NIRMA UNIVERSITY
INSTITUTE OF TECHNOLOGY

No. : NU/IT/MECH/NAFETIC/2013_09/ 1899

## National Laboratory for Testing and Development of Thermal Insulations

*A Project under the National Facilities in Engineering and Technology with Industrial Collaboration (NAFETIC) Scheme of AICTE*

# TEST CERTIFICATE

| | | |
|---|---|---|
| *Name and address of party* | : | **PERLCON PREMIX PVT LTD**<br>302, Akshay, 53 Shrimali Society,<br>Navrangpura, Ahmedabad – 380009. |
| *Test* | : | Determination of thermal conductivity of sample |
| *Test method* | : | Guarded Hot Plate Method as per ASTM C177 and ISO 8302 |
| *Material tested* | : | Plastering Material, "ICYPLAST"<br>Density (as tested) : 527.78 kg/m$^3$ |
| *Test Results* | : | The thermal conductivity of the sample tested at a specimen mean temperature of 35 °C : **0.128 W/mK**. |

**Investigators**

**Professor & Head,**
**Mechanical Engineering Deptt.**

**Director**
**Institute of Technology**

INSTITUTE OF TECHNOLOGY AHMEDABAD NIRMA UNIVERSITY

Date: 24/9/2013

Institute of Technology, Nirma University
Sarkhej-Gandhinagar Highway, Ahmedabad 382 481, INDIA, Ph.: +91-02717-241911/12/13/14/15 Fax: +91-02717-241917 Email: nit@nirmauni.ac.in Website: www.nirmauni.ac.in

CRDF CEPT UNIVERSITY

CEPT RESEARCH AND DEVELOPMENT FOUNDATION

Date: March 30, 2016

To,
Mr. Nimish Desai – Head Marketing (Projects)
Perlcon Premix Pvt. Ltd
302, "Akshay" 53, Shrimali Society
Next to "Vadilal House", Near Mithakali 6 Road Crossing
Navrangpura, Ahmedabad 380 009
Gujarat
079 26441404 / 079 26441325

Sub: Test Report for the sample tested for U-Value

Dear Sir,

Enclosed herewith kindly find the four test report for the sample tested for its U-Value.

Every aspect of how we at CRDF, CEPT University serve customers like you is regularly reviewed and carefully analyzed. One of the most important components of these reviews is gathering feedback directly from our customers.

The suggestions and responses from our customers are of great value. As one of our valued customers, you can help us improve our service, our products and our overall activities. Please take a few minutes to fill out the enclosed questionnaire on your experience dealing with us.

Thank you in advance for sharing your thoughts with us. We appreciate your time and effort in providing feedback to us.

Kindly acknowledge the receipt of the same.

With Regards,

Asha

Asha B. Joshi
Administrative Manager
Centre for Advanced Research in Building Science & Energy (CARBSE)
CEPT Research and Development Foundation
CEPT University, K L. Campus, Navrangpura
Ahmedabad - 380 009
+91 79 26302470 Extn 383

*Encls: i. Test Report*
*ii. Customer Feedback Form*

Report No: CRDF/RPT/GHB/U-Val/001 Report Date: 30th March 2016

**Report of test carried out by CEPT Research and Development Foundation for U - Value of Supplied Material**

The test results of the specimen submitted for U - Value on date 5th February 2016 are as under:

**1. Customer Information**

| | |
|---|---|
| 1.1. Name of the Organization | : Perlcon Premix Pvt. Ltd. |
| 1.2. Contact Person | : Mr. Nimish Desai – Head Marketing (Projects) |
| 1.3. Address | : 302, "Akshay"53, Shrimali Society,<br>Next to "Vadilal House", Near Mithakhali Six Road Crossing<br>Navrangpura, Ahmedabad – 380009, Gujarat |
| 1.4. Phone Numbers | : 079 26771404 / 079 26441325 |
| 1.5. Fax Number | : 079 26569103 |
| 1.6. Email | : nimish.desai@perlcon.com |

**2. Sample Details**

| | |
|---|---|
| 2.1. Sample Identification Number | : U-Val/03/16/0001 |
| 2.2. Name and any other pertinent | : Sand Free, Self-Curing, Light Weight, Cement based Dry mortars |
| 2.3. Identification of the material (Including physical description) | : BlockBond (HD) and ICYPLAST<br>20mm ICYPLAST + 200 mm AAC Block + 20mm ICYPLAST |
| 2.4 Instrument used | : Guarded Hot Box |
| 2.5 Standard Used | : In accordance with ASTM C1363-11 |

**3. Test Specimen size** : 990mm Width X 990mm Height X 240 mm Thickness

**4. Tested By** : Jigar Patel

**5. Description of Test Specimen** : As per attached sheet

**6. Test period:**

| | Date |
|---|---|
| Beginning | 7th March 2016 |
| End | 12th March 2016 |

**Tested By**

**Jigar Patel**
Laboratory Technician

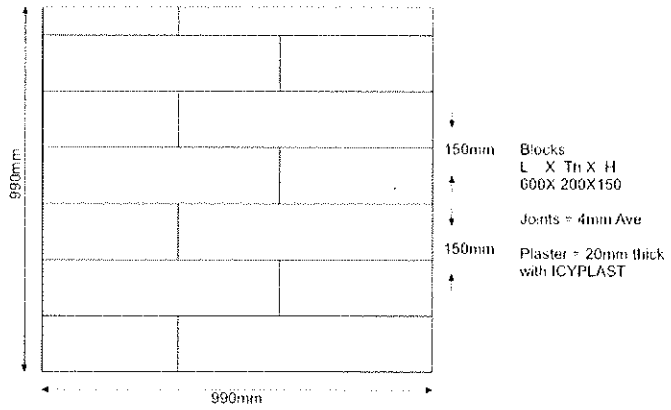
**Verified By**

**Yashkumar Shukla**
Technical Director

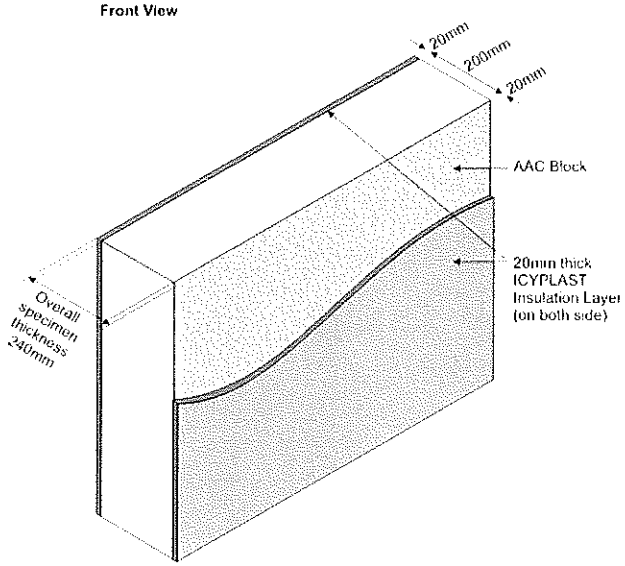
Report No: CRDF/RPT/GHB/U-Val/001 Report Date: 30th March 2016

**7. Pre-Test assembly & Conditioning details** : Prepared a wall of AAC Block of 200mm thickness with 20mm plaster of ICYPLAST applied on both the sides as shown in the drawings below. As per manufacturer's instruction, the specimen was kept in dry environment (< 50% RH) for 21 days to remove the moisture.

**8. Design drawing(s) of Test Specimen:**




Front View



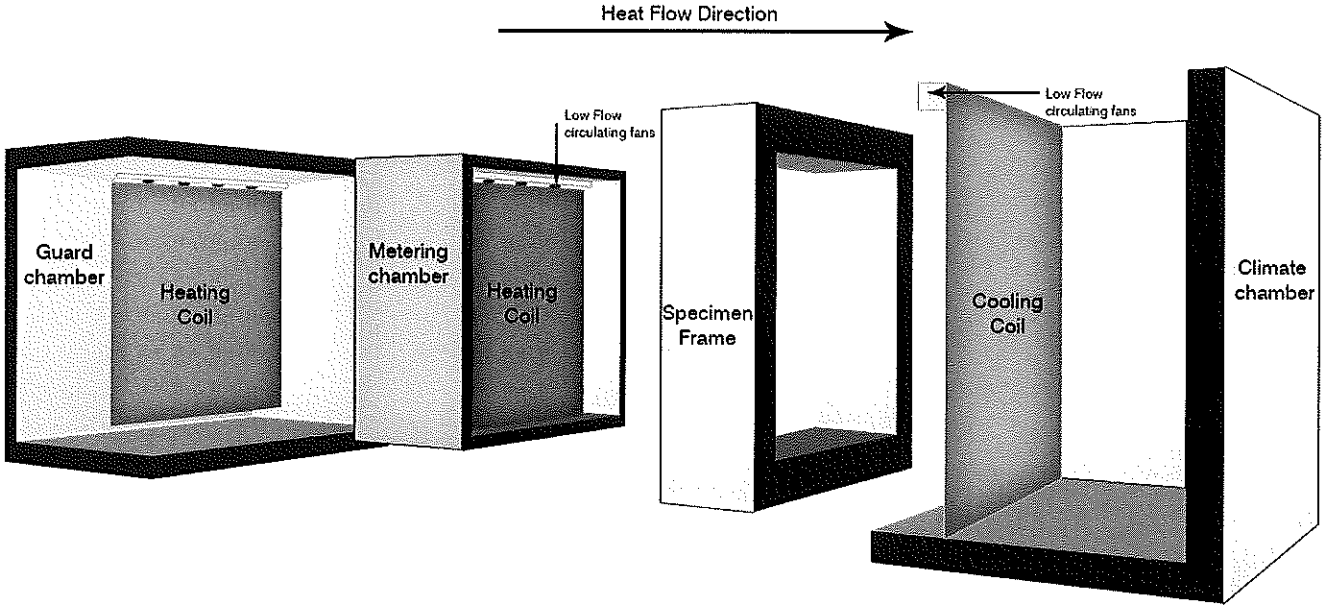

Cross View

**Tested By**
J Patel
**Jigar Patel**
Laboratory Technician

**Verified By**
**Yashkumar Shukla**
Technical Director

Report No: CRDF/RPT/GHB/U-Val/001 Report Date: 30th March 2016

9. **Test Parameters:** Test determines the overall thermal transmittance (U – Value) of the specimen in Guarded Hot Box apparatus located at CARBSE, CEPT Research and Development Foundation. The thermal performance evaluation is completed in accordance with ASTM C1363-11. Data was collected for successive five (5) hours period for a minimum duration of eight (8) hours after steady state condition were achieved. Steady state conditions were considered established when, over five (5) hours period; 1) one hour average of the surface temperature did not vary more than 0.5 °C; and 2) The one hour average of the power input to the metering box did not vary more than ±1%.
10. **Test Specimen Orientation** : Vertical
11. **Direction of Energy Transfer** : Heat transfer from Metering Chamber to Climate Chamber
12. **Schematic of Guarded Hot Box Apparatus**




**Tested By**
**Jigar Patel**
Laboratory Technician

**Verified By**
**Yashkumar Shukla**
Technical Director

Report No: CRDF/RPT/GHB/U-Val/001 Report Date: 30th March 2016

## 13. Results of the measurement:

| Sr. No. | Parameter | Measured Value |
|---|---|---|
| 01 | Metering Chamber Surface Temperature | 40 °C |
| 02 | Metering Chamber Air Temperature | 40 °C |
| 03 | Metering Chamber Air Velocity | 0.2 m/s |
| 04 | Climate Chamber Surface Temperature | 15 °C |
| 05 | Climate Chamber Air Temperature | 15 °C |
| 06 | Climate Chamber Air Velocity | 0.2 m/s |
| 07 | Mean Temperature across the specimen | 27.5 °C |
| 08 | Temperature difference across the specimen | 25 °C |
| 09 | Overall Thermal Transmittance (U – Value ) | 0.45 W/m²k |
| 10 | Overall Thermal Resistance (R – Value) | 2.22 m²k/W |

## 14. Certificate of Accuracy:

This is to certify that the test results herein presented are, to the best of my knowledge, true and accurate representations of the samples submitted.

**Tested By**

**Jigar Patel**
Laboratory Technician

**Verified By**

**Yashkumar Shukla**
Technical Director
CEPT Research and Development Foundation

*Disclaimer:*

1. *The CEPT Research and Development Foundation, CEPT University is not responsible for any kind of alterations in the physical property of the sample and the customer is solely responsible for it and its consequences.*
2. *Result relates to the sample tested only. Sample will be destroyed after 7 days of issue of the report unless specified by the customer.*
3. *Any complains about this report should be communicated in writing within 7 days of issue of the report.*
4. *The test report shall not be reproduced fully or partially or in parts and cannot be used as an evidence in a court of law and shall be used in advert singeing media without written approval of Director, CEPT Research and Development Foundation, CEPT University.*

# K.C.T. Consultancy Services®

**Soil Testing and Material Testing**

(State & Central Govt. Approved)
Regd. No. : AB/TC/Ren/E-I/5294
O.No. AB-Tender-5604-2012
NABL (ISO/IEC : 17025) Accredited
(scope of our accreditation available on www.nabl-india.org)

Cert.No:IAS / IND / 1678

**Ref. No. :** KCT/MT/1411214/08-0061-14 **Date :** 08/12/14

## Test Report

To,
**Perlcon Premix Pvt.Ltd.**
**Ref : Your letter dated 14/10/2014**
**Sample ID : Perlcon Icy Plast ( SP ) Light weight premix insulation plaster mortar**

**Sub:-** Testing of Plaster mortar Sample supplied by you

Dear Sir,

Please find herewith test result of plaster mortar sample supplied by you

| Sr. No. | Description | Test Results |
|---|---|---|
| 1 | Compressive strength in Mpa at 28days | 6.98 |
| 2 | Setting time | |
| a | Initial Setting Time in min. | 180.00 |
| b | Final Setting Time in min. | 435.00 |
| 3 | Tensile Adhesion in N | |
| a | Dry Condition | 1750 |
| b | Wet Condition | 1400 |
| 4 | Shear Adhesion in KN | |
| a | Dry Condition after 24hr. | 5.90 |
| b | Dry Condition after 14 days | 11.90 |
| c | Heat ageing Condition | 9.00 |
| d | Wet Condition | 7.80 |
| 5 | Loose Dry Density in kg/cum | 352.0 |
| 6 | Wet Density in kg/cum. | 710.00 |
| 7 | Water absorption ( % ) | 13.50 |

**Remark:-** 1 ) The sample was tested after addition of 98% water by weight for all test as per instrcution given by the client.

2) There is no Indian standard method available for the test procedure, though test was performed as per the available relavant standard method on the specific instruction given by the client.

3) Results reflect the properties of samples supplied to us and in the condition when supplied to us.

4) The certificate shall not be used for publicity / Product promotion etc. Results shall not be reproduced except in full.

5) We do not undertake or we shall not bound to participate or appear in any legal - court matter or litigation on any issues what so ever arise before or after submission of this certificate.

6) Sample are used while testing and therefore will not be available for inspection after testing.

Thanking you,
Yours faithfully,
**For KCT Consultancy Services,**

(Dr. K.C.Thaker)

KCT CONSULTANCY SERVICES A'BAD

LXXVII

**Contact : Prof.Dr. K.C. Thaker / Dr. K.K. Thaker**
**Regd. Office & Lab :-** 'KCT HOUSE', Shayona Silver Estate Part-2, B/h. Silver Oak College of Engineering, Nr. Lambda, Beside Auda Water Tank, S.G.Road, Gota, Ahmedabad - 382 481.
**Tel. : 079-65103088-89-90, Mobile : 98250 64378, E-mail : kctconser@yahoo.com / kct@kctcs.in, Website : www.kctcs.in**