

COST ACCOUNTING STANDARD ON CAPACITY DETERMINATION

The following is the COST ACCOUNTING STANDARD 2 (CAS 2) issued by the Council of the Institute of Cost and Works Accountants of India on “CAPACITY DETERMINATION”. The standard deals with determination of capacity of a unit. In this Standard, the standard portions have been set in bold italic type. These are to be read in the context of the background material which has been set in normal type.

1. Introduction

Better utilization of capacity means better utilization of resources. It is an important consideration for cost determination and cost reduction. Thus, it is essential to establish the capacity of the plant. Cost Accounting Records Rules under section 209(1)(d) of Companies Act, 1956 and Cost Audit Report Rules, 2001 under section 233B of the said Act specify that comparative statement of installed capacity and actual capacity utilization is to be recorded and furnished in order to assess the operating level.

2. Objective

- 2.1 The objective of the standard is to prescribe the method of determination of capacity to be applied uniformly and consistently.
- 2.2 The standard is to help the management to identify the bottlenecks, imbalances and idle capacity for effective use of various resources.
- 2.3 The standard is to help in proper allocation, apportionment and absorption of cost.

3. Scope

- 3.1 *The standard should be followed for capacity determination required to be carried out for any purpose or under provisions of any Act, Rules or Regulations except where capacity determination has been prescribed otherwise.*
- 3.2 *The standard shall also be followed for maintaining cost records under the Cost Accounting Records Rules or for furnishing information on Capacity Utilization under the Cost Audit Report Rules issued pursuant to Section 209(1)(d) and section 233B of Companies Act, 1956 respectively.*
- 3.3 The standard is applicable for an undertaking, whether existing or new, where there is expansion of more than 5% of the existing capacity due to introduction of new machines or productive resources. Similarly, the standard is also applicable where there is more than 5% reduction of the existing capacity due to disposal or withdrawal or impairment of old machines or productive resources.

4. Definitions

4.1 *'Licenced Capacity' is the production capacity of the plant for which licence has been issued by an appropriate authority.*

4.2 *'Installed Capacity' is the maximum productive capacity according to the manufacturers' specification of machines / equipment. Installed capacity of the unit/plant is determined after taking into account imbalances in different machines/ equipment in the various departments / production cost centres in the unit / plant and number of working shifts.*

4.3 *'Practical or Achievable Capacity' is the maximum productive capacity of a plant reduced by the predictable and unavoidable factors of interruption pertaining to internal causes.*

Thus, practical capacity is the installed capacity minus the inevitable interruptions due to time lost for preventive maintenance, repairs, set ups, normal delays, weekly off-days and holidays etc. Practical capacity does not consider the external factors causing reduction in production e.g. lack of orders.

4.4 *'Normal Capacity' is the production achieved or achievable on an average over a period or season under normal circumstances taking into account the loss of capacity resulting from planned maintenance.*

Normal capacity is practical capacity minus the loss of productive capacity due to external factors.

4.5 *'Actual Capacity Utilization' is the volume of production achieved in relation to installed capacity.*

4.6 *'Idle Capacity' is the difference between installed capacity and the actual capacity utilization when actual capacity utilization is less than installed capacity.*

4.7 *'Excess Capacity Utilization' is the difference between installed capacity and the actual capacity utilization when actual capacity utilization is more than installed capacity.*

4.8 *'Abnormal idle capacity' is the difference between practical capacity and normal capacity or actual capacity utilization whichever is higher.*

5. Determination of Installed Capacity

5.1 Installed capacity is determined based on :

- i) Manufacturers' Technical specifications**
- ii) Capacities of individual or interrelated production centres.**
- iii) Operational constraints / capacity of critical machines**
- iv) Number of shifts**
- v) Any other factor**

5.2 In case of manufacturers' technical specifications are not available, the estimates by technical experts on capacity under ideal conditions may be considered for determination of installed capacity.

5.3 In case a product passes through different production processes and each process is having different capacity then the process which brings effective or ultimate production shall be considered for deciding installed capacity.

6. Determination of Practical / Achievable Capacity

6.1 Practical capacity or achievable capacity should be determined after adjustment of the following with the installed capacity.

- (i) Available production hours taking into consideration holidays, normal shut down days and normal idle time.**
- (ii) Normal time loss in batch change over, break downs of machines, repairs etc**
- (iii) Loss in efficiency due to ageing of the machines/ equipment**
- (iv) Number of shifts**
- (v) Any other factor**

7. Determination of Normal Capacity

7.1 Normal capacity is determined based on the productive capacity achieved over a period of time, say average of three normal years out of preceding five years or expected to be achieved over a period of time, say next three to five years .

7.2 This capacity is determined after adjustment of external factors with practical capacity.

7.3 Normal capacity of production process involved in the production of a product or the productive capacity of the plant as a whole should be taken into account to arrive at normal capacity for a product or plant, as the case may be .

7.4 The periods influenced by abnormalities should be excluded for this purpose.

Explanation :

1. In case the same products with different specifications and of different ranges in terms of size, type, variety etc are manufactured, then there is a need to determine equivalence among them in order to determine the capacity.
2. In case some intermediate products / components etc are also produced, they should be taken into consideration for determining equivalent capacity.
3. In case some machines are leased out/let out or some machines are taken on lease, resulting decrease / increase in capacity should also be considered.

8. Disclosure

8.1 The details of basis for arriving at the capacity, variables used and assumptions made should be disclosed.

8.2 Any change in the installed capacity due to modifications in the machines/ equipment or addition of balancing equipment or disposal or impairment of some machines/ equipment should be disclosed.

8.3 The licenced capacity and installed capacity should be disclosed in absolute term of production whereas practical capacity, normal capacity and actual capacity utilization should be disclosed in absolute term as well as in percentage of installed capacity.

8.4 In case the same products with different specifications and of different ranges in terms of size, type, variety etc are manufactured, then there is a need to determine equivalence among them and capacity should be established in terms of equivalent units.

8.5 In case some machines are taken on lease or some machines are leased out, their impact in terms of increase/ decrease in capacity should be disclosed separately.

8.6 In case of low capacity utilization as compared to the installed capacity, reasons for the same should be disclosed. Comments on the shortfall in production should also specify the factors which are controllable and uncontrollable in short term or in long term.

8.7 In case of excess capacity utilization, the same should be disclosed separately in absolute terms and in terms of percentage with reasons.

Exhibit 1

Illustration

Manufacturers' Specifications - capacity per hour	= 500 units
No of shifts (each shift 8 hours)	= 3 shifts
Holidays in a year :	
Sundays	= 52 days
Other holidays	= 13 days
Annual maintenance is done within these 13 hoildays	
Preventive Weekly Maintenance for the machine on Sunday.	
Normal idle capacity for batch change over, Lunch, personal need etc	= 1 hr per shift
Production based on sales expectancy in past 5 years	= 30.1, 26.9, 29.7, 24.4 and 30.2 lakh units
Actual Production for the year	= 30.1

Calculation

Installed Capacity for the machine = $365 * 8 * 3 * 500 = 43.8$ lakh units

Practical Capacity = $(365 - 52 - 13) * (8 - 1) * 3 * 500 = 31.5$ lakh units

Out of the past five years, normal capacity is average of 3 normal years.

Normal Capacity = $(30.1 + 29.7 + 30.2) / 3 = 30.0$ lakh units

Actual Capacity Utilization = 30.1 lakh units = 68.7 %

Idle Capacity = $(43.8 - 30.1) = 13.7$ lakh unit = 31.3 %

Abnormal idle capacity = $31.5 - 30.1 = 1.4$ lakh units

