MIGHTY・CF

Mighty Chemical Co., Ltd.

Mighty CF-CP Physical Properties Data

Mighty CF-CP Bending Strength Test Method: JIS R-5201			
Material		Plain Mortar as comparison	Mighty CF-CP
Age	7 Days	34.0 Kg/cm²	59.2 Kg/cm²
	28 days	49.9 Kg/cm²	70.4 Kg/cm²

*Test specimines are taken out from 4cmx4cmx16cm mould in 20 ℃ and 80% humidity stored for 24 hours. Then they were kep for the test.
*Test is done by Michaelis type bend testing machine

Mighty CF-CP Compressed Strength Test Method: JIS A-1108			
Material		Plain Mortar as comparison	Mighty CF-CP
Age	7 Days	167 Kg/cm²	214 Kg/cm²
	28 days	251 Kg/cm²	375 Kg/cm²

*Test specimines are taken out from 4cmx4cmx16cm mould in 20 ℃ and 80% humidity stored for 24 hours. Then they were kep for the test.

Mighty CF-CP Bonding Strength against Mortar Test Method: JIS A-6909			
Material		Plain Mortar as comparison	Mighty CF-CP
Age	7 Days	6.5 Kg/cm²	19.0 Kg/cm²
	28 days	9.2 Kg/cm²	22.2 Kg/cm²

*In accordance with JIS A-6909 (for Thin Finish Coating), Mighty CF-CP was applied on 30 cm square board, then applied 5 mm mortar on it. Bonding Strength test was done Mortar was sliced 3 days before each test days.

Mighty CF-CP Tensil Strength Test Test Method: ASTM C190			
Material		Plain Mortar as comparison	Mighty CF-CP
Age	7 Days	12.1 Kg/cm²	31.9 Kg/cm²
	28 days	19.7 Kg/cm²	41.3 Kg/cm²

*In accordance with ASTM C190, Specimen is Bottle Guard Shape (Sectional Area 6.45 cm². It is tested by ®Instron Machine.

Mighty CF-CP Breaking Expansion Test Test Method: ASTM C190			
Material		Plain Mortar as comparison	Mighty CF-CP
Age	7 Days	0.30%	0.42%
	28 days	0.27%	0.40%

*In accordance with ASTM C190, When tensile strength is measured, Pulled warp was measured.

Mighty CF-CP Permeability Test Test Method: JIS A1404			
Material		Plain Mortar as comparison	Mighty CF-CP
Added Pressure	0.1Kg/cm²	3.70%	0.40%
	1.0Kg/cm²	4.20%	0.40%

* Specimine is Ø10x20cm in accordance with JIS A-1404 (Construction Water Proof Materials Testing Method). It was stored in 20 ℃ and 80% humidity environment up to 28 days, then it was dried in 30 ℃ & 60 ℃ each for 48 hours. Later on it was exposed to two different level of water pressure for one hour.

Mighty CF-CP Water Absorption Rate Test Test Method: JIS A1404			
Dried in 30 ℃ for 48 hours			
Material		Plain Mortar as comparison	Mighty CF-CP
Water Absorption Time(Hr)	1	8.90%	0.70%
	5	12.40%	1.40%
	24	15.20%	2.50%
Dried in 60 ℃ for 48 hours			
Material		Plain Mortar as comparison	Mighty CF-CP
Water Absorption Time(Hr)	1	11.30%	2.20%
	5	13.50%	4.10%
	24	15.90%	6.20%

* Specimine is 4cmx4cmx16cm in accordance with JIS A-1404 (Construction Water Proof Materials Testing Method). It was stored in 20 ℃ and 80% humidity environment up to 28 days, then it was dried in 30 ℃ & 60 ℃ each for 48 hours. It was submurged into 2cm in the water, and measured the absorption each time. period.

Mighty CF-CP Air Permeability Test			
Dried in 50 ℃ for 48 hours (28 days old Specimine)			
Material		Plain Mortar as comparison	Mighty CF-CP
Ventilation Time(Hr)	1	828cc/cm²	476cc/cm²
	5	1,499cc/cm²	1,004cc/cm²
	24	2,360cc/cm²	1,455cc/cm²

* Specimine is 100Øx 5 mm and set it on the steel container with water inside (96 mm inside diameter x 55mm high).Specimine and conatiner are sealded with Epoxy Resin. Measure the amount of decrease of the water per square meter at each time period.

Mighty CF-CP Wear-Out Ratio			
number of Rotation (Rounds/minute)	300	500	600
Decrese by Warn-Out Plain Mortar	2.0g	3.4g	6.5g
Decrese by Warn-Out Mighty CF-CP	0.7g	1.1g	2.2g

* Used H-22 Rotary disk with 1Kg pressure by Taper Shape Test Machine

Mighty CF-CP Water Absorption Rate Test Test Method: JIS K-5400	
Bonding Strength	Destruction Condition
2.04N /mm²	Base material was destroyed

* 100KN Test Machine was used

Mighty CF-CP Salt Water Proof Test (Coating Thickness 70 μm) Test Method: JIS K-5600 (Previously K-5400)			
Specimens:	Sheet Metal	(150 x 150 x 0.3mm)	70 μm Synthetic Resin Paint
	Sheet Metal	(150 x 150 x 0.3mm)	70 μm Polyvinyl chloride paint
	Sheet Metal	(150 x 150 x 0.3mm)	70 μm Mighty CF-CP 0.14kg/m²

Test Facility: Yamaguchi Prefecture Industrial Technology Center

Test Specimens	*Result*
Synthetic Resin Paint	Normal
Polyvinyl chloride paint	Normal
Mighty CF-CP	Normal

Mighty CF-CP Salt Water Proof Test
(Coating Thickness 1.0Kg/m², average 500 μm thick)
Test Method: JIS K-5400 8.23

Test Facility: Builidng Material Center Chugoku Laboratory
Spesimen: Steel Board
Size: 150 x 70 x 0.8mm
Specification: 1.0Kg/m² average 500 μm thick coating
Quantity: 3 pieces (tested 2 pieces, left one piece as a comparison)
Test Method: Specimens were submerged in 3 w/v % Sodium chloride for 336 hours. Observed if there are swells, cracks, delamination, and rust or not.
Judgment Standard: No swelling, no cracks, no delamination, no rust
Result: Observed nothing unusual. No color change on the coating.

Mighty CF-CP Compound Cycle Anti-Corrosion Proof Test
Test Method: JIS K-5622 5.10 (For red lead anticorrosive paint)

Test Facility: Building Material Center Chugoku Laboratory
Specimen: Steel Board
Size: 300 x 150 x 0.8mm
Specification: 1.0Kg/m² average 500 μm thick coating
Quantity: 3 pieces (tested 2 pieces, left one piece as a comparison)

Test Method: 36 cycles of heat & cold temperature environment.
Observed if there was any swells, delaminations, and rust or not.

Test Condition: One cycle is 6 hours.

1. Salt Spray Test: 30°C±2°C 0.5 Hours
2. Humidity cabinet test: 30°C±2°C 1.5 Hours (95±3 RH)
3. Heat Wind Dry Test: 50°C±2°C 2.0 Hours
4. Warm Wind Dry Test: 30°C±2°C 2.0 Hours

Specimens exposed to the environment above mentioned, which is 36 cycles of 6 hour cycle (Total 216 hours), were rinsed with running water, and examined the coating condition after 2 hours.

Judgment Standard: No swelling, no cracks, no delamination, no rust
Result: Observed nothing unusual. No color change on the coating.

Other Test Results			
Against Freeze and Thaw	Acrylic Lysin	Delaminated at 30 cycles	3mm on slate board. 28 days old specimin Repetition of a cycle of -20°C x16 Hr and 20°Cx16 Hr
	Polymer Mortar	Delaminated at 30 cycles	
	Mighty CF-CP	Normal at 40 cycles	
Against Impact	Plain Mortar	Failed at 5 cm	Coated on 50mm Øx 4mm and cured for 28 days. Drop 500g of weight , measured the height when coating failed by Dupont impact test machine
	Mighty CF-CP	Failed at 12.5 cm	
Heat Resistance	Compund Resin Paint	Fade, color change, Crack, Delaminate	250°C , JIS K 5400 Coated 70 μ on the sheet Metal
	Vinyl Chrolide Paint	Color change, Delaminate Flake	
	Mighty CF-CP	small change in appearance No flake, No delamination	
Alkline Proof	Compund Resin Paint	Delamination, Flaking	JIS K 5400 Coated 70 μ on the sheet Metal
	Vinyl Chrolide Paint	Normal	
	Mighty CF-CP	Normal	
Freeze Test	Compund Resin Paint	Delamination	JIS A 5209 A cycle of reeze at -20°C, and thaw. 10 Cycles Coated 70 μ on the sheet Metal
	Vinyl Chrolide Paint	Normal	
	Mighty CF-CP	Normal	

Kaneo Gotan
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President
Mighty Chemical Co., Ltd.