

REFREX® 1200

Introduction

Refrex® 1200 woven fabrics are designed to meet the toughest thermal, mechanical and electrical performance requirements. These fabrics can perform beyond many use limits of other high temperature textiles such as aramids, carbon, quartz or glass.

Refrex® fabrics are woven from true ceramics. They are oxidation resistant, chemically inert, lightweight, electrically insulating at high temperatures, flexible, and fire, flame and heat resistant.



Features and Benefits

- Non-oxidizing
- Non-hygroscopic
- Good chemical resistance
- Low thermal conductivity
- Good abrasion resistance
- Fire and flame resistant

Important Processing Information

Heat Cleaning: Refrex® 1200 woven fabrics are coated during manufacture with sizings or finishes to serve as aids in textile processing. The sizings or finishes consist of organic polymers which, when first heated, may ignite and/or decompose to potentially hazardous byproducts or process contaminants. See Safety Data Sheet or contact Insulcon for more information.

Heat Treating: If Refrex® 1200 woven fabrics are to be subjected to hot humid environments for extended periods of time (e.g., 95°C @ 100% relative humidity for ten days), heat treating is necessary. Heat treatment changes the crystal structure of the fiber preventing physical degradation in these conditions. Heat cleaning or heat treating of Refrex® ceramic fabrics are services offered by Insulcon.

Typical Applications

Application	Refrex® 1200
Continuous Use Temperature*	1200°C
Aerospace Flame barrier, thermal shields, gaskets, seals, micrometeorite debris shields	
Industrial Furnace curtains and linings, door seals, tube seals, gaskets, expansion joints, flexible couplings	
Composites Ceramic Matrix Composites (CMC), Polymer Matrix Composites (PMC)	

*40% fiber strength retention tested at room temperature after 100 hours soak

REFREX® 1200

Typical Properties

Style	Target thread count per cm		Input Fiber		Weave	Permeability (Heat cleaned)	Width cm	Sized		Heat cleaned			
	Warp	Fill	Yarn type	Denier (Tex)				Weight g/m ²	Thickness mm	Weight g/m ²	Thickness mm	Breaking strength kg/cm	
												Warp	Fill
1208	8	4	Served Roving	600(67)	10 Mesh Leno	N/A	97	110	0.38	81	0.23	5	4
1210	18	18	Served Roving	600(67)	5 Harness Satin	Med	97	290	0.41	240	0.28	25	25
1212	10	10	Roving	1200(133)	5 Harness Satin	Med	107, 147	270	0.36	270	0.28	21	23
1214	8	7	½ Yarn	900(100)	Plain Weave	High	97,150	310	0.38	300	0.36	21	21
1220	12	10	Roving	1800(200)	5 Harness Satin	Low	91,160	440	0.53	440	0.51	25	25
1229	7	7	Roving	3600(400)	4 Harness Satin	Med	127	540	0.76	542	0.71	30	29
1230	7	7	½ Yarn	1800(200)	4 Harness Satin	High	91	610	.081	610	0.76	29	30
1240	13	8	½ Yarn	1800(200)	5 Harness Satin	Med	91	810	1.0	810	0.97	30	27
1262	16	8	½ Yarn	1800(200)	Plain Double Layer	High	10,30,76	980	1.4	980	1.4	34	25

*Permeability (cfm/ft²): Low <20; Med 20-70; High >70

Emissivity: Refrex® 1230 – 0.88

Refrex® Thermal Conductivity

Typical Properties (not for specification purposes)

The tests were run in accordance with ASTM C-177-76, steady state heat transmission properties by means of the guarded hot plate.

Refrex® 1230	
T (°C)	TC (W/m°C)
100	0,107
200	0,123
300	0,139
400	0,142
500	0,145
600	0,160
700	0,174