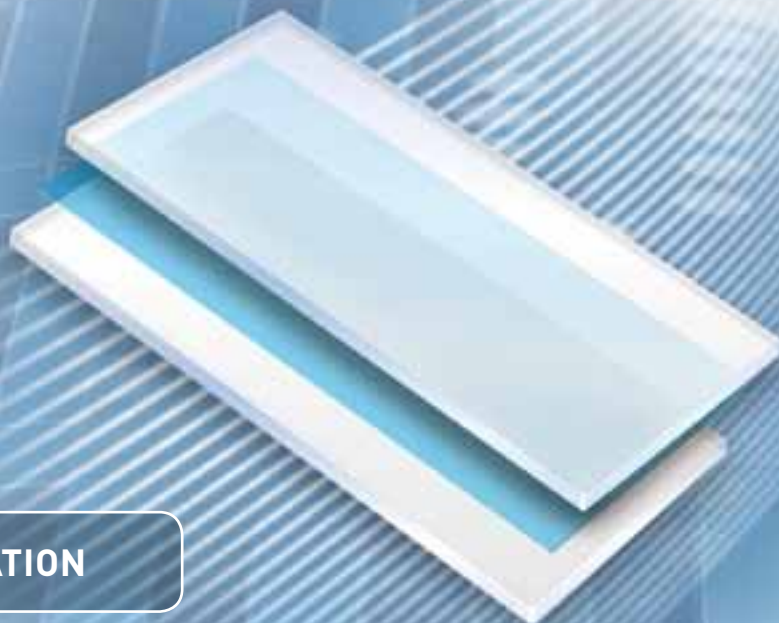


kuraray

ARCHITECTURE

PVB FILM FOR LAMINATED SAFETY GLASS



PRODUCT INFORMATION

TROSIFOL[®]

INNOVATION IN GLASS. SURELY.



YOUR PARTNER FOR THE FUTURE

Reliable and long lasting adhesion is the key to long-term stability in architectural glazing. TROSIFOL® products are well known for their excellent adhesion properties. This is one of the reasons why TROSIFOL® is one of the world's leading manufacturers of PVB films for laminated safety glass.

There are long-term relationships between TROSIFOL® and its customers that ensure success for both businesses. Aside from its products, TROSIFOL® offers a wide range of cooperation possibilities including expert technical service, support in designing new production lines and the development of innovative and customised product solutions. TROSIFOL® is certified to DIN EN ISO 9001:2008, ISO/TS 16949, DIN EN ISO 14001:2004 and OHSAS 18001:2007.



PRODUCT PROPERTIES

- Very low inherent colour (yellowness) for high-clarity laminated glass
- High edge stability for outstanding long-term strength
- Different degrees of adhesion for optimum results in different applications
- Simple edge seaming
- Low odour
- Minimal electrostatic charging

CENTRAL STATION, BERLIN



LONDON-EYE, GREAT BRITAIN

THE TRANSPARENCY EXPERIENCE.

STANDARD PRODUCTS FOR ARCHITECTURAL APPLICATIONS

TROSIFOL® offers a wide range of products for different applications in architectural glazing. Safety glass laminated with TROSIFOL® has excellent product properties in respect of safety, security, long term stability, noise reduction and UV protection. Furthermore TROSIFOL® PVB films offer outstanding optical characteristics such as transparency and light stability.

TROSIFOL® BG is the standard product designed for the architectural glazing sector, with premium product properties for optimum laminated glass products. It has high mechanical strength, very low plasticiser volatility and significantly reduced electrostatic charging. The film's low level of inherent colour yields a visible and measurable improvement in the optical glass quality, particularly of multiple laminates.

Owing to the varying requirements of laminated safety glass, we continue to supply film types with different degrees of adhesion in our aim to help you achieve optimum production results.

TROSIFOL® BG R10/15 is the product line for all standard laminated glass applications and particularly for penetration-resistant glazing conforming to the requirements of EN 356.

For optimum production yield in special applications, e.g. the production of laminated safety glass with toughened glass, we recommend TROSIFOL® BG R20.

All products satisfy the quality requirements of EN ISO 14449, EN ISO 12543-4, EN 356 and EN 12600 as well as the relevant international quality standards. TROSIFOL® products can be supplied, as desired by the customer, refrigerated or PE-interleaved.



TROSIFOL® BG R10/15

TROSIFOL® BG R10/15 with medium adhesion for standard applications in the laminated safety glass sector. Available in widths of 300 to 3210 mm.

Type	Thickness [mm]	Colour	Light transmittance* [%]	Colour code	Length of refrigerated roll [m]	Length of roll PE-interleaved [m]
R15	0.38	Clear	87	–	500/1000	400
R10/R15	0.76	Clear	87	–	250/500	200
R15	1.14	Clear	87	–	150/330	150
R15	1.52	Clear	87	–	125/250	125
R15	2.28	Clear	86	–	177	95
R15	0.38	Sand white	70	W 40.71	400	400
R15	0.38	White translucent	60	W 30.65	400/1000	400
R15	0.38	Light blue-green	73	8.40.73	400	400
R15	0.38	Ocean blue	76	7.40.71	400	400
R15	0.38	Medium bronze	55	3.10.52	400	400
R15	0.38	Grey	45	6.60.44	400	400
R15	0.38	Asahi grey	42	6.50.42	400	400
R15	0.38	Light brown	55	S 40.55	400	400
R15	0.38	Medium brown	24	S 60.28	400	400
R15	0.76	White translucent	59	W 30.65	250	200
R15	0.76	Grey	44	6.65.44	250	200
R15	0.76	Medium bronze	53	3.10.52	250	200
R15	0.76	Bronze	36	3.60.38	250	200
R15	0.76	Light blue-green	72	8.40.73	250	200

TROSIFOL® BG R20

TROSIFOL® BG R20 with high adhesion for special applications in the laminated safety glass sector. Available in widths of 300 to 3210 mm.

Type	Thickness [mm]	Colour	Light transmittance* [%]	Colour code	Length of refrigerated roll [m]	Length of roll PE-interleaved [m]
R20	0.76	Clear	87	–	250/500	200
R20	1.14	Clear	87	–	150/330	150
R20	1.52	Clear	87	–	125/250	125

* LSG with 2 x 4 mm float glass



SPECIAL PRODUCTS FOR ARCHITECTURAL APPLICATIONS

With the development of new applications for architectural glazing, the demand for innovation in laminated safety glass is increasing continuously. With its state-of-the-art production equipment and technology, TROSIFOL® manufactures PVB films that convert laminated safety glass into multi-functional products.

TROSIFOL® SOUND CONTROL, TROSIFOL® COLOUR and LUMINEO are examples of films for creative and innovative design with glass.

TROSIFOL® SOUND CONTROL

TROSIFOL® SOUND CONTROL is a PVB film with excellent noise reduction properties. Compared to a standard glass unit of the same thickness you will achieve an improvement in sound reduction of approx. 3 dB with TROSIFOL® SOUND CONTROL. The manufacturing process of laminated safety glass with TROSIFOL® SOUND CONTROL is as simple and efficient as with standard products for architectural glazing.

Safety glass laminated with TROSIFOL® SOUND CONTROL shows excellent characteristics in respect of safety and security, long-term stability, optical performance and light stability.

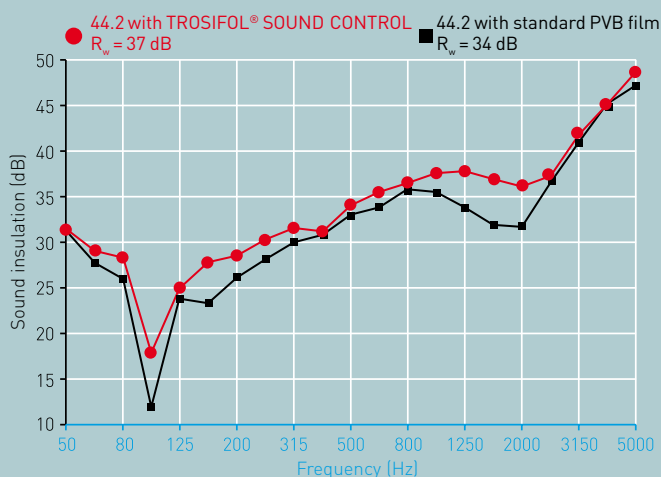


THE SPECIALITIES. OUR SPECIALITY.

TROSIFOL® SOUND CONTROL

Type	Thickness [mm]	Colour	Light transmittance [%]	Width [mm]	Length of re-ferigerated roll [m]	Length of roll PE-interleaved [m]
SOUND CONTROL	0.76	Clear	88	300 - 3210	-	200/450
SOUND CONTROL	1.14	Clear	88	300 - 3210	-	150/330
SOUND CONTROL+	0.76	Clear	88	3210	230	-

ACOUSTIC PROPERTIES OF TROSIFOL® SOUND CONTROL



ACOUSTIC PROPERTIES OF IGU WITH TROSIFOL® SOUND CONTROL**:

Construction of IGU			Weighted sound reduction
Glass [mm]	Gas space* [mm]	Glass [mm]	R_w [dB]
4	16	44.2	39
6	16	44.2	41
8	16	44.2	42
10	16	44.2	44
44.2	16	66.2	47
44.3	16	66.3	49
44.3	20	66.3	50

* Filled with Argon
** Measurements in accordance with DIN EN 20140-3/ DIN EN ISO 140

TROSIFOL® COLOUR/LUMINEO

The excellent colourfastness of TROSIFOL® COLOUR and LUMINEO makes them suitable for both indoor and outdoor applications.

The wide range of basic colours can be combined to create an almost unlimited number of colour shades.

TROSIFOL® COLOUR

Colour	Code	Max. Width [mm]	Thickness [mm]	Roll length [m]
Yellow	Y.85	2250	0.38	30/200
Orange	O.55	2250	0.38	30/200
Red	R.30	2250	0.38	30/200
Light green	G.80	2250	0.38	30/200
Green	G.39	2250	0.38	30/200
Dark green	G.41	2250	0.38	30/200
Sky blue	B.54	2250	0.38	30/200
Blue	B.43	2250	0.38	30/200
Medium blue	B.37	2250	0.38	30/200
Brilliant blue	B.31	2250	0.38	30/200
Violet	V.30	2250	0.38	30/200
Brilliant Black	S.00	2250	0.76	30/200
Diamond White	W.00	2250	0.76	30/200
Shining White	W.17	2250	0.38	30/200
LUMINEO	G.60	2250	0.76	20/200

All rolls are supplied PE-interleaved in the standard widths 1000 mm, 1600 mm and 2250 mm. Additional widths of 800/1200/1400/1800/2000 mm are available if purchased in amounts of at least 500 m² per colour type (200 m roll length only).



LOGISTICS AND PACKAGING

TROSIFOL® products are packed in vapour-tight bags.

Depending on the width, the rolls are dispatched in vertical or horizontal packaging.

MULTI-WAY PACKAGES – HORIZONTAL

Max. roll width [mm]	Type 1 dimensions [mm]			Type 2 dimensions [mm]		
	Length	Width	Height	Length	Width	Height
800	1020	595	805	–	–	–
1240	1420	595	805	–	–	–
1600	1800	595	805	–	–	–
2000	2160	595	805	2145	590	730
2250	2480	595	805	2395	590	730
2600	2830	595	805	2950	590	730
3210	3400	595	805	3390	590	730
3210 (Jumbo size)	3400	780	980	–	–	–



Multi-way packages – horizontal

ONE-WAY PACKAGES – HORIZONTAL

Max. roll width [mm]	Dimensions [mm]		
	Length	Width	Height
1100	1180	600	740
1320	1420	600	740
1500	1600	595	740
1850	2070	595	740
2160	2240	595	740
2590	2710	595	740
3210	3400	595	740



One-way packages – horizontal

DRUM PACKAGES – VERTICAL

Max. roll width [mm]	Dimensions [mm]	
	∅	Height
740	570	800
850	570	900



Drum packages – vertical

TECHNICAL DATA

TROSIFOL® BG R10/15

Product	Thickness [mm]	Water content [%]	Surface Roughness R _z * [μm]
R15	0.38	0.45	40
R15	0.76	0.45	40
R10	0.76	0.45	40
R15	1.14	0.45	40
R15	1.52	0.45	40
R15	2.28	0.45	40

TROSIFOL® BG R20

Product	Thickness [mm]	Water content [%]	Surface Roughness R _z * [μm]
R20	0.76	0.45	40
R20	1.14	0.45	40
R20	1.52	0.45	40

TROSIFOL® SC

Product	Thickness [mm]	Water content [%]	Surface Roughness R _z * [μm]
TROSIFOL® SC	0.76	0.45	45
TROSIFOL® SC	1.14	0.45	45
TROSIFOL® SC+	0.76	0.45	40

TROSIFOL® HR100

Product	Thickness [mm]	Water content [%]	Surface Roughness R _z * [μm]
TROSIFOL® HR100	0.76	0.43	100

All details are typical averages.

* Values measured in accordance with EN ISO 4287



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