

4WT NO: 3423,3442
JOB NO: 2693
CLIENT REF: MartyMcAleenan 14/01/2016
REPORT NO: 1912

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REPORT
ON THE TESTING
OF
WT-1 LIQUID MEMBRANE
TO ETAG 022, ANNEX E

Supplied by:

C-Tec N.I Ltd
Unit 6
Ashtree Enterprise Park
Newry
County Down
BT34 1BY

Report Prepared by:

Lesley J Komatsu

Report on the testing of WT-1 Liquid Membrane

4ward Testing Ltd were contacted by C-Tec N.I. Ltd of Unit 6, Ashtree Enterprise Park, Newry, County Down, Northern Ireland, BT34 1BY and asked to carry out Water Tightness & Resistance to Water & Moisture of Walls with Flexible Substrate on WT-1 Liquid Membrane to ETAG 022, Annex E

Identification

Material:	Liquid Membrane
Customer Identification:	WT-1
Batch No:	Grey Lot 5620346
Customer Reference:	e mail Marty McAleenan 14/01/2016
4ward Sample No:	3423,3442
Job No:	2693
Date Received:	14/01/2016

Test Data

The Sealant was tested as received from the customer with preparation of the test chamber being carried out by the customer and the Laboratory

Testing was carried out to ETAG 022, Annex E – Walls in Wet Rooms: Water Tightness & Resistance to Water & Moisture of Walls with Flexible Substrate. The principle of the testing being to subject a wall which has been covered with a Flexible Coating to alternating hot and cold water with pipe penetrations and wash basin supports exposed to short term mechanical loads.

The test rig consisted of a chamber with 3 solid walls constructed of plaster board and one wall being a glass door (as in a shower cubicle). The chamber was 2.3m in height. There was a ventilation gap at the base of the door and at the top near the ceiling for air circulation. The walls of the chamber were coated with WT-1 Liquid Membrane by a representative of the customer, C-Tec, following the manufacturer's instructions.

Photo to show Chamber coated with the WT-1 Membrane



After 48 hrs 7 nozzles were mounted 1m above the floor level and at a distance of 300mm from both the coated wall and the tile covered wall. The nozzles were connected to water pipes with the spray from each nozzle a cone of 60°, with even distribution of the water. Flow through each nozzle was approximately 0.05l/sec.

4 water pipes and 1 drainpipe are allowed to penetrate the wall, 2 of the pipes simulate hot and cold feeds to a basin and are fixed perpendicular to the surface of the wall. The other 2 water pipes are PEX pipe connected via junction boxes mounted according to the supplier's description. The ends of the pipes are plugged.

Two supports for a wash basin are mounted ~ 0.8 metre above floor level.

Cabinet with plumbing



Holes made through the structure were filled with a bathroom grade sealant.

An Agilent U1272A Digital Multimeter (UKAS Calibration Certificate No:U7146) was used to detect any moisture ingress at predetermined points around the chamber both before and after the testing.

The following regime comprises 1 cycle:

- 60 secs hot water ($60 \pm 3^\circ\text{C}$)
- 60 secs pause
- 60 secs cold water ($10 \pm 3^\circ\text{C}$)
- 60 secs pause

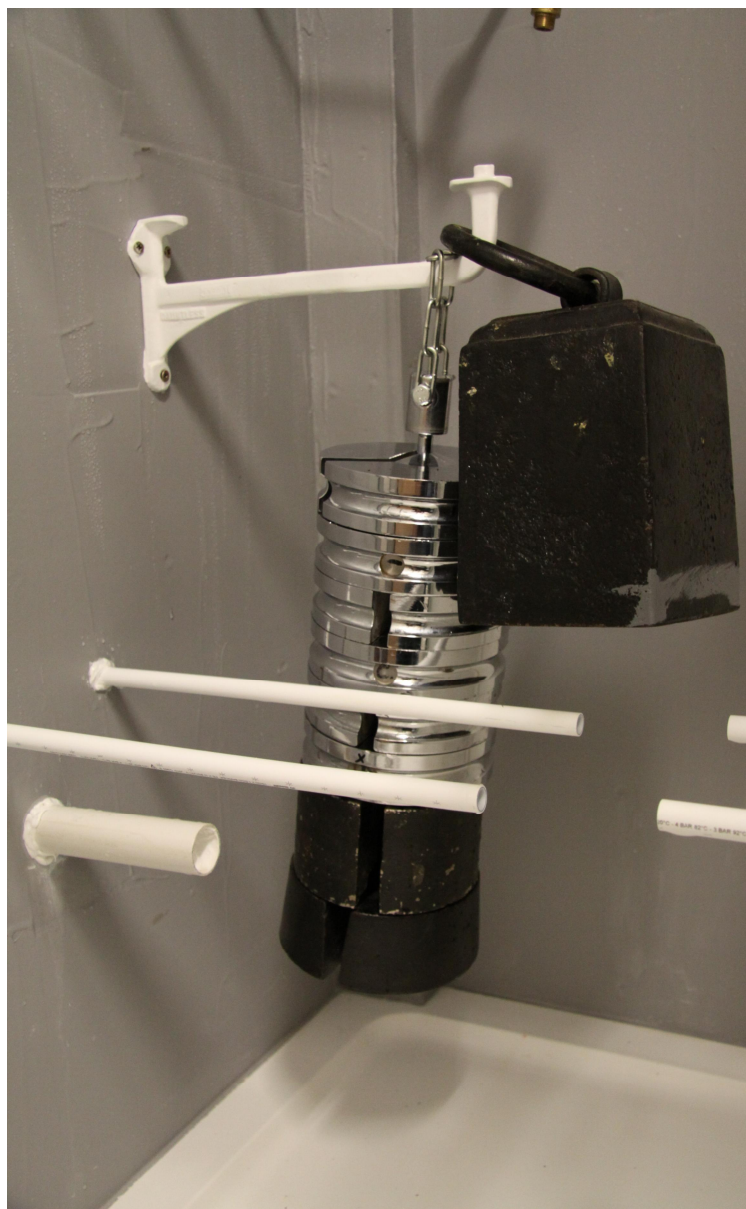
The temperature of the water being monitored at the nozzle and the cycle is repeated 1500 times twice.

A small electric windscreen washer motor with a rotating arm of length 300mm and with a mass of 0.3Kg was used to test the resistance to dynamic forces of the Coating. The arm rotates at 45rpm, total mass being 2.3Kg and is fitted through the wall of the chamber being placed ~ 200mm from the wall surface.

Procedure

A static load of 750N (76.5Kg) is applied to each of the wash basin supports and held in position for 5 mins following which they are removed. Any deflection of the supports is measured at a distance of 300mm prior to the weights being added and 10 mins after removal.

To show support loading



The nozzles are positioned so the spray points face the joints, corners and pipe penetrations.

The walls were exposed to 1500 cycles as per the regime above after which the arm and motor described above is mounted on one penetration for water pipes for each type at a distance of 0.4m from the wall and allowed to run for 24hrs.

A second spraying regime of 1500 cycles is carried out after which measurements for water ingress are taken. A visual inspection to look for any change in appearance of the Coating or possible water penetrations of the chamber is carried out. The test chamber is then dismantled and further readings and visual inspections carried out.

To show spraying in action taken from top of chamber



Test date: 14 - 29/03/2016

Test Results

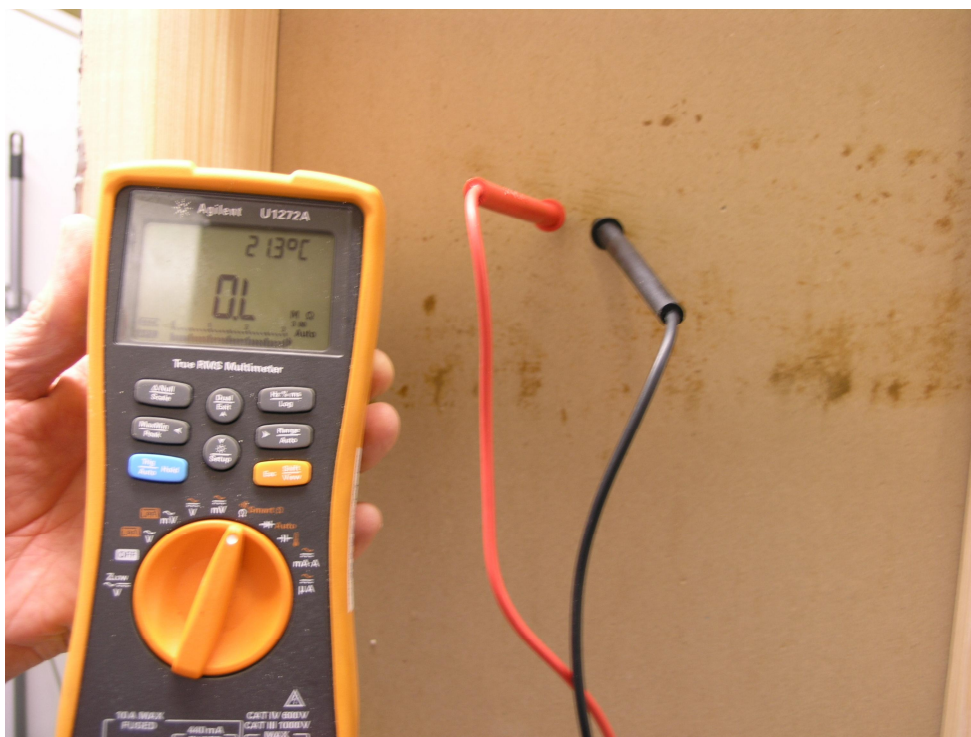
There was no deflection of the supports following removal of the static load and no damage to the Coating was visible.

There was no change in appearance of the Coating following the hot and cold water cycling.

There was no moisture ingress recorded at predetermined points after the test was completed.

On dismantling the chamber after completion of the testing there was no evidence of water penetration through the chamber walls.

To show no moisture present through the chamber wall following completion of testing



Conclusion

When used for walls in a wet room WT-1 Liquid membrane can be said to be watertight as there was no sign of water penetrating the walls. There was no damage such as dimensional changes and WT-1 Liquid Membrane can be said to be water resistant. Therefore WT-1 is in compliance with ETAG 022 Annex E Walls in wet Rooms: Water Tightness and Resistance to Water and Moisture of Walls with Flexible Substrate.

These results relate only to the material tested

Work carried out and recorded by the following personnel:



Anthony Hanson
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Work approved by the following personnel:



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Technical Manager

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