PRODUCT DATA SHEET

HIGHLIGHTS:

Hi Temp's R51 material is solvent-resistant and water-resistant.
Hi Temp's R51 material does not emit airborne fibers.
Hi Temp's R51 material will not produce toxic gases.
Hi Temp's R51 material can withstand a temperature in excess of 1750^{0}F.

R51 - 32 Oz COATED FIBERGLASS WELDING BLANKET

Fiberglass cloth impregnated with Hi Temp's proprietary silicone elastomer coating. This material weights 32 oz/yd^2 and is capable of withstanding temperatures in excess of 1750^{o}F. This material is solvent-resistant, water-resistant, and meets all industry safety standards for toxic gases.

R51-39-32	**Rolls 39.25" X 150' (1 X 45.72 meters)**
R51-61-32	**Rolls 61" X 150' (1.55 X 45.72 meters)**
R51-L x W-32-B	**Cut blankets in various sizes**
Temperature Limitations for Short Periods	**Up to 1750°F (954°C) *****
Temperature Limitations for Continuous Use	**Up to 900°F (482°C) *****
Thickness Availabilities	**0.032" (0.76mm)**
Density Availabilities	**32 oz/yd^2 (1.08 kg/m^2)**
Typical Uses	**Welding blanket, welding curtains, heat shields, and splash curtains for molten metals, pre-heat pads, and airtight wear resistant backing for insulated materials.**

*****Because this material is used in widely varied applications, we do not guarantee the applicability or accuracy of the technical information included herein. This is a guide only without guarantee. We recommend making your own tests in your specific application on the material of interest.**

Why Use Hi Temp's Silicone Coated Fire Blanket

Hi Temp's silicone coated fire blanket has excellent heat and flame characteristics: ***Advertised temperature limitations for fire blankets are often overstated by the manufactures. Tests conducted on the R51 material indicate that our temperature limitations are on the conservative side*** (Note 1).

Hi Temp's silicone coated fire blanket materials do not release toxic gases when exposed to intense heat or flame: ***The U.S. Department of Energy warns that some welding blankets release copious amounts of toxic fumes. Tests conducted by the Alberta Research Council confirm that the R51 material does not release toxic fumes*** (Note 2).

Hi Temp's silicone coated fire blanket is solvent and water-resistant: Welding blankets are often exposed to solvents. A fire blanket that is not solvent resistant can become an extreme fire hazard if solvent is absorbed into the material.

Hi Temp's silicone coated fire blanket does not emit airborne fibers: NIOSH classifies fiberglass fibers as a nuisance particulate. Hi Temp's silicone rubber coating encapsulates the fibers preventing them from becoming an irritation.

Hi Temp's R51 32 oz material has achieved **UL1709** and **CANULCS109** standards as independently tested by Intertek laboratories and Applied textiles test labs. (Note 3) (Note 4) (full test reports are available per request)

(See reverse for more information)

NOTES

Note 1: *The Alberta Research Council conducted a specifically designed test. This test is considered to be one of the most stringent tests of a welding blanket to withstand prolonged exposure to molten stainless steel (for reference austenitic stainless steel has a melting range from 2500oF/1375oC to 2650oF/1450oC).*

This test involved forming large molten metal droplets with a plasma cutter 18" above a horizontally mounted piece of material. The molten metal droplets were allowed to fall directly onto the material and remain there until cooled. The metal droplets remained glowing hot for 10-15 seconds after contacting the blanket. None of the molten metal droplets passed through the material or caused the material to combust.

Note 2: *Toxic Fumes: The U.S. Department of Energy released a report warning of the unexpected hazards when using welding blankets (The Unexpected Hazards, Issue #19, U.S. Department of Energy – report is attached). This bulletin was in response to an incident that saw four workers overcome by toxic fumes when a welding blanket they were using was exposed to the flame from a welder's torch. The report concludes that the some welding blankets release copious amounts of toxic fumes. The toxic fumes were identified as hydrochloric acid (HCl), cyanide (HCN), nitrogen oxide (NOx), and carbon monoxide (CO).*

This report and another similar incident in Washington State prompted HI TEMP to test its materials for the toxic fumes identified above. The Alberta Research Council carried out the tests on HI TEMP's materials, using a similar method to the method outlined in the report, and found any fumes produced were well within the threshold limit values.

Note 3:*CAN/ULC-S109 (NFPA 701)*

Fabrics used in most public spaces (including schools, churches, auditoriums, theatres, and more.) is required by law in many states and cities to be certified as flame retardant, according to standards developed by the National Fire Protection Association (NFPA). NFPA has various standards depending on how the fabric will be used. In the case of draperies, curtains, and similar hanging textiles, the standard that applies is NFPA 701: Standard Methods of Fire Tests for Flame Propagation of Textiles and Films. This test measures the flammability of a fabric when it is exposed to specific sources of ignition. NFPA 701 (Small Scale) testing measures the ignition resistance of a fabric after it is exposed to a flame for 12 seconds. The flame, char length, and flaming residue are recorded.

The fabric will pass the test if all samples meet the following criteria:

An after flame of less than 2.0 seconds

A char length of less than 6.5"

The specimen does not continue to flame after reaching the floor of the test chamber

Fabric certified as flame retardant is certified to have been tested and passed the NFPA 701 test.

Note 4: *Underwriters Laboratory UL 1709*

A quick over view of the UL 1709 test is that it is measuring the ability of Hi Temp's material to protect the integrity of a steel beam to a fully exposed rapidly heat rising fire over a 2 hour time period.

Scope of the UL 1709 Test

1.1 This standard describes a test method for measuring the resistance of protective materials to rapid-temperature-rise fires.

1.2 The test method covers a full-scale fire exposure, intended to evaluate the thermal resistance of protective material applied to structural members and the ability of the protective material to withstand the fire exposure.

1.3 The standard describes the minimum testing requirements for classification, the limits of applicability of test results and acceptable methodology to determine the classification achieved.

1.4 The test method includes a supplementary test method for beams, intended to evaluate the ability of protective materials to perform when subject to significant deflections, for use in conjunction with the full-scale exposure test and applicable for beams and other sections subject to bending. Information published in accordance with this test method may also include product design tables for beams and sections subject to bending derived from the supplementary test method and accompanying methodology.

1.5 Information published in accordance with this test method may also include supplementary product design tables for alternate limiting temperatures derived from a multi-temperature analysis. Such tables are provided to aide in conditions where a performance-based-design approach is implemented, but are not part of the classification.