

Test Report

Flexibility of Oxifree TM198 Coating System at -50°C

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For

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1. Report Title:

Flexibility of Oxifree TM198 Coating System at -50°C

2. Test Method:

ASTM D790 Standard Test Methods for “Flexural Properties of Unreinforced and Reinforced Plastics” is used to make the flexural strain measurement. The flexural strain is calculated with the following equation;

$$\varepsilon_f = \frac{6Dd}{L^2}$$

where:

ε_f = strain in the outer surface, (in./in.),

D = maximum deflection of the center of the beam, (in)

L = support span, (in.), and

d = Sample thickness, (in.).

The five samples are cooled in a low temperature chamber to – 60 °C. One sample is taken out of the chamber one by one. Each sample is tested within 15 seconds after its removal from the cold temperature chamber. The sample is bent with a three-point bending fixture. The maximum deflection limit is approximately 1.45”. The maximum deflection limit is reached without fracture. The sample is still flexible even at -50 °C.

3. Test Samples and Results

Table 1 ASTM D790 Flexibility Test Result of Oxifree TM198 Coating System at -50 °C

Sample	Width, in	thickness, d	Span, L	Deflection, D	Flex Strain
ID#	in	in	in	in	%
121103-1	0.5155	0.0925	3	>1.4595	>9.0
121103-2	0.5155	0.090	3	>1.473	>8.8
121103-3	0.5155	0.097	3	>1.4405	>9.3
121103-4	0.5155	0.0795	3	>1.4715	>7.8
121103-5	0.5155	0.089	3	>1.4575	>8.6

Note: All samples are bent to the machine limit without fracture.

4. Conclusion

The Oxifree TM198 Coating System remains to be flexible even at -50 °C.