

Standard Bumper Protectors

Bumper protectors are strong, flexible & highly resilient. Among their many features is the ability to withstand shock and vibration, whilst being both non-slip and non-marking.

Bumper protectors are supplied kiss-cut on a sheet to allow ease of removal and aid application. Manufacturing so many different shapes, colours and styles, the standard quantity on a sheet will always vary depending on the size of the part. Information on this and the number of sheets and pieces in our cartons can be found in the product pages on our website.

Polyurethane base material

Polyurethane Physical Properties

Property	Test Method	Clear	Coloured
Hardness (shore A)	ASTN D-2240	66-70	66-70
Tensile Strength (Mpa)	BS903	3.7	3.7
Elongation (%)	BS903	193	150
Tear Strength (KN/m)	BS903	14.4	13.8
Abrasion Resistance (MG loss)	BS EN 5470-1:1999	150	160
Load Tolerance 21°C to 60°C		Min 3 Mpa	Min 3 Mpa
Flame Retardency	UL94HB (in house)	Pass	Pass
Kinetic Coefficient of friction	ASTM D-1894-78		
	A Stainless Steel	2.52	5.69
	B Glass	2.7	2.9
	D High impact polystyrene	2.37	2.53

Shelf Life - 12 months when stored in original packaging at room temperature

Exposure to the Environment Bumpers are intended for interior applications where physical properties will remain unchanged. When used externally for extended periods, some discolouration as well as loss of adhesion may occur.

Load Tolerance Information

In the event bumper protectors are used for applications involving the support of heavy plate glass or similar, laboratory tests have shown that cylindrical shapes perform better than hemispherical.

A heavy load supported by the wrong style of bumper protector could result in fracturing or "crumbling" of the polyurethane material. Please refer to the chart for weight loading guidance.

Compression tests were carried out at ambient temperature (24°C)

Pressure Sensitive adhesive data

Acrylic Adhesive

The acrylic adhesive is a medium tack adhesive with higher end use temperature and good clarity. Usually preferred for applications where good ageing properties are required. Unless otherwise requested this adhesive is standard on all clear bumper protectors because of its superior ageing properties.

Rubber Adhesive

The rubber adhesive is an aggressive high tack adhesive which displays good instant tack as well as high peel and shear properties. Unless otherwise requested this adhesive is standard for all coloured bumper protectors because of its superior tack & shear properties.

Peel & Shear Data

- **FINAT 1** : 90° Peeling test, 300mm/min.

Samples width: 25x145mm – Load 2 back and forth with roll of 2 kg

- **FINAT 8** : Shear test

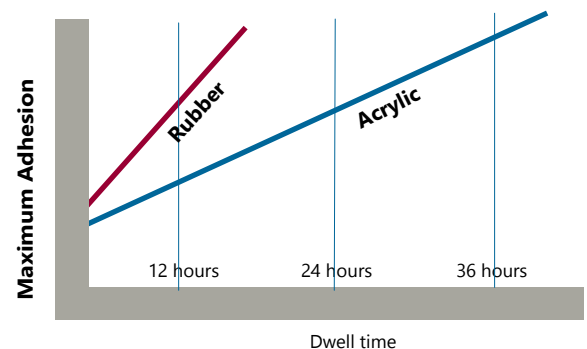
Samples width: 25x25mm – Load 2 back and forth with roll of 2 kg

Surface Material	Test Method	Acrylic Standard on clear bumpers		Rubber Standard on coloured bumpers	
		20min 23°C 50% RH	24h 23°C 50% RH	20min 23°C 50% RH	24h 23°C 50% RH
Stainless Steel	Peel FINAT 1 Unit N/25mm	13.8	16.5	12.3	21.1
Aluminium		13.4	15.4	11.6	16.9
Glass		12.2	12.5	17.5	23.8
HPDE		1.7	1.8	9.9	14.1
Polystyrene		10.1	10.1	15.7	21.4
ABS		6.3	10.0	13.2	19.5
Stainless Steel	Shear FINAT 8	-	>300h	-	>300h

Adhesive Considerations

Please refer to the chart which illustrates the relative adhesion properties of the adhesive systems used in the production of bumper protectors.

In general terms allow time (dwell) to increase the surface contact and therefore the adhesion. Please note that acrylic adhesives generally require longer dwell times than the rubber based systems. We recommend customers carry out their own tests because application conditions will vary.



APPLYING bumper protectors

It is important to remember, that as with any self adhesive product, the surface to which they are being applied must be clean, dry and free from dust and dirt. Therefore, to gain maximum adhesion, clean the surface with low strength solvent and allow to dry thoroughly before use. Please follow solvent manufacturers' instructions for safety.

Temperature Data (Application)

Usual application temperature advised for pressure sensitive adhesives are 18-30°C. We do not advise application at higher temperature

Concerning lowest temperature, test have been carried out to evaluate the impact of lower temperature on initial adhesion. Indeed, the major risk is a lack of adhesion when temperature decreases.

Test description

- Adhesive and plates are stored for at least 2h at tested temperature
- 90° peeling test on stainless steel after 1 min at 23°C.
- 90° Peeling test on stainless steel after 1 min at 10 or 15°C.

By comparison we can evaluate low temperature impact on initial adhesion.

Adhesion after 1min (N/25mm)	Acrylic Standard on clear bumpers	Rubber Standard on coloured bumpers
23°C	10.5	10.6
15°C		8.8
10°C	9.3	

There was an impact on initial adhesion at low temperature. The decrease is inferior to 20%.

Temperature Data (Service)

Test description:

This test is based on the evaluation of adhesion performances after an exposure at low or elevated temperature.

- 90° Peeling test on stainless steel is carried out after 24h at 23°C
- Same test is carried after 24 h at 23°C + 2h at low or elevated temperature

(for example, extreme value -40°C / +120°C)

We then compare adhesion performances **with and without** temperature exposure

Maximum Adhesion Decrease 20% accepted.

	Acrylic Standard on clear bumpers	Rubber Standard on coloured bumpers
Minimum Service Temperature	- 40°C	- 20°C
Maximum Service Temperature	+ 120°C	+ 100°C

IMPORTANT - The information contained in this data sheet is subject to change without notice. For this reason it is necessary for clients to check the data sheets regularly if any of the data is important for the end application.