TECHNICAL NOTE & PERFORMANCE SUMMARY

CNCGLASS Ionoplast Interlayer — Tensile, Tear and Elongation Mechanical Performance

1. Purpose and Scope

This technical note presents the key mechanical properties of the **CNCGLASS ionoplast interlayer**, a stiff ionic-type structural interlayer for high-performance laminated glass. The interlayer film was characterised in uniaxial tension and in tear, determining its tensile strength, elongation at break and tear strength. Together these properties govern the post-breakage performance of structural laminates: a high tensile strength and tear resistance allow the interlayer to bridge cracked glass and carry load, while high elongation capacity accommodates the large deformations associated with glass fracture.

2. Material and Test Conditions

Material	CNCGLASS ionoplast interlayer film
Specimen form	Sheet, specimens cut from the sample
Nominal thickness	1.54 mm
Laboratory conditions	23 ± 2 °C, 50 ± 5% RH

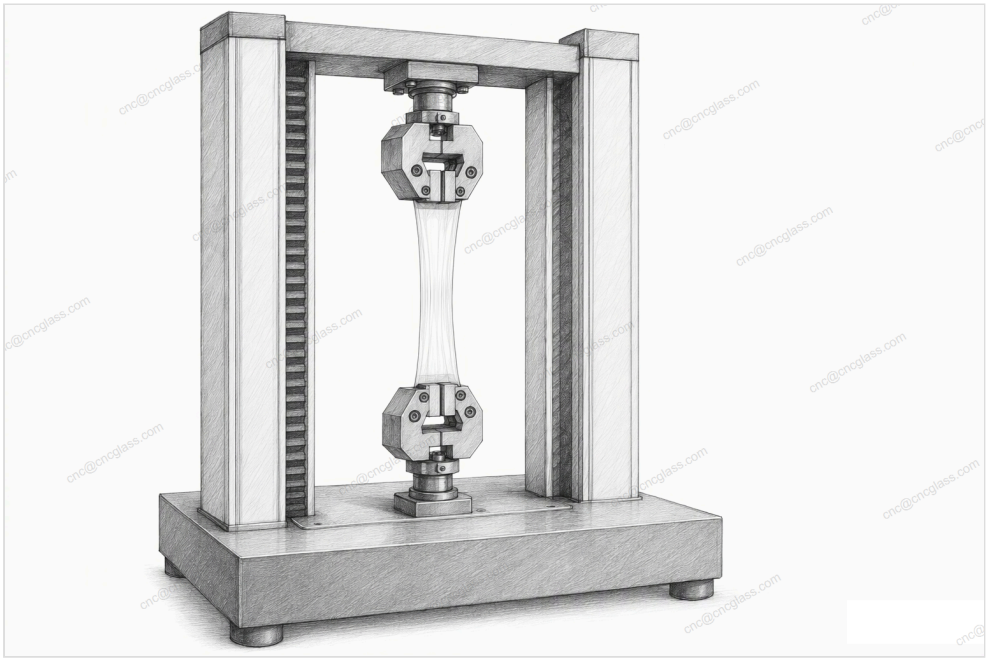


Fig. 1 — Uniaxial tensile test: an interlayer film strip gripped and stretched in a universal testing machine.

3. Test Methods and Results

Property	Test Method and Conditions	Result
Tensile strength	ASTM D638-14, Type I specimen, 50 mm/min crosshead speed, 115 mm grip separation	**37.7 MPa**
Elongation at break	ASTM D412-16 Method A, Die C specimen, 500 mm/min speed, 25 mm gauge length	**330%**
Tear strength	ASTM D624-00 (2012), Type C specimen, 500 mm/min speed	**165.4 kN/m**

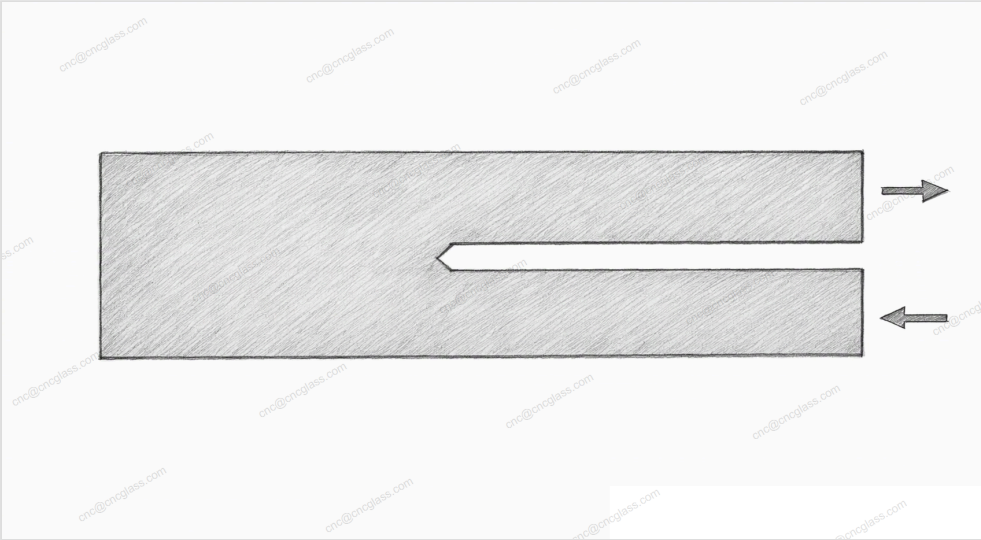


Fig. 2 — Tear test specimen geometry: the film strip is split into two legs that are pulled apart, propagating the tear along the interlayer.

4. Discussion

The measured tensile strength of **37.7 MPa** confirms the high load-carrying capacity characteristic of ionoplast interlayers, which is what allows laminates made with them to retain substantial structural performance even after both glass plies have fractured. The elongation at break of **330%** demonstrates the ductility available to absorb the large deformations of post-breakage and impact events without rupture of the interlayer ply.

The tear strength of **165.4 kN/m** reflects strong resistance to cut-growth propagation. In service, laminated glazing edges inevitably contain small flaws from cutting and handling; a high tear resistance means that a local tear in the interlayer does not readily propagate through the laminate. This combination of strength, ductility and tear resistance underpins the use of CNCGLASS ionoplast laminates in overhead glazing, floor and stair treads, facades, balustrades and other structural glazing applications where post-breakage integrity is required.

5. Conclusion

Mechanical characterisation of the CNCGLASS 1.54 mm ionoplast interlayer film established:

Tensile strength 37.7 MPa · Elongation at break 330% · Tear strength 165.4 kN/m

These results demonstrate the combination of stiffness, ductility and tear resistance required of a structural interlayer for demanding laminated glass applications.

This document is a CNCGLASS technical note and performance summary. It is not a third-party test certificate or a certificate of conformity, and it does not authorise the use of any third-party laboratory mark.

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