

## **Prices of Structural Works and Production Costs**

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### **Abstract**

The creation of the prices of the structural works stems from the costs and the profit. To achieve the profit from the sale of the structural works it is necessary to manage the costs of the production with regards to the coverage of the costs and the profit with the prices of the sale. Therefore the firm has to create the conditions for the check of the costs that are projected into the prices, and by this way to avoid the disproportion among the actually achieved costs of the structural production and the costs from the costs calculation.

### **Keywords**

Costs, cost management, costs and prices of structural works

### **1. Costs and Prices In the Structural Production**

At present building companies in the Czech Republic use for the structural works prices creation the absorption calculation method [4]. All costs are calculated for the in advance determined output of the production. Costs are divided according to the principle of allocation into direct and indirect costs.

Building companies use price databases sold by special organizations. Prices here are calculated from average costs and average profit detected on the building market. Only particular costs of selected structural works what the company considers beeing important from the aspect of the profit creation. These are usually projected into these prices. In case costs of the company are higher, company cannot use those price databasses. It would mean lost from the very beginning of the building contract.

For the cost management in the structural production the costs can be divided into production costs and other costs that ensure the production [5]. These costs are then projected into the price calculation of the structural works and consequently into the total price of the building orders.

The difference between the price calculated from costs of the company and the market price is for the company an indicator of the amount of production costs. In case it is not possible to cover production costs and the profit by the sale price, it is necessary to do appropriate operations.

Prices are compared in two levels:

1. The total price of the building delivery drafted into the calculation (budget) according to the particular cost sections. Cost sections include mainly:

- prices of project and preparation works
  - the construction part
  - the equipment for the working part of the building
  - costs for the organization of the production
  - the price of the land
  - the risk reserve
2. Calculated unit prices of structural works in the construction part of the budget. Unit prices of structural works include:
- direct costs for the production material
  - direct costs wages of production workers
  - direct costs connected with the production equipment
  - indirect costs of the production
  - indirect costs connected with the management of the company and the profit.

**The critical point** of the structural production it is the **interconnection** of the total price of particular building orders and the price calculations of structural works with the internal company's cost calculations. In case costs calculated in the sale prices of orders don't match to costs of the production, the production becomes unprofitable.

## 2. Management and Control of Costs of Building Order

For needs of the management and the control the costs can be divided into:

- direct costs used for the assurance of the production
- indirect costs that serve for the assurance of the order.

Indirect costs arise from the need to cover costs of the administrative department, the production department and the part of the costs connected with own order. The calculation of these costs is established with the use of so called Key what is defined in advance.

The source of information for the management and the control of costs it is mainly the accounting evidence and the operative evidence of the company.

Basic indicators used for the control of the costs arising in the frame of the order in planned prices with the real state. Sources of information you can find in the following table:

**Table 1: Basic indicators used for the control of the costs**

Plan	Reality
Outputs in the CZK from planned returns	Outputs in the CZK from realized returns
Outputs in specific units <b>Amount of specific units of structural works from the documentation that have to be done in the planned period</b>	Outputs in specific units <b>Amount of specific units of structural works ascertained by the direct measuring on the building realized during the planned period</b>
Unit prices of structural works planned	Unit prices of structural works invoiced to the customer
Costs implemented into prices	Costs really achieved

Production material

**The amount of specific units of the planned consumption of particular materials calculated from standards of the consumption**

**Unit prices from price lists or from offers of suppliers including unit purchase costs**

Production wages

**The amount of planned standard hours for fulfillment of specific units of the output determined from the standard base (output standard)**

**Tariff rates of wages of particular professions determined from company's tariffs**

Productive machinery

**The amount of planned standard hours for fulfillment of specific units of the output determined from the standard base (capacity standard)**

**Tariffs of costs for one hour of the machinery running determined from the company's evidence**

Sub deliveries

**Planned costs of sub deliveries including costs for their assurance determined according to the contracts with sub suppliers.**

Production overheads of the department

**Costs of the department determined according to the costs of last planned period with the implementation of possible changes. Costs of the order (not production material, production wages and production machinery) determined according to conditions of the order.**

Overhead administrative expenses

**Costs allocated to the department and next to the order determined according to the needs of the company's management from information of the last planned period with the implementation of possible and expected changes.**

Production material

**The amount of specific units of the planned consumption of particular materials conducted in the operative evidence of supplies (suppliers' invoices)**

**Unit prices of bought materials mentioned on invoices and petty cash slips**

Production wages

**The amount of standard hours determined from measured specific units of the output. Paid hours of productive workers.**

**One-hour wage tariffs paid to production workers.**

Productive machinery

**Amount of standard hours determined from measured specific units of the output. Really achieved costs.**

Sub deliveries

**Real costs from sub suppliers' invoices and realized costs of the department that ensures sub deliveries.**

Production overheads of the department

**Real costs of the department taken from delivers' invoices, paid wages, bought services, depreciations and other arisen financial duties.**

**Real costs connected with the realization of the order that are not included in the production material, production wages and in the other direct costs.**

Overhead administrative expenses

**Real costs allocated to the department and to the order. Information is taken from delivers' invoices, depreciations, bought services and fulfilling of next financial duties.**

In the case of the structural production cost management we have two possibilities:

- prices of structural works orders the costs and profits corresponding with market prices
- total prices of the building orders the costs and profits corresponding with market prices

We control chosen indicators and differences from the plan. In the case of prices we control the fulfilling of calculated standards and their valuation, e.g.:

- standards of the production material consumption and unit prices of these materials,
- output standards of productive workers and one-hour wage tariffs,
- capacity standards of the productive machinery and costs for an hour of the machine's running

In our department we have the research named "Progressive Building Materials with Utilization of Secondary Raw Materials and their Impact on Structures Durability". We solved in it the problem of production material costs for example:

- an interaction of raw materials
- structures durability
- total price of construction is especially researched

### **3. Conclusions**

For the building production prosperity assurance it is necessary to ensure the balance between the covering of the production needs and possibilities provided by the building orders. These are defined by the building market conditions. Behind their assurance it is also their sale price that responds to the building market reality. However the sale price must cover costs for the structural production and create profits.

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