

# Nitride bonded Silicon carbide Tubes

## PRODUCT INFORMATION

Nitride bonded Silicon Carbide (NB SiC) tubes are an economic choice to Thermocouple sensor OEMs. These tubes can be produced to a large range of OD, ID, with several options for mounting. NB SiC does not contaminate non-ferrous melts, like cast iron tubes.

Discover our three brands and their properties.

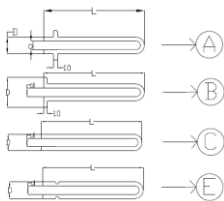
### N-Durance® Tubes

#### PROPERTIES

- Chemical inertness, high hot strength and heat shock resistance

#### TYPICAL APPLICATIONS

- Temperature Measurement of heat treating furnaces
- Non-ferrous furnaces



Type A has projections part way down from the open end.  
Type B has a flange  
Type C is without a flange  
Type E has a groove

#### Standard lengths and diameters of N-Durance® tubes:

OD	ID	Length
20 - 50 mm	8 - 26 mm	Up to 1100 mm

#### MATERIAL PROPERTIES: N-Durance®

Properties	Unit	Spec.	Typical Values
Bulk Density	g/cc	>2.75	2.80
Apparent Porosity	%	<12	8
Surface Porosity	%	<1	0.5
Cold Modulus of Rupture (At room temperature)	MPa	>150	160
Hot Modulus of Rupture (At 1400 °C)	MPa	>140	180
Modulus of Elasticity	GPa		240
Thermal Conductivity (at 1000 °C)	W/m.K		20
Co-efficient of thermal Expansion	°C		4.4x10 <sup>-6</sup>
Maximum Service Temperature	°C		1450

Apr-20

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PERFORMANCE CERAMICS & REFRACTORIES



# Nitride bonded Silicon carbide Tubes

## PRODUCT INFORMATION

### Refrax® 20E Tubes



#### PROPERTIES

- Cold end of the tube can be flanged, inserted into a threaded metal sleeve and cemented.
- Lower porosity tubes are available to improve oxidation resistance.
- Chemical inertness and heat shock resistance.

#### TYPICAL APPLICATIONS

- Non-ferrous furnaces
- Heat Treatment furnaces

#### Standard lengths and diameters of Refrax® 20E tubes:

OD	ID	Length
20 mm – 90 mm	WALL 4 – 10 mm	Up to 1600 mm

#### MATERIAL PROPERTIES: Refrax® 20E

Properties	Unit	Typical Values
Bulk Density	$\text{g.cm}^{-3}$	2.20
Apparent Porosity	%	28
Modulus of Rupture at 20 °C	$\text{N.mm}^{-2}$	25
Thermal Conductivity at 1000 °C	$\text{W/m}^{-1}\cdot\text{K}^{-1}$	18.5
Abrasion resistance - BS1902	$\text{cm}^{-3}$	80

Aug-00

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# Nitride bonded Silicon carbide Tubes

## PRODUCT INFORMATION

### CRYSTON® 789A Tubes



#### PROPERTIES

- Cold end of the tube can be flanged, inserted into a threaded metal sleeve and cemented.
- Lower porosity tubes are available to improve oxidation resistance.
- High hot strength, heat shock resistance, chemical inertness.

#### TYPICAL APPLICATIONS

- Non-ferrous furnaces

#### Standard lengths and diameters of CRYSTON® 789A tubes:

OD	ID	Length
25 mm - 40 mm	12 - 27 mm	Up to 1500 mm

#### MATERIAL PROPERTIES: CRYSTON® 789A

Properties	Unit	Typical Values
Bulk Density	g.cm <sup>-3</sup>	> 2.62
Apparent Porosity	%	< 16
Modulus of Rupture at 20 °C	N.mm <sup>-2</sup>	> 165
Thermal Conductivity at 1000 °C	W/m <sup>-1</sup> .K <sup>-1</sup>	15.5
Abrasion resistance - BS1902	10 <sup>-6</sup> /°C	5.1

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