

FIREX™ RX-2373

Introduction

FIREX™ RX-2373 is a modified epoxy binder filled with thermally active materials that form cooling gases when exposed to temperatures above 350°F. When heated in the approximate range of 1000°F to 5000°F is applied, a char forms which insulates by transpirational cooling and re-radiation. In addition, filler materials more efficiently control the release of gaseous molecular species.

This char layer may be brushed away after partial use and the FIREX™ RX-2373 re-used or refurbished with additional material. It adheres well to metals, wood, paper, and glass, and readily accepts a top coat.

FIREX™ RX-2373 is furnished solvent-free as "A" and "B" components with a shelf life of six months. When thoroughly mixed, the material may be applied by screeding or troweling and can be injection molded. Pot life and cure time may be adjusted for a variety of applications by the addition of small amounts of solvent. RX-2373 cures at room temperature with a final density of 0.045 lbs./in³.

Physical Properties

Property	Typical Values	ASTM or Test Method
Tensile Strength, (psi)		D638-68
@ -65°F	4000	
@ 73°F	810	
@ 200°F	43	
Ultimate Elongation %		D638-68
@ -65°F	X 1	
@ 73°F	3	
@ 200°F	13	
Compressive Strength, (psi)		D695-63T
@ -65°F	16900	
@ 73°F	2490	

@ 200°F	160	
Flexural Strength, (psi)		
@ -65°F	6240	
@ 73°F	1940	
@ 200°F	160	D790-66
Lap Shear Strength, (psi)		
@ -65°F	2120	
@ 73°F	680	
@ 200°F	49	D1002-64
Izod Impact Strength, (psi)		
ft. lbs./in. of notch	0.23	
@ -65°F	0.52	
@ 73°F	0.33	
@ 200°F		D256-56
Coefficient of Thermal Expansion (in./in./°C) 10 ⁻⁵	9.4	D696-44
Thermal Conductivity BTU/(hr·ft·°F)	0.135	Cenco-Fitch
Specific Heat cal/g·°C	0.47	C351-61
Volume Resistivity 10 ¹¹ ohm-cm	1.28	D257-66
Dielectric Strength (volts/mil)	270	D149-64
Arc Resistance (sec)	78	D495-61
Dielectric Constant		
@ 60 c	25	
@ 1 mc	5.2	D150-65T
Dielectric Factor		
@ 60 c	0.34	
@ 1 mc	0.08	D150-65T

FIREX™ RX-2390

Introduction

FIREX™ RX-2390 is a modified epoxy binder filled with thermally active materials that form cooling gases when exposed to temperatures above 350°F. When heated in the approximate range of 1000°F to 5000°F is applied, a char forms which insulates by transpirational cooling and re-radiation. In addition, filler materials more efficiently control the release of gaseous molecular species.

This char layer may be brushed away after partial use and the FIREX™ RX-2390 re-used or refurbished with additional material. It adheres well to metals, wood, paper, and glass, and readily accepts a top coat.

FIREX™ RX-2390 is a two-part epoxy resin system. It is produced in sprayable and trowelable versions, with a shelf life of six months, as well as precured panels. This material can be applied to vertical surfaces without sagging or slumping. Coating thickness up to 60 mils can be applied in a single pass. RX-2390 cures at room temperature, with a final density of 0.045 lbs./in³.

Physical Properties

Property	Typical Values	ASTM or Test Method
Tensile Strength, (psi)		D638-68
@ -65°F	4000	
@ 73°F	810	
@ 200°F	43	
Ultimate Elongation %		D638-68
@ -65°F	X 1	
@ 73°F	3	
@ 200°F	13	
Compressive Strength, (psi)		D695-63T
@ -65°F	16900	
@ 73°F	2490	
@ 200°F	160	
Flexural Strength, (psi)		

@ -65°F	6240	D790-66
@ 73°F	1940	
@ 200°F	160	
Lap Shear Strength, (psi)		D1002-64
@ -65°F	2120	
@ 73°F	680	
@ 200°F	49	
Izod Impact Strength, (psi)		D256-56
ft. lbs./in. of notch	0.23	
@ -65°F	0.52	
@ 73°F	0.33	
@ 200°F		
Coefficient of Thermal Expansion (in./in./°C) 10 ⁻⁵	9.4	D696-44
Thermal Conductivity BTU/(hr·ft·°F)	0.135	Cenco-Fitch
Specific Heat cal/g·°C	0.47	C351-61
Volume Resistivity 10 ¹¹ ohm-cm	1.28	D257-66
Dielectric Strength (volts/mil)	270	D149-64
Arc Resistance (sec)	78	D495-61
Dielectric Constant		D150-65T
@ 60 c	25	
@ 1 mc	5.2	
Dielectric Factor		D150-65T
@ 60 c	0.34	
@ 1 mc	0.08	

FIREX™ RX-2376

Introduction

FIREX™ RX-2376 is a polyurethane based coating containing active fillers that form a liquid film at temperatures of 250°F or higher. Under conditions of aerodynamic heating, this film is swept away by the air stream without affecting airfoil characteristics or electrical transmission. As long as unreacted material remains, the substrate temperature will be approximately 250°F.

Thermal and Physical Properties

Property	Typical Values
Heat of ablation	1800 BTU/lb.
Activation temperature	280°F
Substrate temperature	250°F
Specific heat	0.4 BTU/lb·°F
Thermal conductivity	0.14 BTU/(hr·ft·°F)
Density (maximum)	0.04 lb/in ³
Tensile strength (at 72°F)	1000 psi
Ultimate elongation (at 72°F)	5%

Application

FIREX™ RX-2376 is a two-component liquid system that is mixed in the ratio of 100 parts component A to 172.5 parts component B. Pot life is approximately one hour at room temperature. Conventional suction type paint spray equipment can be used for application of the material after mixing. To ensure maximum thickness uniformity and a smooth surface, it is recommended that the substrate being coated be in a horizontal position.

A maximum thickness of 20 to 30 mils can be applied at one time. For applications requiring thicker coatings, 20 to 30 mils should be applied per pass and a six-hour drying time allowed between passes. Cure time is 24 hours. Cured materials remain stable at temperatures from -65°F to +200°F.

FIREX™ RX-2376 has a limited shelf life characteristic of many polyurethane-based materials. As long as the containers are kept tightly sealed, shelf life is at least 30 days at 70°F. Shelf life can be extended up to 90 days by refrigeration.

FIREX™ RX-2390NS

Introduction

FIREX™ RX-2390NS is the same as FIREX™ RX-2390 but made without solvents. FIREX™ RX-2390NS is a modified epoxy binder filled with thermally active materials that form cooling gases when exposed to temperatures above 350°F. When heated in the approximate range of 1000°F to 5000°F is applied, a char forms which insulates by transpirational cooling and re-radiation. In addition, filler materials more efficiently control the release of gaseous molecular species.

This char layer may be brushed away after partial use and the FIREX™ RX-2390NS can be re-used or refurbished with additional material. It adheres well to metals, wood, paper, and glass, and readily accepts a top coat.

FIREX™ RX-2390NS is a two-part epoxy resin system without solvents. It is produced in sprayable and trowelable versions, with a shelf life of six months, as well as precured panels. This material can be applied to vertical surfaces without sagging or slumping. Coating thickness up to 60 mils can be applied in a single pass. RX-2390NS cures at room temperature, with a final density of 0.045 lbs./cu.in.

Physical Properties

Property	Typical Values	ASTM or Test Method
Tensile Strength, (psi)		D638-68
@ -65°F	4000	
@ 73°F	810	
@ 200°F	43	
Ultimate Elongation %		D638-68
@ -65°F	X 1	
@ 73°F	3	
@ 200°F	13	
Compressive Strength, (psi)		D695-63T
@ -65°F	16900	
@ 73°F	2490	
@ 200°F	160	

Flexural Strength, (psi)		
@ -65°F	6240	D790-66
@ 73°F	1940	
@ 200°F	160	
Lap Shear Strength, (psi)		
@ -65°F	2120	D1002-64
@ 73°F	680	
@ 200°F	49	
Izod Impact Strength, (psi)		
ft. lbs./in. of notch	0.23	D256-56
@ -65°F	0.52	
@ 73°F	0.33	
@ 200°F		
Coefficient of Thermal Expansion (in./in./°C) 10 ⁻⁵	9.4	D696-44
Thermal Conductivity BTU/(hr·ft·°F)	0.135	Cenco-Fitch
Specific Heat cal/g·°C	0.47	C351-61
Volume Resistivity 10 ¹¹ ohm-cm	1.28	D257-66
Dielectric Strength (volts/mil)	270	D149-64
Arc Resistance (sec)	78	D495-61
Dielectric Constant		
@ 60 c	25	D150-65T
@ 1 mc	5.2	
Dielectric Factor		
@ 60 c	0.34	D150-65T
@ 1 mc	0.08	

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