

Task 9.33: Process Costing

HÜVEDE (Pty) Ltd. is a production firm for barbells (Hanteln). The goods are produced by a 3 step process. In the first step, the barbells are cast (werden gegossen) in the foundry division (Gießerei). The process is continued in the painting department where the barbells are coated. The last step is the shipping department where the barbells are packed in plastic boxes.

At the beginning of the Accounting period HÜVEDE (Pty) Ltd. discloses the balance sheet as below:

Hüvede (Pty) Ltd.'s STATEMENT of FINANCIAL POSITION as at 31.12.20X2			
A			C, L
<i>Non-current assets</i>	[EUR]	<i>Equity</i>	[EUR]
P, P, E	900,000.00	Share capital	500,000.00
Intangibles		Reserves	400,000.00
Financial assets		Retained earnings	50,000.00
<i>Current assets</i>		<i>Liabilities</i>	
Inventory	60,000.00	Interest bear liab	
Accounts receivables		Accounts payables	
Prepaid expenses		Provisions	
Cash/Bank	20,000.00	Tax liabilities	30,000.00
Total assets	980,000.00	Total equity and liab.	980,000.00

Exhibit 1: HÜVEDE (Pty) Ltd.'s balance sheet

The inventory consists of 10,000.00 barbells in the painting department that wait for coating. The coating is in 4 layers, the barbells in the painting department are coated twice.

HÜVEDE (Pty) Ltd. buys iron for 150,000.00 EUR. It is used in the foundry completely. The depreciation in the foundry is 150,000.00 EUR. During the Accounting period 20X3, HÜVEDE (Pty) Ltd. casts 75,000.00 barbells which each contain iron costs (materials) to the extent of 2.00 EUR/u. Labour in the foundry is 75,000.00 EUR/a.

For the painting department, HÜVEDE (Pty) Ltd. buys paint for 200,000.00 EUR. Labour in the painting department is 64,000.00 EUR. (Assume the same labour/barbell casting and coating costs applied last Accounting period when the 10,000 barbells were produced.) During the Accounting period 20X3, the opening value for barbells in the painting department is coated twice, all other barbells 4 times. A paint coat per barbell costs 0.30 EUR/(u x coating). The latter amount does not contain labour. At the end of the Accounting period, there is paint still left. For the packing, HÜVEDE (Pty) Ltd. buys 40,000 boxes for 0.50 EUR/box and 50,000 boxes for 0.55 EUR/u. Apply a first-in-first-out cost formula for all inventory movements, including sales. Labour costs in the shipping department are 127,500.00 EUR.

The barbells are all finished in 20X3. 68,000 barbells are sold to wholesalers at a net unit selling price of 15.00 EUR/u.

Required: Run a Process Costing and record the production and sale of barbells for HÜVEDE (Pty) Ltd. Determine the closing stock of barbells. Ignore VAT.

Solution:

- (1) Payment of income tax liabilities: 30,000.00 EUR
- (2) Purchase of iron 150,000.00 EUR
- (3) Adding iron to stock 150,000.00 EUR
- (4) Adding iron to MSA foundry account
- (5) Recording depreciation for the foundry to the extent of 150,000.00 EUR
- (6) Adding depreciation to the MSA foundry account 150,000.00 EUR
- (7) Recording labour to the extent of 75,000.00 EUR
- (8) Adding labour to the MSA foundry account 75,000.00 EUR
- (9) Completing 75,000 barbells in the foundry. The cost of manufacturing equal to $150,000 + 150,000 + 75,000 = \mathbf{375,000.00 \text{ EUR}}$. The barbells are transferred to the painting department.
The painting department coats the 10,000 barbells from the opening value twice and the new barbells received from the foundry 4 times. The equivalent unit equals to $10,000 \times 50\% + 75,000 = \mathbf{80,000 \text{ units}}$.
- (10) Purchase of paint 200,000.00 EUR
- (11) Adding the paint to the Raw Materials Inventory account 200,000.00 EUR
- (12) Adding paint to the extent of 96,000.00 EUR to the MSA Painting account
- (13, 14) Recording labour in the Painting department 64,000.00 EUR
- (15) Transfer of 85,000 barbells to the Packing department. The amount equals to 595,000.00 EUR. The cost of manufacturing so far (after Foundry and Painting departments) are: $5 + 0.80 + 4 \times 0.30 = \mathbf{7.00 \text{ EUR/u}}$. The amount is $595,000/85,000 = \mathbf{7.00 \text{ EUR/u}}$.
- (16, 17) Purchase and storage of boxes: $40,000 \times 0.50 + 50,000 \times 0.55 = \mathbf{47,500.00 \text{ EUR}}$.
- (18) Transfer of 85,000 boxes to the Packing department: $40,000 \times 0.50 + 45,000 \times 0.55 = \mathbf{44,750.00 \text{ EUR}}$.
- (19, 20) Recording and adding labour for the Packing department: 127,500.00 EUR. Packing labour per barbell equals to $127,500 / 85,000 = \mathbf{1.50 \text{ EUR/u}}$.
- (21) Putting 40,000 packed barbells on stock: $40,000 \times (7 + 1.50 + 0.50) = \mathbf{360,000.00 \text{ EUR}}$.
- (22) Putting 45,000 packed barbells on stock: $45,000 \times (7 + 1.50 + 0.55) = \mathbf{407,250.00 \text{ EUR}}$.
The unit cost of manufacturing for the first batch are $7 + 1.50 + 0.50 = \mathbf{9.00 \text{ EUR/u}}$ and for the next one: $7 + 1.50 + 0.55 = \mathbf{9.05 \text{ EUR/u}}$.
- (23) Recording inventory movements for 68,000 sold barbells: $40,000 \times 9 + 28,000 \times 9.05 = \mathbf{613,400.00 \text{ EUR}}$.
- (24) Revenue recognition equals to: $68,000 \times 15 = \mathbf{1,020,000.00 \text{ EUR}}$.

Observe the accounts for the profit calculation:

D		MSA (inventory) painting		C
OV	60,000.00	(15)	595,000.00	
(9)	375,000.00			
(12)	96,000.00			
(14)	64,000.00			
	<u>595,000.00</u>		<u>595,000.00</u>	

D		P, P, E		C
OV	<u>900,000.00</u>	c/d	<u>900,000.00</u>	
b/d	900,000.00			

D		Cash/Bank		C
OV	20,000.00	(1)	30,000.00	
(24)	1,020,000.00	(2)	150,000.00	
		(7)	75,000.00	
		(10)	200,000.00	
		(13)	64,000.00	
		(16)	47,500.00	
		(19)	127,500.00	
		c/d	<u>346,000.00</u>	
	<u>1,040,000.00</u>		<u>1,040,000.00</u>	
b/d	346,000.00			

D		Issued capital		C
c/d	<u>500,000.00</u>	OV	<u>500,000.00</u>	
		b/d	500,000.00	

D		Reserves		C
c/d	<u>400,000.00</u>	OV	<u>400,000.00</u>	
		b/d	400,000.00	

D		Retained earnings		C
c/d	<u>334,620.00</u>	OV	50,000.00	
	<u>334,620.00</u>	R/E	<u>284,620.00</u>	
			<u>334,620.00</u>	
		b/d	334,620.00	

D		Income tax liabilities		C
(1)	30,000.00	OV	30,000.00	
c/d	<u>121,980.00</u>	P&L	<u>121,980.00</u>	
	<u>151,980.00</u>		<u>151,980.00</u>	
		b/d	121,980.00	

D		Purchase		C
(2)	150,000.00	(3)	150,000.00	
(10)	200,000.00	(11)	200,000.00	
(16)	47,500.00	(17)	47,500.00	
	<u>397,500.00</u>		<u>397,500.00</u>	

D Raw materials inventory iron C	
(3) <u>150,000.00</u>	(4) <u>150,000.00</u>

D MSA foundry C	
(4) <u>150,000.00</u>	(9) <u>375,000.00</u>
(6) <u>150,000.00</u>	
(8) <u>75,000.00</u>	
<u>375,000.00</u>	<u>375,000.00</u>

D Depreciation C	
(5) <u>150,000.00</u>	(6) <u>150,000.00</u>

D Acc depr C	
c/d <u>150,000.00</u>	(5) <u>150,000.00</u>
	b/d <u>150,000.00</u>

D Labour C	
(7) <u>75,000.00</u>	(8) <u>75,000.00</u>
(13) <u>64,000.00</u>	(14) <u>64,000.00</u>
(19) <u>127,500.00</u>	(20) <u>127,500.00</u>
<u>266,500.00</u>	<u>266,500.00</u>

D Raw materials inventory paint C	
(11) <u>200,000.00</u>	(12) <u>96,000.00</u>
	c/d <u>104,000.00</u>
<u>200,000.00</u>	<u>200,000.00</u>
b/d <u>104,000.00</u>	

D MSA shipping (packaging) C	
(15) <u>595,000.00</u>	(21) <u>360,000.00</u>
(18) <u>44,750.00</u>	(22) <u>407,250.00</u>
(20) <u>127,500.00</u>	
<u>767,250.00</u>	<u>767,250.00</u>

D Raw materials boxes C	
(17) <u>47,500.00</u>	(18) <u>44,750.00</u>
	c/d <u>2,750.00</u>
<u>47,500.00</u>	<u>47,500.00</u>
b/d <u>2,750.00</u>	

D Finished goods inventory barbells C	
(21) <u>360,000.00</u>	(23) <u>613,400.00</u>
(22) <u>407,250.00</u>	c/d <u>153,850.00</u>
<u>767,250.00</u>	<u>767,250.00</u>
b/d <u>153,850.00</u>	

D Cost of goods sold C	
(23) <u>613,400.00</u>	P&L <u>613,400.00</u>

D Revenue C	
P&L <u>1,020,000.00</u>	(24) <u>1,020,000.00</u>

D Profit and Loss P&L C	
COS <u>613,400.00</u>	Rev <u>1,020,000.00</u>
EBT <u>406,600.00</u>	
<u>1,020,000.00</u>	<u>1,020,000.00</u>
ITL <u>121,980.00</u>	b/d <u>406,600.00</u>
R/E <u>284,620.00</u>	
<u>2,446,600.00</u>	<u>2,446,600.00</u>

Exhibit 2: Accounts

Hüvede (Pty) Ltd.'s
STATEMENT of COMPREHENSIVE INCOME
for the year ended 31.12.20X3

	[EUR]
Revenue	1,020,000.00
Other income	
	1,020,000.00
COS	(613,400.00)
Labour	
Depreciation	
Other expenses	
Earnings before int. & taxes (EBIT)	406,600.00
Interest	
Earnings before taxes (EBT)	406,600.00
Income tax expenses	(121,980.00)
Deferred taxes	
Earnings after taxes (EAT)	284,620.00

Exhibit 3: Statement of profit and loss and other comprehensive income

Hüvede (Pty) Ltd.'s
STATEMENT of FINANCIAL POSITION
as at 31.12.20X2

A			C, L
<i>Non-current assets</i>	[EUR]	<i>Equity</i>	[EUR]
P, P, E	750,000.00	Share capital	500,000.00
Intangibles		Reserves	400,000.00
Financial assets		Retained earnings	334,620.00
<i>Current assets</i>		<i>Liabilities</i>	
Inventory	260,600.00	Interest bear liab	
Accounts receivables		Accounts payables	
Prepaid expenses		Provisions	
Cash/Bank	346,000.00	Tax liabilities	121,980.00
Total assets	1,356,600.00	Total equity and liab.	1,356,600.00

Exhibit 4: Balance sheet