



# AIT

## Asian Institute of Technology

School of Engineering and Technology

Postal Address:  
P.O. Box 4, Klong Luang  
Pathumthani 12120  
Thailand

Street Address:  
Km. 42 Paholyothin Highway  
Klong Luang, Pathumthani 12120  
Thailand

Tel: (66-2) 524-6051-57  
Fax: (66-2) 524-5509, 6059  
<http://www.ait.ac.th>

### EXECUTIVE SUMMARY

The Structural Engineering Laboratory, School of Engineering and Technology, Asian Institute of Technology (AIT) was engaged by the Saint - Gobain Weber Co.,Ltd., to conduct the performance test of cementitious tile adhesive. The sample in the trademark of " weber.tai fix " was submitted by the Saint - Gobain Weber Co.,Ltd. The series of test were detailed in according with ISO 13007 / European Norms (EN 12004:2007+A1:2012) test methods as follows:

#### Specification of cementitious adhesives

Fundamental Characteristics			
1a Normal setting adhesives			
Characteristic	Requirement	Test Method	Results
Tensile adhesion strength	$\geq 0.5 \text{ N/mm}^2$	ISO 13007 part 2 4.4.4.2 or EN 1348 § 8.2	PASS
Tensile adhesion strength after water immersion	$\geq 0.5 \text{ N/mm}^2$	ISO 13007 part 2 4.4.4.3 or EN 1348 § 8.3	PASS
Open time : tensile adhesion strength	$\geq 0.5 \text{ N/mm}^2$ after not less than 20 min	ISO 13007 part 2 4.1 or EN 1346	PASS

Regarding the testing, it was found that the properties of weber.tai fix are conformed to ISO 13007 / European Norms (EN 12004:2007+A1:2012) test methods as specified. These results certify the adequacy and representative character of test samples only.

Reference No: S0161-13

Date of Issue: 3 April 2013

Checked by:

**MR. EKKACHAI YOOPRASERTCHAI**  
RESEARCH ASSOCIATE

Approved by:

**DR. PENNUNG WARNITCHAI**  
LEADER OF CIVIL AND INFRASTRUCTURE  
ENGINEERING GROUP  
May 17, 2013



**AIT****Asian Institute of Technology**

Km. 42 Paholyothin Highway, Klong Luang, Pathumthani, Thailand 12120

P. O. Box 4 Klong Luang, Pathumthani 12120, Thailand. Tel. (66-2) 524-5527, 524-6427 Fax. (66-2) 524-5544

**STRUCTURAL ENGINEERING LABORATORY****STRUCTURAL ENGINEERING FIELD OF STUDY****SCHOOL OF ENGINEERING AND TECHNOLOGY****TYPE OF TEST:** INITIAL ADHESION STRENGTH ( EN 1348:2007 )**TEST SPECIMEN:** Ten (10) specimens of Ceramic tile of size 50 x 50 x 5 mm. installed by using " weber.tai fix " were prepared in the SE laboratory. The mix proportion of water to " weber.tai fix " ratio was 25.0 % by weight.**CLIENT:** SAINT - GOBAIN WEBER CO., LTD.**DATE OF TEST:** February 22, 2013**TEST METHOD:** After finish the preparation, the test units were placed in standard conditions for 27 days. Bond the pull head plate to the tile with the high strength epoxy and keep the test units for a further 24 hour in standard condition. Determine the tensile adhesive strength.**TEST RESULTS:**

Specimen No.	Width of Specimen (mm.)	Length of Specimen (mm.)	Area (mm <sup>2</sup> )	Maximum Load (N.)	Tensile Adhesion Strength (N/mm <sup>2</sup> )	Remarks
1	50	50	2,500	4,070	1.63	Adhesive failure between tile and adhesive
2	50	50	2,500	3,874	1.55	Adhesive failure between tile and adhesive
3	50	50	2,500	4,854	1.94	Cohesive failure within the adhesive
4	50	50	2,500	3,776	1.51	Adhesive failure between tile and adhesive
5	50	50	2,500	3,962	1.58	Adhesive failure between tile and adhesive
6	50	50	2,500	3,089	1.24	Adhesive failure between tile and adhesive
7	50	50	2,500	2,834	1.13	Adhesive failure between tile and adhesive
8	50	50	2,500	2,972	1.19	Cohesive failure within the adhesive
9	50	50	2,500	3,236	1.29	Cohesive failure within the adhesive
10	50	50	2,500	3,942	1.58	Cohesive failure within the adhesive
				Average	<b>1.46</b>	

**Note:** This report certifies the adequacy and representative character of the test sample(s) only.



TESTED BY:

  
 MR. APIRAK POORAT  
 TECHNICIAN

CHECKED BY:

  
 MR. EKKACHAI YOOPRASERTCHAI  
 RESEARCH ASSOCIATE

APPROVED BY:

  
  
 DR. PENNING WARNITICHAI  
 LEADER OF CIVIL AND INFRASTRUCTURE  
 ENGINEERING THEMATIC (CIE)  
 April 3, 2013

## Asian Institute of Technology

Km. 42 Paholyothin Highway, Klong Luang, Pathumthani, Thailand 12120

P. O. Box 4 Klong Luang, Pathumthani 12120, Thailand. Tel. (66-2) 524-5527, 524-6427 Fax. (66-2) 524-5544

### STRUCTURAL ENGINEERING LABORATORY

### STRUCTURAL ENGINEERING FIELD OF STUDY

### SCHOOL OF ENGINEERING AND TECHNOLOGY

**TYPE OF TEST:** ADHESIVE STRENGTH AFTER WATER IMMERSION ( EN1348:2007 )**TEST SPECIMEN:** Ten (10) specimens of Ceramic tile of size 50 x 50 x 5 mm. installed by using " weber.tai fix " were prepared in the SE laboratory. The mix proportion of water to " weber.tai fix " ratio was 25.0 % by weight.**CLIENT:** SAINT - GOBAIN WEBER CO., LTD.**DATE OF TEST:** February 22, 2013**TEST METHOD:** After finish the preparation, the test units were placed in standard conditions for 7 days and stored in water for 20 days. Bond the pull head plate to the tile with the high strength epoxy and keep the test units for a further 24 hour in in water at the standard temperature. Determine the tensile adhesive strength.**TEST RESULTS:**

Specimen No.	Width of Specimen (mm.)	Length of Specimen (mm.)	Area (mm <sup>2</sup> )	Maximum Load (N.)	Tensile Adhesion Strength (N/mm <sup>2</sup> )	Remarks
1	50	50	2,500	3,168	1.27	Cohesive failure within the adhesive
2	50	50	2,500	4,168	1.67	Cohesive failure within the adhesive
3	50	50	2,500	3,109	1.24	Cohesive failure within the adhesive
4	50	50	2,500	3,207	1.28	Cohesive failure within the adhesive
5	50	50	2,500	3,138	1.26	Cohesive failure within the adhesive
6	50	50	2,500	2,972	1.19	Cohesive failure within the adhesive
7	50	50	2,500	2,697	1.08	Cohesive failure within the adhesive
8	50	50	2,500	3,285	1.31	Cohesive failure within the adhesive
9	50	50	2,500	4,139	1.66	Cohesive failure within the adhesive
10	50	50	2,500	2,991	1.20	Cohesive failure within the adhesive
				Average	1.31	

**Note:** This report certifies the adequacy and representative character of the test sample(s) only.



TESTED BY:

  
MR. APIRAK POORAT  
TECHNICIAN

CHECKED BY:

  
MR. EKKACHAI YOOPRASERTCHAI  
RESEARCH ASSOCIATE.

APPROVED BY:

  
  
DR. PENNUNG WARNITCHAI  
LEADER OF CIVIL AND INFRASTRUCTURE  
ENGINEERING THEMATIC (CIE)  
April 3, 2013

## Asian Institute of Technology

Km. 42 Paholyothin Highway, Klong Luang, Pathumthani, Thailand 12120

P. O. Box 4 Klong Luang, Pathumthani 12120, Thailand. Tel. (66-2) 524-5527, 524-6427 Fax. (66-2) 524-5544




### STRUCTURAL ENGINEERING LABORATORY

### STRUCTURAL ENGINEERING FIELD OF STUDY

### SCHOOL OF ENGINEERING AND TECHNOLOGY

**TYPE OF TEST:** OPEN TIME ( EN1346 )**TEST SPECIMEN:** Thirty (30) specimens of Ceramic tile of size 50 x 50 x 5 mm. installed by using " weber.tai fix " were prepared in the SE laboratory. The mix proportion of water to " weber.tai fix " ratio was 25.0 % by weight.**CLIENT:** SAINT - GOBAIN WEBER CO., LTD.**DATE OF TEST:** February 22, 2013**TEST METHOD:** Apply a thin layer of the adhesive to the concrete slab with a straight edge trowel. After 5, 10 and 20 minutes place the tiles on the adhesive and storage them under standard conditions for 27 days. Bond the pull head plates to the tiles with the high strength epoxy and keep the test units for a further 24 hour in standard condition. Determine the tensile adhesive strength.**TEST RESULTS:**

Specimen No.	Tensile adhesion strength of specimen in different open time (N/mm <sup>2</sup> )		
	5 (min.)	10 (min.)	20 (min.)
1	1.20	0.97	0.65
2	1.06	1.53	0.67
3	1.26	1.45	0.73
4	1.17	1.35	0.95
5	1.67	1.40	0.69
6	1.17	1.27	0.72
7	1.86	1.55	0.61
8	1.12	1.02	0.55
9	1.08	1.22	0.63
10	1.26	1.24	1.04
<b>Average</b>	1.28	1.30	0.72

**Note:** This report certifies the adequacy and representative character of the test sample(s) only.**TESTED BY:**  
MR. APIRAK POORAT  
TECHNICIAN**CHECKED BY:**  
MR. EKKACHAI YOOPRASERTCHAI  
RESEARCH ASSOCIATE**APPROVED BY:**  
  
DR. PENNUNG WANNITICHAI  
LEADER OF CIVIL AND INFRASTRUCTURE  
ENGINEERING THEMATIC (CIE)  
April 3, 2013