QUANTUM Chemical
High Performance Coatings

ZERO VOC HIGH-GLOSS TOP COAT ACCELERATED CORROSION TEST

ILLUSTRIUM™ M1172 DTM

M1172 DTM vs COMMERCIAL URETHANE

TEST PARAMETERS

Substrate:1/4" steel test panels sandblasted to SSPC-SP5 White Metal Blast.
Coatings: ILLUSTRIUM™ M1172 DTM and Commercial Solvent Borne 2K DTM Urethane.
Test Methods: ASTM B-117 Salt Spray Fog Corrosion test; ASTM D4541-17 Pull-Off Adhesion Test.

PROCEDURE

Blasted panels were given one spray application of **ILLUSTRIUM™ M1172 DTM**, the commercial DTM urethane was applied in two coats with a flash off period between applications. Panels were allowed to cure for two weeks at ambient conditions (23°C, 30% RH). Panels were then scribed and exposed for 1,000 hrs of salt spray as per ASTM B-117. Adhesion was checked prior to exposure and after completion of 1,000 hours of testing.

RESULTS

Table 1: Pre and post-salt spray adhesion and appearance.

Coating	Hours Exposure	Adhesion 1 (PSI)	Adhesion 2 (PSI)	Adhesion 3 (PSI)	Average (PSI)	Appearance
M1172*	0	3,000	2,200	N/A	2,600	Pristine
M1172*	1,000	1,100	675	1,150	**975**	**A few blisters, some rust @ scribe**
M1172	0	3,200	3,300	N/A	3,250	Pristine
M1172	1,000	610	580	N/A	**595**	**A few blisters, some rust at scribe**
Urethane DTM	0	>3,600	>3,600	N/A	>3,600	Pristine
Urethane DTM	1,000	650	480	N/A	**565**	**Blisters and rust on whole panel**

*This sample was blasted and sprayed at Quantum, all other samples were blasted and sprayed at customer facility

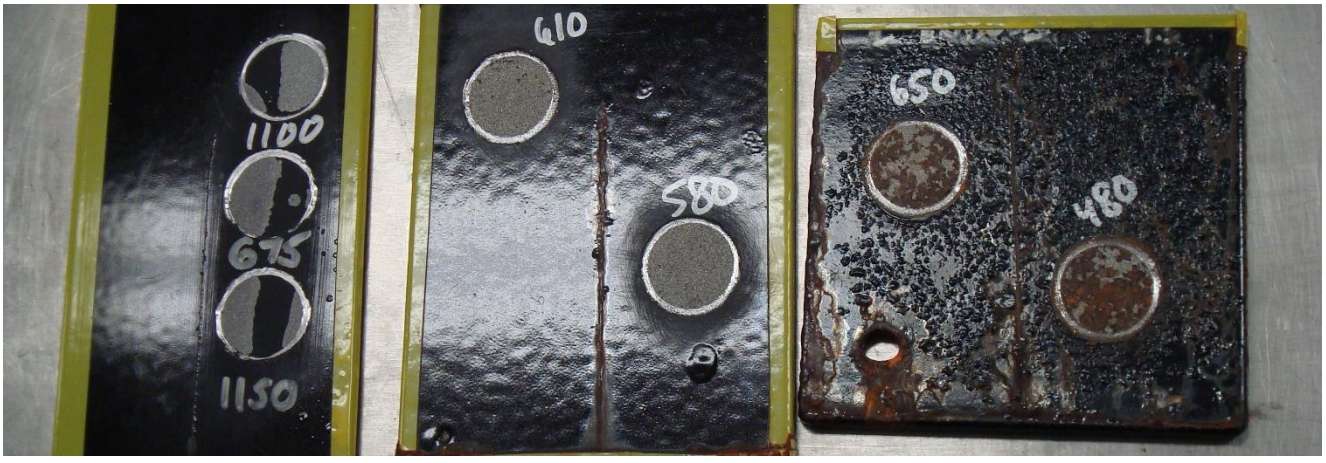

Figure 1: Test panels after 1,000 hours of salt spray testing, **ILLUSTRIUM™ M1172 DTM** blasted and sprayed at Quantum Chemical (left); **ILLUSTRIUM™ M1172 DTM** blasted and sprayed at customer (middle); and commercial urethane DTM (right). Numbers written on panels represent PSI destructive pull-off adhesion, exposing the steel under the coating.

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