TC-11® Corrosion Inhibitor

Versus

Gunk® Liquid® Wrench and PB™ Blaster®

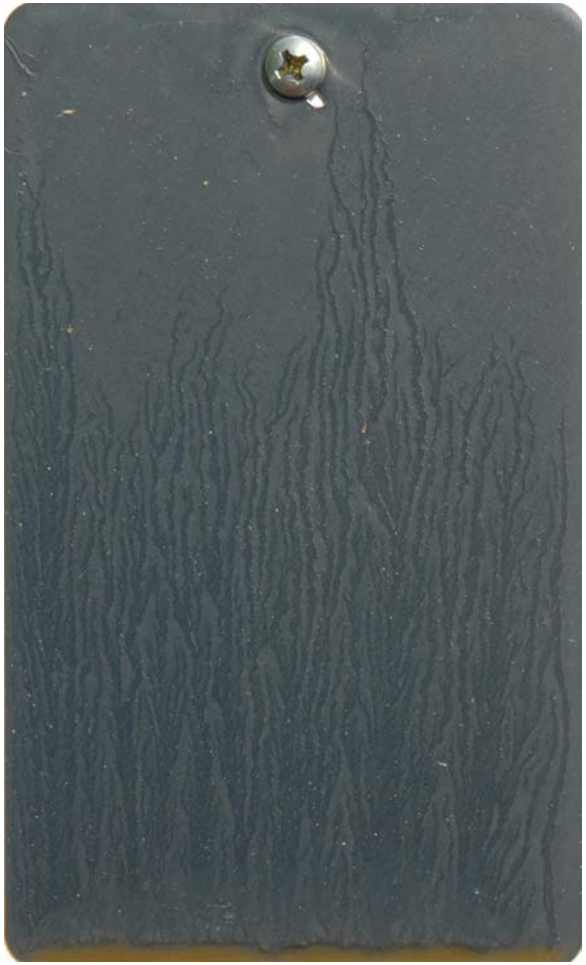
July 2006

Corrosion Test Methodology

1. Identical Type S Steel Q-Panels are chemically cleaned and treated once with a competing product.
2. The Q-Panels are mounted in a vertical position for 24-hours.
3. The Q Panels are mounted on a test panel.
4. The Q-Panels are exposed to identical environmental exposures – full tropical sunlight, intermittent rainfall, a salt breeze, and a nightly condensation cycle.
5. The Q Panels are photographed at 24-hour intervals using sunlight as the light source.

Start of Test

Liquid Wrench



TC-11

PB Blaster

Day One

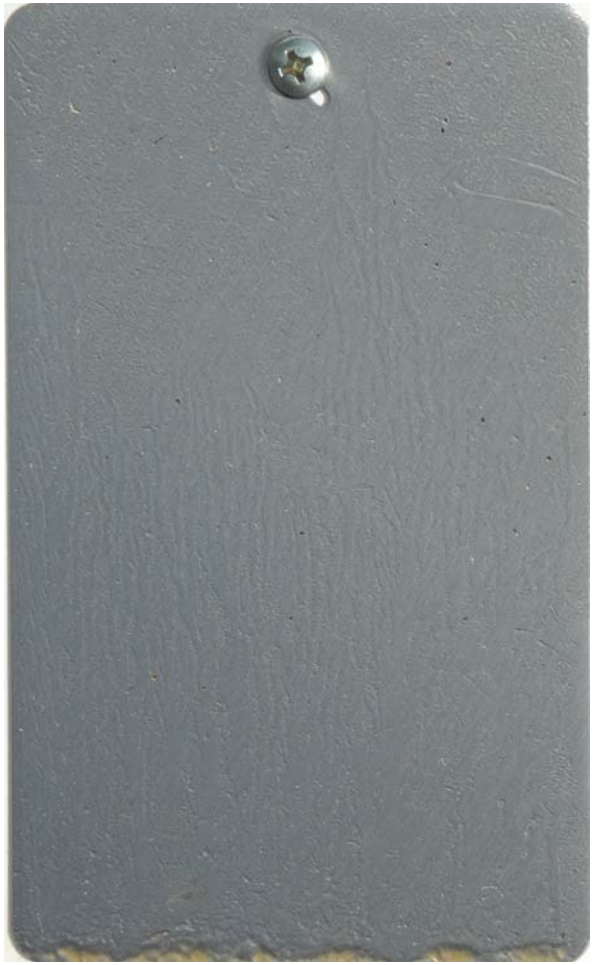
Liquid Wrench

TC-11

PB Blaster

Day Two

Liquid Wrench



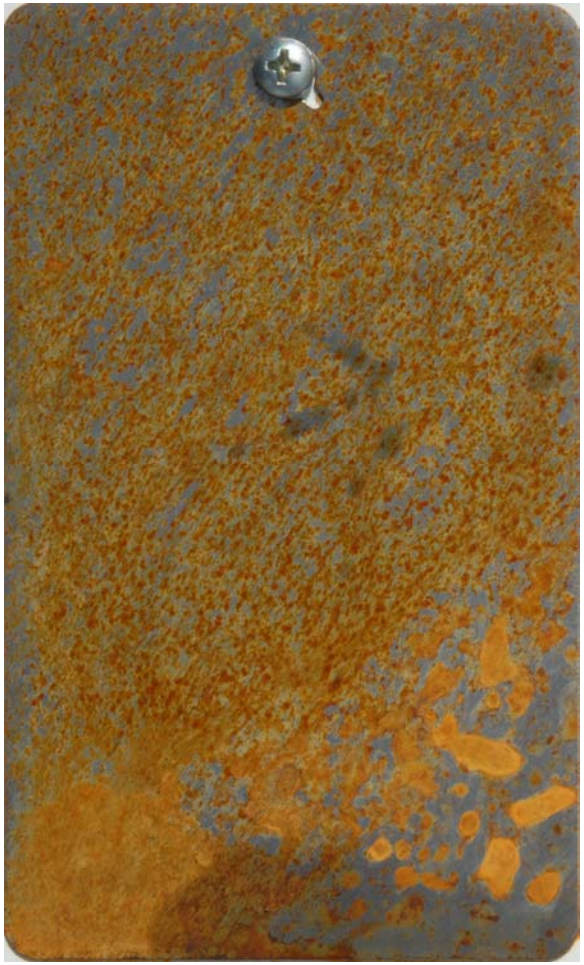
TC-11

PB Blaster

Day Three

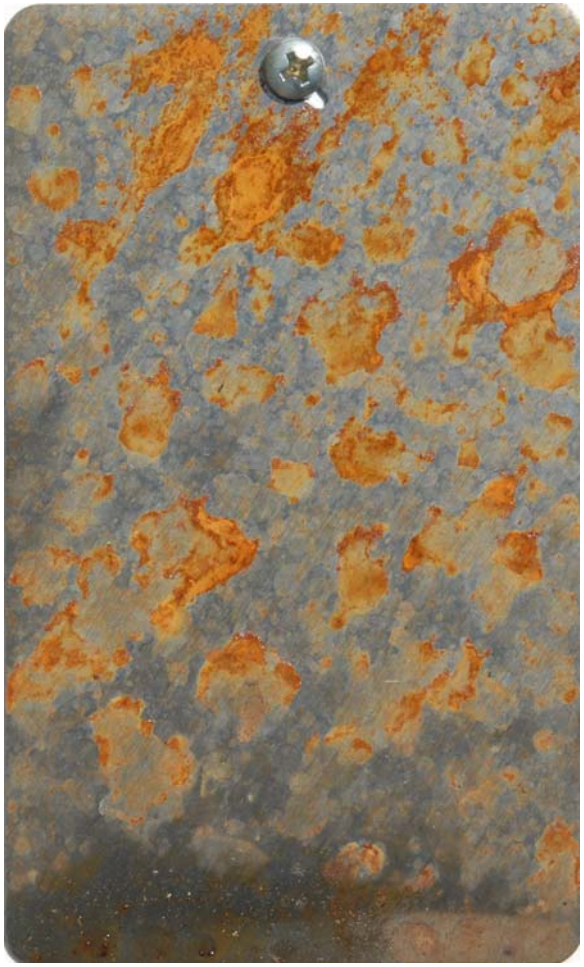
Liquid Wrench

TC-11

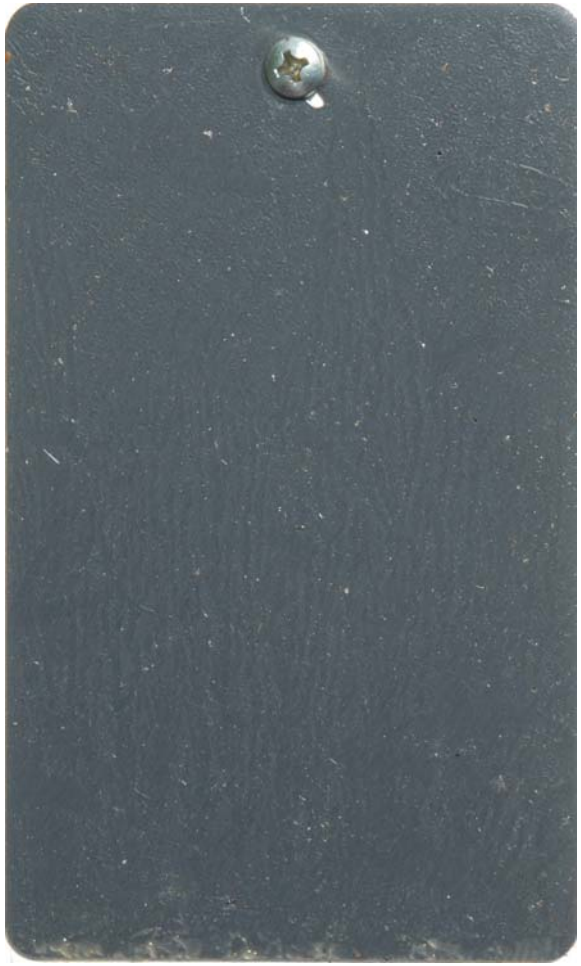


PB Blaster

Day Four



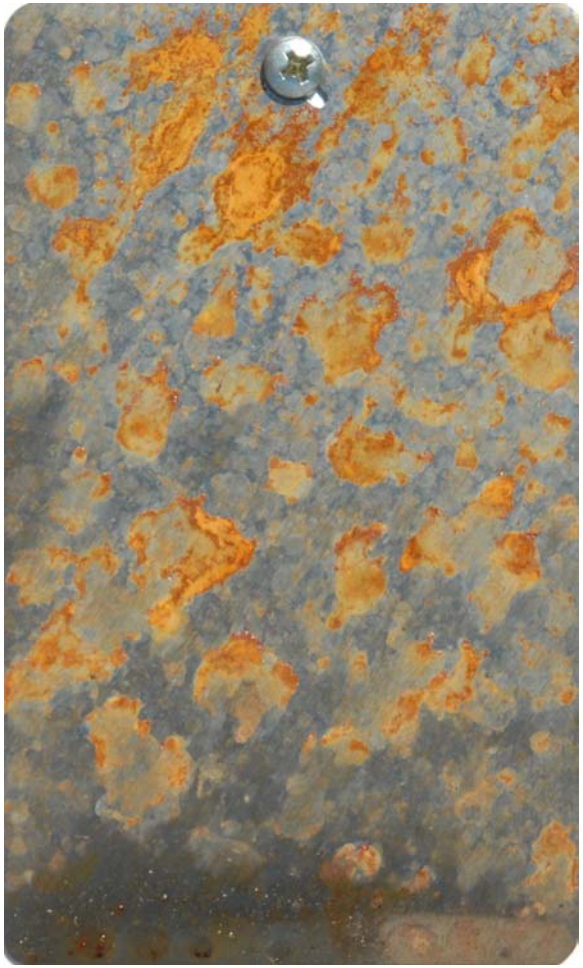
Liquid Wrench



TC-11

PB Blaster

Day Five

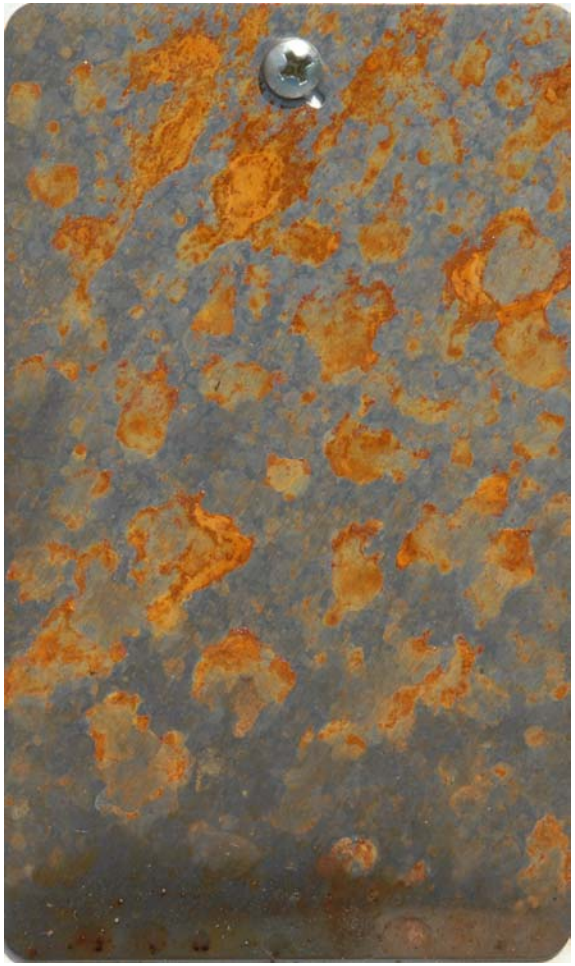


Liquid Wrench

TC-11

PB Blaster

Day Six

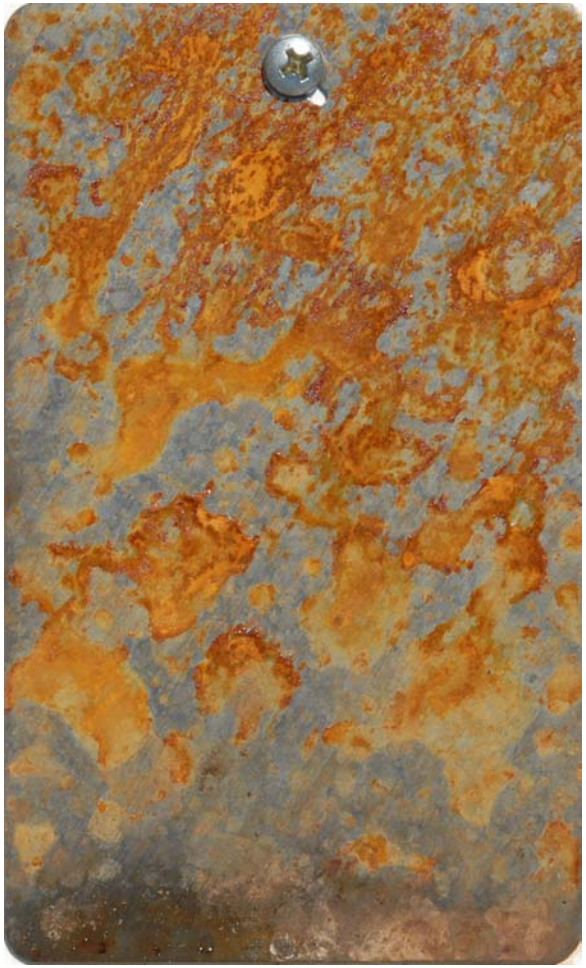


Liquid Wrench

TC-11

PB Blaster

Day Seven

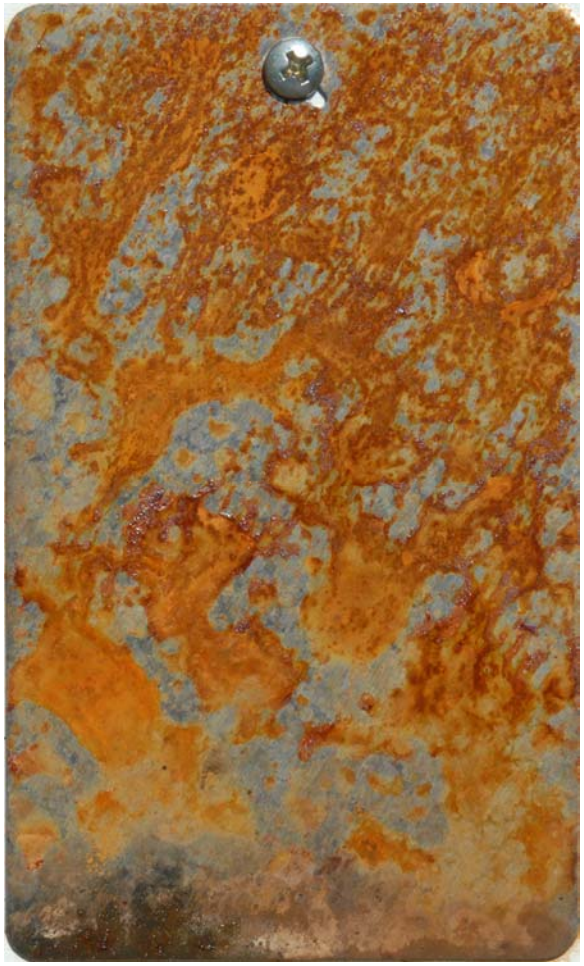


Liquid Wrench

TC-11

PB Blaster

Day Eight

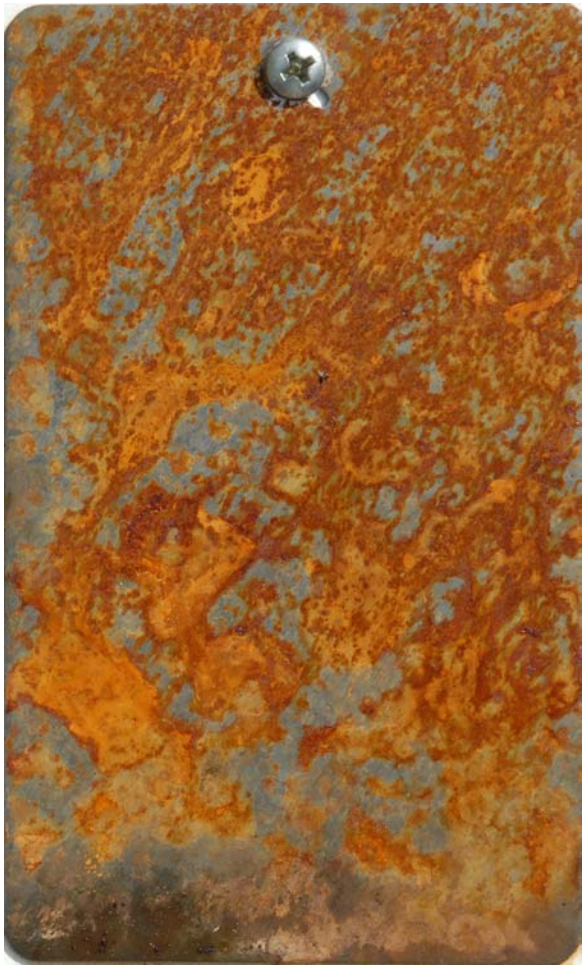


Liquid Wrench

TC-11

PB Blaster

Day Nine

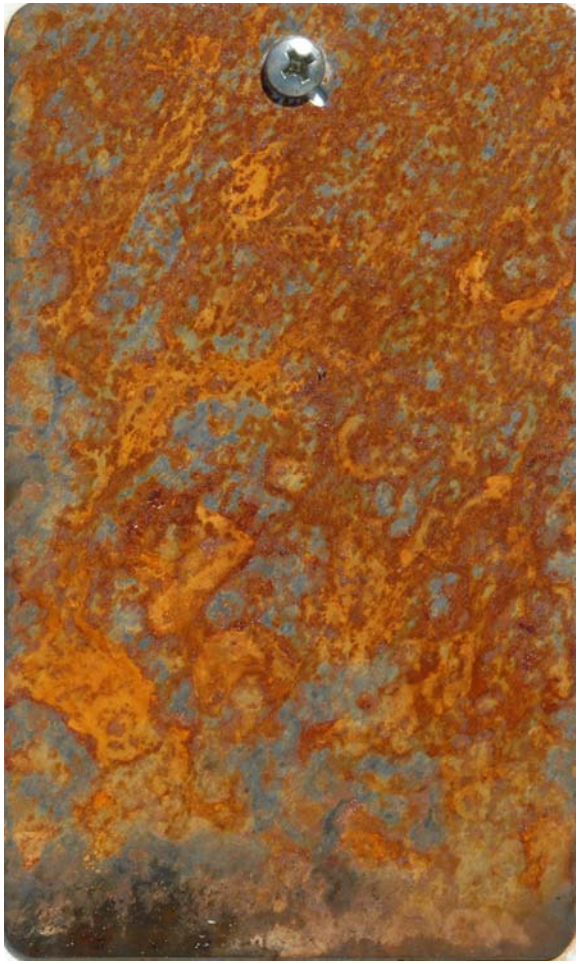


Liquid Wrench

TC-11

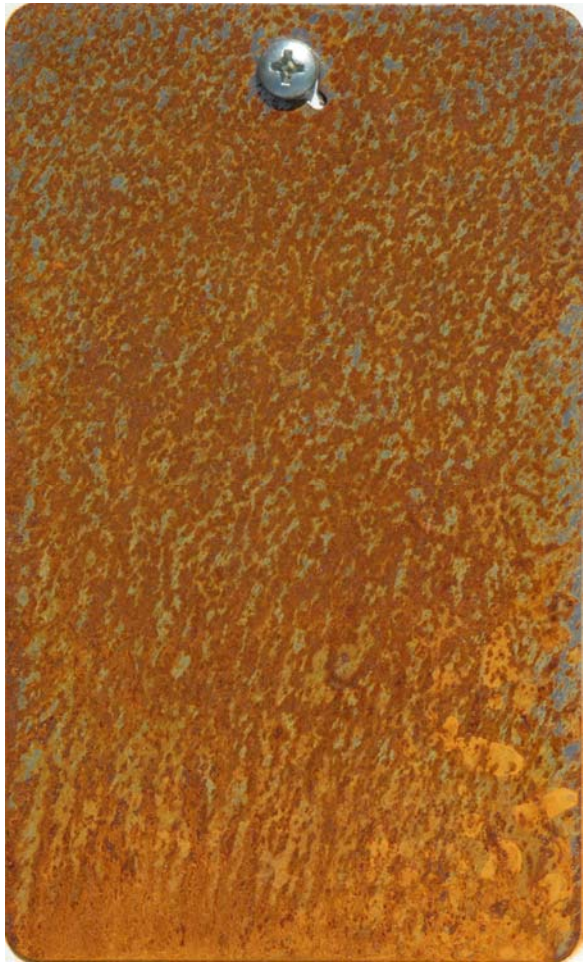
PB Blaster

Day Ten



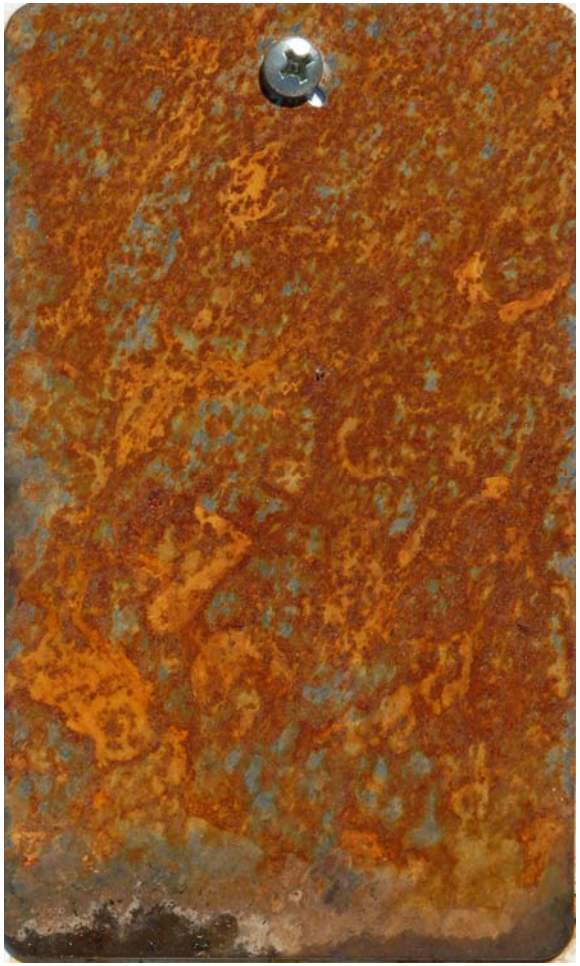
Liquid Wrench

TC-11



PB Blaster

Day Eleven



Liquid Wrench

TC-11

PB Blaster

Day Twelve

Liquid Wrench

TC-11

PB Blaster

Day Thirteen

Liquid Wrench

TC-11

PB Blaster

Day Fourteen

Liquid Wrench

TC-11

PB Blaster

Day Fifteen

Liquid Wrench

TC-11

PB Blaster

Day Sixteen

Liquid Wrench

TC-11

PB Blaster

Day Seventeen

Liquid Wrench

TC-11

PB Blaster

Day Eighteen

Liquid Wrench

TC-11

PB Blaster

Day Nineteen

Liquid Wrench

TC-11

PB Blaster

Day Twenty

Liquid Wrench

TC-11

PB Blaster

Day Twenty-One

Liquid Wrench

TC-11

PB Blaster

Day Twenty-Two

Liquid Wrench

TC-11

PB Blaster

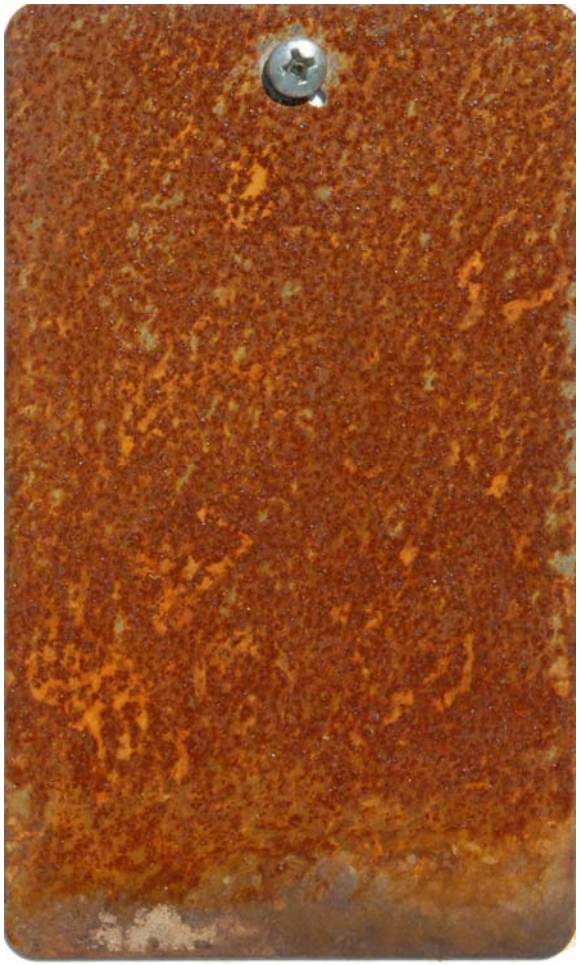
Day Twenty-Three

Liquid Wrench

TC-11

PB Blaster

Day Twenty-Four

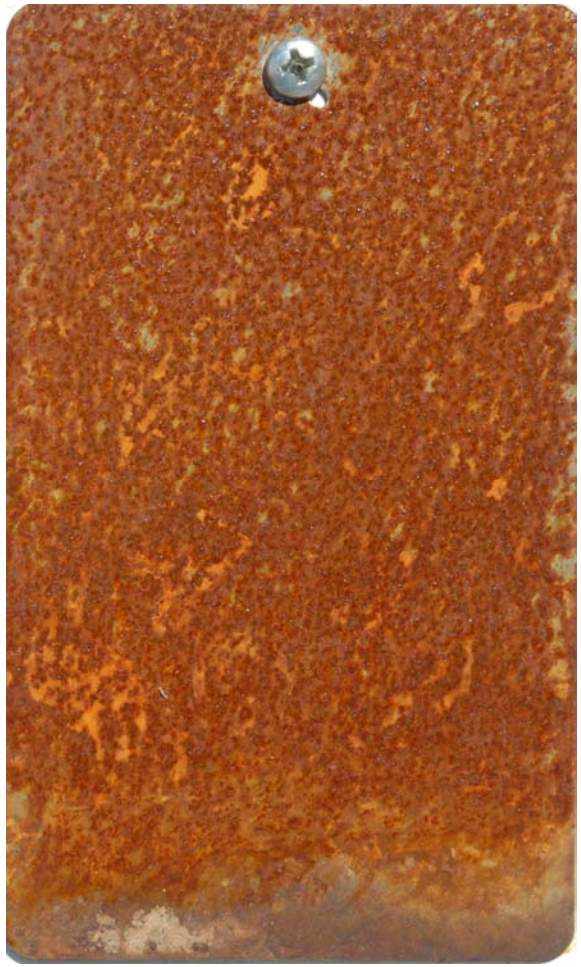


Liquid Wrench

TC-11

PB Blaster

Day Twenty-Five



Liquid Wrench

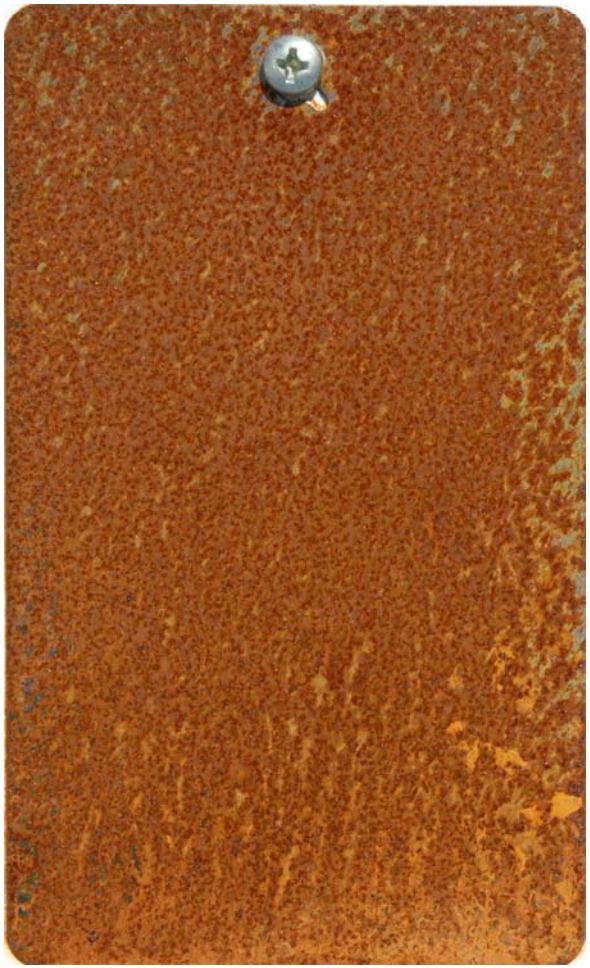
TC-11

PB Blaster

Day Twenty-Six

Liquid Wrench

TC-11



PB Blaster

Day Twenty-Seven

Liquid Wrench

TC-11

PB Blaster

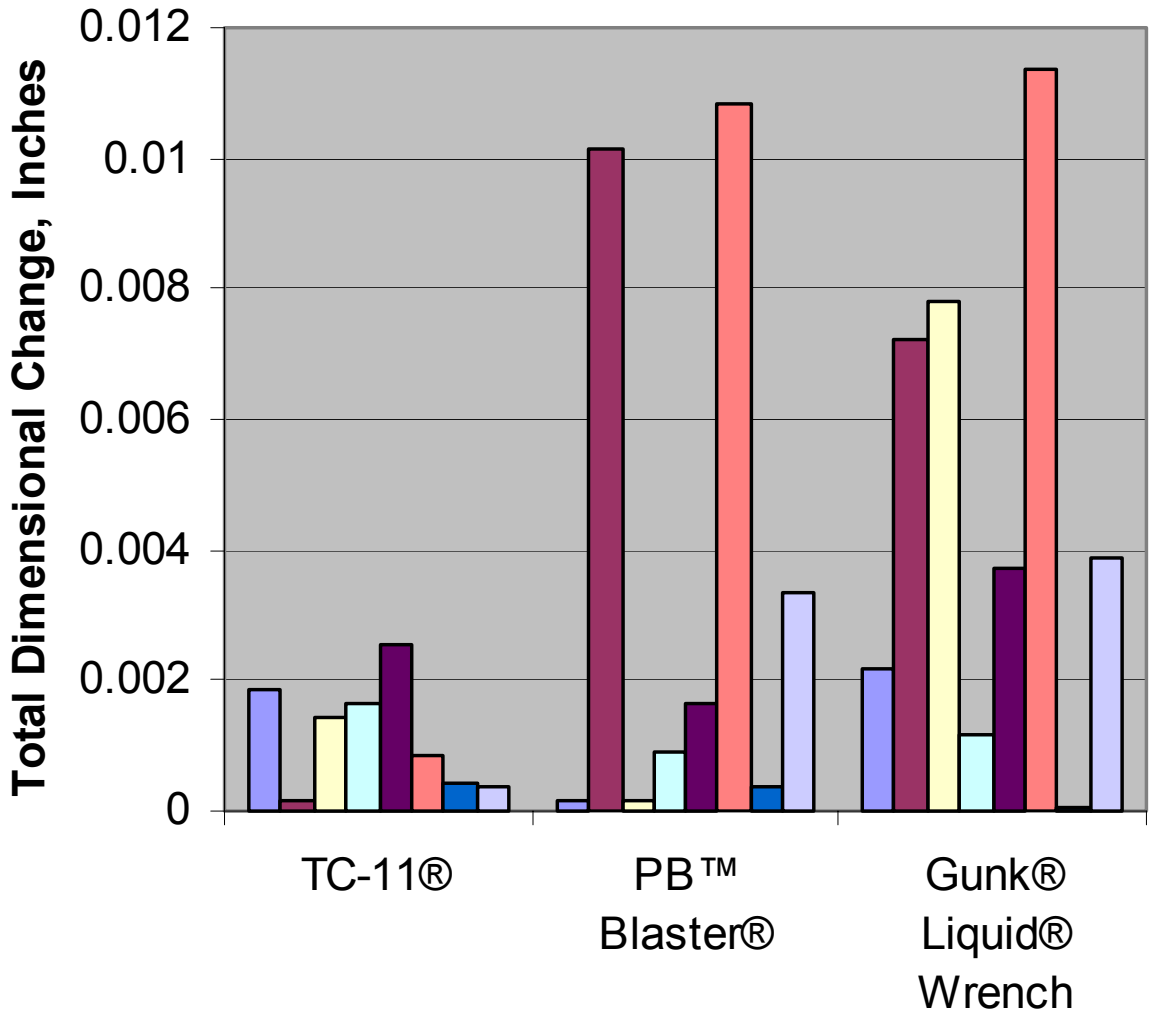
Corrosion Test Conclusions

1. Liquid Wrench failed after two days of exposure.
2. PB Blaster failed after two days of exposure.
3. TC-11 failed after 24 days of exposure.
4. TC-11 offers significantly better corrosion control performance than Liquid Wrench or PB Blaster.

Compatibility Testing Methodology

- The test coupons were 1” diameter x ½” thick pieces of elastomer selected on the basis of sensitivity to solvents.
- The thickness of each coupon was measured with a digital micrometer.
- The coupon was treated once with a product.
- The thickness of the coupon was measured for a two week period with a micrometer.
- The thickness of an untreated coupon was measured for a two week period.
- The difference in the dimensional changes between the treated coupon and the un-treated coupon was calculated.
- The test results were plotted on a graph in the order of performance.

Compatibility Test Results



- Buna-N - O-rings, diaphragms, seals
- Silicone - Electrical insulation, gaskets, seals
- Latex - Erasers, gaskets, tank liners, seals
- Neoprene - Wetsuits, belting, seals, and insulation
- SBR - Insulation, conveyor belts, gasketing, washers
- Butyl - Inner tubes, garden hose, seals
- Hypalon - Wet suits, seals, gasketing
- EPDM - Engine mounts, body mounts, CV joint boots

Compatibility Test Conclusion

TC-11 is more compatible with the sensitive elastomers tested than Liquid Wrench or PB Blaster.

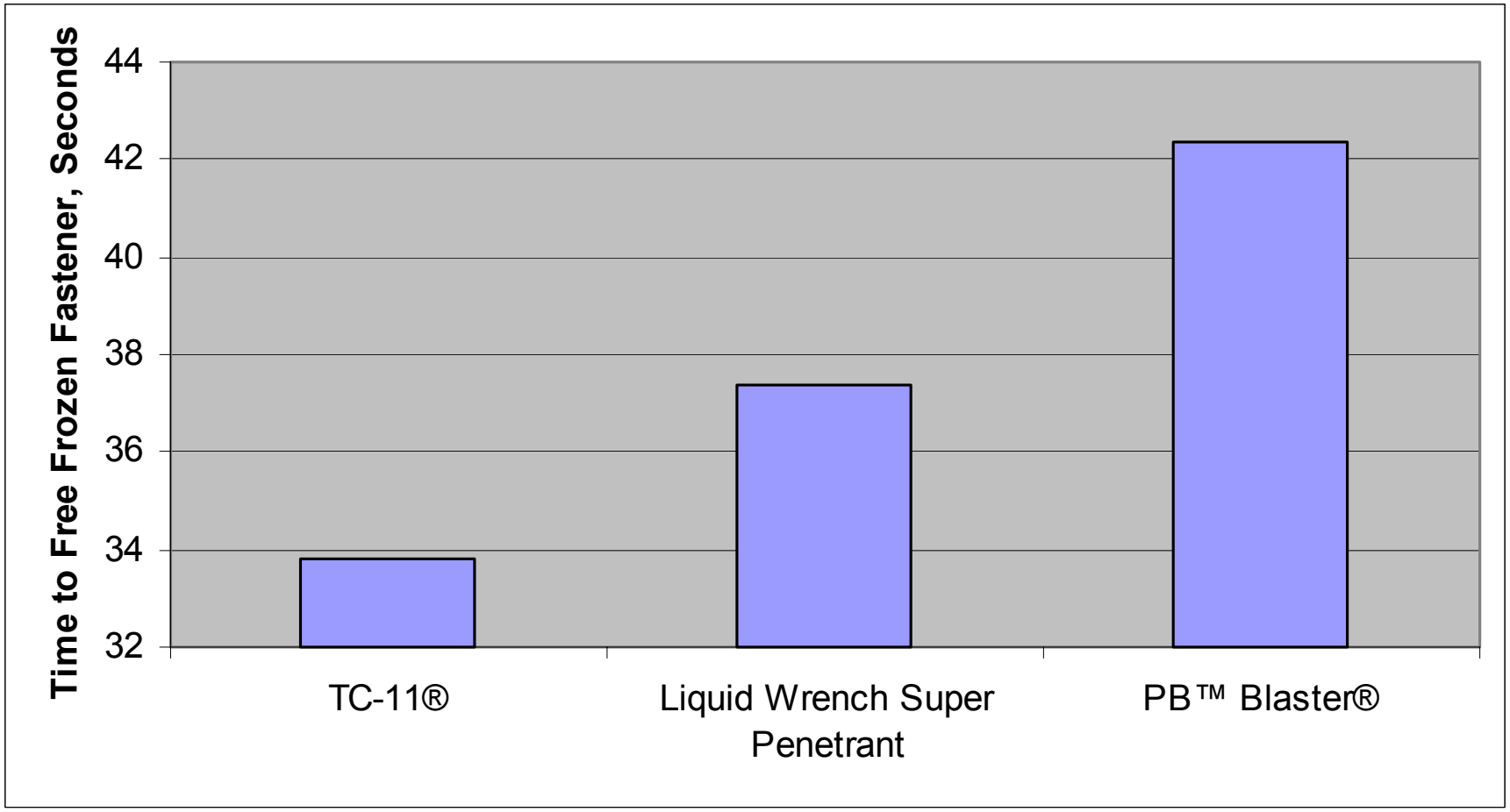
Penetration Testing Methodology

ICC learned about the penetrating ability of TC-11 from customers. Customers indicated that TC-11 was able to free frozen parts and fasteners even if all other products and all other techniques had failed.

ICC implemented a penetration test using the following test protocol:

1. Steel nuts and bolts were used to make a test coupon with 35 foot-pounds of torque.
2. The test coupons were allowed to weather for eight months by exposing them to sunlight and rainfall.
3. Randomly selected test coupons were mounted in a fixture and pre-loaded with 40 foot-pounds of torque.
4. A penetrating oil was applied to the coupon.
5. The amount of time required for the coupon to “un-freeze” was measured with a stop watch.
6. The process was repeated three times for each product.

Penetration Test Results



Penetration Test Conclusion

TC-11 offers better penetrating capability than Liquid Wrench or PB Blaster