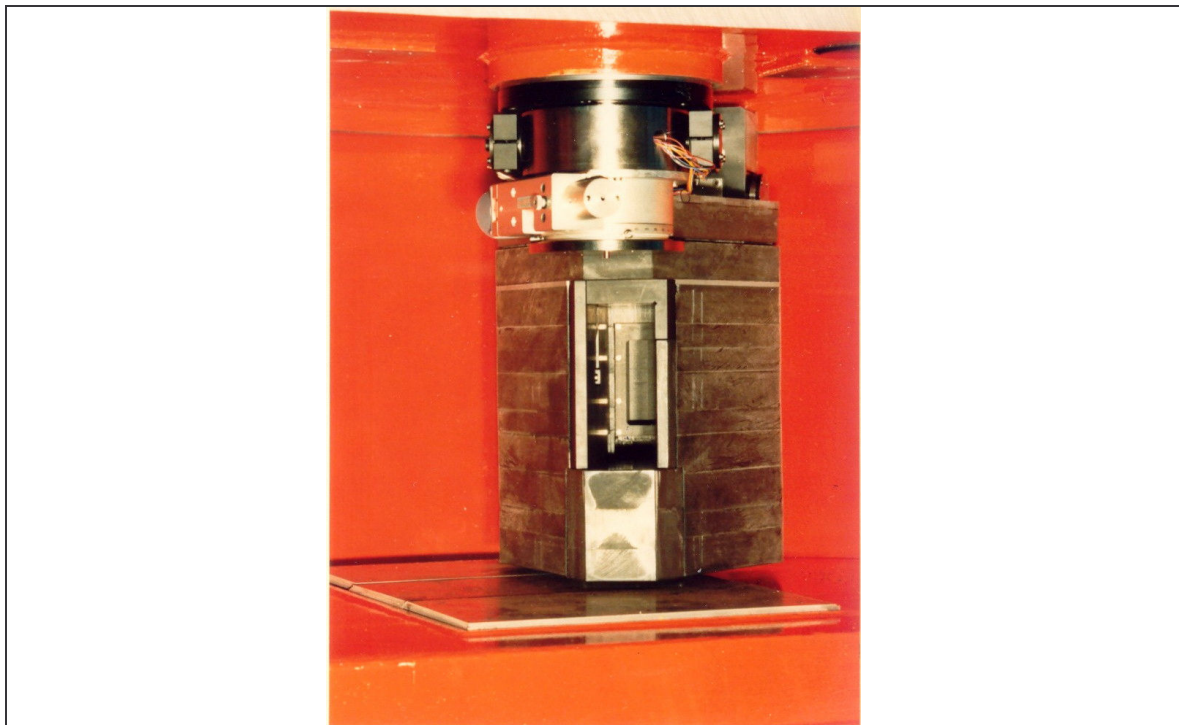


## Produktinformation

### Wefapress ST 1000<sup>®</sup> BOR30 (DIN 16972 TG2)

ST 1000<sup>®</sup> BOR30 is a material which is based on ultrahigh molecular weight low pressure polyethylene (PE-UHMW) modified with boron carbide compounds. Designed for sensitive nuclear areas, it makes an indispensable neutron shielding material and an efficient absorber of energy-intensive thermal radiation. The characteristics of ST 1000<sup>®</sup> BOR30 are as follows:

- high mechanical load bearing capacity
- extreme hardness
- high absorption of thermal neutrons
- high chemical resistance



Standard colours: granite grey (similar to RAL 7026)  
Special colours: --  
Form of delivery: sheets (2000 x 1000 pressed)  
Finished parts: --

Fields of application: • nuclear industry

## Technical Data Sheet

Material designation	ST 1000 <sup>®</sup> BOR30		
Raw material	PE-UHMW		
Material colour(s)	granite grey		
Properties	Unit	Test method	Value
Molecular weight (average molar mass)	g/mol		approx. $5 \cdot 10^6$
Mechanical properties			
Density	kg/m <sup>3</sup>	ISO 1183	960
Tensile strength	MPa	ISO 527	720
Shore D hardness 15s		ISO 868	60 - 65
Ball indentation hardness, 30s	N/mm <sup>2</sup>	ISO 2039-1	30 - 35
Yield stress	MPa	ISO 527	≥ 17
Elongation at break	%	ISO 527	≥ 200
Compression test	MPa	ISO 604	≥ 400
Notched impact strength (Charpy)	kJ/m <sup>2</sup>	ISO 11542-2	≥ 120
Abrasion	%	Sand-slurry method	100
Dynamic coefficient of sliding friction			approx. 0.3
Thermal properties			
Dimensional stability under heat			
Vicat softening temperature	°C	ISO 306	80
Crystallite melting range	°C	ISO 3146	135 - 138
Thermal conductivity at 23°C	W/m*K	ISO 52612	approx. 0.4
Specific heat at 23°C			
Coefficient of linear expansion at 23°C	K <sup>-1</sup>	ISO 11359	approx. $2 \cdot 10^{-4}$
Application temperature (min.)	°C		-200
Application temperature (briefly)	°C		90
Application temperature (max.)	°C		80
Electrical properties			
Volume resistivity	Ω m	IEC 60250	$>10^{12}$
Surface resistance	Ω	IEC 60093	$>10^{12}$
Dielectric strength	kV/mm	IEC60243	45
Relative permittivity	at 100 Hz	IEC 60250	2.1
Dielectric dissipation factor	at 100 Hz	IEC 60250	$3.9 \cdot 10^{-4}$

Notes for the user:

Data sheet specifications are made to our today's knowledge. This information does not mean that certain properties are agreed upon or assured. Whether or not a material is suitable for a given application is the user's decision. All specifications are subject to change.

Vreden, August 03