

**Technical Data**
**October 2014**

This is a highly resilient flexible polyurethane based tape coated with a versatile pressure sensitive adhesive. This tough yet durable material has excellent anti-slit properties and is ideal for preventing squeaks & rattles. It also offers protection against scratches and is the perfect way to create a non-slip base over a large area due to its high coefficient of friction. BumperFlex protective tapes are available in a wide range of thicknesses to suit most applications. They are supplied on a roll with a thick backing paper suitable for die-cutting. A BumperFlex feature is that it's easily die cut into pads, discs, washers, squares or gaskets to suit almost any job. Also ideal for conversion to rolls for automatic application

## General product information

	BF.4105	BF.4108	BF.4110	BF.4116
<b>Thickness (mm)</b>	0.5	0.8	1.0	1.6
<b>Standard width (mm)</b>	115	115	115	115
<b>Standard length (met)</b>	66	66	66	33
<b>Adhesive system</b>	All transparent tapes have the 4001 acrylic adhesive. Coloured tapes have the 6001 rubber adhesive			
<b>Polyurethane finish</b>	Generally transparent tapes have gloss finish. coloured have matt finish			
<b>Colours available</b>	CL/BL/W/BR	CL/BL/W/BR	CL/BL/W/BR	CL/BL/W/BR
<b>Slitting tolerance</b>	± 0.5mm	± 0.5mm	± 0.5mm	± 0.5mm
<b>Thickness tolerance</b>	± 8%	± 6%	± 5%	± 5%

CL=Clear BL=Black W=White BR=Brown

## Polyurethane base material

### Polyurethane Physical Properties

Property	Test Method	Clear	Coloured
Hardness (shore A)	ASTN D-2240	68-76	68-76
Tensile Strength (Mpa)	BS903	4.5MN/m <sup>2</sup>	3.7MN/m <sup>2</sup>
Elongation (%)	BS903	190	193
Tear Strength (KN/m)	BS903	22.3	14
Abrasion Resistance (MG loss)	BS EN 5470-1:1999	175	150
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	5.69	5.52
	B Glass	2.9	2.7
	D High impact polystyrene	2.53	2.37
Density		105 kg/m <sup>3</sup>	109 kg/m <sup>3</sup>
Compression Set 40°C (%)	BS903	Max 5	Max 5
Solvent & Fuel Resistance	5% detergent in water	No noticeable effect	
	25% detergent in water	No noticeable effect	
	5% bleach in water	No noticeable effect	
	Motor oil	No noticeable effect	
	Isopropyl Alcohol	Some swelling. More evident in clear series	
	Hydrochloric acid (one normal solution)	No noticeable effect	
	Diesel Fuel	No noticeable effect	
	Heptane	Slight swelling	
	Toluene	Substantial swelling	

### Exposure to the Environment

BumperFlex tape is intended for interior applications where physical properties will remain unchanged. When exposed to UV light for extended periods, some discoloration as well as loss of adhesion may occur. However BumperFlex may be used outdoors in a protected area with some discoloration apparent. SHELF LIFE- 12 months when stored in original packaging at room temperature

## Adhesive system information

### Adhesive Data

#### 6001 Rubber Adhesive

The 6001 adhesive is an aggressive high tack rubber based adhesive which displays good instant tack, high peel and shear properties. 6001 works particularly well on slightly irregular surfaces and some low surface energy plastics. Unless otherwise requested, this adhesive is standard on all coloured BumperFlex tapes because of its superior tack & shear

#### 4001 Acrylic Adhesive

The 4001 adhesive is a medium tack adhesive with good shear strength, higher end use temperature and good clarity. Usually preferred for applications where good ageing properties are a benefit. Unless otherwise requested this adhesive is standard on all clear BumperFlex tapes because of its superior ageing properties.

	Properties	6001	4001
Adhesive Characteristics	System Thickness Backing Liner Adhesive Feature	Solvent Rubber 0.002 160gms paper High initial tack & shear	Solvent Acrylic 0.002 160gms paper Good ageing & clarity
Adhesive Performance	Shear Strength @ 21°C Shear Strength @ 49°C	Extremely good Extremely good	Good Good
Application Temperature		15°C to 65°C	10°C to 80°C
Service Temperature		-10°C to 70°C	-20°C to 80°C
Storage Temperature		Room temperature	Room temperature

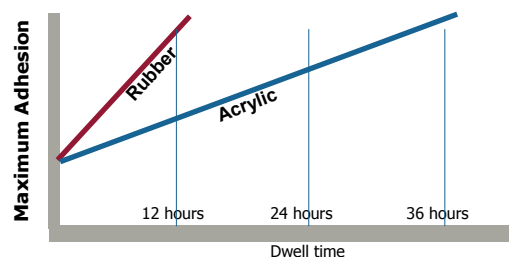
### Substrate adhesion performance

Surface Material	6001	6001	4001	4001
	20 minute @ 23°C	24 hours @ 23°C	20 minute @ 23°C	24 hours @ 23°C
Stainless Steel <u>Peel FINAT 1</u> <u>Shear FINAT 8</u>	24.4 N/25mm /	44.7 N/25mm 93h	16.3 N/25mm /	18.4 N/25mm >100h
Aluminium <u>Peel FINAT 1</u>	33.8 N/25mm	44.1 N/25mm	14.3 N/25mm	20 N/25mm
Glass <u>Peel FINAT 1</u>	40.5 N/25mm	39.5 N/25mm	15.9 N/25mm	17.9 N/25mm
HPDE <u>Peel FINAT 1</u>	16.8 N/25mm	27.2 N/25mm	1.0 N/25mm	2.4 N/25mm
PS <u>Peel FINAT 1</u>	21.8 N/25mm	31.8 N/25mm	11.8 N/25mm	18.2 N/25mm
ABS <u>Peel FINAT 1</u>	31.4 N/25mm	33.9 N/25mm	15.6 N/25mm	17.6 N/25mm

### Adhesive Considerations

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

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 BUMPERFLEX TAPES

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.

DISCLAIMER: To the best of our knowledge the information in this Technical Data Sheet is believed to be correct as of the date issued. However, neither BumperStops Ltd nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of the suitability of any material is the sole responsibility of the user.

All BumperFlex tapes are RoHS and Wee compliant.