

# BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET)



DEPARTMENT OF CIVIL ENGINEERING  
Mobile: 01819 557 964; PABX: 966 5650-80 Ext. 7226; www.buet.ac.bd/ce/



## STRENGTH OF MATERIALS LABORATORY

BRTC No. : 1102-71844 /22-23/CE; Dt: 27/9/2022  
Sent by : Project Manager, Union Mercantile Ltd.  
Ref. No. : Letter; Dt: 27/9/2022  
Project : Reliance 718 MW Combined Cycle Power Plant Project, Maghnaghat, Narayanganj  
Sample : Bitutherm Extruded Polystyrene Thermal Insulation Board, 50 mm Thick (Sample 1)  
Date of Test : 20/10/2022

### TEST RESULTS


#### 1. Dimensions

Length	1244.5	mm
Width	597.5	mm
Thickness	48.5	mm

#### 2. Density of the Board (ASTM C 1622-03)

Sl. No	Specimen Dimension	Specimen Volume	Specimen Weight	Density	Average Density
	mm	mm <sup>3</sup>	gm	kg/m <sup>3</sup>	kg/m <sup>3</sup>
1	150.6×150.2×48.8	1103495	38.76	35.12	35.25
2	151.9×149.5×49.2	1117272	39.52	35.37	
-	-	-	-	-	-

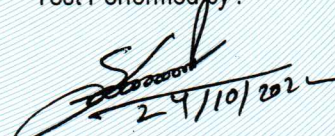
Countersigned by:

  
Dr. A. B. M. Badruzzaman  
Professor  
Department of Civil Engineering  
BUET, Dhaka-1000, Bangladesh



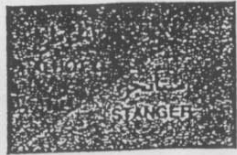
PEBSnWfHL

Test Performed by:

  
Dr. Shameem Ahmed  
Assistant Professor  
Department of Civil Engineering  
BUET, Dhaka-1000, Bangladesh

**Important Notes:** Samples as supplied to us have been tested in our laboratory. BRTC does not have any responsibility as to the representative character of the samples required to be tested. It is recommended that samples are sent in a secure and sealed cover/packet/container under signature of the competent authority. In order to avoid fraudulent fabrication of test results, it is recommended that all test reports are collected by duly authorized person, and not by the Contractor/Supplier.

AL HOTY-STANGER



BITUMAT CO. LTD.

P.O. BOX 7487

DAMMAM 31462

Date: 16<sup>th</sup> Jan. 2010

TWO No.: 20100333

Inv.: To Follow

Report No.: 40476

Page 1 of 1

**"TEST REPORT ON EXTRUDED POLYSTYRENE SAMPLE"**

Sample Reference : EXTRUDED POLYSTYRENE BOARD  
 Sample Identification : "BITU THERM" 50mm  
 Size : 500 x 500mm  
 Density : 32 – 35 Kg/m<sup>3</sup>  
 Sampled by : Client  
 Date Received : 06.01.2010  
 AHS Sample No. : 20100333 / 001  
 Required Test : Density, Thermal conductivity, Compressive strength and Water absorption.

**RESULTS**

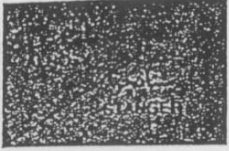
TESTS	METHOD	RESULTS
Density, Kg/m <sup>3</sup>	ASTM D-1622	33.61
Water Absorption by Submersion, vol. %	ASTM D-2842	0.041
Compressive Strength @ 10% deflection, psi (kPa)	ASTM D-1621	76 (516.38)
Thermal Conductivity	ASTM C518-04 (See attached 'B')	



*(Signature)*  
**A. N. M OMAR, M. Sc.**  
 Assistant Manager, Materials Analysis Dept.  
 for AL HOTY-STANGER LTD. CO.

*(Signature)*  
**NAEEM ZAIDI, M. Sc.**  
 Manager, Materials Analysis Dept.  
 Test Method Variation: NONE

*This report relates only to the sample tested and shall only be reproduced in full with the written approval of Al Hoty-Stanger testing laboratory*

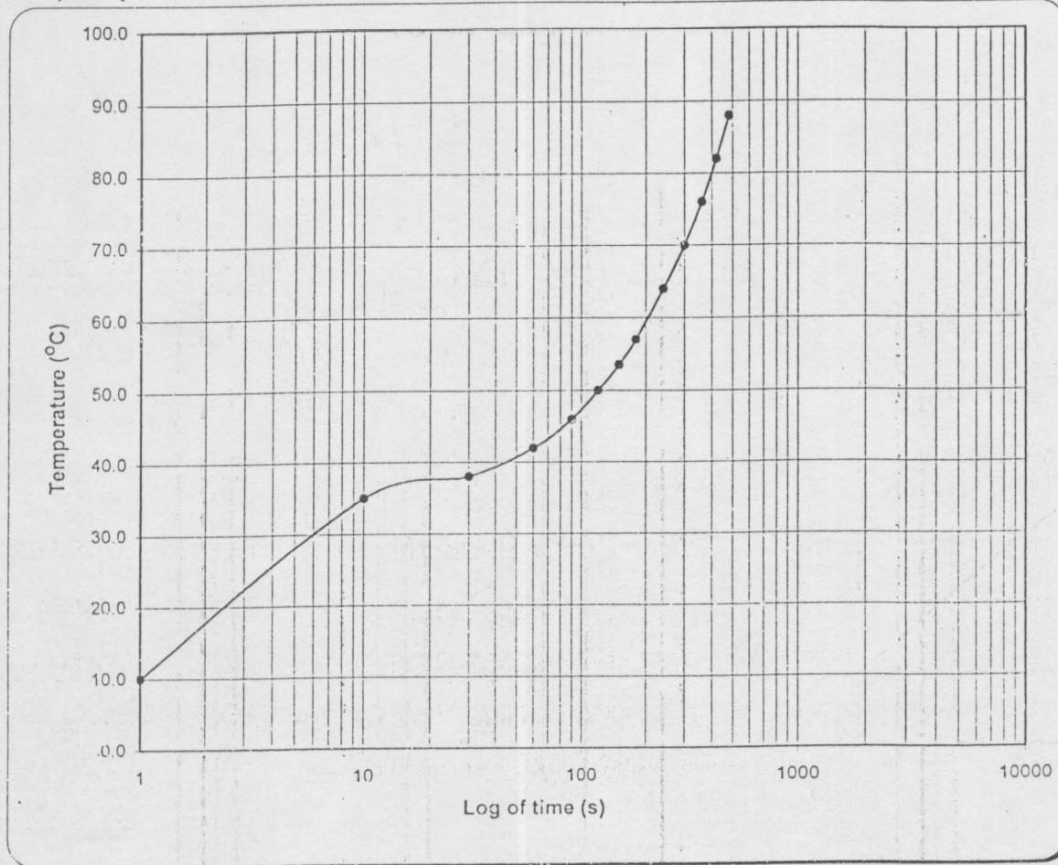


METHOD : ASTM C 518-04

CLIENT: BITUMAT CO. LTD.

SHEET NO.B

Sample Description : EXTRUDED POLYSTERENE  
 Location : Bitumat Co. Ltd., Dammam  
 Date Sample received : 06.10.2010  
 Sampled by : Client



Gradient Temperature = 36.00 °C  
 "g" Factor = 10  
 Thermal Conductivity = 0.028 (W/m-K)  
 Thermal Resistance = 1.79 K-m<sup>2</sup>/W

*[Signature]*  
 K.H.ABDUL NESSIR  
 Assistant Manager  
 Construction Materials Dept.  
 For AL HOTY STANGER LTD. CO. - Khobar



*[Signature]*  
 ABDUL NAEEM  
 Lab Supervisor

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