



I SQUARED R ELEMENT CO., INC.

12600 Clarence Center Road, P.O. Box 390, Akron, New York 14001-0390

Phone: (716)542-5511 Fax: (716)542-2100 Web: www.isquaredrelement.com E-mail: sales@isquaredrelement.com

Ceramic Terminal Tubes for Starbar Heating Elements

Zircon = standard choice - suitable for most applications
Alumina = high temperature choice

Material specifications	Zircon	85% Alumina	90% Alumina	94% Alumina
chemical analysis (%)				
ZrO ₂	46	--	0.39	0.25
Al ₂ O ₃	12	85	89.4	94.9
SiO ₂	36	12.8	9.5	4
Fe ₂ O ₃	0.34	0.34	0.35	0.1
TiO ₂	0.37	0.37	0.31	0.22
Na ₂ O	0.14	0.14	0.02	0.1
CaO	--	0.09	--	<0.01
service temperature (°C)	1590	1760	1800	1518
refractories under load (°C)	1500	1670	1700	1726
density (g/cc)	3.2	5.54	2.6	2.59
apparent porosity (%)	18	20	20	20
thermal shock resistance (cycles)	>30	>30	>30	>30
thermal expansion (cm/cm °C)	7.0x10 ⁻⁶	8.0x10 ⁻⁶	8.0x10 ⁻⁶	7.9x10 ⁻⁶
thermal conductivity (W/r 500°C)	2.66	3.21	3.09	3.21
1000°C	1.77	2.15	2.34	2.34
compressive strength (Mpa)	49.5	49.5	75.8	75.8
modulus of rupture (Mpa) 20°C	--	24.6	--	--
1370°C	5.8	15.5	15.8	--
modulus of elasticity (Gpa)	56	54.1	66.5	--

Hard Ceramics



Vacuum Formed Ceramic Fibre

Lightweight Choice

