










**webertai flex**
**Flexible high performance tile adhesive for fixing all sizes and types of tiles in heavy-duty areas**

- 
Flexible: suitable for laying tile on deformable substrates
- 
Resist to all weather conditions, pressure, and vibration
- 
Good for laying large size tiles
- 
Low VOCs
- 
Ideal for laying tiles in high-rise buildings
- 
TIS standard high quality class
- 
Laying tiles on both internal and external existing tiles
- 
LEED

**webertai flex** is flexible high performance tile adhesive mixing with water to fix all sizes and types of tiles. Ideal for tiling on deformable substrates like plywoods\*, wood-cement boards\*, fiber-cement boards\*, gypsum boards\*, etc

\* Apply **weberprim 2** primer (Page 90) before tiling

**APPLICATION**
**Substrate preparation**

- New substrate should be sound, level, and clean with normal absorption rate
- Case of existing substrate; check bonding. Remove peel-off paint and de-bonded tiles and lay the new ones. Clean off any excess dirt and laitance.
- In case of porous substrate with high absorption, dampen the surface before tiling
- For new render or screed, it should be fully cured at the rate of 7 days per 1 cm thickness before tiling

**Mixing**

Mixing **webertai flex** in water with the ratio of 1 : 3 by volume (1 part of water + 3 parts of **webertai flex**). Using slow-speed electric mixer to mix or gradually mix by hand until obtaining homogeneous lump-free paste. Leave for 3 – 4 minutes for chemical curing before using.

**Tiling**

1. Using notched trowel to spread tile adhesive onto substrate
2. Back buttering in case of laying tile bigger than 10 x 10 inches
3. Placing tiles on tile adhesive and knock gradually with rubber hammer
4. Clean the excess tile adhesive on tile surface
5. Tiles can be adjusted within 15 minutes after laying
6. Leave for 24 hours before grouting

**SHELF LIFE AND STORAGE**

One year after manufacturing date when stored unopened in dry and ventilated place. Store airtight in dry and ventilated conditions if remained in opened bag



**SUITABLE FOR :** ceramic tiles, granito tiles, marbles, granites, artificial tiles

**PACKAGING :** 20 kg bag

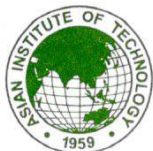
**COLOR :** grey

**COVERAGE :** average 4-7m<sup>2</sup> /20 kg bag

TECHNICAL DATA	
Type	High performance tile adhesive
Density of powder	140 g/cm <sup>3</sup>
Chemical curing time	3 – 4 minutes
Pot life (in shade)	4 hours
Open time	20 - 30 minutes
Recommended thickness	2 – 10 mm
Waiting time before grouting	24 hours

*Remark: These test results are from laboratory test. They could be slightly different from on-site results because of the differences in applications and conditions*

CERTIFIED STANDARD		
International/European standard	Standard	Result
Initial tensile adhesion strength ISO 13007 part 2-4.4.4.2 or EN 1348-8.2	≥ 1.0 N/mm <sup>2</sup>	2.05 N/mm <sup>2</sup>
Tensile adhesion strength after water immersion ISO 13007 part 2-4.4.4.3 or EN 1348-8.3	≥ 1.0 N/mm <sup>2</sup>	1.54 N/mm <sup>2</sup>
Tensile adhesion strength after heat ageing ISO 13007 part 2-4.4.4.4 or EN 1348-8.4	≥ 1.0 N/mm <sup>2</sup>	1.86 N/mm <sup>2</sup>
Open time tensile adhesion strength ISO 13007 part 2-4.1 or EN 1346	≥ 0.5 N/mm <sup>2</sup>	1.35 N/mm <sup>2</sup>
Deformability ISO 13007 part 2 – 4.5 or EN 12002	S2-deformable > 5 mm.	5.5 mm.
American Standard	Standard	Result
Shear strength according to ANSI 118.1 – 2012		
- To glazed wall tiles 7 days	> 2.07 MPa	3.41 MPa
- To porcelain mosaics 1 day	> 0.50 MPa	0.62 MPa
7 days	> 1.38 MPa	3.56 MPa
28 days	> 1.38 MPa	3.76 MPa
84 days	> 1.38 MPa	3.59 MPa
- To quarry tiles 28 days	> 1.03 MPa	3.63 MPa
Water immersion shear strength according to ANSI 118.4 – 2012		
- To glaze wall tiles 7 days	> 1.38 MPa	2.31 MPa
- To porcelain mosaic 7 days	> 1.03 MPa	1.88 MPa
Freeze-thaw shear strength according to ANSI A118.4-2012		
- To porcelain mosaics 28 days	> 1.21 MPa	2.03 MPa
- To quarry tiles 28 days	> 0.69 MPa	1.95 MPa



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### 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 with a trademark of "Webertai flex (Lot No. 1900194)" was provided by the SAINT-GOBAIN WEBER CO., LTD. The series of tests were according to ISO 13007 / European Norms (EN 12004:2007+A1:2012) 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	2.05 $\text{N/mm}^2$  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	1.54 $\text{N/mm}^2$  PASS
Tensile adhesion strength after heat ageing	$\geq 0.5 \text{ N/mm}^2$	ISO 13007 part 2 4.4.4.4 or EN 1348 § 8.3	1.86 $\text{N/mm}^2$  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	1.35 $\text{N/mm}^2$  PASS

From test results, it is found that the properties of "Webertai flex (Lot No. 1900194)" are conformed to ISO 13007 / European Norms (EN 12004:2007+A1:2012) requirement. These results certify the adequacy and representative characteristic of the test samples only.

Reference No: S0048-19

Tested Date: February 22, 2019

Checked & Approved by:

**DR. ANAWAT CHOTESUWAN**  
SENIOR LABORATORY SUPERVISOR  
March 27 2019

**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 "Webertai flex (Lot No.1900194)" were prepared in the SE laboratory. The mix proportion of water to "Webertai flex (Lot No.1900194)" ratio was 25.0 % by weight.

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

**DATE OF TEST:** February 22, 2019 **DATE OF PREPARATION :** January 25, 2019

**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	4,420	1.77	Cohesive failure within the adhesive
2	50	50	2,500	4,424	1.77	Cohesive failure within the adhesive
3	50	50	2,500	5,815	2.33	Cohesive failure within the adhesive
4	50	50	2,500	5,026	2.01	Cohesive failure within the adhesive
5	50	50	2,500	4,487	1.79	Cohesive failure within the adhesive
6	50	50	2,500	4,767	1.91	Cohesive failure within the adhesive
7	50	50	2,500	5,333	2.13	Cohesive failure within the adhesive
8	50	50	2,500	5,532	2.21	Cohesive failure within the adhesive
9	50	50	2,500	5,698	2.28	Cohesive failure within the adhesive
10	50	50	2,500	5,768	2.31	Cohesive failure within the adhesive
Average					<b>2.05</b>	

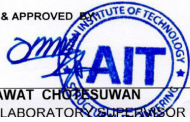
**Note:** This report certifies the adequacy and representative character of the test sample(s) only.

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**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 "Webertai flex (Lot No.1900194)" were prepared in the SE laboratory. The mix proportion of water to "Webertai flex (Lot No.1900194)" ratio was 25.0 % by weight.

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

**DATE OF TEST:** February 22, 2019 **DATE OF PREPARATION :** January 25, 2019

**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	3,467	1.39	Adhesive failure between tile and adhesive
2	50	50	2,500	3,161	1.26	Adhesive failure between tile and adhesive
3	50	50	2,500	4,318	1.73	Adhesive failure between tile and adhesive
4	50	50	2,500	3,853	1.54	Adhesive failure between tile and adhesive
5	50	50	2,500	4,358	1.74	Adhesive failure between tile and adhesive
6	50	50	2,500	3,903	1.56	Adhesive failure between tile and adhesive
7	50	50	2,500	3,969	1.59	Adhesive failure between tile and adhesive
8	50	50	2,500	3,651	1.46	Adhesive failure between tile and adhesive
9	50	50	2,500	3,921	1.57	Adhesive failure between tile and adhesive
10	50	50	2,500	3,878	1.55	Adhesive failure between tile and adhesive
Average					<b>1.54</b>	

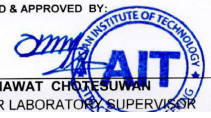
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**TYPE OF TEST:** ADHESIVE STRENGTH AFTER HEAT AGEING ( EN1348:2007 )

**TEST SPECIMEN:** Ten (10) specimens of ceramic tile of size 50 x 50 x 5 mm. installed by using "Webertai flex (Lot No.1900194)" were prepared in the SE laboratory. The mix proportion of water to "Webertai flex (Lot No.1900194)" ratio was 25.0 % by weight.

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

**DATE OF TEST:** February 22, 2019 **DATE OF PREPARATION :** January 25, 2019

**TEST METHOD:** After finish the preparation, the test units were placed in standard conditions for 14 days and then place in oven at 70 ± 2 °C for 13 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	5,300	2.12	Cohesive failure within the adhesive
2	50	50	2,500	5,055	2.02	Cohesive failure within the adhesive
3	50	50	2,500	4,868	1.95	Cohesive failure within the adhesive
4	50	50	2,500	4,622	1.85	Cohesive failure within the adhesive
5	50	50	2,500	3,934	1.57	Cohesive failure within the adhesive
6	50	50	2,500	4,634	1.85	Cohesive failure within the adhesive
7	50	50	2,500	4,227	1.69	Cohesive failure within the adhesive
8	50	50	2,500	4,972	1.99	Cohesive failure within the adhesive
9	50	50	2,500	4,812	1.92	Cohesive failure within the adhesive
10	50	50	2,500	4,159	1.66	Cohesive failure within the adhesive
Average					<b>1.86</b>	

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

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

**TEST SPECIMEN:** Forty (40) specimens of Ceramic tile of size 50 x 50 x 5 mm. installed by using "Webertai flex (Lot No.1900194)" were prepared in the SE laboratory. The mix proportion of water to "Webertai flex (Lot No.1900194)" ratio was 25.0 % by weight.

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

**DATE OF TEST:** February 22, 2019 **DATE OF PREPARATION :** January 25, 2019

**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> )			
	5 (min.)	10 (min.)	20 (min.)	30 (min.)
1	2.24	2.39	1.37	0.93
2	2.61	2.12	1.09	0.80
3	2.84	2.29	1.34	0.94
4	2.51	1.84	1.36	1.02
5	2.64	2.25	1.47	1.11
6	2.68	1.76	1.46	1.09
7	2.50	1.82	1.44	0.77
8	2.21	2.26	1.34	0.98
9	2.47	2.05	1.47	0.92
10	2.53	2.37	1.13	1.04
Average	<b>2.52</b>	<b>2.12</b>	<b>1.35</b>	<b>0.96</b>

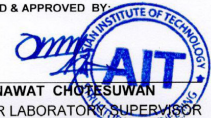
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Ensaios

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## Tests of modified dry-set cement mortar according ANSI A118.4:2012 - weber tai.flex

Working report N° 315.37004-08/19

Client: **Saint-Gobain Weber Co., Ltd - Thailand**

Contact at client: **Kanchana LOCOLAS**

Contact at CTCV: **J. Valente de Almeida**

Work period: **April 2018 - March 2019**

Proj. n° 315.37004

Rep. n° 08

Revision: 0

Date: March 2019

<http://www.ctcv.pt>

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## Tests of modified dry-set cement mortar according ANSI A118.4:2012 - weber tai.flex

Saint Gobain Weber Co Ltd - Thailand

### Aim

Evaluate compliance of the test results with the requirements of ANSI A118.4: 2012<sup>1</sup>.

### 1. Introduction

Saint Gobain Weber Co Ltd - Thailand requested the CTCV to carry out tests on modified dry-set cement mortar - weber tai.flex - in accordance with the American Standard ANSI A118.4.

This report presents the methodology of the tests, the results of the tests carried out and their comparison with the applicable regulatory requirements

### 2. Methodology

The methodology used in the study was the following:

- carrying out the tests
- processing of data
- reporting

#### 2.1. Tests

The tests carried out are presented at table 1.

<sup>1</sup> ANSI A118.4:2012 - American National Standard Specifications for Modified Dry-Set Cement Mortar.

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Table 1 - Tests according ANSI A118.4

Property	Test duration and/or conditions
Glazed wall tile shear strength (A1)	7 days 7 days water immersion
Open time (20 min) (B)	28 days
Porcelain mosaic tile shear strength (C)	1 day 7 days 7 days water immersion 28 days 28 days w/freeze-thaw cycling 12 weeks
Quarry tile shear strength (D)	28 days 28 days w/freeze-thaw cycling
Sag (E)	-

### 2.2. Test results

The test results are presented at tables 2,3 and 4.

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Table 2 - Test results (A1 and C)

Ceramic	Test duration/condition	Specimen	Force (kN)	Tension (MPa)	Average (MPa)
A1	Shear initial, 7d	1	16,98	3,29	3,41
		2	20,37	3,95	
		3	15,12	2,93	
		4	17,84	3,46	
	Shear, after 7 d water immersion	1	11,40	2,21	2,31
		2	13,92	2,70	
		3	11,45	2,22	
		4	10,88	2,11	
C	Shear initial, 1d	1	1,08	0,58	0,62
		2	1,09	0,58	
		3	1,31	0,70	
		4	1,19	0,64	
	Shear initial, 7d	1	7,02	3,75	3,56
		2	6,54	3,50	
		3	6,85	3,66	
		4	6,22	3,33	
	Shear initial, 28d	1	7,92	4,24	3,76
		2	6,26	3,35	
		3	7,24	3,87	
		4	6,72	3,59	
	Shear initial, 12 weeks	1	6,63	3,55	3,59
		2	7,51	4,02	
		3	5,66	3,02	
		4	7,04	3,76	
Shear, after 7 day water immersion	1	3,62	1,94	1,88	
	2	3,10	1,66		
	3	3,33	1,78		
	4	4,03	2,16		
Shear, after freeze-thaw	1	3,69	1,97	2,03	
	2	3,97	2,12		
	3	4,12	2,20		
	4	3,38	1,81		

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Table 3 - Test results (D and B)

D	Shear initial, 28d	1	33,42	3,59	3,63
		2	33,46	3,60	
		3	33,71	3,62	
		4	34,28	3,69	
	Shear, after freeze-thaw	1	17,03	1,83	1,95
		2	18,53	1,99	
		3	19,08	2,05	
		4	17,96	1,93	
B	Open time (20 min), 28d	1	2,06	0,82	0,80
		2	1,98	0,79	
		3	2,16	0,86	
		4	1,78	0,71	
		5	2,02	0,81	
		6	1,93	0,77	
		7	2,34	0,94	
		8	1,79	0,72	
		9	2,01	0,80	
		10	1,97	0,79	

Table 4 - Test results

Ceramic	Test duration/condition	Specimen	Sag (mm)	Average (mm)
E	Sag, 28d	1	0,2	0,2
		2	0,2	
		3	0,2	

### 3. Comparison with standard requirements

The comparison of test results with standard requirements is presented at Table 5.

Os resultados apresentados neste trabalho referem-se apenas às amostras ensaiadas. Não se assume qualquer responsabilidade relativa à exatidão da amostragem, a menos que seja efetuada sob a direta responsabilidade do CTCV. A reprodução deste trabalho é autorizada apenas na sua forma integral. Para qualquer reprodução parcial será indispensável autorização do CTCV por escrito.

Table 5 - Comparison of test results with standard requirements

Ceramic	Test duration/condition	Test result (MPa)	Requirements (MPa)	Compliance
A1	Shear initial, 7d	3,41	>2,07	Complies
	Shear, after 7 d water immersion	2,31	>1,38	Complies
B	Open time (20 min), 28 d	0,80	≥ 0,5	Complies
C	Shear initial, 1d	0,62	>0,50	Complies
	Shear initial, 7d	3,56	>1,38	Complies
	Shear initial, 28d	3,76	>1,38	Complies
	Shear initial, 12 weeks	3,59	>1,38	Complies
	Shear, after 7 day water immersion	1,88	>1,03	Complies
	Shear, after freeze-thaw	2,03	>1,21	Complies
D	Shear initial, 28d	3,63	>1,03	Complies
	Shear, after freeze-thaw	1,95	>0,69	Complies
Ceramic	Test duration/condition	Test result (mm)	Requirements (mm)	Compliance
E	Sag	0,2	≤ 0,5	Complies

Coimbra, 19 March 2019



Joaquim Valente de Almeida  
 Testing Materials Laboratory

Os resultados apresentados neste trabalho referem-se apenas às amostras ensaiadas. Não se assume qualquer responsabilidade relativa à exatidão da amostragem, a menos que seja efetuada sob a direta responsabilidade do CTCV. A reprodução deste trabalho é autorizada apenas na sua forma integral. Para qualquer reprodução parcial será indispensável autorização do CTCV por escrito.



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## COMPRESSION TEST

SPECIMEN FROM : บริษัท แชน-โกแบ็ง เวเบอร์ จำกัด  
PROJECT NAME : Webertai flex  
TYPE OF SPECIMEN : CUBE  
DATE OF CASTING : 4 October 2019  
DATE OF TESTING : 1 November 2019

SPEC. NO.	CROSS SECTIONAL AREA (cm <sup>2</sup> )	VOLUME (cm <sup>3</sup> )	WEIGHT (kg)	DENSITY (gm/cm <sup>3</sup> )	TOTAL LOAD (kN)	ULTIMATE STRESS (MPa)	REMARKS (ksc)
1	25.0	125.0	0.23	1.84	56	22.40	228.3
2	25.0	125.0	0.22	1.76	61	24.40	248.7
3	25.0	125.0	0.22	1.76	61	24.40	248.7

โครงสร้าง/บริเวณที่เท Webertai flex

Tested by :

(Umpon Praesin)

Checked by :

(Sittisak Jamnam)

Department Head :

(Uthairith Rochanavithata)

Remarks

1. The testing results are good only for those specimens tested.
2. Not valid unless signed and sealed.

Job ID : 25623501

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