

Fire Test Results for Marinite I

ASTM E662 Smoke Generation
ASTM E162 Surface Flammability
BSS 7239 Smoke Toxicity Test

Marinite I has been used in rail transportation applications for many years. Normally, test method ASTM E84, Surface Spread of Flame, has been adequate to convince code officials and engineers of Marinite's exceptional performance in Fire situations. The zero smoke, zero flame spread designation is the best test result that can be given to a material under the ASTM E 84 method. Recently, however, the Massachusetts Bay Transportation Authority asked BNZ to provide additional data about Marinite I's performance characteristics in high temperature fire environments. Because of Marinite's low, toxicity, smoke and flame spread, it will be used in a new light railcar transportation system near Boston.

As with any great product we sometimes forget what a marvelous material Marinite I is when exposed to high heat and flame. It does not generate toxic gases when it is exposed to high temperature, thus protecting the passengers from heat and noxious odors normally associated with other materials. As new light rail systems, off shore drilling rigs and ship rehabilitation programs are growing, the use of Marinite is a natural because of its low cost, easy fabrication and superior fire performance characteristics.

A comparison of Marinite I versus the desired performance characteristics is displayed below.

Toxicity Test, BSS 7239. (Test Method for Toxic Gas Generation by materials on Combustion)

Type of Gas	Concentration at 4 minutes, ppm	Specified performance level, ppm
CO Carbon Monoxide	50	3,500
HCl Hydrochloric Acid	None detected	500
HCN Hydrocyanic Acid	None detected	150
HF Hydrogen Fluoride	None detected	200
NOx Oxides of Nitrogen	Trace	100
SO2 Sulfur Dioxide	None detected	100

ASTM E662, Optical Density of Smoke Generated by Solid Materials.

Marinite I Smoke Density at 4.0 minutes, 0.0
Required Smoke Density at 4.0 minutes, 100

ASTM E162 Surface Flammability of Materials using a Radiant Heat Energy Source.

Marinite I Flame Spread Index, 1.0
Required Flame Spread Index, 25.0

If you need a copy of the official fire test report please contact the Billerica Plant or BNZ Corporate Headquarters.