

# Test Report

---

## **Sand Abrasion Resistance of Oxifree TM198 Coating System**

4/3/2013

For

**Mr. Ed Hall  
Oxifree Global LLC  
22955 SH 249, Ste 6  
Tomball, Texas 77375  
Phone: (281) 251-7171  
Email: Ed.Hall@oxifree.com**

Prepared by

**Benjamin T. A. Chang, PhD, PE  
Certified NACE Coating Inspector, Certified NACE/SSPC Protective Coating Specialist  
President, PolyLab LLC  
10400 Westoffice Dr. Ste 107, Houston, TX 77042, USA  
Email – Benjamin.Chang@PolyLab LLC.com  
Phone# - (713) 783-7659**

# 1. Report Title:

## Sand Abrasion Resistance of Oxifree TM198 Coating System

### 2. Test Method:

ASTM D968 Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive.

The test apparatus is shown in Figure 1. A total of 200 liters of the standard abrasive specified in the ASTM D968 Standard was directed onto the surface at 45 degree. The thickness in the test area was compared to the thickness in the same area prior to testing. The test area was also examined under a microscope.



**Fig. 1 ASTM D968 Sand Abrasion Test Apparatus**



**Fig.2 The Sand Abrasion Test Sample at 45 Degree to the Falling Sand.**

### 3. Test Samples

Test sample 3”x 6” x 4mm (thickness) prepared by Oxifree Co is shown in Figure 3. .



**Fig. 3 Sand Abrasion Test Sample, 3” x 6” x 4 mm (thickness)**

### 4. Test Result

The sample after sand abrasion test is shown in Figure 4. There was little measurable DFT loss as determined by thickness readings using a micrometer after 200 liters of sand falling on the sample. The sand abrasion of the sample is estimated to be 0.5 mil at most. The sand abrasion resistance is 400 liters per mil of Oxifree TM198 Coating. In comparison with epoxy coating, the typical sand abrasion value would be about 40 liters per mil of epoxy coating. Therefore, the sand abrasion resistance of the elastomeric Oxifree TM198 coating is much better than a hard epoxy coating.



**Fig 4 Oxifree TM198 Coating after ASTM D968 Sand Abrasion Test**

The black line is from a permanent marker and was drawn after testing was completed. The crescent marks are cuts from the sharp edge of the micrometer made during measurement attempts.