | 365 days |
| Avg period of Credit allowed by the suppliers | 16 days |
|  | Rs in thousands |
| Avg debtors o/s | 480 |
| Raw materials consumption | 4400 |
| Total production cost | 10000 |
| Total cost of goods sold | 10500 |
| Sales for the year | 16000 |
| Value of Avg stock maintained:  Raw materials  WIP  FG | 320  350  260 |

Solution:

Operating Cycle=RMCP+WIPCP+FGCP+RCP

Cash Cycle=OC-PCP

RMCP=Avg Raw materials x365

Avg Raw materials consumed

RMCP= 320 x365days =27days

4400

WIPCP= Avg WIP x365

Total Production Cost

WIPCP= (350/10000)x 365 days =13days

FGCP=(Avg FG/Total COGS) x365

FGCP=(260/10500)x365days=9days

RCP=(Avg Rec/Credit sale)x365days

RCP=(480/16000)x365 days =11 days

Operating Cycle=27+13+9+11=60days

Cash Conversion cycle=60days -16dys =44days

Prob 2.Using the following data , calculate the working capital cycle for XYZ LTd.

|  |  |
| --- | --- |
| Particulars | Rs.in thousands |
| Sales | 3000 |
| Cost of Production | 2100 |
| Purchases | 600 |
| Avg RM  Avg WIP  Avg FG | 80  85  180 |
| Avg Creditors | 90 |
| Avg Drs | 350 |

Solution:

RMCP= (Avg Raw material/Purchases )x365

RMCP=(80/600)x365=49 days

WIPCP=(Avg WIP/Total cost of Production)x365

=(85/2100)x365=15 days

FGCP=(Avg FG/Cost of Production)X365days

(180/2100)=31days

RCP = (350/3000) X 365days =43days

Gross working capital Operating cycle=49+15+31+43=138days

PCP = (90/600) x 365=55days

Cash Conversion Cycle=138-55=83days

Payables Conversion Period=

(Avg. Creditors/Total Credit Purchases) x 365

Prob 3:Calculation of Operating Cycle

**RMCP**

Avg RM=(Op RM+Cl RM)/2

Avg RM=(10000+11000)/2=10500

Raw materials consumed =Op RM+Purchases-Cl RM

10000+35000 -11000 = 34000

RMCP=(10500/34000)x365days= 113days

WIPCP

Avg WIP=(30000+30500)/2=30250

Total Cost of Production=Opening WIP+ Material Consumed + Wages and Manufacturing Expenses- Cl WIP

30000+34000+15000-30500=48500

WIPCP=(30250/48500)x365=228 days

FGCP=(AVG FG/COGS) x365

Avg FG=(5000+8500)/2=6750

COGS=Op FG + Cost of Production- Cl FG

COGS=5000+48500-8500=45000

FGCP= (6750/45000)x365=55 days

RCP=(Avg Drs/credit sales)x365

Avg Drs=(Op Drs+Cl Drs)/2

(6500+30000)/2=18250

(18250/100000) x 365=67 days

PCP= (Avg Creditors/Credit Purchases) x 365

Avg Creditors=(5000+10000)/2=7500

(7500/35000) x 365=78days

Gross Operating Cycle 113days+228days+55days+67days=463days

Cash Conversion Cycle=463 days- 78 days=385 days

Prob 4.From the following data, compute the duration of the operating cycle for each of the two years and comment on the increase/decrease:

|  |  |  |
| --- | --- | --- |
| Particulars | Year 1 | Year 2 |
| Stock:  Raw Materials  WIP  FG | 20000  14000  21000 | 27000  18000  24000 |
| Purchases | 96000 | 135000 |
| COGS | 140000 | 180000 |
| Sales | 160000 | 200000 |
| Debtors | 32000 | 50000 |
| Creditors | 16000 | 18000 |

Assume 360 days per year for computational purpose.

Calculation of Operating Cycle

Solution:

|  |  |  |
| --- | --- | --- |
| Particulars | Year 1 | Year 2 |
| RMCP | (20/96)x360= 75days | (27/135)x360=72days |
| WIPCP | (14/140)x360= 36days | (18/180)x360= 36days |
| FGCP | (21/140)x360= 54days | (24/180)x360= 48days |
| RCP | (32/160)x360=72days | (50/200)x360=90days |
| PCP | (16/96)x360= 60days | (18/135)x360=48days |
| GOC | 75+36+54+72= 237 | 72+36+48+90= 246 |
| Cash Cycle | 237-60=177 | 246-48=198 |

There is an increase of 21days (198-177) in the length of the operating cycle, i.e (21/177)x100=12% increase

Reasons for increase are as follows:

Debtors are taking longer period to pay back (90-72) = 18days

Creditors are receiving the payment earlier (60-48) = 12days

30days

Less: FG turnover lowered (54-48) - 6days

RM stock turnover lowered (75-72) - 3days

Increase in operating cycle 21days

Problems on Working Capital Requirement

Prob5.The Cost sheet of PQR Ltd. provides the following data:

|  |  |
| --- | --- |
|  | Cost per unit Rs |
| Raw materials | 50 |
| Direct labour | 20 |
| Over heads (including depreciation of Rs 10) | 40-10 of dep=Rs.30 |
| Total Cost | 110-10 of dep=100 |
| Profit | 20 |
| Selling | 130 |

Average raw material in stock is for one month. Average material in work in progress is for half month. Credit allowed by suppliers one month, credit allowed to debtors one month. Average time lag in payment of wages 10 days, average time lag in payment of overheads 30 days. 25% of the sales are on cash basis. Cash balance expected to be Rs 100000. Finished goods lie in the warehouse for one month.

You are required to prepare a statement of the working capital needed to finance a level of the activity of 54000 units of output. Production is carried on evenly throughout the year and wages and overheads accrue similarly. State your assumptions, if any, clearly.

Solution:

As the annual level of activity given is 54000 units, it means that the monthly turnover would be 54000/12=4500 units.

The working capital requirement for this monthly turnover can be evaluated.

Estimation of Working Capital Requirement

|  |  |  |  |
| --- | --- | --- | --- |
| Particulars | Amount | Amount | Amount |
| 1.Current Assets |  |  |  |
| Minimum Cash Balance |  | 100000 |  |
| Inventories:  Raw Materials (4500xRs.50x1month)  Work In Progress  Materials  (4500xRs 50x1/2 month)  Wages at 50% of  (4500xRs.20x1/2month)  Overheads at 50% of(4500x30x1/2month)  Finished Goods  (4500x100x1month) | 112500  22500  33750 | 225000  168750  450000 |  |
| Receivables:  Debtors  (4500xRs 100x75%) |  | 337500 |  |
| Gross Working Capital (total current asset) |  |  | 1281250 |
| 2.Current Liabilities |  |  |  |
| Creditors for materials  (4500xRs50x1month) |  | 225000 |  |
| Creditors for wages (4500xRs20x10/30) |  | 30000 |  |
| Creditors for Overheads  (4500xRs30x1month) |  | 135000 |  |
| Total of Current liabilities |  |  | 390000 |
| Net Working Capital (TCA-TCL) |  |  | 891250 |

Assumption:

In the valuation of Work in Progress, the raw materials have been taken at full requirements for 15 days, but the wages and overheads have been taken only at 50% on the assumption that on an average all units in work in progress are 50% complete.

2. Since, wages are paid with a time lag of 10 days, the working capital provided for wages has been taken by dividing the monthly wages by 3 i.e. 10/30 (assuming a month to consist of 30 days)

3. The overheads of Rs 40 per unit includes depreciation cost of Rs 10 per unit , which is a non-cash item .This depreciation cost has been ignored for valuation of work in progress, finished goods and debtors . The overhead cost, therefore, has been taken only at Rs 30 per unit.

Prob 5.A proforma Cost sheet of a company provides the following particulars

|  |  |
| --- | --- |
| Elements of Cost | Amount per unit |
| Raw materials | 80 |
| Direct labour | 30 |
| Overheads | 60 |
| Total Cost | 170 |
| Profit | 30 |
| Selling Price | 200 |

The following further particulars is provided:

a. Raw materials are in stock on an average for one month

b. Raw materials are in process on an avg for half a month

c. Finished goods are in stock on an average for one month

d. Credit allowed by suppliers is one month

e. Lag in payment of wages is 1and 1/2 week

f. Lag in payment of overheads is one month

g. 1/4th output is sold against cash

h. Cash in hand and at bank is expected to be 25000

i. Credit allowed to customers is 2 months

You are required to prepare a statement of working capital requirement to finance a level of activity of 104000 units of production.

You may assume that the production is carried on evenly throughout the year, wages and overheads accrue similarly and a time period of 4 weeks is equivalent to a month.

Solution:

Estimation of Working Capital Requirement

|  |  |  |  |
| --- | --- | --- | --- |
| Particulars | Amount | Amount | Amount |
| 1.Current Assets |  |  |  |
| Minimum Cash Balance |  | 25000 |  |
| Inventories:  Raw Materials (104000xRs.80x4/52)  Work In Progress  Materials 104000x80x2/52  Wages104000x30x2/52  Overheads104000x60x2/52  Finished Goods  Materials 104000x80x4/52  Wages 104000x30x4/52  Overheads 104000x60x4/52  Finished Goods  104000x 170x4/52 | 320000  120000  240000  640000  240000  480000 | 640000  680000  1360000 |  |
| Receivables:  Debtors  Raw materials  104000x80x8/52x3/4  Wages  104000x30x8/52x3/4  Overheads  104000x60x8/52x3/4  Debtors  104000x170x8/52x3/4 | 960000  360000  720000 | 20,40,000 |  |
| Gross Working Capital (total current asset) |  |  | 47,45,000 |
| 2.Current Liabilities |  |  |  |
| Creditors for materials  (104000xRs80x4/52) |  | 640000 |  |
| Creditors for wages (104000xRs30x1.5/52) |  | 90000 |  |
| Creditors for Overheads  (104000x60x4/52) |  | 480000 |  |
| Total of Current liabilities |  |  | 1210000 |
| Net Working Capital (TCA-TCL) |  |  | 3535000 |

Prob 6.Hi Tech Ltd. plans to sell 30000 units next year.

The expected cost of goods sold is as follows:

|  |  |
| --- | --- |
| Particulars | Rs.(Per Unit) |
| Raw Materials | 100 |
| Manufacturing Expenses | 30 |
| Selling, Administration and financial expenses | 20 |
| Selling Price | 200(-150) |

The duration at various stages of the operating cycle is expected to be as follows:

Raw material Stage 2 months

WIP stage 1 month

Finished Goods stage ½ month

Debtors stage 1 month

Assuming the monthly sale level of 2500 units, estimate the working capital requirement if the desired cash balance is 5% of gross working capital requirement, and WIP is 25% complete with respect to manufacturing expenses.

Estimation of Working Capital Requirement

|  |  |  |
| --- | --- | --- |
| Particulars | Amount | Amount |
| 1.Current Assets |  |  |
| Inventories:  Raw Materials (2500xRs.100x 2months)  Work In Process  Materials  (2500xRs 100x1month)  Manufacturing Exp 25% of (2500xRs.30)  Finished Goods  Raw materials  (2500xRs100x1/2 month)  Manufacturing Expenses  (2500xRs.30x1/2month) | 500000  250000    18750  125000  37500 | 931250 |
| Receivables:  Debtors  (2500xRs150 at Total Cost of sales) |  | 375000 |
| Gross Working Capital |  | 1306250 |
| Cash balance (13,06,250x5/95) |  | 68750 |
| Total Working Capital Requirement |  | 1375000 |

Estimation of the Cash balance on the basis of GWC

If the desired cash balance is 5% of the Gross Working Capital requirement

If Gross Working capital is 100% Cash balance is 5%

100%-5%=95%

If 95% working capital requirement is 1306250

Then cash of 5% is?? =1306250x5%/95%=68750

Prob7.XYZ ltd. sells its products on a gross profit of 20% of sales. The following information is extracted from its annual accounts for the year ending 31st December 2008

Sales (at 3 months credit) Rs 40,00,000

Raw material Rs.1200000

Wages (15 days in arrears) Rs.9,60,000

Manufacturing and general Expenses (one month in arrears) Rs.1200000

Administration Expenses ( one month in arrears)

Rs 4,80,000

Sales promotion expenses (payable half yearly in advance) Rs.200000

The company enjoys one month credit period from the suppliers of raw materials and maintains 2 months stock of raw materials and 1and ½ months in finished goods.

Cash balance is maintained at Rs 100000 as a precautionary balance. Assuming a 10% margin, find out the working capital requirement of XYZ ltd.

Solution:

Estimation of Working Capital Requirement

|  |  |  |  |
| --- | --- | --- | --- |
| Particulars | Amount | Amount | Amount |
| 1.Current Assets |  |  |  |
| Minimum Cash Balance |  | 100000 |  |
| Inventories:  Raw Materials(1200000x2/12)  Finished Goods  4000000x80%x1.5/12  Advance payment of sales promotion  200000x6/12 | 200000  400000  100000 | 700000 |  |
| Debtors (4000000x80%x3/12) |  | 800000 |  |
| Gross Working Capital (total current asset) |  |  | 1600000 |
| 2.Current Liabilities |  |  |  |
| Creditors for materials  1200000x1/12 |  | 100000 |  |
| Creditors for wages  960000x.5/12 |  | 40000 |  |
| Creditors for Overheads  Manufacturing & Gen exp 1200000x1/12  Administrative Exp  480000x1/12 | 100000  40000 | 140000 |  |
| Total of Current liabilities |  |  | 280000 |
| Excess of CA over CL |  |  | 1320000 |
| +10% Safety margin |  |  | 132000 |
| Net Working Capital required |  |  | 1452000 |

Working note for the Finished Goods:

Finished Goods stock holding period is-1and ½ month on the Total Cost of sales

Total Cost is 80% of the total sales because 20% is the Gross profit on sales

Hence 80% of 4000000 x1.5/12=400000