

Task 9.19: Manufacturing Accounting – Process Costing

(Manufacturing Accounting - Auftragskalkulation)

STONEBRIDGE Ltd. is a production firm for coffee pots. The production process consists of assembling and heat treatment activities. The assembling department takes coffee pot bodies (CPB) and fixes one lid and one handle to each of them. STONEBRIDGE runs a process costing and a perpetual inventory system. As the components (materials) and coffee pots are difficult to distinguish STONEBRIDGE applies the first-in-first-out formula.

At the beginning of fiscal year 20X5 STONEBRIDGE shows the statement of financial position as below in exhibit 1:

**Stonebridge Ltd's
STATEMENT of FINANCIAL POSITION
as at eoy 20X4**

A		C,L	
<i>Non-c. assets</i>	20X4	<i>SHs' capital</i>	20X4
P,P,E	230.000	Issued capital	100.000
Int. assets		Other reserves	
Financial assets		Retained ear.	105.000
<i>Current assets</i>		<i>Liabilities</i>	
Inventory	47.000	Int. bear. liab.	180.000
A/R		A/P	32.000
Prepaid exp.		Provisions	
Cash	185.000	Def. income	
		Tax liabilities	45.000
	<u>462.000</u>		<u>462.000</u>

Exhibit 1: Statement of Financial Position

The amount of inventories is raw materials. It contains 1,000 CPBs at 20.00 EUR each, 800 lids at 5.60 EUR each and 4,504 handles at 5.00 EUR each: $1,000 \cdot 20 + 800 \cdot 5.60 + 4,504 \cdot 5 = \mathbf{47,000.00 \text{ EUR}}$.

In 20X5 STONEBRIDGE buys 3,000 CPBs at 21.00 EUR each and 5,000 lids at 6.10 EUR each. STONEBRIDGE produces 4,000 coffee pots which all get completed and are transferred to storage. STONEBRIDGE sells 3,625 coffee pots at a selling price 85.00 EUR/coffee pot.

The overheads contain depreciation 63,500.00 EUR and material handling costs 12,700.00 EUR. Depreciation is allocated to the departments half : half. Material handling expenses are allocated only to the Assembling department. The total overheads from both cost centers are fully allocated to goods produced along to all material expenses for used up materials during the accounting period – even if these materials were on stock at the beginning of the year. Not yet used materials do not carry overheads.

Required: Determine the closing stock of inventory and the pretax profit for STONEBRIDGE. Ignore VAT.

STONEBRIDGE Ltd. ist ein Produktionsunternehmen für Kaffeepötte. Der Produktionsprozess besteht aus Montage und Wärmebehandlungsaktivitäten. Die Montageabteilung nimmt Kaffeepottkörper (CPB) und montiert daran einen Deckel und einen Griff. STONEBRIDGE betreibt ein Process-Costing-System und führt ein permanentes Lagerbestandssystem. Weil die Komponenten (Material) und Kaffeepötte schwierig zu unterscheiden sind, wendet STONEBRIDGE die First-In-First-Out-Verbrauchsfolgefiktion an.

Zu Beginn des Geschäftsjahrs 20X5 zeigt STONEBRIDGE die Bilanz wie in Abbildung 1:

**Stonebridge Ltd's
STATEMENT of FINANCIAL POSITION
as at eoy 20X4**

A		C,L	
<i>Non-c. assets</i>	20X4	<i>SHs' capital</i>	20X4
P,P,E	230.000	Issued capital	100.000
Int. assets		Other reserves	
Financial assets		Retained ear.	105.000
<i>Current assets</i>		<i>Liabilities</i>	
Inventory	47.000	Int. bear. liab.	180.000
A/R		A/P	32.000
Prepaid exp.		Provisions	
Cash	185.000	Def. income	
		Tax liabilities	45.000
	<u>462.000</u>		<u>462.000</u>

Abbildung 1: Statement of Financial Position

Der Wert der Vorräte ist Rohmaterial. Es enthält 1.000 CPB zu je 20,00 EUR, 800 Deckel zu je 5,60 EUR und 4.504 Griffe zu je 5,00 EUR: $1.000 \cdot 20 + 800 \cdot 5,60 + 4.504 \cdot 5 = \mathbf{47.000,00 \text{ EUR}}$.

In 20X5 kauft STONEBRIDGE 3.000 CPBs zu je 21,00 EUR und 5.000 Deckel zu je 6,10 EUR. STONEBRIDGE stellt 4.000 Kaffeepötte her und stellt alle fertig und lagert alle Kaffeepötte ein. STONEBRIDGE verkauft 3.625 Kaffeepötte zu einem Verkaufspreis von 85,00 EUR/Kaffeepott.

Die Gemeinkosten enthalten Abschreibungen i.H.v. 63.500,00 EUR und Materialhandlingskosten i.H.v. 12.700,00 EUR. Die Abschreibungen werden jeweils hälftig auf die Abteilungen verteilt. Die Materialhandlingskosten werden nur der Montageabteilung zugerechnet.

Die gesamten Gemeinkosten werden vollständig auf die Kostenstellen entsprechend der Werte der in der Abrechnungsperiode verbrauchten Materialien verrechnet – auch wenn diese Materialien Anfangsbestand waren. Noch nicht verbrauchte Materialien tragen keine Gemeinkosten.

Gefragt: Bestimmen Sie den Endbestand an Rohmaterial und den Vorsteuergewinn der STONEBRIDGE Ltd. Ignorieren Sie die Umsatzsteuer.

Solution (Lösung)

Hint: Not all bookkeeping entries are required for this task. To prepare a statement of financial position requires making all bookkeeping entries and offers the chance to check the task with regard to completeness. The solution starts with the assumption that all activities are on cash.

(1) Paying for income tax: 45,000.00 EUR

DR Income Tax Liabilities	45,000.00 EUR
CR Cash/Bank	45,000.00 EUR

(2) Purchase: It is required to run 3 accounts for the materials due to the overview. The purchases are: CPBs: $3,000 \cdot 21 = 63,000.00$ EUR and lids: $5,000 \cdot 6.10 = 30,500.00$ EUR.

DR RM-Inventory	63,000.00 EUR
CR Cash/Bank	63,000.00 EUR

DR RM-Inventory	30,500.00 EUR
CR Cash/Bank	30,500.00 EUR

(3) Depreciation: 63,500.00 EUR

DR Depreciation	63,500.00 EUR
CR Acc. Depr.	63,500.00 EUR

(4) Material handling costs 12,700.00 EUR

DR Material Handling Expenses	12,700.00 EUR
CR Cash/Bank	12,700.00 EUR

(5) Assigning materials to the WIP accounts. WIP assembling receives with regard to materials: for CPB: $1,000 \cdot 20 + 3,000 \cdot 21 = 83,000.00$ EUR. For Lids: $800 \cdot 5.60 + 3,200 \cdot 6.10 = 24,000.00$ EUR. For the handles: $4,000 \cdot 5 = 20,000.00$ EUR.

DR WIP ass	83,000.00 EUR
CR RM-Inventory	83,000.00 EUR

DR WIP ass	24,000.00 EUR
CR RM-Inventory	24,000.00 EUR

DR WIP ass	20,000.00 EUR
CR RM-Inventory	20,000.00 EUR

(6) Depreciation is allocated to the cost centers half : half: $63,500 / 2 = 31,750.00$ EUR.

DR MOH-Assembling	31,750.00 EUR
CR Depreciation	31,750.00 EUR

DR MOH-Heat Treatment	31,750.00 EUR
CR Depreciation	31,750.00 EUR

(7) Allocation of material handling costs to cost center WIP-Assembling in full: 12,700.00 EUR.

DR MOH-Assembling	12,700.00 EUR
CR Material Handling Expenses	12,700.00 EUR

(8) The total cost of assembling gets transferred to the WIP heat treatment account. It amounts to 171,450.00 EUR for the first transfer and for the transfer to Finished Goods it is **203,200.00 EUR**:

DR WIP HT	171,450.00 EUR
CR WIP Ass	171,450.00 EUR

DR FG Inventory	203,200.00 EUR
CR WIP HT	203,200.00 EUR

(9) Sales: $3,625 \cdot 85 = 308,125.00$ EUR. The cost of sales amounts to $(3,625/4,000) \cdot 203,200 = 184,150.00$ EUR.

DR Cash/Bank	308,125.00 EUR
CR Sales	308,125.00 EUR

DR COS	184,150.00 EUR
CR FG Inventory	184,150.00 EUR

See the accounts for the job order finishing and the calculation of profit via the Profit and Loss account:

D		PPE	C	
OV	230,000.00	c/d	230,000.00	
b/d	230,000.00			

D		Cash/Bank	C	
OV	185,000.00	(1)	45,000.00	
(9a)	308,125.00	(2a)	63,000.00	
		(2b)	30,500.00	
		(4)	12,700.00	
		c/d	341,925.00	
	493,125.00		493,125.00	
b/d	341,925.00			

D		SCap	C	
c/d	100,000.00	OV	100,000.00	
		b/d	100,000.00	

D		Inv-CPB	C	
OV	20,000.00	(5a)	83,000.00	
(2a)	63,000.00			
	83,000.00		83,000.00	

D		Inv-Lids	C	
OV	4,480.00	(5b)	24,000.00	
(2b)	30,500.00	c/d	10,980.00	
	34,980.00		34,980.00	
b/d	10,980.00			

D		Inv-Hdls	C	
OV	22,520.00	(5c)	20,000.00	
		c/d	2,520.00	
	22,520.00		22,520.00	
b/d	2,520.00			

D		IBL	C	
c/d	180,000.00	OV	180,000.00	
		b/d	180,000.00	

D		A/P	C	
c/d	32,000.00	OV	32,000.00	
		b/d	32,000.00	

D		Tax Liabilities	C	
(1)	45,000.00	OV	45,000.00	
c/d	37,192.50	P&L	37,192.50	
	82,192.50		82,192.50	
		b/d	37,192.50	

D		Depr	C	
(3)	63,500.00	(6a)	31,750.00	
		(6b)	31,750.00	
	63,500.00		63,500.00	

D		Acc Depr	C	
c/d	63,500.00	(3)	63,500.00	
		b/d	63,500.00	

D		Mat handling	C	
(4)	12,700.00	(7)	12,700.00	

D		WIP-assembl	C	
(5a)	83,000.00	(8a)	171,450.00	
(5b)	24,000.00			
(5c)	20,000.00			
(6a)	31,750.00			
(7)	12,700.00			
	171,450.00		171,450.00	

D		WIP-heat trtm	C	
(6b)	31,750.00	(8b)	203,200.00	
(8a)	171,450.00			
	203,200.00		203,200.00	

D		FG-Inventory	C	
(8b)	203,200.00	(9b)	184,150.00	
		c/d	19,050.00	
	203,200.00		203,200.00	
b/d	19,050.00			

D		COS	C	
(9b)	184,150.00	P&L	184,150.00	

D		Revenue	C	
P&L	308,125.00	(9a)	308,125.00	

D		P&L	C	
COS	184,150.00	Rev	308,125.00	
NPc/d	123,975.00			
	308,125.00		308,125.00	
ITL	37,192.50	b/d	123,975.00	
R/E	86,782.50			
	123,975.00		123,975.00	

D		R/E	C	
c/d	191,782.50	OV	105,000.00	
	191,782.50	P&L	86,782.50	
			191,782.50	
		b/d	191,782.50	

Exhibit 2: Accounts

The closing stock for RM inventories is $10,980 + 2,520 = 13,500.00$ EUR. The pretax profit is according to the P&L-account: **123,975.00 EUR**.

In order to check the bookkeeping entries the statement of financial position is prepared as displayed in exhibit 3 (not required by the task):

**Stonebridge Ltd's
STATEMENT of FINANCIAL POSITION
as at eoy 20X5**

A		C,L	
<i>Non-c. assets</i>	20X4	<i>SHs' capital</i>	20X4
P,P,E	166.500	Issued capital	100.000
Int. assets		Other reserves	
Financial assets		Retained ear.	191.783
<i>Current assets</i>		<i>Liabilities</i>	
Inventory	32.550	Int. bear. liab.	180.000
A/R		A/P	32.000
Prepaid exp.		Provisions	
Cash	341.925	Def. income	
		Tax liabilities	37.193
	<u>540.975</u>		<u>540.975</u>

Exhibit 3: Statement of Financial Position