



evguard[®] laminating film
Safer at cold temperatures

Description

The brittle properties of glass to impact loads is a main disadvantage in many applications. Thanks to Laminated Safety Glasses (LSG), resistance to penetration at a broad temperature range gives protection against the risk of injury, vandalism, burglary and security. This makes the **evguard®** product family stand out in the laminated safety glass industry market as a “**premium**” product.



There are several international standards in the glass industry to evaluate the safety performance of laminated safety glass and corresponding interlayers. In this one pager results are discussed from the ball drop testing according to the DIN 52338 standard on laminated safety glasses made with different types of interlayers. (Pictures: Left: Test passed, Right: Test failed)

Facts



Friedmann & Kirchner
[Gesellschaft für Material- und Bauteilprüfung mbH]

Prüfbericht

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Auftraggeber: Folienwerk Wolfen GmbH
Guardianstraße 4
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Auftrag: Kugelfallversuche für Verbundglas nach DIN 52338 an gekühlten Proben

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DIN 52338:2016-10 Prüfverfahren für Flachglas im Bauwesen –
Kugelfallversuch für Verbundglas

Rohrbach, der 05. März 2021

 Dipl.-Ing. Michael Friedmann

 F&K
beaufsichtigt
anerkannte
PÜZ-Stelle

 Dipl.-Ing. Robert Kirchner

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Der Abdruck dieses Prüfberichts bedarf unserer schriftlichen Genehmigung.
Eine auszugsweise Veröffentlichung ist untersagt.

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The performance of laminated safety glass made with different types of interlayers was investigated using the ball drop tests according the DIN52338 standard. The tests were carried out independently at the Friedmann & Kirchner institute (F&K). According to the norm, 500 mm x 500 mm of LSG samples have been tested with a 1 kg weight ball. These tests were done to evaluate the performance of LSG at cold temperatures.

The samples were exposed under the colder climate conditions of 0 °C, -20 °C and -40 °C prior to performing the ball drop tests.

evguard® laminating film and the combination of evguard®/MPE has successfully passed the test at all 3 testing temperatures. Further information of this testing results are given in the next page.

Conclusion



It has been confirmed with this independent testing that **evguard**[®] and **evguard**[®] MPE interlayers are premium products for safety and security applications also at colder climatic conditions.

Interlayer	Construction	Testing height	Temperature		
			0 °C	-20 °C	-40 °C
evguard [®]	44.2	4,5 m	✓	✓	✓
PVB			✓	✓ ¹⁾	✗
evguard [®] +MPE	44.2/0.2	6 m	✓	✓	✓
Stiff PVB	44.2		✓ ¹⁾	✗	✗
Ionomer	44.2 ²⁾		✓	✗	✗

✓ Passed

✗ Failed

¹⁾ crack on the interlayer has already initiated. ²⁾ Interlayer thickness 0,89 mm.

Results are based on the testing report 2017-04-4738-06 from F&K Institute.