FACULTY OF ENGINEERING

CHULALONGKORN UNIVERSITY

TEST RESULT SUMMARY

The sample in the trademark of "weber.dry roofseal" was submitted by the Saint-Gobain weber Co.,Ltd. The series of test and test methods were conducted on April 19, 2012 in accordance with European Norms (EN 14891:2007) with details as follows:

Specification of cementitious liquid-applied water impermeable products (CM)

1a Fundamental Characteristics			
Characteristics	Requirement	Test Method	Results
Initial tensile adhesion strength	≥ 0.5 N/mm^2	EN 14891 A.6.2	PASS
Tensile adhesion strength after heat ageing	≥ 0.5 N/mm^2	EN 14891 A.6.5	PASS
Tensile adhesion strength after contact with lime water	≥ 0.5 N/mm^2	EN 14891 A.6.9	PASS

Regarding to the testing results, it was found that the properties of "weber.dryroofseal" conformed to European Norms (EN 14891:2007) 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 :

(Dr. Boonchai Sangpetngam)

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Type of test : INITIAL TENSILE ADHESION STRENGTH (EN 14891-A.6.2: 2007)

Test specimen : Three (3) specimens of "weber.dry roofseal" were prepared in the laboratory.

Client : SAINT-GOBAIN WEBER CO., LTD.

Date of test : 12 Apr. 2012

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 adhesion strength.

Test results :

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

Specimen No.	Width of Specimen (mm)	Length of Specimen (mm)	Area (mm^2)	Maximum Load (N)	Tensile Adhesion Strength (N/mm^2)	Remarks
1	50	50	2,500	3,171	1.27	The failure of all specimens occurred at the interface between tile adhesive surface and tile
2	50	50	2,500	3,231	1.29	
3	50	50	2,500	3,051	1.22	
				Average	1.26	

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

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Type of test : TENSILE ADHESION STRENGTH AFTER HEAT AGEING (EN 14891-A.6.5: 2007)

Test specimen : Three (3) specimens of "weber.dry roofseal" were prepared in the laboratory.

Client : SAINT-GOBAIN WEBER CO., LTD.

Date of test : 12 Apr. 2012

Test method : After finish the preparation, the test units were placed in standard conditions for 14 days and then place them in an air-circulating oven at (70 ± 3) °C for a further 14 days. Remove from the oven and bond the pull head plate to the tile with the high strength epoxy. Condition the test units for a further 24 h under standard conditions and determine the tensile adhesion strength.

Test results :

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

Specimen No.	Width of Specimen (mm)	Length of Specimen (mm)	Area (mm^2)	Maximum Load (N)	Tensile Adhesion Strength (N/mm^2)	Remarks
1	50	50	2,500	3,390	1.36	The failure of all specimens occurred at the interface between waterproofing surface and concrete
2	50	50	2,500	3,889	1.56	
3	50	50	2,500	3,470	1.39	
				Average	1.44	

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

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Type of test : TENSILE ADHESION STRENGTH AFTER CONTACT WITH LIME WATER (EN 14891-A.6.9: 2007)

Test specimen : Three (3) specimens of "weber.dry roofseal" were prepared in the laboratory.

Client : SAINT-GOBAIN WEBER CO., LTD.

Date of test : 19 Apr. 2012

Test method : After finish the preparation, the test units were placed in standard conditions for 28 days and and then immerse them in saturated lime water (pH$\geq$ 12) at 40 °C for a further 7 days. Remove from the lime water, rinse with clean water, wipe with a cloth and bond the pull head plate to the tile with the high strength epoxy. Condition the test units for a further 24 h under standard conditions and determine the tensile adhesion strength.

Test results :

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

Specimen No.	Width of Specimen (mm)	Length of Specimen (mm)	Area (mm^2)	Maximum Load (N)	Tensile Adhesion Strength (N/mm^2)	Remarks
1	50	50	2,500	1,835	0.73	The failure of all specimens occurred at the interface between waterproofing surface and concrete
2	50	50	2,500	1,715	0.69	
3	50	50	2,500	1,695	0.68	
				Average	0.70	

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

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Tested by :

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Type of test : BOND TO CONCRETE AT 28 DAYS (WI-QC-PRO-161)

Test specimen : Three (3) specimens of "weber.dry roofseal" were prepared in the laboratory.

Client : SAINT-GOBAIN WEBER CO., LTD.

Date of test : 12 Apr. 2012

Test method : Apply weber.dry roofseal onto standard concrete slab. Place the test unit in standard condition for 27 days. Bond the pull head plate to waterproofing layer with high strength epoxy and keep the test unit for a further 24 hours in standard condition. Determine the tensile adhesion strength.

Test results :

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

Specimen No.	Width of Specimen (mm)	Length of Specimen (mm)	Area (mm^2)	Maximum Load (N)	Tensile Adhesion Strength (N/mm^2)
1	50	50	2,500	4,188	1.68
2	50	50	2,500	4,368	1.75
3	50	50	2,500	4,128	1.65
				Average	1.69

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

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ISTRS/55269-1

25 April 2012

Subject : Tensile properties of roofseal specimens

Dear : Saint - Gobain Weber Co., Ltd.

As the Institute for Scientific and Technological Research and Services (ISTRS), King Mongkut's University of Technology Thonburi, conducted the tensile property following the standard testing method, ASTM D412-2003 of weber.dry roofseal specimens. The results were presented as below Table;

Properties		**Results**
Tensile property of weber.dry roofseal specimens	Modulus (MPa)	0.47 ± 0.03
	Maximum Stress (MPa)	0.52 ± 0.03
	Strain at break (%)	689 ± 54

Certified by

(Prof.Dr.Narongrit Sombatsompop)
Head of Laboratory

N. Buranajant
(Assoc.Prof.Nithi Buranajant)
Director of Institute for Scientific and Technological Research and Services