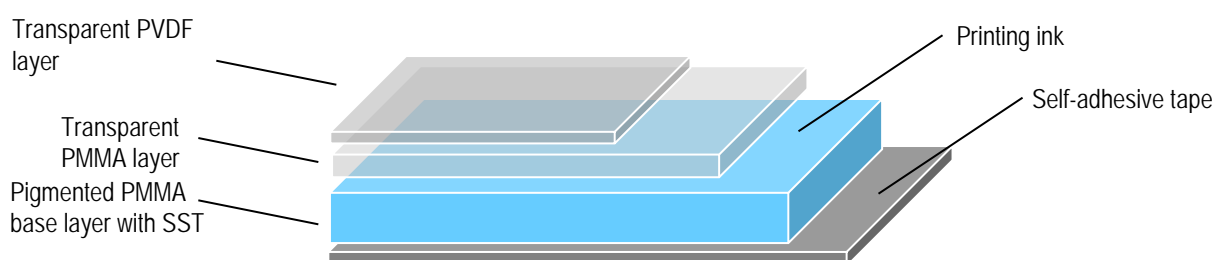




## PRODUCT INFORMATION

<b>TYPE OF FOIL</b>	<b>RENOLIT EXOFOL FR</b>
	Embossed multilayer film manufactured for lamination on to substrates for interior and exterior application in vertical assembly of components. Self-adhesive tape on the back of the film.
<b>Article Number:</b>	30.30.92 – RENOLIT EXOFOL FR solid colour 30.30.93 – RENOLIT EXOFOL FR printed



Technical Data				
	Standard Test Method	Unit	Values	Tolerances
1. Thickness	DIN EN ISO 2286-3	µm	415	± 25
2. Tensile stress at break*	DIN EN ISO 527-3	MPa	15	≥ 15
3. Elongation at break*	DIN EN ISO 527-3	%	60	≥ 60
4. Dimensional stability*	DIN 53377	%	5	≤ 5
5. Scratch resistance*	Erichsen test 435	cN	20	≥ 20
6. Abrasion resistance*	DIN EN ISO 105-X12		Grade 5	
7. Embossing stability*	RENOLIT test method	No change in embossing and/or colour		
8. Weather fastness*	EN 513 - method 1	Colour change ≥ grey scale 3 after the samples have received 30 GJ / m <sup>2</sup> , according to the requirements of RAL-GZ 716		

\* Values of the film on the basis of RENOLIT EXOFOL FX

to 1:	Plunger – 10 mm Ø with flat surface, pressure 50 kPa, measuring over emboss structure
to 2, 3:	Sample width: 15 mm, Measurement in machine direction, Normal climate 23°C (± 1°C), 50 % relative humidity (± 5%)
to 4:	10 Min. / 100 °C
to 7:	10 Min. / 80 °C
to 8:	Grey scale according to DIN EN 20105 - A02 / ISO 105 - A02

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## GENERAL PRODUCT INFORMATION

Self adhesive tape:	The film <b>RENOLIT EXOFOL FR</b> consists of a combination of <b>RENOLIT EXOFOL FX</b> film and a self-adhesive tape on the back of the film. It is a high strength pure acrylic adhesive with an outstanding ageing and UV stability. The self-adhesive properties of the <b>RENOLIT EXOFOL FR</b> film enable the direct lamination onto the window profile. The bonding has a good initial strength (tack) and excellent ageing resistance; however it is not comparable with the machine-made bonding of a cross-linked adhesive system. The adhesion is around 50% of the cross-linked system and the bonding has a certain degree of softness which can leave pressure points if permanent punctual or linear pressure occurs.
Processing:	The recommendation for the lamination of window profiles with the film <b>RENOLIT EXOFOL FR</b> is described further in the technical information sheet "Processing Recommendation Repair Film". The recommended processing temperature is 18 to 35 °C. The processing recommendation and further information can be received from <b>RENOLIT</b> . Furthermore <b>RENOLIT</b> offers seminars for the procedure of subsequent lamination.
Stress whitening:	Due to the nature of the PMMA film, stress whitening can occur when forming. Unheated forming of the film, e.g. when pressing sheets at room temperature, is not recommended and will affect the warranty.
Storage conditions:	The film has to be stored at room temperature (approx. 20 °C) and normal humidity (approx. 50%). Shelf life is one year after delivery.
Chemical resistance:	Due to the excellent chemical resistance of PVDF (polyvinylidene fluoride), <b>RENOLIT EXOFOL FR</b> films are resistant to most organic acids and bases, aliphatic and aromatic hydrocarbons, alcohols and halogenated solvents. With the exception of fluorine, <b>RENOLIT EXOFOL FR</b> is also resistant to halogens (chlorine, bromine, iodine). Not resistant to high polar organic solvents (e.g. acetone, ethyl acetate, dimethylformamide, dimethylacetamide), fuming sulfuric acid, amines, and basic liquids with pH ≥ 12. Compatibility tests are always required. Please take into account that the chemical compatibility is strongly dependent on temperature, exposure time, concentration and state of aggregation of the substance. Please be careful near any cut edges of the film e.g. welded corners, as the film is unprotected in the cross section. Side penetration of chemicals cannot be excluded.
Care Instructions/ Maintenance:	Components laminated with <b>RENOLIT EXOFOL FR</b> films can be efficiently cleaned with water and a neutral detergent, soap or washing-up liquid (in non-concentrated form) with a soft sponge or cloth. Further maintenance is not required. Do not use abrasive cleaners or abrasive sponges or cloths. Never work the surface dry or mechanically (e.g. rotating brushes). Contaminations not caused by natural weather conditions should be removed immediately. <b>Aggressive cleaners or cleaners containing unknown solvents should not be used.</b> If water and soap are insufficient, window fabricators/installers can use the <b>RENOLIT EXOFOL Professional Cleaner</b> <a href="http://www.renolit.com/exterior/de/produkte/profireiniger">www.renolit.com/exterior/de/produkte/profireiniger</a> . For persistence dirt and stains, eg. Graffiti, <b>RENOLIT</b> recommend Graffinet® Plexiclean from EAG GmbH, Ringstraße 4, D-30457 Hannover, Germany ( <a href="http://www.eag.eu">www.eag.eu</a> ) and BONDERITE S-ST 1302 from Henkel AG & Co. KGaA, Henkelstraße 67, D-40191 Düsseldorf, Germany ( <a href="http://www.henkel.de">www.henkel.de</a> ).

For further information, please contact **RENOLIT** .

This technical information sheet represents our latest state of knowledge and shall inform without obligation. The herein stated details do not release the manufacturer using our films from their own inspections and tests, which must correspond with the relevant national guidelines for its intended purpose. It is the duty of the customer to determine if the purchased product is suitable for its intended purpose.

The recipient of this information shall neither forward nor publish the content or parts of it to any third parties without the prior written consent of **RENOLIT**.

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