

Semester: II

COST & MANAGEMENT ACCOUNTING-I

Dr. Rama Nag De

Associate Professor

CONTRACT COSTING

Introduction

Contract costing, also known as terminal costing, is a variant of job costing. Contract means a big job in which work is done at site and not in factory premises. The cost of each contract is ascertained. Thus, in this method of costing, each contract is a cost unit and an account is opened for each contract in the books of contractor to ascertain profit/loss thereon.

Features of Contract Costing

Contract costing usually shows the following features:

1. Contracts are generally of large size and, therefore, a contractor usually carries out a small number of contracts at a particular point of time.
2. A contract generally takes more than one year to complete,
3. Work on contracts is carried out at the site of contracts and not in factory premises.
4. Each contract undertaken is treated as a cost unit.
5. A separate contract account is prepared for each contract in the books of contractor to ascertain profit or loss on each contract.
6. Nearly all labour cost will be direct.
7. Most expenses (*e.g.*, electricity, telephone, insurance, etc.) are also direct.
8. Specialist subcontractors may be employed for say, electrical fittings, welding work, glass work, etc.
9. Plant and equipment may be purchased for the contract or may be hired for the duration of the contract.

Contract Costing and Job Costing — Distinction

Main points of distinction between contract costing and job costing are as follows:

1. Contract is generally big while job is small. It is well said, “a job is a small contract and a contract is a big job.”
2. The number of jobs undertaken at a time are usually large as compared to number of contracts because contracts are generally much bigger in size.
3. In contract costing most of the costs are chargeable direct to contract accounts. Under job costing, direct allocation to such an extent is not possible.
4. Allocation and apportionment of overhead costs is simpler in contract costing as compared to job costing.
5. Jobs are usually carried out in factory premises while contract work is done at site.

Contract Costing Procedure

The basic procedure for costing of contracts is as follows:

1. **Contract account.** Each contract is allotted a distinct number and a separate account is opened for each contract.
2. **Direct costs.** Most of the costs of a contract can be allocated direct to the contract. All such direct costs are debited to the contract account. Direct costs for contracts include:

(i) Materials, (ii) Labour and supervision, (iii) Direct expenses, (iv) Depreciation of plant and machinery, (v) Subcontract costs, etc.

3. Indirect costs. Contract account is also debited with overheads which tend to be small in relation to direct costs. Such costs are often absorbed on some arbitrary basis as a percentage on prime cost, or materials, or wages, etc. Overheads are normally restricted to head office and storage costs.

4. Transfer of materials or plant. When materials, plant or other items are transferred from the contract, the contract account is credited by that amount.

5. Contract price. The contract account is also credited with the contract price. However, when a contract is not complete at the end of the financial year, the contract account is credited with the value of work-in-progress as on that date

6. Profit or loss on contract. The balance of contract account represents profit or loss which is transferred to Profit and Loss Account. However, when contract is not completed within the financial year, only a part of the profit arrived is taken into account and the remaining profit is kept as reserve to meet any contingent loss on the incomplete portion of the contract. This is discussed in detail later in this chapter.

SPECIAL POINTS IN CONTRACT COSTING

Some of the important points in contract costing are now discussed:

Cost of Materials

Materials include (i) materials specifically purchased for the contract; (ii) materials issued from store against material requisition notes. The cost of both these types of materials is debited to the contract account.

Materials returned to store. Whenever materials are issued in excess of requirements, as for instance, cement, sand, pipes, bricks, etc., these are later returned to the store accompanied by a Material Return Note which gives the details of the material returned. Such returned materials are credited to contract account.

Materials at site. At the end of each accounting period, value of materials lying unused at site is credited to contract account and is carried forward for charging against the next period.

Cost of Labour

All wages of workers engaged on a particular contract are charged direct to the contract irrespective of the type of work they perform. When several contracts are running at different locations, payroll is normally sectionalised so as to have separate payroll for each contract. Difficulties in costing may be encountered when some workers may have to move from one site to another when a number of small contracts are undertaken. In such situation, it becomes necessary to provide time sheets from which allocations can be made. In order to control labour utilisation and prevent fraud in the payment of wages, surprise visits by head office personnel will be necessary.

Plant Depreciation

There are two different methods of dealing with depreciation of plant in contract account:

(a) Contract account is debited with the cost of the plant installed. At the end of the year or when the plant is no longer required, the plant is revalued and contract account is credited with this revalued or depreciated figure. In case plant is sold on the completion of the contract, the contract account is credited with its sale proceeds. The net effect of the above debit and credit will be that the contract account will stand debited with the amount of depreciation which is the difference between the value of plant debited and value of plant credited. The method is generally used on long contracts which extend over more than one year because depreciated value of the plant is credited to the contract account and brought down as an opening balance in the next period.

(b) Alternatively, contract account is simply debited with the amount of depreciation. It is usual to use this method when plant is sent to contract only for a short period. For example, mobile crane or bulldozer used in a contract may be charged on this basis.

However, when a plant is hired for a contract, a charge for the hire of the plant is debited to the contract as a direct expense.

Subcontract Costs

Work of specialised character, for which facilities are not internally available, is offered to a subcontractor. For example, steel work, glass work, painting, etc., is usually carried out by the subcontractors who are accountable to the main contractor. The cost of such work is charged to the contract account.

Payment based on Architect's Certificate

In case the contract is small, full payment is usually made on the completion of the contract. But in case of large contracts, it may take more than one year to complete. In such a case, if no payment is received until the completion of the contract, the financial resources of the contractor could surely become strained. Therefore, a system of progress payments is agreed by parties. In this system, part payments of the contract amount are paid from time to time on the basis of certificate issued by the architects (acting for the contractee), certifying the value of the work satisfactorily completed. Such payments received by the contractor are usually credited to the personal account of the contractee. It should be noted that such payments are not entered in the Contract Account.

Work-in-progress — Work Certified and Uncertified

When the contract is not completed till the end of the accounting year, the architect is required to value the work-in-progress. Such work-in-progress is classified into work certified and work uncertified.

Work Certified. This is that part of the work-in-progress which has been approved by the contractee's architect or engineer for payment. Work certified is valued at contract price (*i.e.*, selling price), and includes an element of profit.

Work Uncertified. This is that part of the work-in-progress which is not approved by the architect or engineer. This is valued at cost and thus does not include an element of profit.

Both work certified and uncertified appear on the credit side of the contract account and also on the assets side of the balance sheet.

Retention Money and Cash Ratio

It is usual practice not to pay the full amount of work certified. The contractee may pay a fixed percentage, say 80% or 90% of the work certified, depending upon the terms of the contract. This is known as *Cash Ratio*. The balance amount not paid is known as *Retention Money*. For example, if cash ratio is 75%, the retention money will be remaining 25%. This retention money is a type of security for any defective work which may be found in the contract later on. This also works as a deterrent for the contractor to leave the contract incomplete, if he finds the contract unprofitable. The retention money may also be adjusted against penalties that become due if the contract is not completed within the stipulated time as per the terms of the agreement.

Extra Work

Sometimes the contractor is required to do some extra work like additions or alterations in the work originally done as per agreement. The contractor will charge extra money for such extra work. The cost of such extra work is debited to the contract account and extra price realised is credited to the contract account.

PROFIT ON INCOMPLETE CONTRACTS

Contracts which are started and finished during the same financial year create no accounting problems. But in case of those contracts which take more than one year to complete, a problem arises whether profit on such contracts should be worked out only on the completion of the contract or at the end of each financial year on the partly completed work. If profit is computed only on the completion of the contract, profit will be high in the year of completion of the contract, whereas in other years of working on contract, profit will be nil. This would result not only in distorted profit pattern but also higher tax liability because income tax at higher rates may have to be paid. Therefore, when contracts extend beyond a year, it becomes necessary to take into account the profit earned (or loss incurred) on the work performed during each year. This helps in avoiding distortion of the year-to-year profit trend of the business. There are two aspects of profit computation:

(a) Computation of notional profit or estimated profit.

(b) Computation of the portion of such profit to be transferred to Profit and Loss Account.

Notional Profit

Notional profit is the difference between the value of work-in-progress certified and the cost of such work-in-progress certified. It is computed as follows (Figures are assumed):

Value of work certified	20,00,000
Add: Cost of work not yet certified	<u>1,50,000</u>
	21,50,000
Less: Cost of work to date	<u>19,00,000</u>
Notional Profit	<u>2,50,000</u>

If in any year, cost of work done exceeds the value of work certified and uncertified, the result will be a notional loss.

Estimated Profit

Estimated profit represents the excess of the contract price over the estimated total cost of the contract. It is computed as follows (Figures are assumed):

Contract Price	30,00,000
Less: Total cost already incurred	<u>21,00,000</u>
	9,00,000
Less: Estimated additional costs to complete the contract	<u>3,50,000</u>
Estimated Profit	<u>5,50,000</u>

Portion of Notional Profit or Estimated profit to be Transferred to Profit and Loss Account

The portion of the notional or estimated profit to be transferred to P&L Account depends upon the stage of completion of the contract *i.e.*, ratio of work-in-progress certified to total contract work. For this purpose work-in-progress uncertified is not considered. Prudence requires that the total notional profit should not be transferred to P&L Account but a portion of it should be withheld as a reserve to meet any unforeseen future expenses or contingencies.

Rules. There are no hard and fast rules in this regard. However, the following general rules may be followed :

1. When work-in-progress certified is less than 1/4 of the contract price, no profit is transferred to Profit and Loss Account. This is based on the principle that no profit should be taken into account unless the contract has reasonably advanced.

2. When work-in-progress certified is 1/4 or more but less than 1/2 of the contract price, then generally 1/3 of the profit is transferred to Profit and Loss Account. The balance amount is treated as reserve. Thus, profit to be transferred to Profit and Loss Account is computed by the following formula:

$$\text{Transfer to P\&L A/c} = \text{Notional profit} \times 1/3$$

Alternatively, a more common practice is to further reduce this amount by the cash ratio.

$$\text{Transfer to P\&L A/c} = \text{Notional profit} \times 1/3 \times \frac{\text{Cash received}}{\text{Work certified}}$$

3. When work certified is 1/2 or more but less than 9/10 of the contract price, (*i.e.*, 50% to 90%), then the profit to be transferred to P & L Account is computed as follows:

$$\text{Transfer to P\&L A/c} = \text{Notional profit} \times 2/3 -$$

Here also a more common practice is to further reduce this amount by cash ratio. This is shown below:

$$\text{Transfer to P\&L A/c} = \text{Notional profit} \times 2/3 \times \frac{\text{Cash received}}{\text{Work certified}}$$

4. When contract is near completion then the estimated profit should be calculated on the whole contract. The proportion of estimated profit to be transferred to Profit and Loss Account is computed by any one of the following formulas:

$$(a) \text{ Estimated profit} \times \frac{\text{Work certified}}{\text{Contract price}}$$

$$(b) \text{ Estimated profit} \times \frac{\text{Work certified}}{\text{Contract price}} \times \frac{\text{Cash received}}{\text{Work certified}}$$

$$(c) \text{ Estimated profit} \times \frac{\text{Cost of work to date}}{\text{Estimated total cost of work}}$$

$$(d) \text{ Estimated profit} \times \frac{\text{Cost of work to date}}{\text{Estimated total cost of work}} \times \frac{\text{Cash received}}{\text{Work certified}}$$

5. **Loss on Uncompleted Contracts.** In the event of a loss on uncompleted contracts, this should be transferred in full to the Profit and Loss Account, whatever be the stage of completion of the contract.

ESCALATION CLAUSE

Contracts generally take long time to complete and in this period there may be changes in prices. Escalation clause is often provided in contracts to cover any likely changes in the price or utilisation of materials and labour. Thus, a contractor is entitled to suitably enhance the contract price if the cost rises beyond a given percentage. The object of this clause is to safeguard the interest of the contractor against unfavourable changes in cost. The escalation clause is of particular importance where prices of material and labour are anticipated to increase or where quantity of material and/or labour time cannot be accurately estimated.

Just as an escalation clause safeguards the interest of the contractor by upward revision of the contract price, a de-escalation clause may be inserted to look after the interest of the contractee by providing to downward revision of the contract price in the event of cost going down beyond an agreed level.

COST-PLUS CONTRACTS

Cost-plus contract is a contract in which the contract price is ascertained by adding a specified amount or percentage of profit to the costs allowed in the contract. This type of contract terms are agreed upon in those cases where it is not possible to compute the cost in advance with a reasonable degree of accuracy due to unstable conditions of market prices, labour rates, etc. The contractee undertakes to reimburse the actual cost of contract plus a stipulated profit. The profit to be added to cost may be either a fixed amount or a specified percentage of cost. The items of cost to be included for the purpose of determining contract price are broadly agreed upon in advance. The accounts of the contractor are usually subject to audit by the contractee.

Cost-plus contracts are usually entered into for executing special type of work, like construction of dam, powerhouse, newly-designed ship, etc., where cost estimation is difficult. Government often prefers to give contracts on 'cost-plus' terms.

Cost-plus contracts offer the following advantages:

To the Contractor:

1. There is no risk of loss on such contracts.
2. It protects him from the risk of fluctuations in market prices of material, labour, etc.
3. It simplifies the work of preparing tenders and quotations.

To the Contractee:

The contractee can ensure a fair price of the contract by being entitled to audit the accounts of the contractor.

The disadvantages of cost-plus contracts are:

To the Contractor:

1. The contractor is deprived of the advantages which would have accrued due to favourable market prices.
2. The contractor has to suffer for his own efficiency. This is because profit is usually based as a percentage of cost and efficient working resulting in lower cost also leads to lower profits.

To the Contractee:

1. The contractee has to pay more for the inefficiency of the contractor as a contractor

has no incentive to reduce costs.

2. The price a contractee has to pay is unknown until after the completion of work.

Problem 1

The BBA Construction Company undertakes large contracts. The following particulars relate to contract No. 125 carried out during the year ended on 31st March, 2015.

Particulars	Rs.	Particulars	Rs.
Work certified by architect	1,43,000	Wages accrued on 31st March	1,800
Cost of work not certified	3,400	2015 Direct expenditure	2,400
Plant installed at site	11,300	Materials on hand on 31st March	1,400
Value of plant on 31st March 2015	8,200	2015 Materials returned to store	400
Materials sent to site	64,500	Direct expenditure	200
Labour	54,800	accrued on 31st	2,00,000
Establishment charge	3,250	March 2015	1,30,000
		Contract price	
		Cash received from contractee	

Prepare a Contract Account for the period ending 31st March 2015 and find out the profit. It was decided to transfer $\frac{2}{3}$ of the profit on cash basis to Profit and Loss Account.

Solution:

Contract No. 125 Account for the year ending 31st March, 2015

<i>Particulars</i>		<i>Particulars</i>	
To Materials sent to site	64,500	By Materials returned	400
To Labour	54,800	By Materials in hand By	1,400
To Establishment charge	3,250	Work-in-Progress:	
To Direct expenses	2,400	Certified	1,43,000
To Wages accrued	1,800	Uncertified	3,400
To Direct expenses accrued	200	By Plant at site	8,200
To Plant at site	11,300		
To Notional Profit c/d	18,150		
	1,56,400		1,56,400
To P&L A/c (18,150 x 2/3) x (1,30,000/ 1,43,000)	11,000	By Notional Profit b/d	18,150
To Reserve	7,150		
	18,150		18,150

Problem 2

Simplex Construction Ltd. agreed to take a contract for construction of a bridge on 01.07.2017. The contract price was Rs. 5,00,000. The company incurred following expenses up to 31.12.2017:

Particulars	Rs.
Materials consumed	1,10,000
Wages	40,000
Direct expenses	20,000
Plant purchased on 01.07.2017	1,00,000
Materials in hand on 31.12.2017	5,000

Additional information:

- Depreciation on plant @10% per annum.
- Charge other works expenses @20% of wages & office expenses @10% of works cost.
- The amount certified by the contractee's engineer was Rs. 3,00,000, retention money being 20% of the certified value.

Prepare Contract A/c showing the amount of profit that the company can reasonably take to its P/L A/c.

SOLUTION:**Simplex Construction Ltd.****Dr.** Contract No. 126 Account for the year ending 31st March, 2015 **Cr.**

Particulars	Rs.	Particulars	Rs.
31.12.17		31.12.17	
To materials consumed	1,10,000	By Work-in-progress c/d	3,00,000
To wages	40,000	(value of work certified)	
To direct expenses	20,000		
To depreciation on plant (6 months)	5,000		
To other works expenses (20% on wages)	8,000		
Works Cost	1,83,000		
To office expenses (10% on works cost)	18,300		
	2,01,300		
To Profit & Loss A/c (profit transferred) (WN:1)	52,640		
To Work-in-progress c/d (provision)	46,060		
	3,00,000		3,00,000
01.01.2018			
To Work-in-progress b/d: Value of certified work 3,00,000 Less: Provision <u>46,060</u>	2,53,940		

Working Notes**1. Proportion of profit to be transferred to Profit & Loss A/c:**

- Accounting profit: Rs. (3,00,000-2,01,300) = Rs. 98,700
- Profit on realized basis: 80% of Rs. 98,700 = Rs. 78,960
- Proportion to be transferred to P/L A/c: 2/3 of Rs. 78,960 = Rs. 52,640

PROBLEM 3

S Ltd. furnished the following information in respect of incomplete contract as on 31.3.2016.

Particulars	Contract A (Rs.)	Contract B (Rs.)
Contract Price	2,40,000	1,50,000
Work certified	2,16,000	1,00,000
Estimated cost of completion of contract	2,10,000	1,20,000
Cash received	1,16,000	80,000
Uncertified Work	10,000	7,000
Cost of contract (expenditure incurred up to 31.3.16)	1,80,000	95,000

Calculate the profit to be carried to P/L A/c for the year ended 31.3.16.

SOLUTION:

P Ltd.

Dr. Contract No. 127 Account for the year ending 31st March, 2015 Cr.

PARTICULARS	A	B	PARTICULARS	A	B
To cost of contract	1,80,000	95,000	By works certified	2,16,000	1,00,000
To accounting profit c/d	46,000	12,000	By works uncertified	10,000	7,000
	2,26,000	1,07,000		2,26,000	1,07,000
To P/L A/c (WN: 1)	22,716	6,400	By accounting profit b/d	46,000	12,000
To Reserve	23,284	5,600		46,000	12,000
	46,000	12,000			

Working Notes

1. Proportion of profit to be transferred to Profit & Loss A/c:

$$\text{Accounting Profit} \times \frac{\text{(cash received)}}{\text{(work certified)}} \times \frac{2}{3}$$

CONTRACT A:

$$46,000 \times \frac{1,60,000}{2,16,000} \times \frac{2}{3} = \text{Rs. } 22,716$$

CONTRACT B:

$$12,000 \times \frac{80,000}{1,00,000} \times \frac{2}{3} = \text{Rs. } 6,400$$