IS 13418 : 1992

(Reaffirmed 1998)

भारतीय मानक

भरण की प्रति इकाई दर के विश्लेषण के लिए प्रपत्र

Indian Standard

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

UDC 627·81·05 : 693·546·3

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

July 1992

Price Group 1

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Cost Analysis and Cost Estimates Sectional Committee had been approved by the River Valley Division Council.

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 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.

Indian Standard

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

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 REFERENCE

2.1 The Indian Standard, IS 11590 (Part 1) : 1986 'Guidelines for working out construction equipment used for river valley projects: Part 1 General' is a necessary adjunct to this standard.

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 proformas 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

Sl No.	Item	Unit	Qty	Rate	Amount
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	Cu-m			
2.	LABOUR	Man hours			
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				
4.	ANALYSIS				
	a) Total cost of drilling from Table 1 = Rs.	C_d			
	b) Total length of holes = L				
	c) Cost of drilling/m drilled = Rs.	$\frac{C_d}{L}$			

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

Sl No.	Item	Unit	Qty	Rate	Amount
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				
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.	Cg/w			

NOTE — Separate rate analysis should be worked out for any change in grout mix.

Standard Mark

The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.