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STRUCTURAL ENGINEERING LABORATORY

STRUCTURAL ENGINEERING FIELD OF STUDY

SCHOOL OF ENGINEERING AND TECHNOLOGY

TYPE OF TEST: **INITIAL ADHESION STRENGTH**

TEST SPECIMEN: Ten (10) specimens of " weber.dry top " having a size of 50 x 50 x 2 mm. were prepared in the SE laboratory. The mix proportion of " weber.dry top " is 78 g. of powder form to 22 g. of liquid resin by weight.

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

DATE OF TEST: February 26, 2013

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^2)	Maximum Load (N.)	Tensile Adhesion Strength (N/mm^2)	Remarks
1	50	50	2,500	2,550	1.02	Cohesive failure within the adhesive
2	50	50	2,500	2,305	0.92	Cohesive failure within the adhesive
3	50	50	2,500	2,383	0.95	Cohesive failure within the adhesive
4	50	50	2,500	2,648	1.06	Cohesive failure within the adhesive
5	50	50	2,500	2,520	1.01	Cohesive failure within the adhesive
6	50	50	2,500	2,207	0.88	Cohesive failure within the adhesive
7	50	50	2,500	2,471	0.99	Cohesive failure within the adhesive
8	50	50	2,500	2,677	1.07	Cohesive failure within the adhesive
9	50	50	2,500	2,579	1.03	Cohesive failure within the adhesive
10	50	50	2,500	2,354	0.94	Cohesive failure within the adhesive
				Average	**0.99**	

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 AND INFRASTRUCTURE ENGINEERING GROUP
May 17, 2013

ASIAN INSTITUTE OF TECHNOLOGY ★ AIT ★ STRUCTURAL ENGINEERING

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STRUCTURAL ENGINEERING LABORATORY

STRUCTURAL ENGINEERING FIELD OF STUDY

SCHOOL OF ENGINEERING AND TECHNOLOGY

TYPE OF TEST: **INITIAL ADHESION STRENGTH (EN 14891:2004)**

TEST SPECIMEN: Ten (10) specimens of Ceramic tile of size 50 x 50 x 5 mm. installed by using " weber.dry top " were prepared in the SE laboratory. The mix proportion of " weber.dry top " is 78 g. of powder form to 22 g. of liquid resin by weight.

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

DATE OF TEST: January 26, 2013

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^2)	Maximum Load (N.)	Tensile Adhesion Strength (N/mm^2)	Remarks
1	50	50	2,500	2,207	0.88	Cohesive failure within the adhesive
2	50	50	2,500	2,109	0.84	Adhesive failure between tile and adhesive
3	50	50	2,500	2,040	0.82	Adhesive failure between tile and adhesive
4	50	50	2,500	2,383	0.95	Adhesive failure between tile and adhesive
5	50	50	2,500	1,991	0.80	Adhesive failure between tile and adhesive
6	50	50	2,500	2,216	0.89	Adhesive failure between tile and adhesive
7	50	50	2,500	1,912	0.76	Cohesive failure within the adhesive
8	50	50	2,500	1,991	0.80	Adhesive failure between tile and adhesive
9	50	50	2,500	1,834	0.73	Adhesive failure between tile and adhesive
10	50	50	2,500	1,991	0.80	Cohesive failure within the adhesive
				Average	**0.83**	

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

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STRUCTURAL ENGINEERING LABORATORY

STRUCTURAL ENGINEERING FIELD OF STUDY

SCHOOL OF ENGINEERING AND TECHNOLOGY

TYPE OF TEST: **ADHESIVE STRENGTH AFTER CONTACT WITH CHLORINATED WATER (EN14891:2004)**

TEST SPECIMEN: Ten (10) specimens of Ceramic tile of size 50 x 50 x 5 mm. installed by using " weber.dry top " were prepared in the SE laboratory. The mix proportion of " weber.dry top " is 78 g. of powder form to 22 g. of liquid resin by weight.

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

DATE OF TEST: March 5, 2013

TEST METHOD: After finish the preparation, the test units were placed in standard conditions for 28 days and stored in chlorine water for 7 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 standard condition. Determine the tensile adhesive strength.

TEST RESULTS:

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	1,599	0.64	Cohesive failure within the adhesive
2	50	50	2,500	1,893	0.76	Cohesive failure within the adhesive
3	50	50	2,500	1,530	0.61	Cohesive failure within the adhesive
4	50	50	2,500	1,334	0.53	Cohesive failure within the adhesive
5	50	50	2,500	1,687	0.67	Cohesive failure within the adhesive
6	50	50	2,500	1,942	0.78	Cohesive failure within the adhesive
7	50	50	2,500	1,481	0.59	Cohesive failure within the adhesive
8	50	50	2,500	1,550	0.62	Cohesive failure within the adhesive
9	50	50	2,500	1,814	0.73	Cohesive failure within the adhesive
10	50	50	2,500	1,618	0.65	Adhesive failure between tile and adhesive
				Average	**0.66**	

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 CONTACT WITH LIME WATER (EN14891:2004)**

TEST SPECIMEN: Ten (10) specimens of Ceramic tile of size 50 x 50 x 5 mm. installed by using " weber.dry top " were prepared in the SE laboratory. The mix proportion of " weber.dry top " is 78 g. of powder form to 22 g. of liquid resin by weight.

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

DATE OF TEST: March 5, 2013

TEST METHOD: After finish the preparation, the test units were placed in standard conditions for 28 days and stored in lime water(pH>12) at 40 °C for 7 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 standard condition. Determine the tensile adhesive strength.

TEST RESULTS:

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	2,059	0.82	Cohesive failure within the adhesive
2	50	50	2,500	1,638	0.66	Cohesive failure within the adhesive
3	50	50	2,500	1,432	0.57	Cohesive failure within the adhesive
4	50	50	2,500	1,569	0.63	Cohesive failure within the adhesive
5	50	50	2,500	1,785	0.71	Cohesive failure within the adhesive
6	50	50	2,500	1,942	0.78	Cohesive failure within the adhesive
7	50	50	2,500	1,697	0.68	Cohesive failure within the adhesive
8	50	50	2,500	1,402	0.56	Cohesive failure within the adhesive
9	50	50	2,500	1,471	0.59	Cohesive failure within the adhesive
10	50	50	2,500	1,481	0.59	Cohesive failure within the adhesive
				Average	**0.66**	

Note: 1) This report certifies the adequacy and representative character of the test sample(s) only.
2) The test units were stored in lime water(pH>12) at room temperature.

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TYPE OF TEST: **ADHESIVE STRENGTH AFTER HEAT AGEING (EN14891:2004)**

TEST SPECIMEN: Ten (10) specimens of Ceramic tile of size 50 x 50 x 5 mm. installed by using " weber.dry top " were prepared in the SE laboratory. The mix proportion of " weber.dry top " is 78 g. of powder form to 22 g. of liquid resin by weight.

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

DATE OF TEST: March 27, 2013

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 14 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^2)	Maximum Load (N.)	Tensile Adhesion Strength (N/mm^2)	Remarks
1	50	50	2,500	1,402	0.56	Cohesive failure within the adhesive
2	50	50	2,500	1,157	0.46	Cohesive failure within the adhesive
3	50	50	2,500	1,334	0.53	Cohesive failure within the adhesive
4	50	50	2,500	1,177	0.47	Cohesive failure within the adhesive
5	50	50	2,500	1,373	0.55	Cohesive failure within the adhesive
6	50	50	2,500	1,432	0.57	Cohesive failure within the adhesive
7	50	50	2,500	1,383	0.55	Cohesive failure within the adhesive
8	50	50	2,500	1,500	0.60	Cohesive failure within the adhesive
9	50	50	2,500	1,334	0.53	Cohesive failure within the adhesive
10	50	50	2,500	1,530	0.61	Cohesive failure within the adhesive
				Average	**0.54**	

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

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