Silicon Carbide Refractories

CUMIFRAC

USER INDUSTRIES	APPLICATION
• H.T. Insulators / Ceramics • Sanitaryware • Ferro-alloys • Foundries, Forge plants, Powder metallurgy	Kiln furniture Muffles and chamber-fronts Taphole linings Heat treatment furnace hearth

		CUMIFRAC A24		CUMIFRAC R1		CUMIFRAC SPL	
PROPERTIES	UNIT	Limit Value	Typical Value	Limit Value	Typical Value	Limit Value	Typical Value
Maximum Hot Face Temperature	°C	1550	1550	1550	1550	1550	1550
Bulk Density	gm/cc	2.50 min.	2.55	2.50 min.	2.55	2.60 min.	2.65
Apparent Porosity	%	14.0 max.	11.0	18.0 max.	15.0	12.0 max.	11.0
Cold Crushing Strength	Kg/cm^2	750 min.	900	1100 min.	1300		
Modulus of Rupture							
At Room Temperature	Kg/cm^2	175 min.	210	150 min.	175	300 min.	325
At 1250°C		200 min.	225	175 min.	200	400 min.	420
Thermal Conductivity At 1000°C Hot Face Temperature	W/m^oK	15.0 min.	15.7	15.0 min.	15.7	15.0 min.	15.9
Chemical Analysis							
SiC	%	84.0 min.	87.04	82.0 min.	85.13	86.0 min.	89.00
Al_2O_3		-	-	2.10 max.	1.70	-	-
Fe_2O_3		0.95 max.	0.56	1.20 max.	0.63	1.0 max.	0.62
Recommended Laying Mortars		CUMIBOND LS 4		CUMIBOND LS 4		CUMIBOND LS 4	

Note : The above typical values shown are based on average test result on standard samples. Properties are subjected to reasonable variation based on product shape etc. and hence should be considered for general guidence only.

CUMIFRAC Silicon Carbide refractories are produced from silicon carbide, a raw material synthesized in a resistance-type electric furnace at temperature exceeding 2500°C, through the reaction of silica with carbon. They have a thermal conductivity ten times that of fireclay refractories, good corrosion and thermal shock resistance, and can be formed into complex shapes. They can withstand slag attack and flame erosion. This makes CUMIFRAC unusual even among advanced refractories and has given it wide uses.

OUTSTANDING FEATURES

- Extremely high thermal conductivity
- Very high hot strength
- High erosion and abrasion resistance, thermal shock resistance
- Chemical inertness

CUMIFRAC A 24 : Refractory silicate-bonded SiC
CUMIFRAC R1 : Clay-bonded SiC
CUMIFRAC SPL : Refractory silicate-bonded SiC with higher strength

Feasibility of special shapes require case-by-case study by CUMI manufacturing and Technical team. We would request all our customers to kindly ask CUMI Sales Representatives for detail Product Data, Quality Assurance Plans etc. as and when applicable.

CARBORUNDUM UNIVERSAL LIMITED
SUPER REFRACTORIES
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		CUMIFRAC M		CUMIFRAC 90	
PROPERTIES	UNIT	Limit Value	Typical Value	Limit Value	Typical Value
Maximum Hot Face Temperature	°C	1500	1500	1550	1550
Bulk Density	gm/cc	2.50 min.	2.55	2.60 min.	2.65
Apparent Porosity	%	18.0 max.	16.0	16.0 max.	14.5
Cold Crushing Strength	Kg/cm^2	700 min.	850	800 min.	900
Modulus of Rupture					
At Room Temperature	Kg/cm^2	175 min.	185	-	-
At 1250°C		100 min.	125	-	-
Thermal Conductivity At 1000°C Hot Face Temperature	W/m°K	15.0 min.	15.7	-	-
Chemical Analysis					
SiC		82.0 min.	85.38	90.0 min.	91.05
Al_2O_3	%	1.0 max.	0.60	3.0 max.	2.55
Fe_2O_3		1.0 max.	0.64	0.95 max.	0.80
Recommended Laying Mortars		CUMIBOND LS 4		CUMIBOND LS 4	

Note : The above typical values shown are based on average test result on standard samples. Properties are subjected to reasonable variation based on product shape etc. and hence should be considered for general guidence only.

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OUTSTANDING FEATURES

- Extremely high thermal conductivity
- Very high hot strength
- High erosion and abrasion resistance, thermal shock resistance
- Chemical inertness

CUMIFRAC M : Alkaline earth - refractory silicate - bonded SiC
CUMIFRAC 90 : Mullite - bonded SiC

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