



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 classic " 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 cementitious grouts (CG)

| Fundamental Characteristics | | | |
|--|---------------------------|---|---------|
| Characteristic | Requirement | Test Method | Results |
| Abrasion resistance * | $\leq 2\,000\text{ mm}^3$ | ISO 13007 part 4 clause 4.4 or EN 12808-2 | PASS |
| Flexural strength under standard conditions * | $\geq 2,5\text{ N/mm}^2$ | ISO 13007 part 4 clause 4.1.3 or EN 12808-3 | PASS |
| Compressive strength under standard conditions * | $\geq 15\text{ N/mm}^2$ | ISO 13007 part 4 clause 4.1.4 or EN 12808-3 | PASS |
| Shrinkage * | $\leq 3\text{ mm/m}$ | ISO 13007 part 4 clause 4.3 or EN 12808-4 | PASS |
| Water absorption after 30 min | $\leq 5\text{ g}$ | 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 classic " 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:

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: 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 classic " ratio was 36.0 % 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 ³ .) | (mm ³ .) | (mm ³ .) |
| weber color classic | 29.00 | 29.00 | 30.00 | 205.00 | 205.00 | 227.00 |

- 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
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STRUCTURAL ENGINEERING LABORATORY**STRUCTURAL ENGINEERING FIELD OF STUDY****SCHOOL OF ENGINEERING AND TECHNOLOGY****TYPE OF TEST:** COMPRESSIVE STRENGTH TEST (EN 12808-3)**TEST SPECIMEN:** Three (3) cubes having a nominal size of 40x40x40 mm made of " weber color classic " were prepared in SE laboratory. The mix proportion of water to " weber color classic " ratio was 36.0 % by weight.**CLIENT:** SAINT-GOBAIN WEBER CO., LTD.**DATE OF TEST:** February 21, 2013**TEST METHOD:** Test the prism halves broken in flexion. Centre the prism halves laterally to the platens of machine and longitudinally such that the end face of the prism overhangs the platens or auxiliary plates by about 10 mm. Increase the load until fracture.**TEST RESULTS:** The compressive strength of specimens at the age of 28 days are shown as follows.

| Specimen No. | Date of Cast | Date of Test | Age of Specimen (days) | Cross Sectional Area (mm ²) | Maximum Load (N) | Compressive Strength (N/mm ²) | Remarks |
|--------------|--------------|--------------|------------------------|---|------------------|---|---------|
| 1 | 24/01/13 | 21/02/13 | 28 | 1,600 | 31,000 | 19.38 | |
| 2 | 24/01/13 | 21/02/13 | 28 | 1,600 | 34,105 | 21.32 | |
| 3 | 24/01/13 | 21/02/13 | 28 | 1,600 | 29,695 | 18.56 | |
| | | | | | Average | 19.75 | |

Note: 1) This testing machine was calibrated by Calibration Laboratory Co., Ltd, at the date of January 11, 2013
 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 WANNITACHAI
 LEADER OF CIVIL AND INFRASTRUCTURE
 ENGINEERING THEMATIC (CIE)
 April 17, 2013

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:** FLEXURAL STRENGTH TEST (EN 12808-3)**TEST SPECIMEN:** Three (3) cubes having a nominal size of 40x40x160 mm made of " weber color classic " were prepared in SE laboratory. The mix proportion of water to " weber color classic " ratio was 36.0 % by weight.**CLIENT:** SAINT-GOBAIN WEBER CO., LTD.**DATE OF TEST:** February 21, 2013**TEST METHOD:** Keep the demolded prism in standard conditions for 27 days. After conditioning has been completed, place the prism in the testing machine. Apply the load until fracture.**TEST RESULTS:** The flexural strength of specimens at the age of 28 days are shown as follows.

| Specimen No. | Date of Cast | Date of Test | Age of Specimen (days) | Span Length (mm) | Maximum Load (N) | flexural Strength (N/mm ²) | Remarks |
|--------------|--------------|--------------|------------------------|------------------|------------------|--|---------|
| 1 | 24/01/13 | 21/02/13 | 28 | 100 | 2,000 | 4.69 | |
| 2 | 24/01/13 | 21/02/13 | 28 | 100 | 2,100 | 4.92 | |
| 3 | 24/01/13 | 21/02/13 | 28 | 100 | 2,000 | 4.69 | |
| | | | | | Average | 4.77 | |

Note:1) This testing machine was calibrated by Calibration Laboratory Co., Ltd, at the date of January 11, 2013

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


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 TECHNICIAN

CHECKED BY:


 MR. EKKACHAI YOOPRASERTCHAI
 RESEARCH ASSOCIATE .

APPROVED BY:


 DR. PENNUNG WARNITCHAI
 LEADER OF CIVIL AND INFRASTRUCTURE
 ENGINEERING THEMATIC (CIE)
 April 17, 2013


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TYPE OF TEST: DETERMINATION OF SHRINKAGE (EN 12808-4)**TEST SPECIMEN:** Three (3) specimens in prism shape were prepared in the SE laboratory.
The mix proportion of water to " weber color classic " ratio was 36.0 % 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 | 16.29 | 16.06 | 1.44 |
| 2 | 16.09 | 15.96 | 0.81 |
| 3 | 16.23 | 16.09 | 0.88 |

- 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:



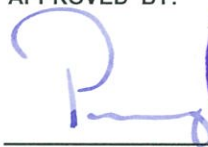
MR. APIRAK POORAT
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TYPE OF TEST: WATER ABSORPTION TEST (EN 12808-5)**TEST SPECIMEN:** Three (3) specimens of standard prisms shape made of " weber color classic " were prepared in SE laboratory. ratio was 36.0 % by weight.**CLIENT:** SAINT-GOBAIN WEBER 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 | 411.60 | 419.30 | 409.50 | 2.10 | 9.80 |
| 2 | 428.10 | 436.00 | 425.50 | 2.60 | 10.50 |
| 3 | 421.10 | 429.30 | 419.00 | 2.10 | 10.30 |
| | | | Average | 2.27 | 10.20 |

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


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 RESEARCH ASSOCIATE
APPROVED BY:


 DR. PENNUNG WARNITICHAI
 LEADER OF CIVIL & INFRASTRUCTURE
 ENGINEERING GROUP
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