



## EXECUTIVE SUMMARY

The Structural Engineering and Construction Program, 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 flex" was submitted by the Saint-Gobain weber Co.,Ltd. The series of test and test methods were detailed in accordance with ISO 13007 / European Norms (EN 12004:2001) as follows:

### Specification of cementitious adhesives (C)

Fundamental Characteristics			
1a Normal setting adhesives (C2)			
Characteristic	Requirement	Test Method	Results
Tensile adhesion strength	$\geq 1 \text{ N/mm}^2$	ISO 13007 part2 clause 4.4.4.2 or EN1348 § 8.2	PASS
Tensile adhesion strength after water immersion	$\geq 1 \text{ N/mm}^2$	ISO 13007 part2 clause 4.4.4.3 or EN1348 § 8.3	PASS
Tensile adhesion strength after heat aging	$\geq 1 \text{ N/mm}^2$	ISO 13007 part2 clause 4.4.4.4 or EN1348 § 8.4	PASS
Open time: tensile adhesion strength	$\geq 0.5 \text{ N/mm}^2$ after not less than 20min	ISO 13007 part2 clause 4.1or EN 1346	PASS

Regarding the testing results, it was found that the properties of "weber.tai flex" are conformed to ISO 13007 / European Norms (EN 12004:2001) test methods as specified. These results certify the adequacy and representative character of test samples only.

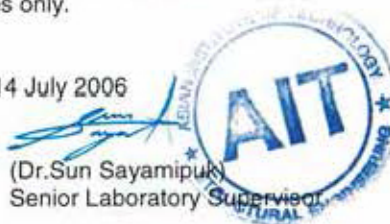
Reference No: S0588-06

Tested by: SE Lab

Date of Issue: 14 July 2006

Approved by:

(Dr.Sun Sayamipuk)  
Senior Laboratory Supervisor



# AIT

## Asian Institute of Technology

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### STRUCTURAL ENGINEERING LABORATORY

### STRUCTURAL ENGINEERING FIELD OF STUDY

### SCHOOL OF ENGINEERING AND TECHNOLOGY

**TYPE OF TEST:** INITIAL ADHESION STRENGTH ( EN 1348:1997 )

**TEST SPECIMEN:** Five (5) specimens of ' weber.tai flex (weber.fermaflex) ' were prepared in the SE laboratory. The mix proportion of water to ' weber.tai flex (weber.fermaflex) ' ratio was 25 % by weight.

**CLIENT:** SAINT - GOBAIN WEBER CO., LTD.

**DATE OF TEST:** July 5, 2006

**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	4,090	1.64	The failure of all specimens occurred at the interface between tile adhesive surface and concrete slab surface.
2	50	50	2,500	5,257	2.10	
3	50	50	2,500	5,541	2.22	
4	50	50	2,500	4,835	1.93	
5	50	50	2,500	5,090	2.04	
				Average	1.98	

**Note :** This results certify the adequacy and representative character of the test samples only.

CHECKED & APPROVED BY :



**DR. SUN SAYAMIPUK**

SENIOR LABORATORY SUPERVISOR

July 14, 2006



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### STRUCTURAL ENGINEERING LABORATORY

### STRUCTURAL ENGINEERING FIELD OF STUDY

### SCHOOL OF ENGINEERING AND TECHNOLOGY

**TYPE OF TEST:** ADHESIVE STRENGTH AFTER WATER IMMERSION ( EN1348:1997 )

**TEST SPECIMEN:** Five (5) specimens of ' weber.tai flex (weber.fermaflex) ' were prepared in the SE laboratory. The mix proportion of water to ' weber.tai flex (weber.fermaflex) ' ratio was 25 % by weight.

**CLIENT:** SAINT - GOBAIN WEBER CO., LTD.

**DATE OF TEST:** July 5, 2006

**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	3,717	1.49	The failure of all specimens occurred at the interface between tile adhesive surface and concrete slab surface.
2	50	50	2,500	3,609	1.44	
3	50	50	2,500	3,462	1.38	
4	50	50	2,500	3,030	1.21	
5	50	50	2,500	3,884	1.55	
				Average	1.42	

**Note :** This results certify the adequacy and representative character of the test samples only.

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**DR. SUN SAYAMIPUK**  
 SENIOR LABORATORY SUPERVISOR  
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**TYPE OF TEST:** ADHESIVE STRENGTH AFTER HEAT AGEING ( EN1348:1997 )

**TEST SPECIMEN:** Five (5) specimens of ' weber.tai flex (weber.fermaflex) ' were prepared in the SE laboratory. The mix proportion of water to ' weber.tai flex (weber.fermaflex) ' ratio was 25 % by weight.

**CLIENT:** SAINT - GOBAIN WEBER CO., LTD.

**DATE OF TEST:** July 5, 2006

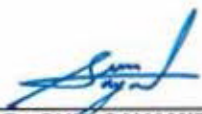
**TEST METHOD:** After finish the preparation, the test units were placed in standard conditions for 14 days and then place in oven for 14 days. Remove from the oven and bond the pull head plate to the tile with the high strength epoxy. Keep the test units for a further 24 hour in standard condition. 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	2,864	1.15	The failure of all specimens occurred at the interface between tile and tile adhesive surface.
2	50	50	2,500	3,197	1.28	
3	50	50	2,500	3,168	1.27	
4	50	50	2,500	3,285	1.31	
5	50	50	2,500	3,491	1.40	
				Average	1.28	

**Note :** This results certify the adequacy and representative character of the test samples only.

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### STRUCTURAL ENGINEERING LABORATORY

### STRUCTURAL ENGINEERING FIELD OF STUDY

### SCHOOL OF ENGINEERING AND TECHNOLOGY

**TYPE OF TEST:** OPEN TIME ( EN1346:1997 )

**TEST SPECIMEN:** Fifty (50) specimens of ' weber.tai flex (weber.fermaflex) ' were prepared in the SE laboratory. The mix proportion of water to ' weber.tai flex (weber.fermaflex) ' ratio was 25 % by weight.

**CLIENT:** SAINT - GOBAIN WEBER CO., LTD.

**DATE OF TEST:** July 5, 2006

**TEST METHOD:** Apply a thin layer of the adhesive to the concrete slab with a straight edge trowel. After 5, 10, 20 and 30 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> )				
	0 (min.)	5 (min.)	10 (min.)	20 (min.)	30 (min.)
1	1.61	1.35	1.49	1.80	2.31
2	1.45	1.57	1.60	2.00	2.10
3	1.53	1.68	1.46	1.84	2.17
4	1.26	1.72	1.78	1.64	2.33
5	1.77	1.70	1.57	2.13	2.25
6	1.93	1.91	1.87	2.14	1.82
7	1.68	1.69	1.84	2.19	2.26
8	1.71	1.92	1.90	2.27	2.06
9	1.89	2.04	2.02	2.00	2.30
10	1.88	1.46	1.98	2.14	2.25
Average	1.65	1.73	1.73	2.00	2.18

**Note :** This results certify the adequacy and representative character of the test samples only.

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SENIOR LABORATORY SUPERVISOR

July 14, 2006

