STOCK ACCOUNTING INSTRUMENTATION IN CONSTRUCTION ENTITIES/ OF ENTITIES IN THE CONSTRUCTION FIELD

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Abstract:

Due to the specific features provided by the various and complex economic processes and phenomena resulted from the technical-economic characteristics, the construction industry requires a special attention on its accounting organization. Due to the stock elements specific only to this branch, such as scaffolding, shuttering, temporary arrangements, as well as to the peculiarities of the synthetic and analytic organization of stock accounting, the lack of specific accounts in the general account plan determined us to focus and analyze this category of current assets, the stocks, at the level of the construction entities.

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1. Introduction

Construction is a branch of the national economy with defined specific features, with various and complex processes and phenomena,

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resulted from the technical-economic characteristics of this branch. These characteristics associated with the high volume and the accelerated pace, as well as with the used means and methods, confer the movement and changes universe of this field increasing and evolving meanings, to which the accounting science must adopt new attitudes and views related to the development on a higher level of its knowledge, reflection, analysis, control and prediction potential (Ciuche, 1977, p.7).

In order to highlight the importance of construction in the market economy, we will present several statistic data on construction. Thus, according to the National Prognosis Commission, following the release/statement no. 20/22.04.2007 (www.x.gov.ro/presa/integrare), construction will represent, in the period 2007-2013, the most dynamic activity sector in the Romanian economy, with an average annual rate of the value added tax of around 11%. This evolution will lead to the increase of the industry share in the gross domestic product, by 2013 the construction will provide around 10% of GDP, sustaining with about 1 percentage point its real increase. In the next period the focus will be on housing, given the deficit in the large built-up urban areas, as well as on the infrastructure construction. In 2007, Romania ranked 3rd in the European Union according to the share of the industry in the economy (30,3%). Of this total, construction had a share of 8,4%, while at the level of EU, construction represented 6,3% (www.newschannel.ro/ştiri).

Stocks and the work-in-progress are those current assets consisting of a set of goods and services within the economic entities intended to be consumed at their first usage, they can be sold after processing (following a production cycle) or can be sold in the state in which they were purchased (Matiș, Pop, 2010, p.267).

On the other hand, the category of stocks and work-in-progress is represented by goods, works and services intended to be consumed at their first use, to be sold as products resulted from processing (Ristea, Dumitru et.al., 2009, p.317).

A main characteristic of stocks is the fact that, classifying them within the current assets category, they are in constant motion, changing their material shape and utility within the economic circuit (Matiș, 2005, p.64).

Stocks are current assets (OMFP 3055/2009):

a) held for sale in the ordinary course of business;

b) being produced for sale in the ordinary course of activity,
c) as raw materials and other supplies to be used in the production and supply of services.

2. Stock evaluation for construction entities Evaluarea stocurilor în cazul entităților din domeniul construcțiilor

Stocks are valued at the lowest value between cost and the net working/feasible value (IFRS, 2009, p.1020). On the other hand, all input and output stock operations should be valued at the same price type, whatever this is (Pereș, Sabău et al., 2005, p.243).

At the *inventory input*, stocks are evaluated as in the case of the other companies with different activities, according to the input method, thus: at acquisition cost, in the case of purchased stocks, in the case of produced stocks, at the input value, in the case of stocks with capital input, at fair value if stocks were received free of charge or by donation.

What interests us is the *production cost* that includes the direct costs associated with the production, such as: direct materials, energy used for technological purposes, direct labor and other direct production costs, the cost of product design, as well as the rationally allotted share of indirect production costs related to their manufacture (OMFP 3055/2009). The production indirect overheads are those costs that remain constant regardless of the production volume, such as depreciation, and the indirect variable ones are those that vary depending on the production volume.

The cost of stocks of a service provider, such as ***construction companies***, includes besides the above mentioned elements, the labour and other costs related to the staff directly engaged in providing the services, including the supervising personnel, as well as the appropriate overheads.

Because the construction entities present certain peculiarities related to the evaluation of stocks at the inventory output, we will focus upon this moment of the evaluation. The national legislation in accounting stipulates three evaluation methods(OMFP 3055/2009):

- LIFO (last input, first output);
- FIFO (first input, last output);
- CMP (average weighted cost).

The International Accounting Standards (IFRS, 2009, p.1020-1022) stipulate as stock evaluation methods at the inventory output only the FIFO and the AWC method, affirming that the LIFO method does not convey a

reliable representation of real stock flows, precisely because this methods deal with treating the newest stock elements as the first sold, thus the elements that remain in the inventory are the old ones.

Even if the Romanian legislation (OMFP 3055/2009) allows the use of any of the three methods, *the economic entities with the main activity object – construction – choose the method of the average weighted cost (AWC).* The motivation for this choice consists in the fact that the average calculated when applying this method and the inventory discharge do not influence the outcome of the activity neither upward nor downward, obtaining an average value between the other two methods, respectively: FIFO and LIFO.

The method of the average weighted cost can be applied in two variants:

- the update of the fixed average unit cost after each input;
- the regular update of the average weighted unit cost, monthly or at other times, which does not exceed the average stock period and is determined as a ratio between the stock input value and the total stock quantity, for each product.

The main disadvantage presented by the AWC method is the formula that requires great attention and that takes into account the average value immediately preceding the current output for which FAC is calculated. Other disadvantages of this method are (Cristea, Caciuc, et.all, 2004, p.166): the risk of distorting the value of stocks, by weight(share), affecting the profitability and the values of the financial statements; the unit cost of stocks will not be identical with the one specified by the suppliers on the invoices, etc.

We believe that the use of a *standard cost for both the input and output of stocks from the inventory*, would reduce the time, would ease the calculation methodology, and the value of the inventory discharge will be the closest to the truth. Thus, even if the determination of a standard cost considers the determination of an average of costs associated to stocks from the last 3-5 years, we believe that in the current state of the economy, due to the daily changes of prices, the determination of the standard stock cost would imply the determination of their average for the last calendar year, and by applying the price update coefficient and the inflation coefficient we would obtain a standard cost for the stocks used in the construction entities.

A particularity of stock accounting in constructions is the consumption of raw materials and materials based on the consumption limit sheet that is drafted for each object estimate (for example plumbing), and the consumption

excess is registered based on the *consumption bill*. *The excess of the quantity necessary according to the estimate is made based on the explanatory note from the foreman of the team, endorsed by the site inspector*.

3. Accounting investigation of stocks in the construction entities

3.1. The synthetic and analytic organization of stocks

The synthetic accounting of stocks, according to the current regulations (OMFP 3055/2009) is held either with the method of the permanent inventory, or with that of the alternate inventory, indicating that the entitites that use the method of the alternate inventory in the synthetic accounting do not organize the analytical stock accounting (Matiș, Pop, 2010, p.280).

Because the volume of raw materials and consumables is very high in a construction work, the *construction units use the method of the permanent inventory* from two reasons:

a. It allows the use of both stock record methods, i.e. quantity-value, used by the construction entities for the accountancy of stocks in warehouses, and global-value, used in synthetic accounting;

b. Because through the method of the alternate inventory the stock should pass to afferent costs at the begininning of the month, all monthly inputs pass to expenses, and at the end of the month, final stocks are established through inventory and registered in the stock accounts, diminishing the costs; one single error of ommission in the physical inventory is enough to obtain erroneous information in the annual accounts.

The method of the permanent inventory supposes recording the value of each input and output of goods in the specific stock accounts. The use of this method has its advantages, it discloses the value of stocks in any moment, any method of stock evidence stipulated in the current legislation can be used (OMFP 3055/2009).

The accountancy of the stock control is performed with the help of the analytic accounting, wich is a complete accountancy, as it uses both the monetary and the natural standard, as opposed to the operative record of the deposits, which use only the natural standard.

The stock analytic accounting must be organized in order to know their place in the deposit corresponding to their quantity, value and type of material.

The analytic accounting is held depending on the type of activity and the needs of the enterprise, corresponding to one of the methods (Crețoiu, Bucur, 2007, p.169-170):

a). Quantity-value (on sheets of analytic accounts);

b). operative-accounting (on sales);

c). global-value ;

d). Specific methods of analytic material record.

Regardless of the adopted work method, the analytic accounting must ensure full compliance with synthetic accounting.

In the case of construction companies, there are two types of analytic material record/accountancy, the quantity-value record is used in the deposits of raw materials and materials, and the global-value record is used in the synthetic accounting.

The global-value method consists of the value record, in the inventory as well as in accounting, and even if it is specific to retail; it is used in the case of the *construction entities*. Because both methods are used, at the end of the day the manager files an inventory report, which is sent to the accounting service, containing the inputs and outputs, to which documents certifying the validity of those listed in the annual report are attached.

The accounting service verifies the legality and reality of the documents included in the annual report, the prices as well as their evaluation together with the other calculations, then registering them in the analytic accounting held for each stock control.

3.2. Accounting of the stock categories specific to constructions Contabilitatea categoriilor de stocuri specifice construcțiilor

Stock accounting is held with the third class of accounts, valid accounts used in all the branches of the national economy, including the construction industry.

The most important elements in the construction industry are the consumables, respectively account 302 „Consumables" and 303 „Inventory items".

Most materials necessary for the construction entity are registered with the help of the account 302 „*Consumables*", *except a part of the scaffolding and shuttering, which belong to the inventory items, and*

respectively, the hutments and the temporary arrangements, specific to the site organization, also belonging to the inventory items.

Specific to the construction entities related to stock accounting, is the fact that the material reception is made in the central warehouse, from where materials are sent to the sites. For a better record of the stock movement between the central warehouse and the sites, at the account for materials and material costs, analytics are opened for each site.

The particularity of the supply and consumption of materials in the companies with prfile „construction work execution" results from:

- Reception of materials at the central warehouse from the supplier:

	%	=	401	124.000
100.000	302 Consumables		Suppliers	
	4426			
24.000	Inferential VAT			

(1)

- transfer of materials from the central warehouse to the site:

30.000	482 Offset between unit and subunit/site	=	302 Consumables	30.000

(2)

At the same time materials will be registered at their entry on the site

30.000	302.1 Consumables – site PRODMEC	=	482 Offset between unit and subunit/site	30.000

(3)

- Material consumption on the site:

30.000	602.1 Consumables costs – site PRODMEC	=	302.1 Consumables – site PRODMEC	30.000

(4)

Scaffolding and shuttering, which do not fall into the category of real estate assets, are accounted with the help of account 303 „Inventory items", which opens the analytic 303.1 „Inventory items/ *Scaffolding and shuttering", as follows:*

- shuttering - wood shuttering, removable plate shuttering, unified shuttering, etc.;
- scaffolding – wooden internal mobile scaffolding, iron internal mobile scaffolding, external mobile scaffolding, wooden internal fixed scaffolding.

What needs to be mentioned in the case of scaffolding and shuttering which are registered as inventory items, is that, although they are used several times in the synthetic accounting, they are put into use only once, i.e. after suffering major degradation.

As regards *the hutments and the temporary arrangements*, they are registered with the account *303 „Inventory items*" by creating an analytic, 303.2 „*Hutments and temporary arrangements*". Note that this category does not contain the organization works where materials (such as concrete platforms, approaches, roads, etc) are not recovered after demolition or removal.

The accounting of hutments and temporary arrangements is made as follows:

a. when hutments are purchased entirely from suppliers and totally consumed without recovering materials after the decommissioning

- hutments acquisition :

	%	=	401	124.000
100.000	303.2		Suppliers	
	Hutments and temporary arrangements			
24.000	4426			
	Inferential VAT			

(5)

- consumption of hutments:

100.000	603.2	=	303.2	100.000
	Hutments and		Hutments and	

	temporary arrangements costs		temporary arrangements	

(6)

2. when hutments are purchased entirely from the suppliers and materials are obtained after the decommissioning:

- hutments acquisition :

	%	=	401	124.000
100.000	303.2		Suppliers	
	Hutments and temporary arrangements			
24.000	4426			
	Inferential VAT			

(7)

- recovery of materials after the decommissioning:

	%	=	303.2	100.000
30.000	3xx		Hutments and	
	Stocks		temporary	
70.000	603.2		arrangements	
	Hutments and temporary arrangements costs			

(8)

3. when a part of the hutments are obtained from self-production and the others are purchased from suppliers with/without recovering materials after the decommissioning

- hutments acquisition :

	%	=	401	86.800
70.000	303.2		Suppliers	
	Hutments and temporary arrangements			
16.800	4426			
	Inferential VAT			

(9)

- hutments from self-production :

30.000	303.2 Hutments and temporary arrangements	=	711 Incomes associated to the costs of the product stocks	30.000

(10)

- site decommissioning :

100.000	% 711 Incomes afferent to the costs of the product stocks and/or 3xx Stocks And/or 603.2 Hutments and temporary arrangements costs	=	303.2 Hutments and temporary arrangements	100.000

(11)

Besides the works involving land development, excavation, connection to the water and gas mains, and other preparatory works, the site organization also supposes the construction of facilities initially used for stock deposits/storing stocks or for other purposes, further integrated as part of the final construction. There is no separate account for such situations that should highlight these constructions, at present invoicing both the beneficiary and the rest of the construction, as a service in the moment in which it becomes part of the final construction. *We believe it necessary to introduce an account in the general account plan for the site organization, **304 „Hutments and temporary arrangements**", which should function as an inventory items account, discharging with the income account 711 „Incomes afferent to the costs of the product stocks", when they are obtained from self-production, respectively with the supplier account when they are purchased, crediting with an expence*

*account, for example **6585 „Expenses afferent to the site organization**", with a stock account when the materials are recovered.*

The account 304 „Hutments and temporary arrangements" functions as follows:

Table 1: 304 „Hutments and temporary arrangements"

C(-)	D (+)
711„Incomes associated to the costs of the product stocks" – for the hutments and temporary arrangements on the site; **401** „Suppliers" – for the purchased hutments and temporary arrangements;	**711**„Incomes associated to the costs of the product stocks" – for the hutments and temporary arrangements produced and disposed on the site; **3xx** „Stocks" – for materials recovered after the decommission **6585** „Site organization costs" for the hutments and temporary arrangements, purchased and consumed

Source: Created by the author

The accounting of the main operations related to hutments and temporary arrangements:

a. obtaining hutments from self-production

- record of hutments and temporary arrangements obtained from self-production

30.000	304 Hutments and temporary arrangements	=	711 Incomes associated to the costs of the product stocks	30.000

(12)

- cassation after decommissioning

30.000	711	=	304	30.000

	Incomes associated to the costs of the product stocks		Hutments and temporary arrangements	

(13)

- obtaining consumables after the decommissioning

	%	=	304	30.000
5.000	3xx Stocks		Hutments and temporary arrangements	
25.000	711 Incomes associated to the costs of the product stocks			

(14)

- invoicing the beneficiary

49.600	411 Customers	=	%	
			7585 Incomes of the site organization	40.000
			4427 Collected VAT	9.600

(15)

b. Hutment purchase

- purchase

	%	=	401	37.200
30.000	304 Hutments and temporary arrangements		Suppliers	
7.200	4426 Inferential VAT			

(16)

- consumption

30.000	6585 Incomes of the site organization	=	304 Hutments and temporary arrangements	30.000

(17)

- invoicing the beneficiary

49.600	411 Customers	=	% 7585 Incomes of the site organization 4427 Collected VAT	 40.000 9.600

(18)

A problem of the construction entities is represented by the *work-in-progress*.

Even if it is called *construction-assembly production*, we should clearly separate the production process from the execution process. Thus, in construction, we will encounter the *production process* only in the auxiliary activities, such as the operation of the concrete plants, where the final product is the concrete. The construction-assembly production involves the development of all the technological process phases, its settlement being made with estimate articles where the entire complex of works has been performed based on the *monthly work situations*. The settlement to the beneficiary is made using the income account 704 „*Incomes from performed works and rendered services*". Hence, it is improper to call it construction-assembly production, because it is actually about the work execution, the final result is to obtain a construction, which cannot be qualified as a finished product.

4. Conclusions

For a proper analysis of the construction market, it is required, in addition to the study and the knowledge of the field structure and

particuliarities, to understand the economic phenomena and the practical exercise within the respective market, at the same time taking into account the real conditions of the construction activities development (Patriche, 2003).

Analysing the definitions presented in this paper, we can conclude that the stocks represents a category of current assets, which, as goods, works and services, are held by the economic entities in order to be consumed at their first use and/or in order to be produced, for finally being sold in their original form or after passing through all the production stages.

In the construction activity, the stock category is that of raw materials and materials, used for construction service. The supply of stocks is based on the **material certificates/inventory**, which are elaborated starting with the general work estimate that helps calculate the necessary raw materials and materials in terms of quantity and type. Their supply is made with a higher quantitative margin of about 20%, that should cover potential losses from different causes, such as natural (humidity) or execution.

According to the national accounting law, the stocks support the evaluation at the inventory input, once with the inventorying, at the date of the annual financial statements and the inventory output. As regards the construction industry, we focus our attention on the moment of the stock input, when the evaluation is made at the production cost, but as we refer to work execution, we should not forget to include in the cost calculation the labor and other costs related to the staff directly engaged in the service supply, as well as the supervisors and the corresponding overheads.

As regards the stock evaluation at the inventory output, although the entities in the construction industry use the average weighted cost, we believe that the use of a standard cost for both the inventory input and output would reduce the work time, would simplify the calculation methodology, and the value of the inventory discharge would be closest to the truth.

In terms of the stock accounting organization, the synthetic accounting is organized according to the permanent inventory method, and from an analytic point of view, the construction entities use both the quantity-value record in the raw material and material warehouses as well as the global-value record, used in the synthetic accounting.

Besides the usual categories of stocks and other economic entities, as regards the construction, we should focus our attention on the scaffolding and shuttering, respectively on the temporary hutments that are not part of the site organization. Thus, at present, the scaffolding, shuttering and the temporary

hutments are accounted through the integration of accounts in account 303 „Inventory item materials".

As the hutments and the temporary arrangements are specific to construction, and due to the fact that they can be purchased and build on the site, they can be used several times, handed to the beneficiary or demolished, and, of course, a separate account is needed for their accounting.

Therefore, we believe that a gap in the current accounting law is the lack of the disctinct account for hutments and temporary arrangements, a stock category that should contain goods purchased and/or built for the work execution or for the construction service.

We consider that the hutments and temporary arrangements must not be included in the category of inventory items and that there should be a separate account, in order to constrain the construction companies to account separately the site organization: ***304 „Hutments and temporary arrangements***", which should function like the inventory items account, discharging with the income account 711 „Incomes afferent to the costs of product stocks", when they are obtained from own production, respectively the supplier account when they are purchased, and crediting with an expense account, for example **6585 „Expenses of the site organization",** with a stock account when the materials are recovered.

We should also consider the problem related to the production-in-progress (on-going production) in order to make the disctinction between the construction work execution and the production associated to the construction. We cannot talk about the production-in-progress unless we refer to the auxiliary production, such as the concrete plants, their final product being the concrete.

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