PRELIMINARY DRAFT CIRCULATION NOTICE

Our Ref:	Date
WRD 23/T-30	28th Dec 2020

TECHNICAL COMMITTEE: Measurement and Cost Analysis of Works for River Valley Projects Sectional Committee, WRD 23

ADDRESSED TO: All Members of Measurement and Cost Analysis of Works for River Valley Projects Sectional Committee, WRD 23

Dear Sir,

As per the decision taken in the 19th meeting of the sectional committee held on 18th Feb. 2020, we are posting the draft standard as mentioned below on our website **www.bis.gov.in** for comments. The additions in the text are underlined and the deletions are also suitably marked.

1.	**Doc. WRD 23 (16772)**	**Proforma for analysis of unit rate of grouting (first revision of IS 13418)**

Kindly examine the above mentioned preliminary draft and kindly provide your specific suggestions for revising the same in view of latest technology.

Last date for comments: 28th Jan 2021

Comments, if any, may please be made in the format attached herewith and mailed to the undersigned at the above address. Comments will be appreciated in electronic form at the email address mentioned below. In case you have any difficulty in accessing the document at our website, please write to us for a hard copy.

Thanking you,

Yours faithfully,

(Lalthan Pari)
Scientitst 'E' (Water Resources)

Encl : as above

Sending Comments

P-Draft	**Doc WRD 23 (16772)**
	Title: Proforma for analysis of unit rate of grouting (first revision of IS 13418)

Sl. No.	Name of the commenter/ Commenting organization	Clause/ Subclause Paragraph Figure/Table	Type Of Comment General/ Technical/ Editorial	Comments (Justification For Change)	Proposed Change	Observations of the Secretariat
1.						
2.						
3.						

For official use only

Doc. WRD 23(16772)

December 2020

BUREAU OF INDIAN STANDARDS

PRELIMINARY

Indian Standard

PROFORMA FOR ANALYSIS OF UNIT RATE OF GROUTING USED IN RIVER VALLEY PROJECTS

(First Revision of IS 13418)

(Not to be reproduced without the permission of BIS or used as a STANDARD)	Last date for receipt of comments is 28th Jan 2021

FOREWORD

(Formal clauses will be added later)

Grouting is the process of injecting mixtures of cement slurry or other suitable materials into confined and inaccessible spaces (cracks and crevices) so that the whole formation may act as a monolithic mass to withstand the high pressures and loads to which it may be subjected. During construction proper grouting can control ground water flow, prevent loose sand densification below adjacent structures due to pile driving and increase stability of granular soil below existing structures so as to reduce the need for lateral support. After construction grouting is done for underpinning, reducing machine foundation vibrations and elimination of seepage through openings.

Grout materials include cement and sand, clay-cement, slag-cement, resin gypsum-cement, clays, asphalt, pulmen seal, fuel ash and a large number of colloidal and low viscosity chemicals.

Grouting is extensively used in construction of river valley projects. As such projects are being executed all over the country, it is essential that practices relating to estimation of grouting cost are harmonized and uniform. To this end, this standard lays down a proforma for working out cost analysis of unit rate for grouting.

This standard was first published in 1992. In view of the experiences gained while using the standard, this revision is being undertaken to bring the existing clauses in sync with the practices in the field. Relevant taxes and duties, wherever applicable, have been added in calculation of unit rates. This standard is one of a series of standards already published which lay down proforma for analysis of rates of concrete, masonry, cyclic drilling and blasting, earthwork, shuttering/formwork, rock excavation and embankment construction.

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 'Rules for rounding off numerical values (revised)'. 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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Doc. WRD 23(16772)

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PROFORMA FOR ANALYSIS OF UNIT RATE OF GROUTING USED IN RIVER VALLEY PROJECTS

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1 SCOPE

1.1 This standard lays down proforma intended for analysis of unit rate of grouting per kg of grout when cement based grout with additives wherever required, is used.

2 REFERENCES

The following standards contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	Title
11590:1995	Guidelines for working out unit rate cost of the construction equipment used for river valley projects (first revision)

3 PROFORMA

3.1 The rate of grouting will involve two components, that is, drilling rate per metre of hole and grouting rate per kg of cement. The performers are therefore given in Tables 1 and 2. For evaluating unit rate of construction equipment references should be made to IS 11590 (Part 1) : 1986

Table 1 Proforma for Analysis of Unit Rate of Drilling for Grouting

(Clause 3.1)

Sl. No.	Item	Unit	Quantity	Rate	Amount	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	DRILLING OF HOLES:					
	a) Machinery and equipment excluding air	Hours				
	b) Compressed air	Hours				
	c) Drill bits and drilling accessories	Hours				
	d) Other materials	Hours				
2.	LABOUR					
3.	OVERHEADS					
	a) Water supply, lighting, sanitary and drainage	Lumpsum				
	b) Temporary construction					
	c) Testing and supervision					
	d) Carriage and freight of machinery					

e) Hidden cost of labour
f) Contingencies
g) Taxes and duties: This list is just indicative
1) Sales Tax on works
2) Services tax
3) Labour cess
4) VAT
5) Entry tax

4 ANALYSIS

Total cost of drilling from Table 1 = Rs. C_d

Total length of holes = L

Copt of drilling/m drilled = Rs. $\frac{C_d}{L}$

NOTES

1. Contractors Overhead and profits are generally taken as 20% of prime cost.

Table 2 Proforma for Analysis of Unit Rate-of Grouting per kg of Cement

(Clause 3.1)

Sl. No.	Item	Unit	Quantity	Rate	Amount	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	GROUTING EQUIPMENT:					
	a) Grout mixer	Hours				
	b) Grout pump and accessories	Hours				
	c) Compressed air	Hours				
2	COST OF GROUT MATERIALS:					
	a) Cement	kg				
	b) Sand	kg				
	c) Additives	kg				
	d) Water	kg				
3	WASHING AND TESTING OF HOLES: Water pump and/or compressed air charges	Hours				
	a) Washing the holes					
	b) Testing of holes					
4	LABOUR	Man hours				
5	OVERHEADS:					
	a) Water supply, lighting sanitary and drainage	Lumpsum				
	b) Temporary construction					
	c) Testing and supervision					
	d) Carriage and freight of machinery					
	e) Hidden cost of labour					
	f) Contingencies					
	g) Taxes and duties: This list is just indicative					
	6) Sales Tax on works					
	7) Services tax					
	8) Labour cess					
	9) VAT					
	10) Entry tax					
6	TOTAL COST OF GROUTING: 1+2+3+4+5 = Rs.	Cg				

ANALYSIS

a) Total cost of grouting = Rs. Cg

b) Total quantity of cement used = w kg

c) Cost of grouting/kg of cement = Rs. $\frac{Cg}{w}$

NOTE –

1. Separate rate analysis should be worked out for any change in grout mix or type of grouting.
2. Contractors Overhead and profits are generally taken as 20% of prime cost.