

BOROFLOAT® 33 – Mechanical Properties

The sum of its properties is what makes it unique.

BOROFLOAT® 33 from Germany is the world's first floated borosilicate flat glass. Its superior quality and excellent flatness combine with outstanding thermal, optical, chemical and mechanical features. The chemical composition of BOROFLOAT® 33 is in accordance with ASTM E 438-92 (2001), Type 1, class A. Rediscover BOROFLOAT® 33 and experience the infinite potential of our most versatile material platform. BOROFLOAT® – Inspiration through Quality.



Sightglass made of BOROFLOAT® 33.

Mechanical properties

Density ρ (25 °C)	2.23 g/cm ³
Modulus of elasticity E (according to DIN 13316)	64 kN/mm ²
Poisson's Ratio μ (according to DIN 13316)	0.2
Knoop Hardness $H_{0,1/20}$ (according to ISO 9385)	480
Bending Strength $\bar{\sigma}$ (according to DIN 52292 T 1)	25 MPa

Impact / shock resistance

The impact / shock resistance of BOROFLOAT® 33 is heavily dependent on the way it is installed, the sheet size and thickness, the type of processing applied (e.g. drilled holes), the condition and preparation of the sheet for further downstream use, the type of impact and several other factors.

Critical forces

Glass	Mean value F_c [mN]	Stdev.* [mN]
BOROFLOAT® 33	363.8	4.3
Other borosilicate glass	271.2	1.9
Soda-lime flat glass	214.4	4.6

Summary of critical forces in Scanning-Scratch-Test.

*Standard deviation

Further data and information available on request.

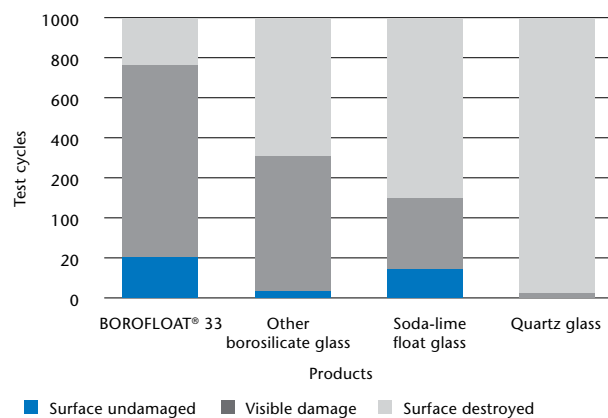
Key benefits:

Excellent mechanical strength

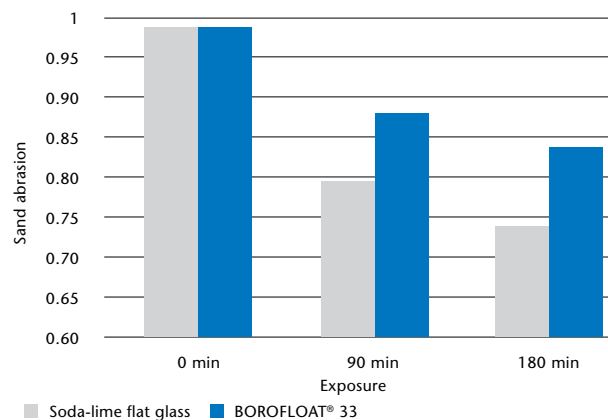
- Low weight
- Strong resistance to abrasion and scratches
- High elasticity

Resistance to abrasion and scratches

Resistance to abrasion



Comparison of sand abrasion BOROFLOAT® 33 & soda-lime float glass



According to a study conducted by the Fraunhofer Institute for Applied Optics and Precision Engineering, BOROFLOAT® 33 displayed the highest resistance to mechanical forces in comparison to other glass materials.

Home Tech
 SCHOTT North America, Inc.
 5530 Shepherdsville Road
 Louisville, KY 40228
 USA
 Phone: +1 (502) 657-4417
 Fax: +1 (502) 966-4976
 Email: borofloat@us.schott.com
 www.us.schott.com/borofloat

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