



**FACULTY OF ENGINEERING
CHULALONGKORN UNIVERSITY**

TEST RESULT SUMMARY

The sample in the trademark of "weber.color power" was submitted by the Saint-Gobain weber Co.,Ltd. The series of test and test methods were conducted on December 2, 2011 in accordance with European Norms (EN 13888: 2009) with details as follows:

Specification of cementitious grouts (CG)

Fundamental Characteristics			
Characteristics	Requirement	Test Method	Results
Flexural strength after dry storage	$\geq 2.5 \text{ N/mm}^2$	EN 12808-3	PASS
Compressive strength after dry storage	$\geq 15 \text{ N/mm}^2$	EN 12808-3	PASS
Shrinkage	$\leq 3 \text{ mm/m}$	EN 12808-4	PASS
Water absorption after 30 min	$\leq 5 \text{ g}$	EN 12808-5	PASS
Water absorption after 240 min	$\leq 10 \text{ g}$	EN 12808-5	PASS

Regarding to the testing results, it was found that the properties of "weber.color power" 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. Veerasak Likhitrungsilp)

On Behalf of Head of Civil Engineering Department

Tested by : 
 (Dr. Boonchai Sangpetngam)



**FACULTY OF ENGINEERING
CHULALONGKORN UNIVERSITY**

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

Test specimen : Three (3) specimens in prism shape were cast in the laboratory.
The mix proportioning of water to "weber.color power" ratio was 33% by weight.

Client : SAINT-GOBAIN WEBER CO., LTD.

Date of test : December 2, 2011

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	4.02	16.00	278	63.7	The flexural strength, $S_f = 3 P l / (2 B D^2)$ where l (span length) is 10 cm. 1 kgf/cm ² = 0.0981 N/mm ²
2	4.06	4.05	16.00	294	66.2	
3	4.03	4.02	16.00	200	46.1	
				Average	58.7	Average flexural strength = 5.76 N/mm ²

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


 (Assoc. Prof. Dr. Veerasak Likhitruangsilp)

On Behalf of Head of Civil Engineering Department

Tested by : 
 (Dr. Boonchai Sangpetngam)



**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 water to "weber.color power" ratio was 33% by weight.

Client : SAINT-GOBAIN WEBER CO., LTD.

Date of test : December 2, 2011


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 ²)	Maximum Load (kgf)	Compressive Strength (ksc)	Remarks
1	4-Nov-2011	2-Dec-2011	28	16	3,060	191.3	1 kgf/cm ² = 0.0981 N/mm ² Average compressive strength of samples = 18.5 N/mm ²
2	4-Nov-2011	2-Dec-2011	28	16	3,000	187.5	
3	4-Nov-2011	2-Dec-2011	28	16	2,990	186.9	
					Average	188.6	

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


 (Assoc. Prof. Dr. Veerasak Likhitrungsilp)

On Behalf of Head of Civil Engineering Department

Tested by : 
 (Dr. Boonchai Sangpetngam)




**FACULTY OF ENGINEERING
CHULALONGKORN UNIVERSITY**

Type of test : SHRINKAGE TEST (EN 12808-4)
 Test specimen : Three (3) specimens in prism shape were cast in the laboratory.
 The mix proportioning of water to "weber.color power" ratio was 33% by weight.
 Client : SAINT-GOBAIN WEBER CO., LTD.
 Date of test : December 2, 2011
 Test results : The shrinkage of specimens at the age of 28 days are shown as follows.
 (The test results are good only for those specimens tested.)

Specimen No.	Initial Length (mm)	Final Length (mm)	Drying shrinkage of specimen (mm/m)
1	163.62	163.40	1.34
2	147.07	146.80	1.84
3	148.66	148.40	1.75

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



 (Assoc. Prof. Dr. Veerasak Likhitrungsilp)
 On Behalf of Head of Civil Engineering Department

Tested by : 

 (Dr. Boonchai Sangpetngam)



FACULTY OF ENGINEERING
CHULALONGKORN UNIVERSITY

Type of test : WATER ABSORPTION (EN 12808-5)
 Test specimen : Three (3) specimens in prism shape were cast in the laboratory.
 The mix proportioning of water to "weber.color power" ratio was 33% by weight.
 Client : SAINT-GOBAIN WEBER CO., LTD.
 Date of test : December 2, 2011
 Test results : the water absorption of specimens at the age of 28 days are shown as follows.

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

Specimen No.	Weight of dry specimen (g)	Weight of Specimen after immersion of 30 min (g)	Weight of Specimen after immersion of 240 min (g)	Water absorption after immersion of 30 min (g)	Water absorption after immersion of 240 min (g)
1	388.19	390.18	392.73	1.99	4.54
2	363.14	365.16	366.85	2.02	3.71
3	368.29	370.67	371.80	2.38	3.51

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



 (Assoc. Prof. Dr. Veerasak Likhitrungsilp)

On Behalf of Head of Civil Engineering Departmen

Tested by : 

 (Dr. Boonchai Sangpetngam)