

**CONDUCTING PLATE LOAD TEST FOR K - VALUE (MODULUS OF
SUBGRADE REACTION) ON PREPARED SUBGRADE WITH
ENGINEERING FILL AT INDOSPACE LOGISTIC PARK
AT B - 1300 & B - 1400 AT FAIZABAD, BADLI, JHAJJAR, HARYANA.**

1.0 INTRODUCTION

- 1.1 Indospace Industrial Part Badli Pvt Ltd., Village Pahasour (Faizabad) Post Office Badli - Jhajjar, Badli Road, New Don Bosco School, Tehsil & Amp : District Jhajjar are in the process of constructing Warehouse buildings at Faizabad, Badli, Jhajjar, Haryana.
- 1.2 To design the flooring, Modulus of subgrade reaction (K - value) is required. For this purpose, K-values tests (Plate Load Tests) had been undertaken at the location of building **B-1300 & B-1400** on the base of the flooring at the proposed site.
- 1.3 This report contains the results and analysis of the tests carried out at various locations at site.
- 1.4 These tests has been carried out as per authorization of the authorized signatory of Indospace Industrial Park Badli Pvt Ltd., vide their letter **IIPBPL/2022/INSPNMRNSC/153.**

2.0 THE SITE

- 2.1 The proposed site is located at near Village Faizabad, on Badli - Jhajjar Road and is situated at a distance of about 3 km from Jhajjar bypass towards Jhajjar, Haryana.
- 2.2 A schematic site plan showing the locations of the tests is enclosed in this report (figs. 1a & 1b).

2.3 Seismic Zone

- 2.3.1 The present site is located in the Seismic Zone IV which is an area of high seismic activity and earthquake intensity, as per the seismic zoning map of India given in BIS code IS:1893 (Part1)-2016.

3.0 OBJECT OF INVESTIGATIONS

- 3.1 To determine modulus of subgrade reaction (K-value) to be used to design the flooring.

4.0 SCOPE OF INVESTIGATIONS

- 4.1 The scope of investigations as stipulated by the client consists of :
- a) Conducting modulus of subgrade reaction (K-value) test by using 30 x 30 cm plate at three locations.
 - b) Preparation and submission of a technical report in three copies containing the details of the tests carried out along with the results.

5.0 FIELD INVESTIGATIONS

5.1 Preliminary Details

- 5.1.1 Field investigations had been carried on 28th November 2022.

5.2 K- Value Tests (Modulus of Subgrade Reaction)

- 5.2.1 K-value tests PLT1 had been conducted at the location of B-1300 whereas PLT2 & PLT3 had been conducted at the location of B-1400 as shown in the figs. 1a & 1b of this report.
- 5.2.2 The plate load tests were conducted on the made up surface (prepared by the client).
- 5.2.3 The size of the plate used for the test was 30x30 cm.
- 5.2.4 The load on the plate was applied using the method of reaction loading by jacking against a loaded vehicle (Water Tanker).

- 5.2.5 Dial gauges resting on two diagonal points near the edge of the plate and supported by magnetic stands fixed on datum bars, had been used for recording the settlements of the plate.
- 5.2.6 After the above set up had been arranged, the initial readings of the dial gauges had been noted and the first increment of the static load had been applied. This load had been maintained constant for a period till no further settlement occurred or the rate of settlement became negligible. The readings of the dial gauges had been noted down. The next higher stage load had then been applied and the above procedure had been continued till the maximum specified settlement or loading intensity had been reached.

6.0 RESULTS & ANALYSIS

6.1 K-value Tests (Modulus of Subgrade Reaction Test)

- 6.1.1 The results of these tests have been plotted in the form of load vs settlement curve (figs. 2a to 2c).
- 6.1.2 The modulus of subgrade reaction (K value) for the square plate of 30 x 30cm size have been shown in the figs 2a & 2b. The same has been determined as per the guidelines of BIS code IS 9214 - 1979.
- 6.1.3 The modulus of subgrade reaction (K-value) for 30cm square plate as determined from the results of K-value test is given below. The modulus of subgrade reaction (K-values) for 75 x 75cm plate size determined based on the relationship given in figure no. 5.1 of Concrete Society report TR -34, 2003 are also given below.

Test No.	Building No.	K-value (kg/cm ³)		K-value (N/mm ³)
		30 x 30cm plate	75cm plate	75cm plate
1	B - 1300	16.8	8.4	0.084
2	B - 1400	22.4	11.2	0.112
3	B - 1400	18.4	9.2	0.092

6.2 List of IS Codes

A list of IS Codes referred for providing the recommendations and that which might be required to implement the same is also enclosed in this report.

Dr. N. Santosh Rao

Technical Director

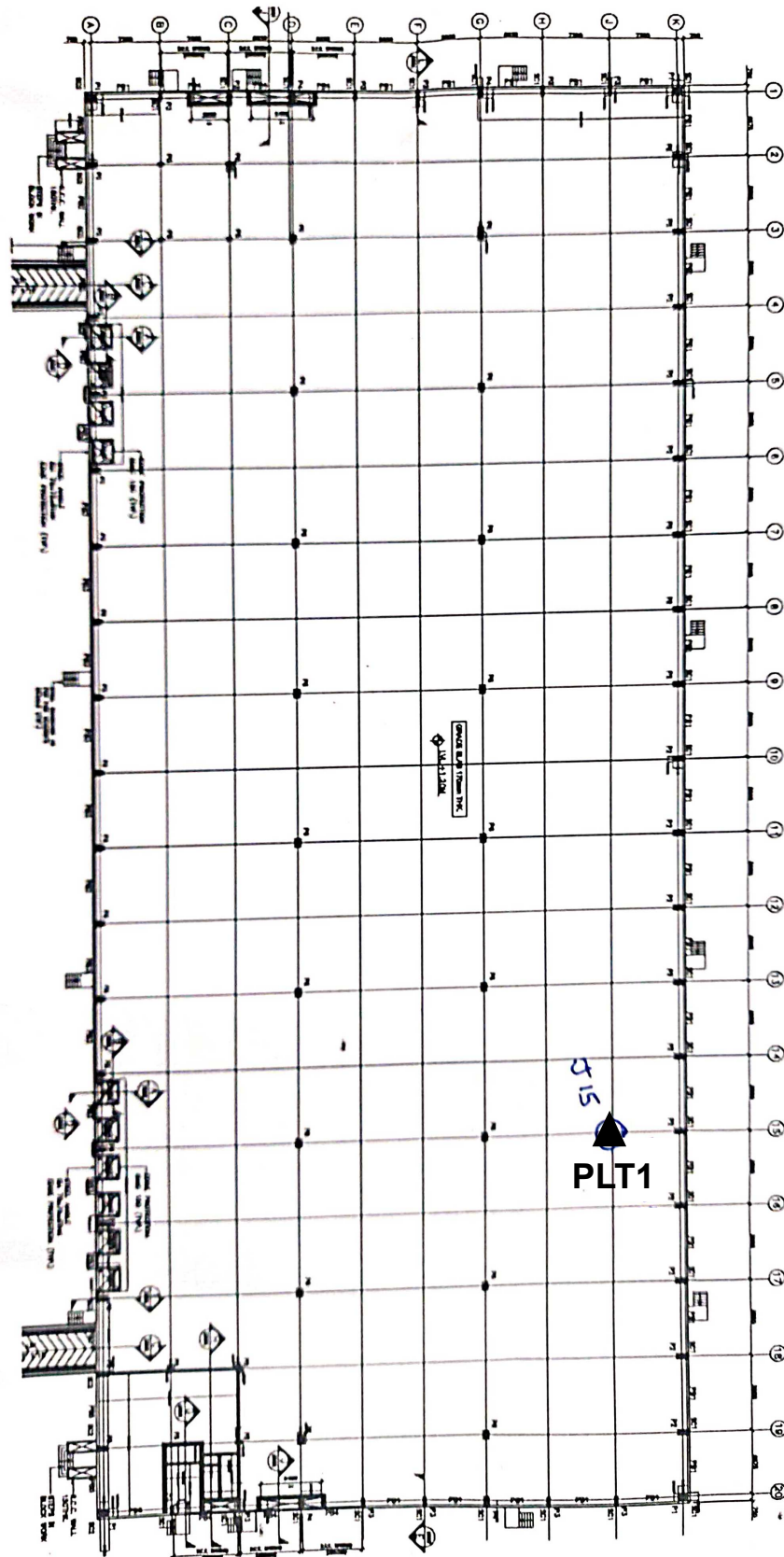
For Nagadi Consultants Pvt. Ltd

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LIST OF IS CODES

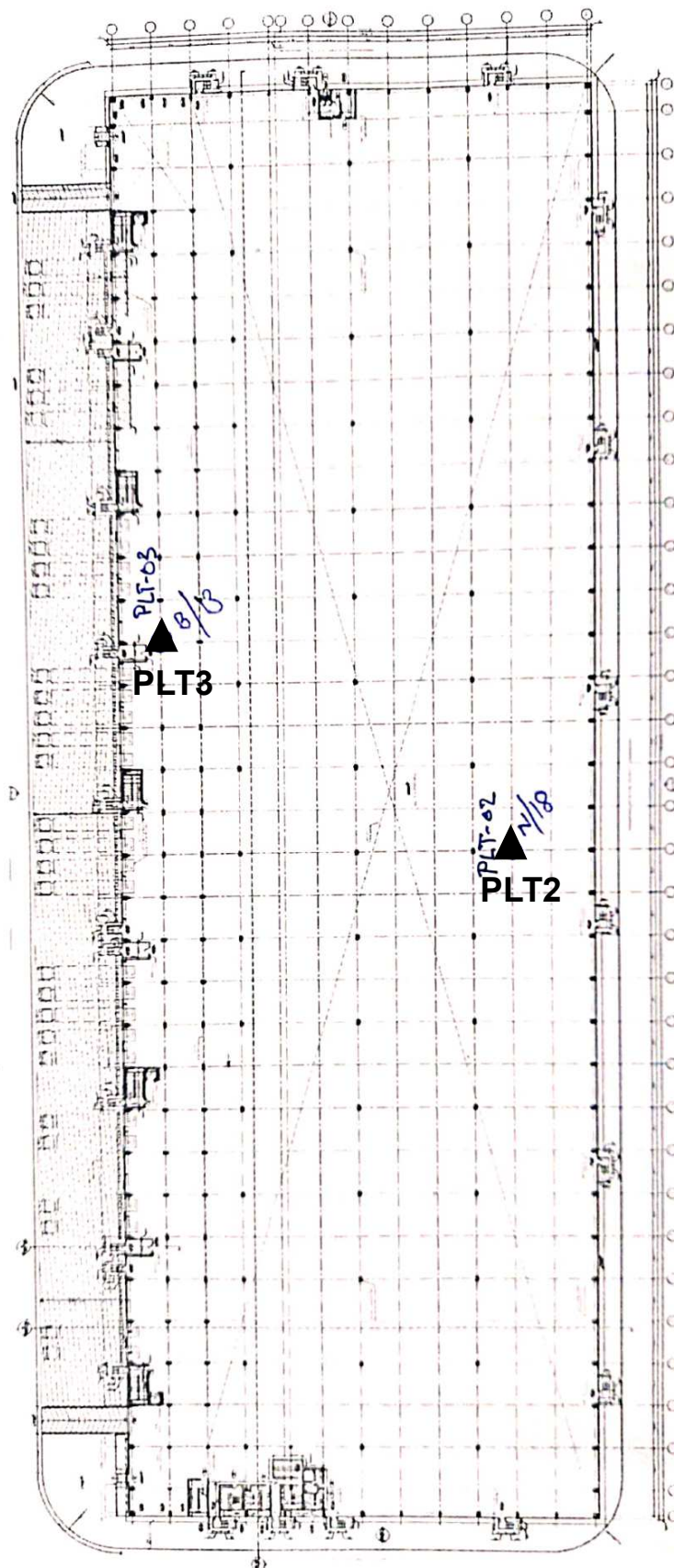
Field Investigation

1. IS 1888 : Method of load test on soils
2. IS 9214 : Method of determination of modulus of sub grade Reaction (K value) of soils in field



SCHEMATIC SITE PLAN
(B-1300)

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**SCHEMATIC SITE PLAN
(B-1400)**

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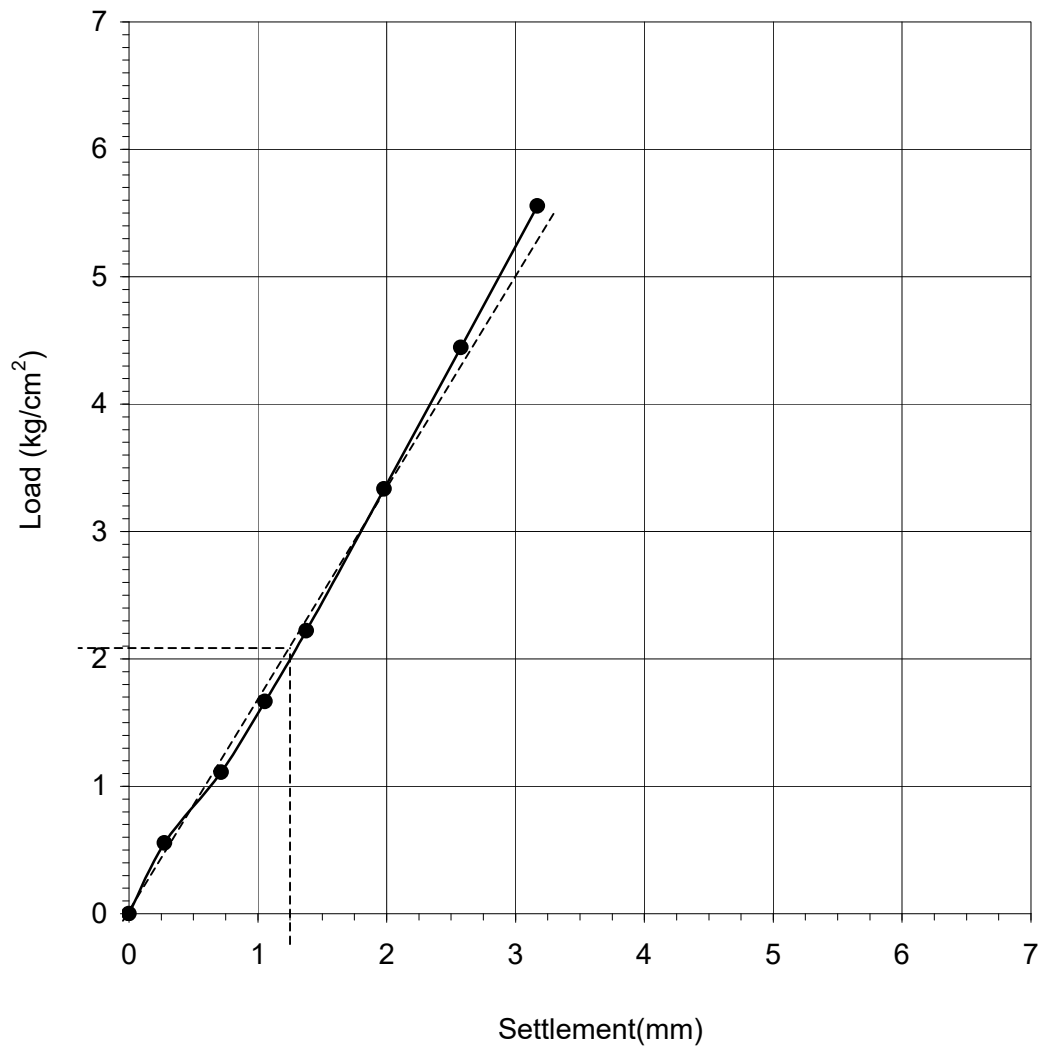
**PHOTOGRAPHS SHOWING
PLATE LOAD TEST UNDERPROGRESS**

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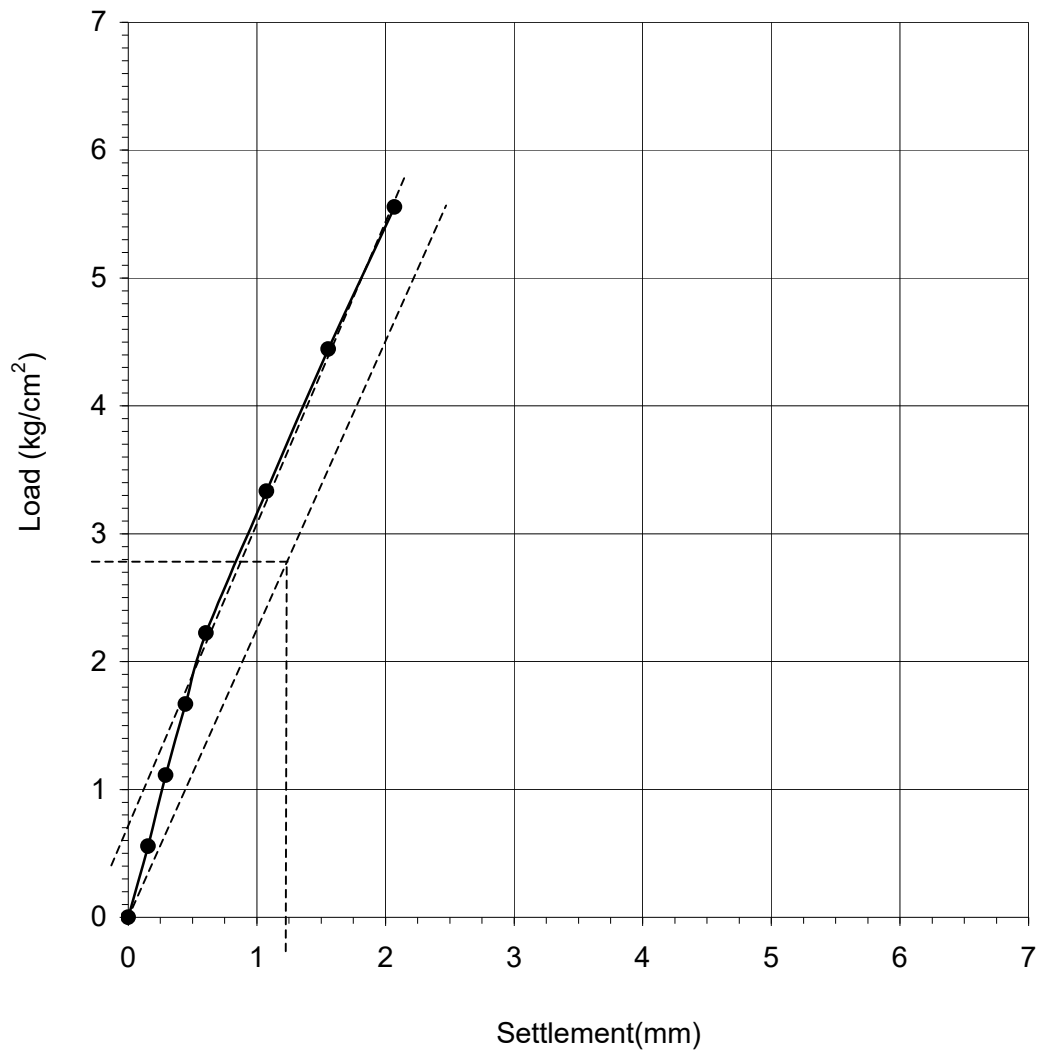
Modulus of Subgrade Reaction (K-value)= 16.8 kg/cm³

Size of the Plate : 30 x 30cm
 Final Loading Intensity : 5.55 kg/cm²
 Corresponding settlement : 3.17mm

K- Value Test Curve : PLT1

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2a



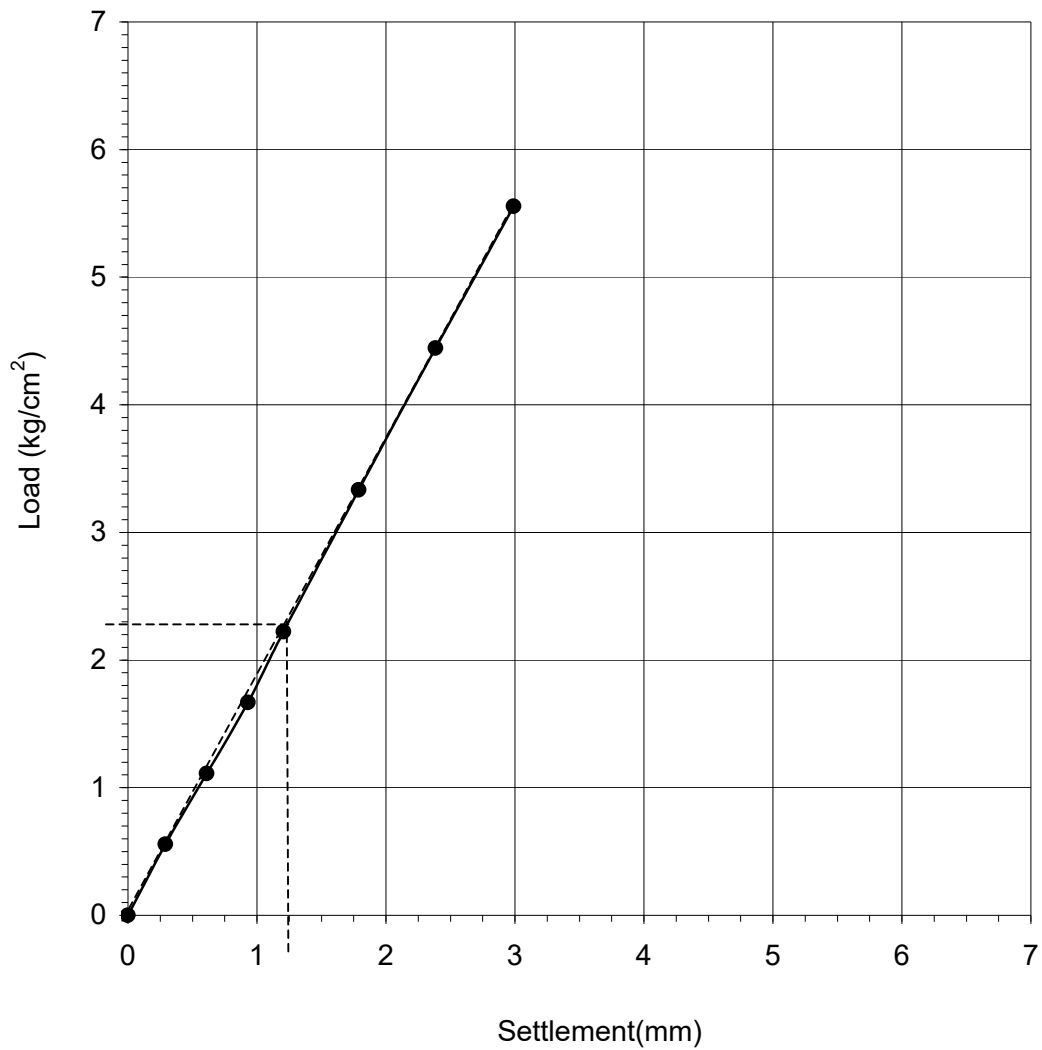
Modulus of Subgrade Reaction (K-value)= 22.4 kg/cm³

Size of the Plate : 30 x 30cm
 Final Loading Intensity : 5.55 kg/cm²
 Corresponding settlement : 2.07mm

K- Value Test Curve : PLT2

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2b



Modulus of Subgrade Reaction (K-value)= 18.4 kg/cm³

Size of the Plate : 30 x 30cm
 Final Loading Intensity : 5.55 kg/cm²
 Corresponding settlement : 2.99 mm

K- Value Test Curve : PLT3

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