■ Production sites in Germany, Poland, France
● Agencies in the Benelux countries, Denmark, Dubai, USA, Norway, UK

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Euroglas Marketing, 4/2019

EUROGLAS

SILVERSTAR - coated glass

For any architectural demands

Our customers around the globe rely on SILVERSTAR coatings

Berlin
// Tropenhaus
// Sony Center
// Gleispark Residential Complex

New York
// Cooper Building

Dubai
// Yas Marina Yacht Club
// Metha Plaza
// Metro Central Hotel
// Al Falassi
// Aldar Headquarters
// Crystal Towers (title image)

London
// Harvard Art Museum
// Credit Suisse

Paris
// Tour Carpe Diem

Stockholm
// German embassy

We link worlds

SILVERSTAR SELEKT combined with Luxar; American Cooper Building, New York.

Glass links, yet separates. It lets us look through, without granting immediate access. We can see on the other side of the glass pane, we can admire and marvel. It tickles our curiosity, inspires us to dream and perhaps even stands at the start of a new discovery.

The world is constantly changing. The world of glass is no exception. New technologies and products keep opening up new application options.

For over 30 years, silver coatings we hardly notice have been guaranteeing insulating glass with outstanding thermal insulation, enabling transparent architecture flooded with light. We have been there from the very beginning and accompany projects around the globe. From major projects to increasing private living comfort. Daylight is vital to our well-being and mind. It significantly boosts the quality of life in residential developments and office buildings. Euroglas is your strong partner.

SILVERSTAR EN2plus triple insulation glass, block of flats, Buochs.

Thermal insulation glass – efficient thermal insulation

Implementing contemporary glass projects requires an environmentally focused energy-saving concept. In this context, glass coatings make an important contribution to environmental protection. With its five magnetron coating systems, the company now provides a wide range of innovative coatings to meet the most varied demands.

It's no longer merely about saving energy, but also about generating energy. Glass panes with SILVERSTAR thermal insulation layers have been designed to let as much solar energy through as possible while retaining the thermal energy within the room.

Rooms with large glass surfaces meet today's standards of comfort. In an age where we consciously approach nature and the environment, we can no longer rely on aesthetic demands alone. We demand so much more from modern thermal insulation glass. Back in the day, windows and glazing were considered an «energy leak». Since then, the efforts to improve the thermal insulation value of insulation glazing have made impressive progress. A Ug value of 1.0 W/m²K for double insulation glazing and 0.6 W/m²K for triple insulation glazing is the standard nowadays. As a result, glazing has become a highly thermally insulating component.

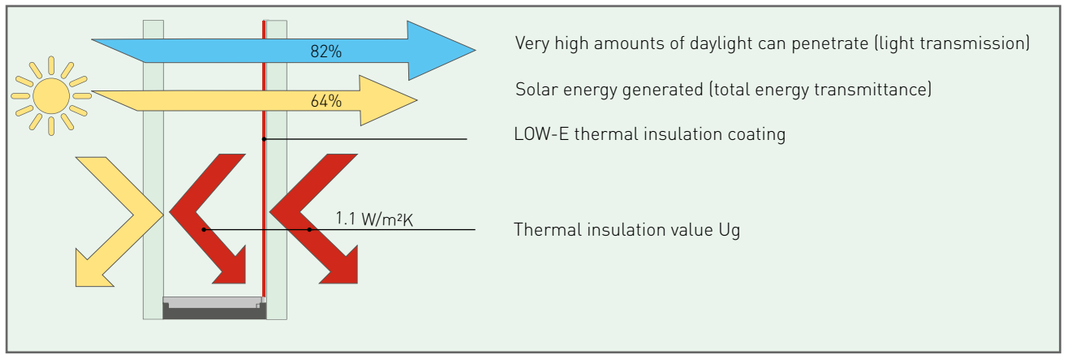
To deliver effective thermal insulation, glass must provide a Ug value that is as low as possible. The lower the Ug value, the lower the thermal loss of the glass and also the energy consumption. Heating costs and environmental pollution will also drop correspondingly. A favourable Ug value also means higher temperatures on the pane surface facing the room. This creates outstanding comfort inside the room, even in very low ambient temperatures.

>> Characteristics

// Thermal insulation glass for efficient thermal insulation and passive solar energy use
// Ug value up to 0.5 W/m²K
// Plenty of daylight. High light transmission
// At 14%, the external reflection is below the defined limit of the Swiss Ornithological Institute, so thermal insulation glass provides basic protection for birds against collisions - neutral view
// Max. glass dimensions 3,210 x 7,500 mm
// Extra lengths on request

>> Benefits

// Guarantees thermal insulation
// Boosts well-being on the inside
// Reduces heating energy costs



Thermal insulation glass function using SILVERSTAR EN2plus as an example.

>> Jaffe Commercial Complex project, Hamburg
SILVERSTAR COMBI 70/35 NG
EUROLAMEX with SILVERSTAR EN2plus

SILVERSTAR SELEKT													
Double insulation glazing 6/16/4 Coating at position 2	Colour	View			Solar values as per EN 410			EN 673	General colour rendering Index Ra	Suitable for tempering	Flexible	Edge deletion	Emissive power ε_n
		Light transmission (%)	External light reflection (%)	Internal light reflection (%)	Direct radiation absorption degree (%)	Total energy transmittance g value (%)	Transmittance factor g/0.87 SC	Thermal conductivity Ug W/m²K (90% argon)					
SELEKT 74/42	Neutral	74	13	14	29	42	48	1.0	96	No	No	Yes	0.01
SELEKT 74/42 T	Neutral	74	13	14	29	42	48	1.0	96	Yes	Yes	Yes	0.01
SELEKT 70/38*	Neutral	70	14	15	29	38	44	1.0	97	No	No	Yes	0.01
SELEKT 70/37	Neutral	70	14	15	35	37	43	1.0	96	No	No	Yes	0.01
SELEKT 70/37 T	Neutral	70	14	15	35	37	43	1.0	96	Yes	Yes	Yes	0.01
SILVERSTAR COMBI – single silver high-performance glass													
COMBI Silver 32/21 T	Silver blue	32	22	19	52	21	24	1.1	93	Yes	Yes	Yes	0.03
COMBI Neutral 30/21 T	Silver grey	30	20	14	55	21	24	1.1	91	Yes	Yes	Yes	0.03
SILVERSTAR COMBI – double silver neutral high-performance glass													
COMBI Neutral 70/35 NG	Light blue	70	14	15	32	35	43	1.0	96	No	No	Yes	0.01
COMBI Neutral 70/35 NG T	Light blue	70	14	15	32	35	43	1.0	96	Yes	Yes	Yes	0.01
COMBI Grey 70/35*	Neutral grey	70	15	17	28	35	41	1.0	95	No	No	Yes	0.01
COMBI Neutral 61/32	Light blue	61	14	13	36	34	39	1.0	95	No	No	Yes	0.01
COMBI Neutral 61/32 T	Light blue	61	14	13	36	34	39	1.0	95	Yes	Yes	Yes	0.01
COMBI Neutral 51/26*	Blue	51	16	21	40	27	32	1.0	87	No	No	Yes	0.01
COMBI Grey 50/28*	Neutral grey	50	13	14	45	28	32	1.0	90	Yes	Yes	Yes	0.01
COMBI Neutral 41/21*	Blue	41	18	21	48	22	25	1.0	86	No	No	Yes	0.01
SILVERSTAR SUPERSELEKT T – triple silver neutral high performance glass													
SUPERSELEKT 60/27	Blue	60	14	13	37	27	32	1.0	95	No	No	Yes	0.01
SUPERSELEKT 60/27 T	Blue	60	16	16	35	27	32	1.0	94	Yes	Yes	Yes	0.01
SUPERSELEKT 35/14 T	Blue-green	35	15	22	58	14	16	1.0	77	Yes	Yes	Yes	0.01

SILVERSTAR - thermal insulation glass													
Double insulation glazing 4/16/4 Coating at position 3	Colour	View			Solar values as per EN 410			EN 673	General colour rendering Index Ra	Suitable for tempering	Flexible	Edge deletion	Emissive power ε_n
		Light transmission (%)	External light reflection (%)	Internal light reflection (%)	Direct radiation absorption degree (%)	Total energy transmittance g value (%)	Transmittance factor g/0.87 SC	Thermal conductivity Ug W/m²K (90% argon)					
SILVERSTAR EN2plus	Neutral	82	12	12	19	64	74	1.1	98	No	No	Yes	0.03
SILVERSTAR EN2plus T	Neutral	82	12	12	19	64	74	1.1	98	Yes	Yes	Yes	0.03
SILVERSTAR ZERO NG	Neutral	76	15	17	18	53	61	1.0	97	No	No	Yes	0.01
SILVERSTAR ZERO NG T	Neutral	76	15	17	18	53	61	1.0	97	Yes	Yes	Yes	0.01
Triple insulation glazing 4/14/4/14/4 (coating at position 2 and position 5)													
SILVERSTAR EN2plus	Neutral	74	14	14	28	53	60	0.6	96	No	No	Yes	0.03
SILVERSTAR ZERO NG	Neutral	65	22	22	25	41	47	0.6	95	No	No	Yes	0.01

SILVERSTAR SUNSTOP													
Silver 20 T	Silver	18	28	28	63	17	19	1.1	94	Yes	Yes	No	0.83
Blue 20 T	Blue	21	16	34	69	19	22	1.1	97	Yes	Yes	No	0.83
Blue 30 T	Blue-silver	27	28	17	58	23	26	1.1	92	Yes	Yes	No	0.83
Blue 50 T	Light blue	44	21	14	51	36	41	1.1	95	Yes	Yes	No	0.83
Neutral 50 T	Neutral grey	46	13	17	54	38	43	1.1	96	Yes	Yes	No	0.83
Neutral 70 T	Neutral grey	63	16	18	34	50	58	1.1	98	Yes	Yes	No	0.83
WHITESHINE	White-silver	56	38	35	22	47	54	1.1	99	No	No	No	0.83
SILVERSTAR Hy Tec - special application													
Free Vision T	Blue-silver	83	9	9	24	64	74	1.1	98	Yes	Yes	No	0.83
NightVision T	Blue-silver	32	35	7	52	26	29	1.1	94	Yes	Yes	No	0.83
LUXAR	Neutral	98	0	0	11	81	93	5.5	99	Yes	Yes	No	0.83

***Not as a temperable version, as a fixed dimension only //** The specified colour serves as orientation and is not a specification, as it may vary. Stated values are based on insulation glass featuring EUROFLOAT as the base glass. Light and radiation-physical values have been calculated as per EN 410:2011 and EN 673:2011. Visual and technical properties of layers suitable for tempering have been adapted in colour. However, the colour is not identical. We recommend sampling in each individual case. T is short for "suitable for tempering".

Solar control glass – intelligent solar protection

Large-scale glass façades have become commonplace in today's modern buildings. In the summer, unintentional interior heat buildup can become a problem. This is where solar control glass can help. It lets the daylight through, but reduces the amount of solar energy coming in. Wafer-thin solar protection layers, applied to the glass through the SILVERSTAR magnetron procedure, reduce excessive solar radiation into the interior through reflection and absorption and prevent rooms from heating up excessively.

>> Characteristics

// Outstanding selectivity – glazing in a range up to 2.2 – for an ideal ratio between the LT and g value
// Low Ug values of 1.0 Ug W/m²K reduce thermal loss and cut energy consumption
// Increases the feel-good factor on the interior
// Maximum light transmittance: plenty of natural daylight reaches the interior.

>> Benefits

// Reduced energy costs
// Outstanding quality of work and life thanks to pleasant room temperatures and natural daylight
// Depending on the solar control glass used: natural or neutral-looking colours
// Very high light transmittance with very low direct solar radiation
// Can be combined with safety glass, sound insulation glass and curved glass

>> Solar protection variants

Factors such as the coating material, film thickness and the staining of the glass can influence the g value, light transmittance and the visual impression. Each solar protection coating has been optimised to retain high levels of light transmission despite low energy transmittance.

>> SILVERSTAR SELEKT

The neutral insulation glass provides an optimal combination of solar protection with thermal insulation for a pleasant room temperature and maximum light transmission throughout the entire year. That is why SILVERSTAR SELEKT is also known as the «four-season glass».

>> SILVERSTAR COMBI

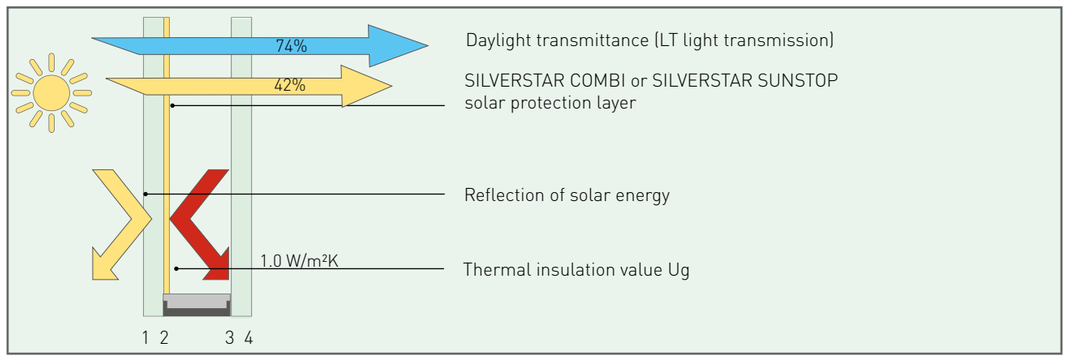
SILVERSTAR COMBI insulation glass offers a coordinated range of colour-neutral and nuanced coatings with gradient values for light transmission and total energy transmittance.

>> SILVERSTAR SUPERSELEKT

These insulation glasses have been optimised to achieve a degree of light transmission that is as high as possible while demonstrating a low total energy transmittance. This ratio is expressed by the selectivity code.

>> SILVERSTAR SUNSTOP

Insulation glass optimised for solar protection offering maximum protection from solar radiation. Thanks to the colourful look of the highly reflective glazings, SILVERSTAR SUNSTOP also opens up special design options.



SILVERSTAR SELEKT 74/42 as an example of how solar control glass functions

>> Bürgenstock Hotel, Obbürgen, Switzerland
SILVERSTAR COMBI neutral 51/26

Special coatings

>>LUXAR NG
Non-reflective glass

LUXAR NG is an innovative product made by Glas Trösch, glass with non-reflecting surfaces. At a reflection of under 0.5% per surface, with the magnetron-coated LUXAR NG you can put an end to irritating mirroring effects. At such a low rate, LUXAR NG is hardly noticed.

LUXAR NG is applied anywhere separation is required but must remain invisible:
// Architecture
// Shop windows
// Picture frames
// Video walls
// Switch systems
// Display cabinets, etc.

>>SPY MIRRORS
Protected from onlookers, the SPY MIRROR allows people to assume the role of the observer without being seen themselves. This is made possible by a multilayer, optical interference layer on the glass. When the SPY MIRROR is used as a separating element between two rooms with different light exposure levels, the desired surveillance or mirror effect occurs. The coated and uncoated sides of the pane generate different reflection values, so the effects are systematically strengthened.

The SPY MIRROR is available in different light transmission values, enabling refined gradients in terms of mirror effect and visibility. To ensure the desired effect, the light exposure values must be different. The light exposure ratio between both rooms must be between a minimum of 1:5 and 1:15 lux, depending on the type.

>>SILVERSTAR FREE VISION
Coating to prevent external condensation

As a result of the outstanding thermal insulation of modern insulating glass, condensation is likely to form on the outside in certain weather conditions. Intelligent SILVERSTAR FREE VISION coating changes the dew point on the glass surface and thus its coating response to almost completely prevent condensation on the outer surface.

>> Characteristics
// External condensation is practically prevented by 100%
// The special coating is ideally suitable for insulating glass with a low U value
// Variants with double or triple insulating glass always as thermally toughened safety glass
// Colour-neutral appearance
// Long-term effect against external condensation
// Maximum dimensions up to 6,000 x 3,210 mm

>>SILVERSTAR NightVisionT
LUXAR SOLAR CONTROL GLASS

SILVERSTAR SUNSTOP NIGHT VISION is a low-reflective solar control glass variant that enables clear views from buildings at night from illuminated rooms thanks to its low glass reflection.

>> Characteristics
// Low-reflective solar control glass
// Optimum transparency for undisturbed views (lowest interior light reflection, LRi)
// High colour reflection index of 94 (with SILVERSTAR)
// Low total energy transmittance thanks to the layered SILVERSTAR SUNSTOP Night Vision design
// Best views at night from brightly illuminated rooms Extremely hard, scratch-proof and environmentally durable LUXAR coating
// Max. glass dimensions: 3,005 x 1,900 mm (3-12 mm)

>> Applications
// Flats, offices and hotels with special views
// VIP boxes in stadiums
// In particular for undisturbed views in darkness from illuminated rooms, e.g. on skylines

>>American Cooper Building
LSG from LUXAR (pos. 1),
SILVERSTAR SELEKT,
metal structure in LSG // 16mm argon // LSG made of LUXAR at pos. 5 and 8