



LUXAR®

Anti-reflective glass



Separated and yet so close

LUXAR® Magnetron Sputtered anti-reflective glass with almost no reflectance, is an innovative product of Glas Trösch. With a reflection per surface of less than 0.5 %, mirror-like effects will be prohibited and therefore LUXAR® is almost invisible.

LUXAR® is used for applications where a partition is needed, but should not be visible:

- Architecture
- Storefronts
- Picture Frames
- Video Walls
- Display Cases
- Vitrines, Showcases etc.

LUXAR® is available as:

- LUXAR® one side coated (for laminated safety glass or in combinations with functional coatings)
Size 6000 mm x 3210 mm
Thickness 4 mm - 15 mm
- LUXAR® both sides coated (standard for invisible appearance)
Size 3210 mm x 1900 mm
Thickness 2 mm - 12 mm

On following float glass substrates

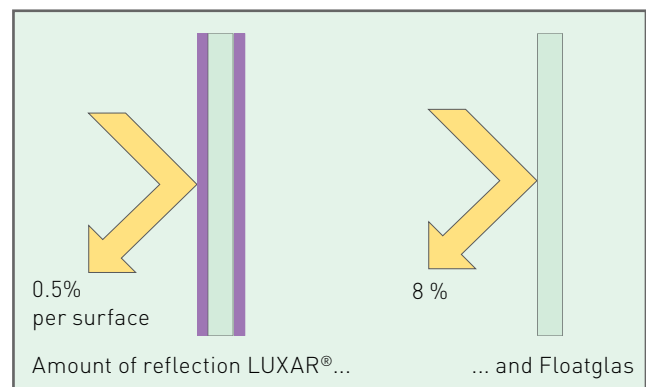
- clear float glass
- Low iron float glass
- Tinted float glass (bronze, grey, green etc).

Reflection varies with viewing angle

LUXAR® is an interference optical coated glass and reduces glare, mirror-like effects and reflections to a minimum. The non reflective properties are optimised for direct viewing of the glass. However if the angle of view changes so does the amount of reflection from the glass. Up to a viewing angle of about 45 degrees the non reflective («invisible») properties of the glass remain. Beyond that, reflections become visible in a bluish/purplish color. The amount of reflection however is significantly lower than the reflection of regular uncoated glass.

Typical Residual Reflection for sizes until 3210 mm x 1900 mm

Single glass (LUXAR® both sides coated) < 1.0 %
Double glazing (2 x LUXAR® both sides coated) < 2.0 %
Double glazing with Low E (u-value <1.1 W/m²K) < 2.0 %



Tigercompound zoo, Singapore



Buildup and processing

LUXAR® uses a multi layer optical thin film coating which is applied to the glass in a vacuum atmosphere with Magnetron Sputtering technology. The individual layers are metal oxides and therefore do not corrode, are hard and durable. The top layer is a quartz-like protective layer, which allows the glass to be handled easily. It also makes it ideal for exterior and high maintenance areas.

Laminated Security Glass

The production of laminated security glass requires one side coated LUXAR®. The uncoated surface will be towards the interlayer or resin, while the anti-reflective coated surface will be towards the «outside» (or air). The result is «a» laminated glass – double side coated.



LUXAR® as tempered or heat strengthened Glass

LUXAR® can be processed and tempered or heat strengthened by a certified processing partner. The standard glass thicknesses in which LUXAR® is tempered or heat strengthened are 3 to 15 mm (1/8"–3/5").

LUXAR® as curved glass (annealed, tempered or laminated)

LUXAR® can be processed and bent by a certified processing partner. The curved glass can be annealed, tempered or laminated. The available Radii of cur

vatures (ROC) and individual glass thicknesses are dependent on the LUXAR® partners equipment and have to be enquired on a case by case basis.

LUXAR® as laminated security glass

LUXAR® can be processed into laminated or bullet resistant glass. Either interlayers like PVB, EVA, SGP etc. can be used. One side coated LUXAR® is used for the outer lites (antireflective coating towards outside or air, uncoated surface towards interlayer), while the inner glass lites are uncoated. Usually laminated glass (interlayer) is kept in stock for thicknesses between 4.4 and 25.5 mm (3/16"–1"); custom made thicker laminated glass is also possible.

LUXAR® and silk screen printing

Both a ceramic silkscreen print as well as a dual component silkscreen print can be applied to a LUXAR® surface.

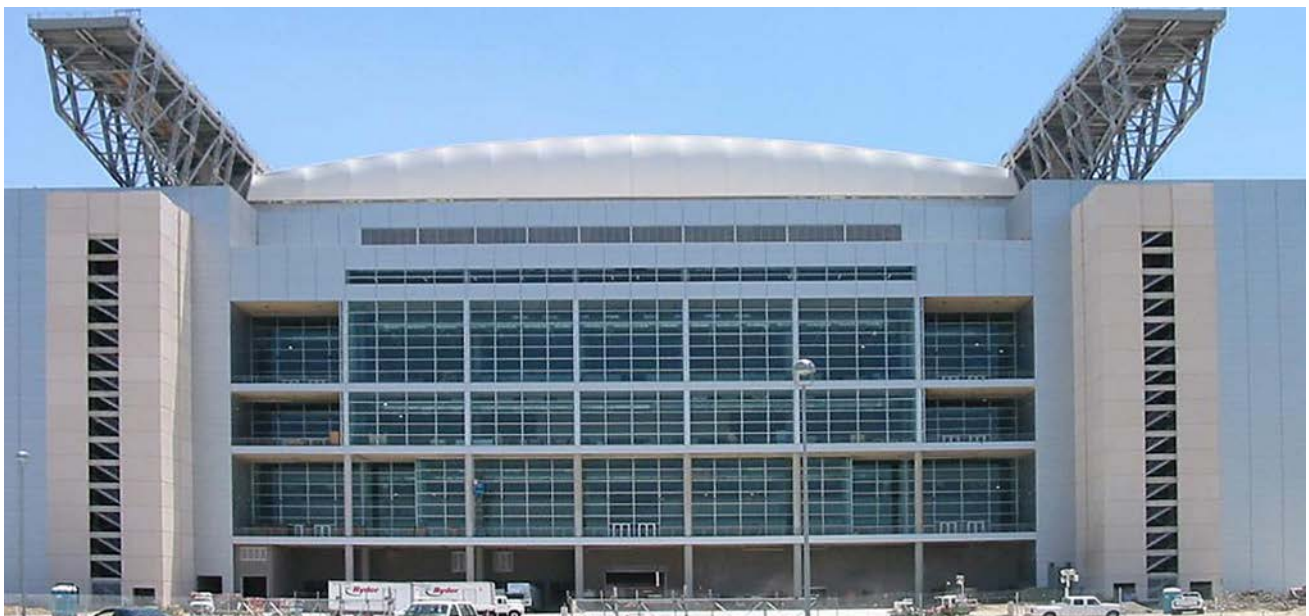
LUXAR® as double glazing

LUXAR® can be double glazed. The best results will be achieved if all surfaces are anti-reflective coated or if one surface has a low E coating instead in order to get good energy conservation or solar reflective performance. More information is available on page 4.

Environmental durability and Abrasion resistance

The multilayer coating of metal oxides and especially the quartz-like protective layer are the basis for the durability and environmental resistance of LUXAR®. In terms of abrasion resistance LUXAR® is comparable to regular clear float glass.

NFL Football Stadium, Houston, USA



LUXAR® in insulation glass units

Since mankind has been building structural coverings and therefore defining space to create privacy, he is also using the exchange of radiation with the environment in different ways. With the expansion of computers, ways to eliminate virtual reflections of artificial lighting on partially reflecting low E coatings are needed as well as new solutions or systems for efficient shading and heat-free transparency. Windows should create exterior contact, provide no glare, let daylight enter interior space and support the energy transfer between interior and exterior by zones, functions and times.

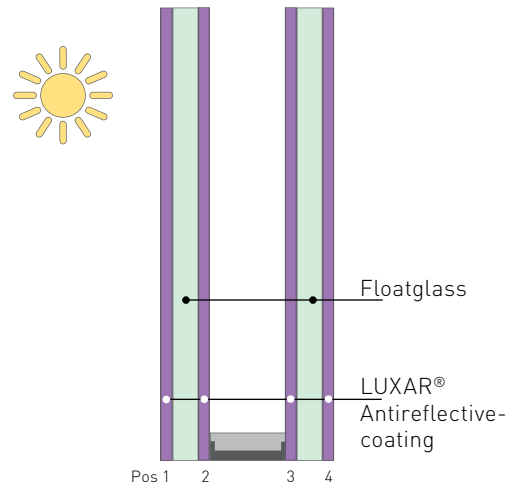
State of the art highly selective anti-reflective and low E coated windows, don't address just perfection of the physical criteria but go for a broadband functionality. Similar to a decathlon athlete, very good results are achieved in many disciplines without compromise. The future will be the anti-reflective and low E coated windows with high selectivity and neutral color.

The newly designed comfort

- Combination of anti-reflective and energy conserving / solar reflective performance
- Improved transparency
- Maximum transparency and unhindered view for LUXAR®
- double glazing – no more mirrorlike effects
- Excellent energy conservation in combination with SILVERSTAR Low E coatings while increasing the light transmission 10–15 %
- Reduced reflection for Low E / Solar reflective glazing down to 2 %
- High Selectivity – low g-value or shading coefficient and high light transmission
- Hard and durable coatings

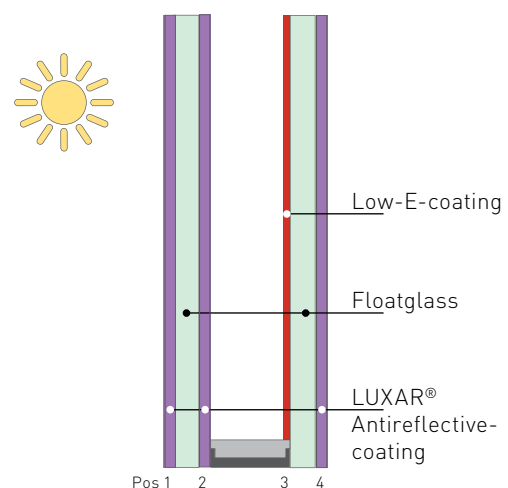
Anti-reflective double glazing

For best performance insulated glazing use durable antireflective coated LUXAR® for all surfaces. No edge deletion needed..



Anti-reflective double glazing with Low E or solar control properties

Usually 3 surfaces use antireflective coated LUXAR® while either **position 3 (for energy conservation)** or **position 2 (for selective solar performance)** use a Low E coating.



Example with Low-E on position 3: Light transmission 98 %, Reflection 2 % (without consideration of absorption)

LUXAR® application areas

Today, antireflective glasses are important components in the architecture, the automotive industry, the electronics industry, in Museums, Design etc. Disturbing mirror-like effects, glare effects and reflections are past and the behind can be seen clear and precise.

BVLGARI Shop, Singapore



Library Domschatzkammer, Cologne, Germany



LUXAR® application areas

Electronics



Traffic



Vehicle Displays



Industrial applications



Digital Signage



LUXAR® application areas

Soldier Field Stadium, Chicago, USA



Tropical Green House Berlin, Germany



Toys'R'Us, Times Square New York, USA





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