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**PRO FORMA FOR ANALYSIS OF  
UNIT RATE OF SHUTTERING/FORMWORK  
FOR CONCRETE ITEMS**

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**BUREAU OF INDIAN STANDARDS**  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

*Indian Standard*

**PRO FORMA FOR ANALYSIS OF  
UNIT RATE OF SHUTTERING/FORMWORK  
FOR CONCRETE ITEMS**

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# *Indian Standard*

## **PRO FORMA FOR ANALYSIS OF UNIT RATE OF SHUTTERING/FORMWORK FOR CONCRETE ITEMS**

### **0. FOREWORD**

**0.1** This Indian Standard was adopted by the Indian Standards Institution on 27 January 1983, after the draft finalized by the Cost Analysis and Cost Estimates Sectional Committee had been approved by the Civil Engineering Division Council.

**0.2** Shuttering/formwork for concrete works for river valley projects are boardly of following types:

- a) Panel forms,
- b) Built-in-place forms,
- c) Mobile forms, and
- d) Special forms.

**0.2.1** The material for shuttering in all the above cases may either be of steel or timber. Shuttering provided for concrete works may be plain formwork or shuttering of special shapes such as circular, horse-shoe, conic and other shapes required for the structure.

**0.3** Struts, braces and ties are required for single or multi-stage depending upon the requirements. The following information will be helpful for a full appreciation of the type and nature of the shuttering work involved:

- a) Name of project,
- b) Name of work,
- c) Layout plan of project,
- d) Location of work,
- e) Purpose of work,
- f) Longitudinal and cross-section,
- g) Construction agency,
  - 1) Departmental or contract

- 2) Name of department/contractor
- h) Volume of concrete work,
- j) Approximate area for shuttering,
- k) Average lead and lift for the formwork,
- m) Type of shuttering,
- n) Normal size of shuttering units used, and
- p) Detailed dimension sketches of special shapes.

*NOTE* — Detailed plan, elevation and sections of the work and full dimension sketches of the formworks for the whole work as well as for individual units should be provided.

**0.4** For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960\*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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## **1. SCOPE**

**1.1** This standard lays down the *pro forma* for analysis of unit rate of shuttering/formwork for concrete items in river valley projects.

## **2. PRO FORMA**

**2.1** The *pro forma* recommended for analysis of unit rate of shuttering/formwork for concrete items is as given in Table 1.

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**TABLE 1 PRO FORMA FOR ANALYSIS OF UNIT RATE OF SHUTTERING/FORMWORK**

Details of Shuttering:

- i) Name of work for which shuttering is required
- ii) Quantity of concrete
- iii) Type and shape of shuttering

( Continued )

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\*Rules for rounding off numerical values ( revised ).

**TABLE 1 PRO FORMA FOR ANALYSIS OF UNIT RATE OF SHUTTERING/FORMWORK — Contd**

Item	Unit	Quantity	Rate	Amount	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
<b>(A) STEEL SHUTTERING:</b>					
a) <i>Materials</i>					
i) Steel plates					
ii) Steel sections					
iii) Pipes					
iv) Miscellaneous materials including that required for welding, rivetting, etc					
b) <i>Labour charges for fabrication</i>					
i) Foremen/supervisors					
ii) Welders					
iii) Fitters					
iv) Helpers					
v) Skilled/ordinary labour					
vi) Others					
c) <i>Charges for machinery and equipment including charges for power/gas/diesel</i>					
i) Cutting machine					
ii) Welding/rivetting machine					
iii) Rolling machine					
iv) Air compressors					
v) Others					
d) <i>Maintenance charges of items under (c)</i>					
e) <i>Ancillaries and incidentals</i>					
Proportional cost of the following job facilities:					
i) Labour and staff quarters					
ii) Service roads and transportation arrangements for staff and labourers					
iii) Electric supply					
iv) Water supply					

( Continued )

**TABLE 1 PRO FORMA FOR ANALYSIS OF UNIT RATE OF SHUTTERING/FORMWORK – Contd**

Item	Unit	Quantity	Rate	Amount	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
v) Sanitary facilities					
vi) Drainage facilities					
vii) Medical facilities					
viii) Other amenities					
f) <i>Maintenance cost of items under clause (e)</i>					
g) <i>Proportional cost of supervisory work establishment</i>					
h) <i>Contingencies</i>					
j) <i>Overhead ( excluding profit )*</i>					
Total cost of shuttering					
Area of shuttering					
Number of reuse					
Cost of shuttering/unit/use					
k) <i>Erection cost</i>					
i) Transportation charges					
ii) Labour charges with details					
iii) Materials including oiling, sealing, etc					
iv) Scaffoldings					
v) Machinery charges, if any					
m) <i>Dismantling/stripping cost</i>					
i) Transportation charges					
ii) Labour charges with details					
iii) Machinery charges, if any					
n) <i>Total charges ( a to m ) of formwork/sq.m chargeable to work</i>					

\*This shall include establishment, office stationery, general tools and plants, staff cars, their running and maintenance, insurance, workman's compensation, telephone and telecommunication facilities, consultation services, entertainments, etc

( Continued )

**TABLE 1 PRO FORMA FOR ANALYSIS OF UNIT RATE OF SHUTTERING/FORMWORK — Contd**

Item	Unit	Quantity	Rate	Amount	Remarks
(1)	(2)	(3)	(4)	(5)	(6)

(B) *WOODEN SHUTTERING:*a) *Materials*

- i) Type of timber
- ii) Wooden joists
- iii) Jigs and joists
- iv) Miscellaneous material

b) *Labour charges*

- i) Foremen/supervisors
- ii) Carpenters
- iii) Labour for creating in position
- iv) Helpers
- v) Other labour, if any.

c) *Charges for machinery and equipment including charges for power/gas/diesel*

- i) Band/circular/trolley saw
- ii) Planer
- iii) Shaper
- iv) Others

d) *Ancillaries and incidentals*

Proportional cost of the following job facilities:

- i) Labour and staff quarters
- ii) Service road and transportation arrangements for staff and labourers
- iii) Electric supply
- iv) Water supply
- v) Sanitary facilities
- vi) Drainage facilities
- vii) Medical facilities
- viii) Other amenities

( Continued



**TABLE 1 PRO FORMA FOR ANALYSIS OF UNIT RATE OF  
SHUTTERING/FORMWORK — Contd**

Item	Unit	Quantity	Rate	Amount	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
e) <i>Maintenance of items under (d)</i>					
f) <i>Proportional cost of supervisory work establishment</i>					
g) <i>Contingencies</i>					
h) <i>Overheads ( excluding profit )*</i>					
Total cost of shuttering					
Area of shuttering					
Number of reuse					
Cost of shuttering/unit/use					
j) <i>Erection cost</i>					
i) <i>Transportation charges</i>					
ii) <i>Labour charges with details</i>					
iii) <i>Materials including oiling           sealing, etc</i>					
iv) <i>Scaffoldings</i>					
v) <i>Machinery charges, if any</i>					
k) <i>Dismantling/stripping cost</i>					
i) <i>Transportation charges</i>					
ii) <i>Labour charges with details</i>					
iii) <i>Machinery charges, if any</i>					
m) <i>Total charges of ( a to k ) form-       work/sq. m chargeable to work</i>					

\*Overhead shall include establishment, office stationery, general tools and plants, staff cars, their running and maintenance, insurance, workman's compensation, telephone and telecommunication facilities, consultation service, entertainments, etc.

# BUREAU OF INDIAN STANDARDS

## Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002

Telephones: 323 0131, 323 8375, 323 9402

Fax : 91 11 3234062, 91 11 3239399

Telegrams : Manaksanstha

(Common to all Offices)

Telephone

## Central Laboratory :

Plot No. 20/9, Site IV, Sahibabad Industrial Area, Sahibabad 201010

8-77 00 32

## Regional Offices:

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002

323 76 17

\*Eastern : 1/14 CIT Scheme VII M, V.I.P. Road, Manikola, CALCUTTA 700054

337 86 62

Northern : SCO 335-336, Sector 34-A, CHANDIGARH 160022

60 38 43

Southern : C.I.T. Campus, IV Cross Road, MADRAS 600113

235 23 15

†Western : Manakalaya, E9, Behind Marol Telephone Exchange, Andheri (East),  
MUMBAI 400093

832 92 95

## Branch Offices::

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550 13 48

‡Peenya Industrial Area, 1st Stage, Bangalore-Tumkur Road,  
BANGALORE 560058

839 49 55

Gangotri Complex, 5th Floor, Bhadbhada Road, T.T. Nagar, BHOPAL 462003

55 40 21

Plot No. 62-63, Unit VI, Ganga Nagar, BHUBANESHWAR 751001

40 36 27

Kalaikathir Buildings, 670 Avinashi Road, COIMBATORE 641037

21 01 41

Plot No. 43, Sector 16 A, Mathura Road, FARIDABAD 121001

8-28 88 01

Savitri Complex, 116 G.T. Road, GHAZIABAD 201001

8-71 19 96

53/5 Ward No.29, R.G. Barua Road, 5th By-lane, GUWAHATI 781003

54 11 37

5-8-56C, L.N. Gupta Marg, Nampally Station Road, HYDERABAD 500001

20 10 83

E-52, Chitaranjan Marg, C-Scheme, JAIPUR 302001

37 29 25

117/418 B, Sarvodaya Nagar, KANPUR 208005

21 68 76

Seth Bhawan, 2nd Floor, Behind Leela Cinema, Naval Kishore Road,  
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23 89 23

Patliputra Industrial Estate, PATNA 800013

26 23 05

T.C. No. 14/1421, University P. O. Palayam, THIRUVANANTHAPURAM 695034

6 21 17

## Inspection Offices (With Sale Point) :

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