

REFRASIL®

Refractory silica in textile form

INSULATION

APPLICATION
BULLETIN
R-1

REFRASIL tape curtains on brazing furnace save up to 1/3 on natural gas requirements



Photo of the silver brazing furnace at Aeronutronic Ford Corporation in Connersville, Indiana, shows automotive parts exiting. The REFRASIL tape curtains perform in temperatures of 1400-2000° F.

By installing twin REFRASIL tape curtains at entrance and exit ends of three Sunbeam brazing furnaces, Aeronutronic Ford Corporation's Refrigeration Products Division reduced total natural gas requirements for the furnaces approximately one-third. The curtains serve both as a combustion chamber to burn off escaping gases and as a barrier to further escaping gases. Each curtain is made of six double rows of 17-inch-long, 1-inch-wide REFRASIL tape material.

The REFRASIL tape curtains used by Aeronutronic Ford perform in a temperature estimated to be 1400-2000° F. In this application, the curtains last an average of one week.

"That is a good service life," Howard Bowers, Maintenance General Foreman for the Connersville plant, says. "It's the best product for the application we could find and we've evaluated a number of other materials. Asbestos curtains, for example, have been tried, but they soon burn to a powder. This then flakes on the parts going through the line, contaminating them. Service life for asbestos curtains is two days. We also tried a glass fiber filament tape, but it too would flake and contaminate the products going through the line. Its service life was less than one 8-hour shift. A metal foil tape was tried, but it rapidly deteriorated in the high temperatures it was exposed to."

The brazing lines at Aeronutronic Ford are used in sub-assemblies of automotive air-conditioning components. The hydrogen-copper brazing line, for example, treats accumulators, receiver/dryers, and hose fittings. Another furnace is used for nitrogen vacuum brazing of evaporators. The furnaces run 24 hours a day.

"The natural gas savings are very significant to us," Bowers says. "We found the REFRASIL tape was a little more expensive than asbestos and filament tape, but its added service life coupled with the natural gas savings make it very attractive to us."

REFRASIL textile is an amorphous silica in a continuous filament fiber. It stands up in continuous use at temperatures to 1800°F with little or no change in properties and will not melt or vaporize until temperatures exceed 3100 F. REFRASIL products are available as fabric, yarn, cordage, bulk fiber, sleeving and batt.

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