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205 521 9638 | 3333 R. ARRINGTON N. • BHAM, AL 35234

ASTM B117 Salt Fog Testing

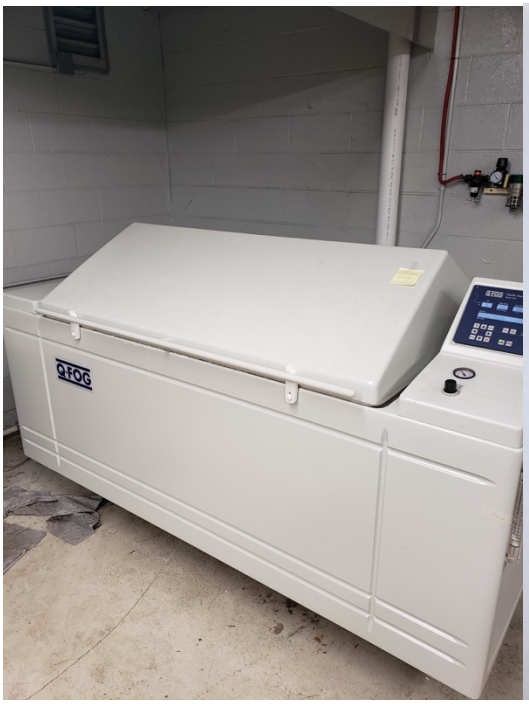
PERMASAFE POLE COATING™

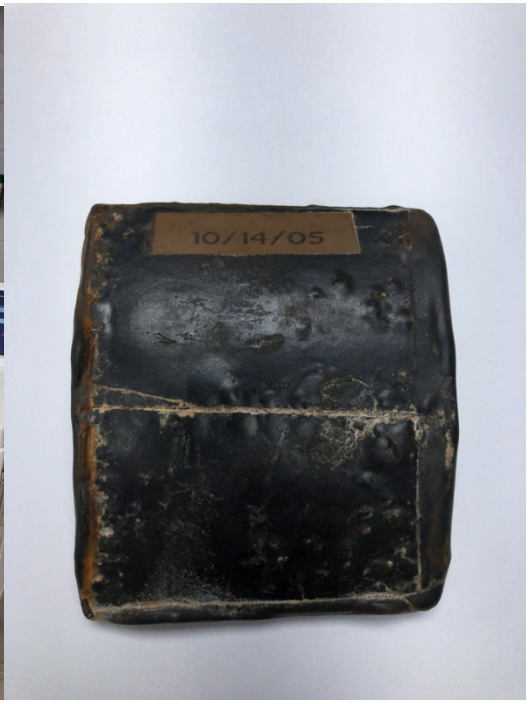
Salt Fog ASTM B-117

ASTM B117 is performed in specialized chambers built to ASTM B117 specifications. The temperature is maintained at 35C (+ 1.1C to 1.7C), with a pH range of 6.5 to 7.2pH and a salt atmosphere of 5 parts sodium chloride to 95 parts ASTM D1193 Type IV water, introduced into the chamber at specific air pressure guidelines.

ASTM B117 does not dictate the length of exposure. The standard calls for exposures in 24 hour blocks of time. The most popular durations are: #1) 96 hour exposure #2) 240 hour exposure #3) 600 hour exposure. However, extremely durable systems such as Permasafe Ceramic Epoxy tests through an entire year or more with very little effect.

Salt Fog (5% NaCl mist @ 95 deg F) - Results:
– 9,000 hours (*over 1 year*) with No Effect. No undercutting at the scribe.
– 20,000 hours (*over 2.3 years*) with none to slight corrosion at the scribe. No undercutting.





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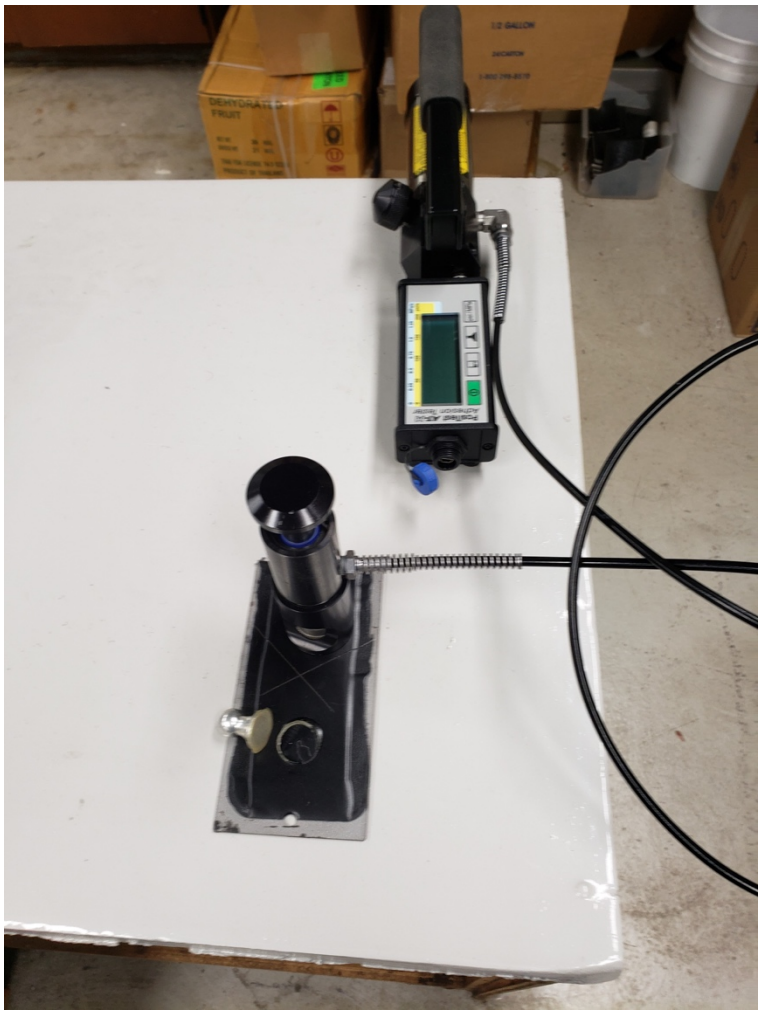
"Pull Off" Adhesion Testing ASTM D4541-17

ASTM D4541-17: The "pull-off adhesion" test is performed by securing a loading fixture, such as a dolly or stud, to the surface of the coating being tested with a glue. A testing apparatus is attached to the loading fixture and aligned to apply tension to the test surface. The force applied to the loading fixture is then gradually increased and monitored until either the loading fixture is detached or a specified load value is reached.
Results: **ASTM D-4541-17 Pull-Off Adhesion Test: 3500+ glue failure on dowel.**



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ASTM D2794 Impact Resistance

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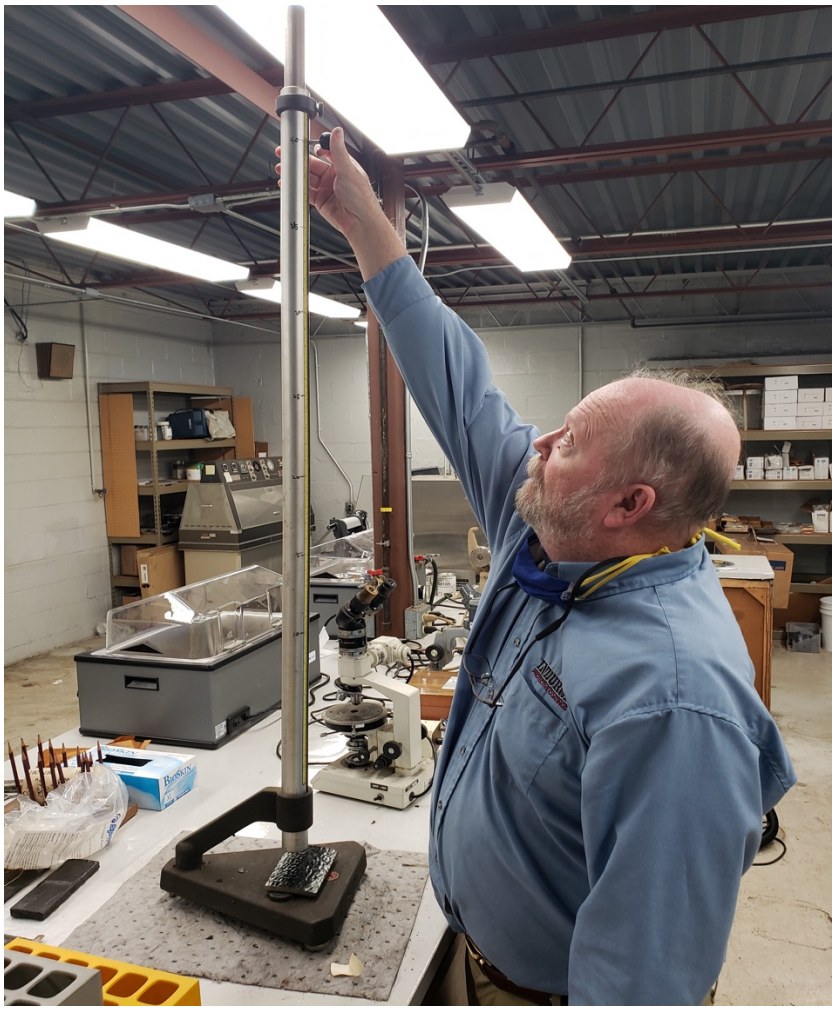
Impact Resistance ASTM D2794

ASTM D 2794 provides a procedure for rapidly deforming by impact a coating film and its substrate and for evaluating the effect of such a deformation. After the coatings have cured on a substrate of choice, a standard weight is dropped a distance to strike an indenter that deforms the coating and the substrate. The indentation can be either an intrusion or an extrusion. By gradually increasing the distance the weight drops, generally 1 inch (25 mm) at a time, the point at which failure usually occurs can be determined.

Results: 140 inch-lbs



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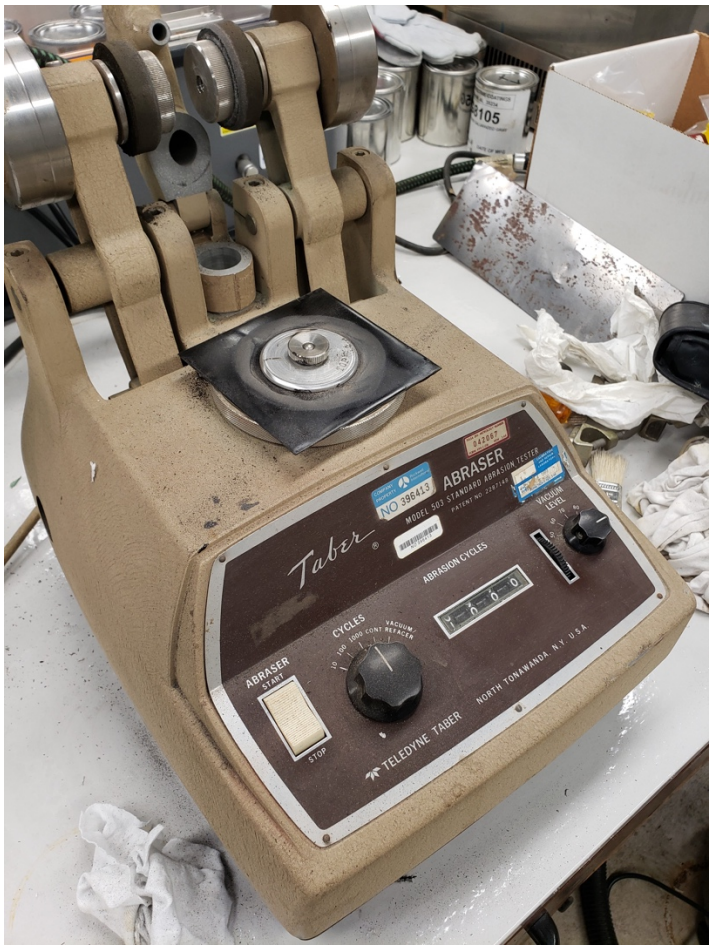
Tabor Abrasion ASTM D-4060

ASTM D4060 tests abrasion resistance of organic coatings by the taber abraser. Testing to ASTM D4060 involves mounting a flat specimen to a turntable that rotates horizontally at a fixed speed. Two arms, each supporting an abrading wheel, are then lowered so that each wheel touches the surface. Before starting the test, a "suction arm" is lowered between the wheels to remove the abraded material from the sample's surface. The turntable then starts rotating forcing rub-wear action of the wheels against the sample's surface for the specified number of cycles or until a given mass of coating has been lost or until the wheels start exposing the substrate.

Results:	**ASTM D-4060 CS-17 Wheel/1000g load: less than 40 mg loss**



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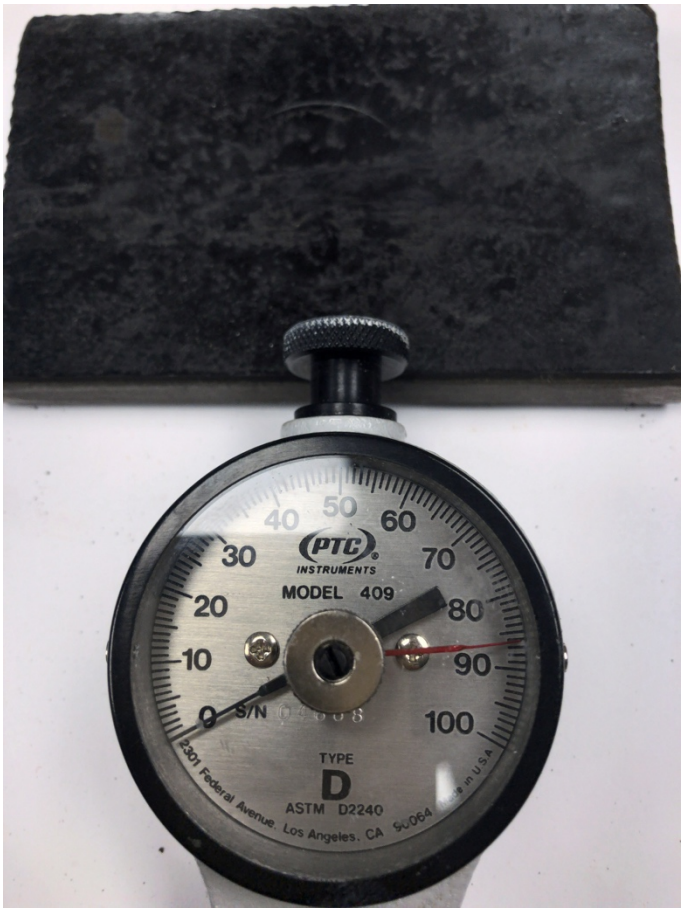
Shore “D” Hardness ASTM D-2240

ASTM D2240 durometers allows for a measurement of the initial hardness, or the indentation hardness after a given period of time. The Shore D Durometer, like many other hardness tests, measures the depth of an indentation in the material created by a given force on a standardized presser foot. This depth is dependent on the hardness of the material, its viscoelastic properties, the shape of the presser foot, and the duration of the test. The basic test requires applying the force in a consistent manner, without shock, and measuring the hardness (depth of the indentation). If a timed hardness is desired, force is applied for the required time and then read. The material under test should be a minimum of 6 mm (0.25 inches) thick.

Shore D Hardness: 85



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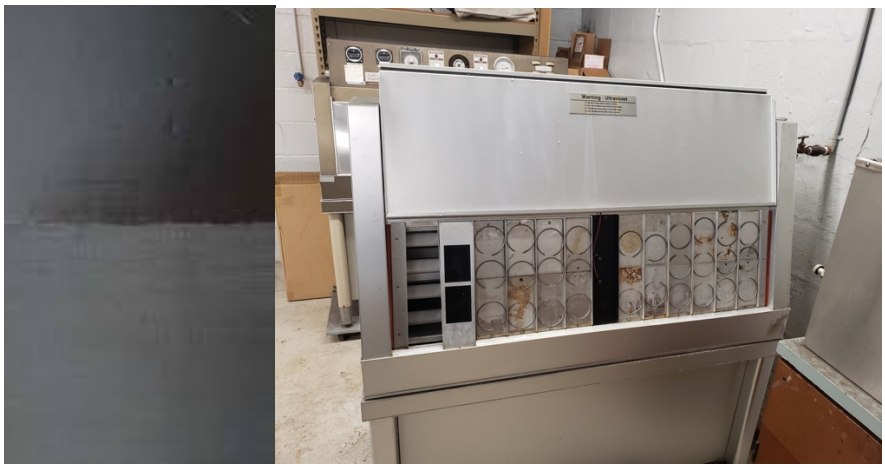
UV Resistance ASTM G-154

ASTM G-154 QUV-B evaluates sunlight and moisture exposure on a coating. When rays of sunlight—particularly UV rays—bombard a surface and may change the surface color creating a chalky effect. Cracking, peeling, de-glossing, oxidation, and tensile weakening are additional potential outcomes of exposure if the polymer system is susceptible to UV light.

Results: ASTM G-154 QUV-B Weatherometer: 3500 hours- slight chalking observed- no other effects.



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Immersion Testing ASTM D6943-15

ASTM D6943-15 is the standard for the evaluation coatings and linings for immersion in various chemicals. The tests are fairly simple and involve immersing panels completely in the chemical of interest, e.g. 20% sulfuric acid or 25% sodium hydroxide. The results are evaluated via **ASTM-D714,** which utilizes photographic references to evaluate the degree of blistering that may develop under these harsh conditions.

Chemicals: 20% Sulfuric Acid immersion for 1 year; 25% NaOH immersion for 1 year; 5% NaCl solution immersion (unscribed) for 1 year; Distilled H2O immersion after 1 year; 5% NaCl immersion (scribed panel) for 1 year.	
Results:	**No effect when rated with ASTM D-714**