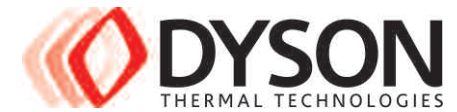


# Tin Oxide Electrodes - STANNEX



Sheet AA - Revision 4 - 01/09

## Technical Ceramics



STANNEX is Dyson Thermal Technologies' advanced high performance Tin Oxide electrode. It is made from ultra-high purity Tin Oxide, with only very small quantities of additives required to promote good sintering. This allows STANNEX to be an extremely dense product with exceptional electrical conductivity characteristics, whilst maintaining excellent refractory properties.

All STANNEX electrodes are isostatically pressed and contain no recycled or reclaimed material to ensure superb consistency and high quality production. Every electrode is individually tested and approved before despatch.

Tin Oxide is the preferred material for lead containing glasses and those which are required to have certain transmission properties in the non-visible region. Additionally in feeders, certain redox sensitive glasses (including some borosilicates) require an oxidised electrode.

A few special glasses also require Tin Oxide as a glass contact refractory in certain parts of the furnace. Depending on the required transmission characteristics of the glass in question, the sintering aid used in the manufacturing process can be altered.

STANNEX 'E' is a dense fine textured homogenous product with exceptionally high electrical conductivity. It is applicable as an electrode for lead and technical glasses with melting temperatures of 1550°C and sometimes beyond.

STANNEX 'ELR' is atmosphere treated to give low resistance at low temperatures and is recommended where back face connectors are employed.

STANNEX 'D' is even finer textured and is advantageous in certain glasses where low colouration and high transmission are paramount. It is normally not used in glasses melting above 1350°C.

(\*N.B. Under glass, STANNEX will withstand temperatures in excess of 1650°C)

Material	STANNEX 'E' and 'ELR'	STANNEX 'D'
SnO <sub>2</sub> Content %	98.5	98.0
Bulk Density g/cm <sup>3</sup>	6.5	6.5
Apparent Porosity %	7.0	4.6
Apparent Specific Gravity	6.95	6.76
Modulus of Rupture MN/m <sup>2</sup>		
@ 20°C	63	70+
@ 1000°C	9	-
@ 1200°C	9	20
@ 1400°C	13	16
Thermal Expansion Coefficient -1°C		
20-1200°C	5.3 X 10 <sup>-6</sup>	5.3 X 10 <sup>-6</sup>
Specific Heat 27°C - 800°C cal/g	0.1	0.1



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