



February 26, 2001

Reissued August 4, 2006

Mr. Eugene Levin, Ph.D.
NeoPoxy
27057 Industrial Blvd.
Hayward, CA 94545

Re: Chemical Resistance Testing of
Epoxy Resin NPR-5300 Series Plate Samples

Dear Mr. Levin:

Please find attached chemical resistance test results for nine (9) samples of cured epoxy material plate samples. The samples were cut and test specimens were prepared by HTS laboratory personnel. The testing program was conducted in general accordance with the following:

- ASTM F1216, "Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube".
- ASTM D543, "Test Method for Resistance of Plastics to Chemical Reagents".
- ASTM D2122, "Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings".

The initial weight and dimensions of each specimen were recorded prior to immersion. One (1) sample of 5 specimens was utilized as a control base sample.

Eight (8) samples were immersed in 8 different chemical reagents in accordance with ASTM F1216, section X2, Table X2.1. The samples were exposed to the reagents for a period of 30 days. At the end of 30 days the specimens from each sample were removed from the reagent containers, rinsed, dried, weighed and dimensions recorded.

The samples were then tested for flexural stress and modulus of elasticity. A summary of all test data and percent change in each property is included in the attached summary of test data. ASTM F1216, Section X2.2.1 states that the test specimens should lose no more than 20% of their initial flexural strength and flexural modulus during the exposure time. As indicated by these test results, these samples comply with that specification requirement.

Should you have any questions or comments regarding these tests or this report, please do not hesitate to call us. Thank you very much.

Sincerely,

Larry L. McMichael
Vice President
F/letters/2001/HTS-1828

SUMMARY OF TEST DATA

RESISTANCE OF EPOXY MATERIAL SAMPLE TO CHEMICAL REAGENTS

Chemical Reagent (Concentration)	Mechanical Property	Test Method ASTM D	Unit	Control Sample	30 Days	
					Value	% Change
Tap water - pH 6-9 (100%)	Observation	543		N/A	No Change	
	Weight	543	g	172.23	172.67	0.26
	Thickness	2122	in.	0.306	0.306	0.00
			mm.	7.8	7.8	0.00
	Max. Flexural Modulus	790 790	psi psi	13219.2 587537	12290.1 524007	-7.03 -10.81
Nitric Acid (5%)	Observation	543		N/A	No Change	
	Weight	543	g	166.66	167.62	0.64
	Thickness	2122	in.	0.294	0.294	0.00
			mm.	7.5	7.5	0.00
	Max. Flexural Modulus	790 790	psi psi	13219.2 587537	12714.4 524930	-3.82 -10.66
Phosphoric Acid (10%)	Observation	543		N/A	No Change	
	Weight	543	g	171.43	172.83	0.82
	Thickness	2122	in.	0.300	0.300	0.00
			mm.	7.6	7.6	0.00
	Max. Flexural Modulus	790 790	psi psi	13219.2 587537	12536.5 521778	-5.16 -11.19
Sulfuric Acid (10%)	Observation	543		N/A	No Change	
	Weight	543	g	183.46	184.25	0.43
	Thickness	2122	in.	0.318	0.318	0.00
			mm.	8.1	8.1	0.00
	Max. Flexural Modulus	790 790	psi psi	13219.2 587537	12932.0 536063	-2.17 -8.76

SUMMARY OF TEST DATA
RESISTANCE OF EPOXY MATERIAL SAMPLE TO CHEMICAL REAGENTS

Chemical Reagent (Concentration)	Mechanical Property	Test Method ASTM D	Unit	Control Sample	30 Days	
					Value	% Change
Gasoline (100%)	Observation	543		N/A	No Change	
	Weight	543	g	171.33	171.36	0.02
	Thickness	2122	in.	0.300	0.300	0.00
			mm.	7.6	7.6	0.00
	Max. Flexural Modulus	790	psi	13219.2	12187.1	-7.81
		790	psi	587537	587001	-0.09
Vegetable Oil (100%)	Observation	543		N/A	No Change	
	Weight	543	g	155.74	155.9	0.10
	Thickness	2122	in.	0.278	0.278	0.00
			mm.	7.1	7.1	0.00
	Max. Flexural Modulus	790	psi	13219.2	13586.0	2.62
		790	psi	587537	591169	0.62
Detergent (0.1%)	Observation	543		N/A	No Change	
	Weight	543	g	161.81	162.27	0.28
	Thickness	2122	in.	0.280	0.280	0.00
			mm.	7.1	7.1	0.00
	Max. Flexural Modulus	790	psi	13219.2	12042.3	-8.90
		790	psi	587537	528921	-9.98
Soap (0.1%)	Observation	543		N/A	No Change	
	Weight	543	g	218.28	218.82	0.25
	Thickness	2122	in.	0.322	0.322	0.00
			mm.	8.2	8.2	0.00
	Max. Flexural Modulus	790	psi	13219.2	12734.4	-3.67
		790	psi	587537	537314	-8.55