



### 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 grouts. The sample in the trademark of " weber.color poxy " was submitted by the Saint - Gobain Weber Co.,Ltd. The series of test were detailed in according with ISO 13007 / European Norms (EN 13888:2009) test methods as follows:

#### Specification of Reaction resin grouts (RG)

Fundamental Characteristics			
Characteristic	Requirement	Test Method	Results
Abrasion resistance *	$\leq 250 \text{ mm}^3$	ISO 13007 part 4 clause 4.4 or EN 12808-2	PASS
Shrinkage *	$\leq 1,5 \text{ mm/m}$	ISO 13007 part 4 clause 4.3 or EN 12808-4	PASS
Water absorption after 240 min	$\leq 0,1 \text{ g}$	ISO 13007 part 4 clause 4.2 or EN 12808-5	PASS

\* Note: The test performed by a manufacturer's laboratory, which uses own test equipment. AIT was witness for this test.

Regarding the testing results, it was found that the properties of " weber.color poxy " are conformed to ISO 13007 / European Norms (EN 13888:2009) test methods as specified. These results certify the adequacy and representative character of test samples only.

Reference No: S0182-13

Date of Issue: 18 April 2013

Checked by:

Approved by:

MR. EKKACHAI YOOPRASERTCHAI  
RESEARCH ASSOCIATE

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





**FACULTY OF ENGINEERING**  
**CHULALONGKORN UNIVERSITY**


**TEST RESULT SUMMARY**

The sample in the trademark of "weber.color poxy" was submitted by the Saint-Gobain weber Co.,Ltd. The series of test and test methods were conducted on March 22, 2013 in accordance with European Norms (EN 13888: 2009) with details as follows:

**Specification of reaction resin grouts**

Fundamental Characteristics			
Characteristics	Requirement	Test Method	Results
Flexural strength after dry storage	$\geq 30 \text{ N/mm}^2$	EN 12808-3	PASS
Compressive strength after dry storage	$\geq 45 \text{ N/mm}^2$	EN 12808-3	PASS

Regarding to the testing results, it was found that the properties of "weber.color poxy" are conformed to European Norms (EN 13888: 2009) test methods as specified. These results certify the adequacy and representative character of test samples only.

  
 (Assoc. Prof. Dr. Tirawat Boonyatee)

On Behalf of Head of Civil Engineering Department

Tested by :

  
 (Assist. Prof. Dr. Boonchai Sangpetngam)

## 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:** DETERMINATION OF RESISTANCE TO ABRASION ( EN 12808-2 )

**TEST SPECIMEN:** Three (3) specimens in cubic shape having a nominal size of 100x100x10 mm. were prepared in SE laboratory. The mix proportion of water to " weber color poxy " ratio of A : B = 1 : 3 by weight.

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

**DATE OF TEST:** February 21, 2013

#### TEST RESULTS:

Specimen	Length Point 1	Length Point 2	Length Point 3	Volume Point 1	Volume Point 2	Volume Point 3
	(mm.)	(mm.)	(mm.)	(mm <sup>3</sup> .)	(mm <sup>3</sup> .)	(mm <sup>3</sup> .)
weber color poxy	20.00	20.00	20.00	67.00	67.00	67.00

- Note:**
- 1) The test performed by a manufacturer's laboratory, which uses own test equipment. AIT was witness for this test.
  - 2) 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 & INFRASTRUCTURE  
ENGINEERING GROUP  
April 18, 2013







**FACULTY OF ENGINEERING**  
**CHULALONGKORN UNIVERSITY**

Type of test : COMPRESSIVE STRENGTH TEST (EN 12808-3)

Test specimen : Three (3) specimens in prism shape were cast in the laboratory.

The mix proportioning of "weber.color poxy" epoxy hardener 1 part : epoxy resin 3 part by volume.

Client : SAINT-GOBAIN WEBER CO., LTD.

Date of test : March 22, 2013

Test method : After flexural test, the halves broken specimens were kept in standard condition until conducting the compression test.

Test results : The compressive strength of specimens at the age of 28 days are shown as follows.

(The test results are good only for those specimens tested.)

Specimen No.	Date of cast	Date of test	Age of Specimen (days)	Cross section area (cm <sup>2</sup> )	Maximum Load (kgf)	Compressive Strength (ksc)	Remarks
1	22-Feb-2013	22-Mar-2013	28	16	10,700	668.8	1 kgf/cm <sup>2</sup> = 0.0981 N/mm <sup>2</sup>  Average compressive strength of samples = 64 N/mm <sup>2</sup>
2	22-Feb-2013	22-Mar-2013	28	16	10,700	668.8	
3	22-Feb-2013	22-Mar-2013	28	16	10,100	631.3	
					Average	656.3	

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

  
 (Assoc. Prof. Dr. Tirawat Boonyatee)

On Behalf of Head of Civil Engineering Departmen

Tested by :

  
 (Assist. Prof. Dr. Boonchai Sangpetngam)



**FACULTY OF ENGINEERING**  
**CHULALONGKORN UNIVERSITY**

Type of test : FLEXURAL STRENGTH TEST (EN 12808-3)

Test specimen : Five (5) specimens in prism shape were cast in the laboratory.  
The mix proportioning of "weber.color poxy" epoxy hardener 1 part : epoxy resin 3 part by volume.

Client : SAINT-GOBAIN WEBER CO., LTD.

Date of test : March 22, 2013

Test method : After mixing them thoroughly, the specimen was cast in the standard molds having a size of 40x40x160 mm.  
The specimens are cured for 24 hours in molds, then stripped and cured in standard condition until conducting the test.

Test results : The flexural strength of specimens at the age of 28 days are shown as follows.  
(The test results are good only for those specimens tested.)

Specimen No.	Width of Specimen, B (cm)	Thickness of Specimen, D (cm)	Length of Specimen (cm)	Maximum Load P (kgf)	Flexural Strength (ksc)	Remarks
1	4.05	3.96	16.05	1,390	328.3	The flexural strength, $S_f = 3 P l / (2 B D^2)$ where l (span length) is 10 cm. $1 \text{ kgf/cm}^2 = 0.0981 \text{ N/mm}^2$ Average flexural strength = 30 N/mm <sup>2</sup>
2	4.06	3.95	16.30	1,300	307.9	
3	4.04	4.00	16.14	1,270	294.7	
4	4.00	3.95	16.20	1,220	293.2	
5	4.03	3.98	16.07	1,230	289.0	
				Average	302.6	

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

  
 (Assoc. Prof. Dr. Tirawat Boonyatee)

On Behalf of Head of Civil Engineering Department

Tested by :   
 (Assist. Prof. Dr. Boonchai Sangpetngam)

**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. 524-5544

**STRUCTURAL ENGINEERING LABORATORY****STRUCTURAL ENGINEERING FIELD OF STUDY****SCHOOL OF ENGINEERING AND TECHNOLOGY****TYPE OF TEST:** DETERMINATION OF SHRINKAGE ( EN 12808-4 )**TEST SPECIMEN:** Three (3) specimens in prism shape were prepared in the SE laboratory. The " weber color poxy " consists of two components with mixing ratio of A : B = 1 : 3 by weight.**CLIENT:** SAINT - GOBAIN WEBER CO., LTD.**DATE OF TEST:** January 24, 2013 - February 21, 2013**TEST RESULTS:** The shrinkage of specimens at the age of 28 days are shown as follows.

Specimen No.	Intial Measurement (mm.)	Final Measurement (mm.)	Drying Shrinkage of specimen (mm./m.)
1	14.52	14.43	0.56
2	15.19	15.13	0.38
3	12.04	11.97	0.44

- Note:** 1) The test performed by a manufacturer's laboratory, which uses own test equipment. AIT was witness for this test.  
2) 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 GROUP  
April 18, 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:** WATER ABSORPTION TEST ( EN 12808-5 )

**TEST SPECIMEN:** Three (3) specimens of standard prisms shape made of " weber color poxy " were prepared in SE laboratory. ratio of A : B = 1 : 3 by weight.

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

**DATE OF TEST:** February 21, 2013

#### TEST RESULTS:

Specimen No.	Weight of Surface-dried Specimen After Immersion 30 min (g)	Weight of Surface-dried Specimen After Immersion 240 min (g)	Weight of the dry Specimen (g)	Water Absorption of Specimen 30 min (g)	Water Absorption of Specimen 240 min (g)
1	423.10	423.10	423.10	0.00	0.00
2	432.30	432.30	432.30	0.00	0.00
3	431.90	431.90	431.90	0.00	0.00
			Average	0.00	0.00

**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 & INFRASTRUCTURE  
ENGINEERING GROUP  
April 18, 2013