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RECOMMENDATION FOR LABOUR OUTPUT CONSTANTS FOR BUILDING WORK

PART I NORTH ZONE

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RECOMMENDATION FOR LABOUR OUTPUT CONSTANTS FOR BUILDING WORK

PART I NORTH ZONE

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AMENDMENT NO. 1 FEBRUARY 1979

TO

IS : 7272 (Part I)-1974 RECOMMENDATION FOR LABOUR OUTPUT CONSTANTS FOR BUILDING WORK

PART I NORTH ZONE

Alterations

(Table 1):

a) *Pages* 4 *to* 12, *col* 3 — Substitute 'm^3' *for* 'M^3' and 'm^2' *for* 'M^2'.

b) *Pages* 4 *to* 12, *col* 5, *heading* — Substitute the following for the existing matter:

'RECOMMENDED CONSTANT IN DAYS (8 WORKING HOURS)'

c) *Page* 5, *Sl No.* (i) (e) *and* (f) — Substitute the following for the existing matter under respective columns:

(1)	(2)	(3)	(4)	(5)	(6)
e)	Extra over items (a) and (b) for every additional lead of 25 m beyond one metre up to 250 m and deposit to a level of 1·5 m	m^3	Mate Mazdoor	0·01 0·12	—
f)	Returning, filling and ramming of excavated earth in layers not exceeding 20 cm in depth, watering, well ramming and levelling lead up to 25 m	m^3	Mate Mazdoor Bhisti	0·02 0·22 0·02	—

(d) *Pages* 5 *and* 6, *col* 2, *against Sl No.* (ii) (d) *and* (e) — Substitute the following for the existing matter:

'd) Unreinforced concrete in foundations including mixing, pouring, consolidating and curing for depths up to 3 m (with 40 mm and below coarse aggregate)

e) Unreinforced concrete under floors including mixing, pouring, consolidating and curing for depths up to 3 m (with 40 mm and below coarse aggregate) '

e) *Page* 8, *col* 2, *against Sl No.* (v) — Substitute 'Formwork (with wooden planks)' *for* 'Formwork'.

f) *Page* 8, *col* 3, *against Sl No.* (v) (a) (1) — Substitute 'm^2' *for* 'M^2'

g) *Page* 9, *col* 6, *against Sl No.* (vii) (a) *to* (f) — Substitute the following for '—' against items (a) to (f):

'Labour constants for Bhisti includes labour for curing.'

h) *Pages* 9 *and* 10, *col* 6, *against Sl No.* (viii) (a) *to* (e) — Substitute the following for the existing matter:

'Labour for mixing concrete for items (a) to (e) will be extra. Labour constants for Bhisti includes labour for curing.'

j) *Page* 11, *col* 6, *against Sl No.* (ix) (a) *and* (b) — Substitute the following for '—' against items (a) and (b):

'Labour constants for Bhisti includes labour for curing.'

k) *Page* 11, *col* 4, *against Sl No.* (xii) — Substitute 'Polisher' *for* 'Painter'.

m) *Pages* 11 *and* 12, *col* 6, *against Sl No.* (xiii) (a) *to* (e) — Substitute the following for '—' against items (a) to (e):

'Items (a) to (e) do not include labour for erection of scaffolding and dismantling the same.'

(BDC 29)

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Indian Standard

RECOMMENDATION FOR LABOUR OUTPUT CONSTANTS FOR BUILDING WORK

PART I NORTH ZONE

0. FOREWORD

0.1 This Indian Standard (Part I) was adopted by the Indian Standards Institution on 15 March 1974, after the draft finalized by the Planning and Organization at Site Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 Schedule of rates form the basis for preparing the detailed estimates for works. These are also very useful in considering the reasonableness of the tenders received from the contractors and for pricing the alterations, additions, omission and substitutions in a contract. It is, therefore, necessary that the schedule of rates should be prepared correctly and be based on rationally stipulated material and labour constants.

0.3 At present different departments at a place are having their own schedule of rates. A comparison of the labour and material constants used for different items of work in these schedules of rates has indicated that there is a good variation in them and due to which different rates exist in various departments for the same items of work in the same locality. This standard is being issued in order to rationalize the labour output constants for different building works.

0.4 The labour constants have been arrived at by the Central Building Research Institute, Roorkee by taking actual observations, using work measurement techniques, on the construction sites at Delhi and Roorkee. Different types of building works up to 10 m height of CPWD, MES and other organizations were included where the workers from neighbouring states were working. Sufficient number of observations to ensure a confidence limit of 95 percent and an accuracy of ± 5 percent were taken. The relaxation allowance for the time required for rest to overcome physical fatigue and working condition allowance has been taken as per the standardized values given for Indian conditions by the Ministry of Labour, Employment and Rehabilitation, Government of India. Other allowances, such as organizations, incidental holdups, ineffective time arising out of preparatory work and additional weightage for small size works have been arrived at by the activity sampling studies and mutual agreement at the committee meetings by the members representing the construction departments and the builders association.

0.5 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.

1. SCOPE

1.1 This standard (Part I) covers the recommended labour output constants for general items of building work for north zone which comprises of the following areas:

Punjab, Haryana, Delhi, Uttar Pradesh and Rajasthan.

1.1.1 The labour constants for other zones would be covered separately in other parts of the standard.

2. LABOUR OUTPUT CONSTANTS

2.1 The recommended labour output constants for general items of building work are given in Table 1.

TABLE 1 RECOMMENDED LABOUR OUTPUT CONSTANTS FOR BUILDING WORK

Sl No.	Description of Work	Unit	Labour	Recommended Constant in Days	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
i)	Excavation and Earth Works				
	a) Excavation over areas (Hard/ dense soil), depth up to 1·5 m and removal (up to one metre from edge)	M^3	Mate Mazdoor	0·06 0·62	— —
	b) Excavation in trenches (Soft/ loose soil) for foundations not exceeding 1·5 m in width and for shafts, wells, cesspits and the like, not exceeding 10 m^2 on plan, depth up to 1·5 m and removal (up to one metre away from edge)	M^3	Mate Mazdoor	0·05 0·50	— —

(*Continued*

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

TABLE 1 RECOMMENDED LABOUR OUTPUT CONSTANTS FOR BUILDING WORK — *Contd*

Sl No.	Description of Work	Unit	Labour	Recommended Constant in Days	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
	c) Extra over item (a) for an additional depth of 1·5 m to 3 m	M^3	Mate Mazdoor	0·01 0·11	— —
	d) Extra over item (b) for an additional depth of 1·5 m to 3 m	M^3	Mate Mazdoor	0·01 0·08	— —
	e) Extra over items (a) and (b) for an additional lead of 50 m in any soil beyond one metre	M^3	Mate Mazdoor	0·02 0·25	— —
	f) Returning, filling and ramming of excavated earth in layers not exceeding 20 cm in depth, watering, well ramming and levelling, lead up to 50 m	M^3	Mate Mazdoor Bhisti	0·02 0·25 0·02	— — —
ii)	Concrete				
	a) Mixing by hand at banker, cement concrete (with 40 mm graded coarse aggregate)	M^3	Mazdoor Bhisti	1·0 0·1	Lead of concrete mix from the place of mix to place of deposit of concrete is assumed up to 30 metres where not otherwise mentioned
	b) Mixing by hand at banker, lime concrete (with 40 mm graded brick ballast)	M^3	Mazdoor Bhisti Bullock with driver	1·6 0·20 0·15	— — —
	c) Mixing by machine (mixer) at banker, cement concrete (with 20 mm graded coarse aggregate)	M^3	Mazdoor Bhisti Mixer operator Mixer	0·50 0·10 0·07 0·07	— — — —
	d) Unreinforced concrete in foundations including mixing, pouring, consolidating and curing:				
	1) Hand mixed cement concrete	M^3	Mason Mazdoor Bhisti	0·10 2·13 0·70	— — —

(*Continued*)

TABLE 1 RECOMMENDED LABOUR OUTPUT CONSTANTS FOR BUILDING WORK — *Contd*

Sl No.	Description of Work	Unit	Labour	Recommended Constant in Days	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
	2) Mixer mixed cement concrete	M^3	Mason	0·10	—
			Mazdoor	1·63	—
			Bhisti	0·70	—
			Mixer operator	0·07	—
			Mixer	0·07	—
			Vibrator	0·07	—
	3) Hand mixed lime concrete	M^3	Mason	0·10	—
			Mazdoor	2·65	—
			Bhisti	0·80	—
			Bullock with driver	0·15	—
					—
	e) Unreinforced concrete under floors including mixing, pouring, consolidating and curing:				
	1) Hand mixed cement concrete	M^3	Mason	0·17	—
			Mazdoor	2·33	—
			Bhisti	0·80	—
	2) Mixer mixed cement concrete	M^3	Mason	0·17	—
			Mazdoor	1·83	—
			Bhisti	0·80	—
			Mixer operator	0·07	—
			Mixer	0·07	—
			Vibrator	0·07	—
	3) Hand mixed lime concrete	M^3	Mason	0·17	—
			Mazdoor	2·85	—
			Bhisti	0·80	—
			Bullock with driver	0·15	—
	f) Reinforced cement concrete *in situ* in foundations, footings, bases for columns, etc excluding form work and reinforcement	M^3	Mason	0·17	The constants for items (f) to (m) include mixing, pouring, consolidating and curing. This does not include fair finish
			Mazdoor	2·00	
			Bhisti	0·90	
			Mixer operator	0·07	
			Mixer	0·07	
			Vibrator	0·07	
	g) Reinforced cement concrete *in situ* in suspended floors/roofs excluding form work, and reinforcement	M^3	Mason	0·24	—
			Mazdoor	2·50	—
			Bhisti	0·90	—
			Mixer operator	0·07	—
			Mixer	0·07	—
			Vibrator	0·07	—

(*Continued*)

TABLE 1 RECOMMENDED LABOUR OUTPUT CONSTANTS FOR BUILDING WORK — *Contd*

Sl No.	Description of Work	Unit	Labour	Recommended Constant in Days	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
	h) Reinforced cement concrete *in situ* in *CHAJJAS* up to 15 cm in thickness excluding form work and reinforcement	M^3	Mason	0·90	—
			Mazdoor	3·50	—
			Bhisti	0·90	—
			Mixer operator	0·10	—
			Mixer	0·10	—
			Vibrator	0·10	—
	j) Reinforced cement concrete *in situ* in beams excluding form work and reinforcement	M^3	Mason	0·20	—
			Mazdoor	3·00	—
			Bhisti	0·90	—
			Mixer operator	0·07	—
			Mixer	0·07	—
			Vibrator	0·07	—
	k) Reinforced cement concrete *in situ* in columns, pillars in ground floor excluding form work and reinforcement	M^3	Mason	0·23	—
			Mazdoor	3·50	—
			Bhisti	0·90	—
			Mixer operator	0·10	—
			Mixer	0·10	—
			Vibrator	0·10	—
	m) Reinforced cement concrete *in situ* in stairs excluding form work and reinforcement	M^3	Mason	0·30	—
			Mazdoor	4·30	—
			Bhisti	0·90	—
			Mixer operator	0·07	—
			Mixer	0·07	—
			Vibrator	0·07	—
iii)	Mortars				
	a) Mixing by hand, cement mortar of any mix/proportions	M^3	Mazdoor	0·75	Labour required will be approximately same for different mix proportions
			Bhisti	0·07	
	b) Mixing by hand cement-lime mortar:				
	Cement: Lime: Sand of any proportions	M^3	Mazdoor	1·33	—
			Bhisti	0·10	—
			Bullock with driver	0·33	—

Continued)

TABLE 1 RECOMMENDED LABOUR OUTPUT CONSTANTS FOR BUILDING WORK — *Contd*

Sl No.	Description of Work	Unit	Labour	Recommended Constant in Days	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
iv)	**Brick work (Straight Walls)**				
	a) Brick work in walls exceeding one brick thick, in cement/ lime mortar	M^3	Mason Mazdoor Bhisti	0·94 1·80 0·20	i) The constants include labour involved in scaffolding
	b) Brick work in walls, one brick thick, in cement/lime mortar	M^3	Mason Mazdoor Bhisti	0·25 0·40 0·10	ii) The constants could be adopted for brick work with any mix or mortar
	c) Half brick walls (with or without hoop iron reinforcement) in cement mortar	M^2	Mason Mazdoor Bhisti	0·12 0·20 0·07	iii) Labour for mixing mortar will be extra
	d) Tile work in super-structure in cement mortar	M^2	Mason Mazdoor Bhisti	1·80 1·80 0·20	— — —
v)	**Formwork**				
	a) Fabrication and erection with all supports, struts, braces, etc, and dressing with oil as cleaning of formwork:				
	1) Rectangular column and walls	M^3	Carpenter Mazdoor	0·25 0·20	— —
	2) Suspended floors/roofs	M^2	Carpenter Mazdoor	0·23 0·20	— —
	3) Sides and soffits of beams	M^2	Carpenter Mazdoor	0·30 0·20	— —

(*Continued*)

TABLE 1 RECOMMENDED LABOUR OUTPUT CONSTANTS FOR BUILDING WORK — *Contd*

Sl No.	Description of Work	Unit	Labour	Recommended Constant in Days	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
vi)	Reinforcement				
	Bar reinforcement including cutting to length, hooked ends, cranking or bending, hoisting and placing in any position, binding with binding wire and holding firmly so as not to be disturbed while placing and ramming of concrete	Quintal	Bar-bender Mazdoor	1·00 1·00	— —
vii)	Plastering and Pointing				
a)	15 mm thick cement plaster to ceiling including mixing of mortar	M^2	Mason Mazdoor Bhisti	0·08 0·10 0·10	— — —
b)	15 mm thick cement plaster on brick walls (exterior) including mixing of mortar	M^2	Mason Mazdoor Bhisti	0·06 0·10 0·10	— — —
c)	15 mm thick cement plaster on brick walls (exterior). Under layer 10 mm cement sand plaster and top layer 5 mm, cement : Marble powder : stone grit, including mixing	M^2	Mason Mazdoor Bhisti	0·15 0·15 0·15	— — —
d)	15 mm thick cement plaster on brick walls (interior) including mixing mortar	M^2	Mason Mazdoor Bhisti	0·08 0·10 0·10	— — —
e)	Struck pointing to brick work in cement mortar including mixing mortar	M^2	Mason Mazdoor Bhisti	0·08 0·10 0·10	— — —
f)	Tuck pointing to random rubble masonry in cement mortar including mixing mortar	M^2	Mason Mazdoor Bhisti	0·10 0·15 0·10	— — —
viii)	Paving and Floor Finish				
a)	Laying of PCC 40 mm thick in alternate bays with side forms and templates and finished smooth	M^2	Mason Mazdoor Bhisti	0·08 0·12 0·10	Labour for mixing concrete for items (a) to (c) will be extra

(*Continued*)

TABLE 1 RECOMMENDED LABOUR OUTPUT CONSTANTS FOR BUILDING WORK — *Contd*

Sl No.	Description of Work	Unit	Labour	Recommended Constant in Days	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
	b) Laying of PCC 25 mm thick in alternate bays with side forms and templates and finished smooth	M^2	Mason Mazdoor Bhisti	0·07 0·10 0·10	— — —
	c) Laying of 40 mm thick *in situ* terrazo flooring, under layer 30 mm thick cement concrete and top layer of 10 mm thick marble chips laid in cement with dividing strips of glass, metal or asbestos to form bays including cutting, grinding and polishing:				
	1) Laying	M^2	Mason Mazdoor Bhisti	0·22 0·22 0·10	— — —
	2) Cutting, grinding and polishing	M^2	Mazdoor Machine	0·50 0·40	— —
	d) Laying of 20 mm thick *in situ* terrazo skirting/dado underlayer 13 mm thick cement plaster and top layer 7 mm thick marble chips laid in cement including rounding of junctions with floor cutting, grinding and polishing:				
	1) Laying	M^2	Mason Mazdoor Bhisti	0·30 0·30 0·10	— — —
	2) Cutting, grinding and polishing	M^2	Mazdoor	0·70	—
	e) Precast terrazo tile flooring 20 mm thick laid over 10 mm thick cement mortar:				
	1) Laying	M^2	Mason Mazdoor Bhisti	0·12 0·20 0·10	— — —
	2) Cutting, grinding and polishing	M^2	Mazdoor Machine	0·50 0·40	— —

(*Continued*)

TABLE 1 RECOMMENDED LABOUR OUTPUT CONSTANTS FOR BUILDING WORK — *Contd*

Sl No.	Description of Work	Unit	Labour	Recommended Constant in Days	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
ix)	Damp-proof Course				
	a) Laying damp-proof course 40 mm thick cement concrete including formwork and fair finishing to edges and mixing	M^2	Mason Mazdoor Bhisti	0·10 0·10 0·01	— — —
	b) Laying damp-proof course 20 mm thick in cement mortar integral water-proofing compound including mixing	M^2	Mason Mazdoor Bhisti	0·10 0·10 0·01	— — —
x)	Joinery				
	a) Door and window *CHOKHATS* coniferous and teak wood wrought and rebated	M^2	Carpenter Mazdoor	20·00 2·00	— —
	b) Panelled/glazed joinery in coniferous and teak wood 30 to 40 mm thick framed with panels or space left out for glass or fixing of mesh wire (with tenoned joints)	M^2	Carpenter Mazdoor	0·90 0·10	— —
	c) Fixing of readymade shutters to frames including fixing of fittings	M^2	Carpenter Mazdoor	0·25 0·25	— —
xi)	Glazing				
	Fixing glass panes on steel or wood work bedded with putty	M^2	Glazier Mazdoor	0·20 0·01	— —
xii)	Painting and Polishing				
	French polishing complete including a coat of wood filler on new work	M^2	Painter	0·35	—
xiii)	White Washing and Colour Washing (for Walls and Flat Ceilings)				
	a) White washing with lime 3 coats on new surface	M^2	Washer Mazdoor	0·02 0·01	— —
	b) Two coats of colour wash over an undercoat of white wash on new work	M^2	Washer Mazdoor	0·03 0·01	— —

(*Continued*)

TABLE 1 RECOMMENDED LABOUR OUTPUT CONSTANTS FOR BUILDING WORK — *Contd*

Sl No.	Description of Work	Unit	Labour	Recommended Constant in Days	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
	c) Distempering with dry distemper 3 coats on new surface including a priming coat of whiting	M^2	Painter Mazdoor	0·08 0·04	— —
	d) Cement based paint 2 or more coats on new work (for each coat)	M^2	Painter Mazdoor Bhisti	0·15 0·01 0·10	— — —
	e) Cement wash one coat on new work	M^2	Washer	0·02	—
xiv)	Terraced Roofing				
	a) 10 cm thick (average) mud *PHUSKA* of clay mixed with *BHUSA* at 8 kg per m^3 of clay on roofs laid to slope and consolidated	M^2	Mason Mazdoor Bhisti	0·01 0·20 0·01	— — —
	b) 10 mm thick mud plaster and *GOBRI* leeping with mud *GOBRI* mortar over mud *PHUSKA*	M^2	Mazdoor	0·01	—
	c) One layer of tile brick laid over *GOBRI* leeping and grouted with cement mortar including mixing and finished neat	M^2	Mason Mazdoor Bhisti	0·12 0·15 0·10	— — —
	d) Lime concrete terracing comprising of lime, surkhi, brick ballast — 20 mm and down average consolidated thickness 10 cm, finished with gur and belgiri treatment complete:				
	1) Laying	M^2	Mason Mazdoor Bhisti	0·10 0·30 0·05	— — —
	2) Beating and finishing	M^2	Mazdoor Bhisti	0·07 0·10	— —

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117/418 B, Sarvodaya Nagar, KANPUR 208005	21 68 76
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NIT Building, Second Floor, Gokulpat Market, NAGPUR 440010	52 51 71
Patliputra Industrial Estate, PATNA 800013	26 28 08
First Floor, Plot Nos. 657-660, Market Yard, Gultekdi, PUNE 411037	426 86 59
'Sahajanand House' 3rd Floor, Bhaktinagar Circle, 80 Feet Road RAJKOT 360002	37 82 51
T.C. No 14/1421, University P. O, Palayam THIRUVANANTHAPURAM 695034	32 21 04

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