

# DuploTEC® 688 SBF – PU Film

## Material description

DuploTEC® 688 SBF is a **Structural Bonding Film** based on polyurethane technology for fast bonding processes and low activation temperatures.

The thermosetting film unites the advantages of an easy to handle adhesive film with structural bonding performance and can be used for bonding of various materials.

	Material	Colour	Thickness in $\mu\text{m}$ (mil)
Liner	Silicone paper	yellow	80 (3.2)
Adhesive	Thermosetting polyurethane film	translucent	100 (4.0)

## Features & benefits

- ✓ Material friendly due to the low activation temperature starting at 95 °C (203 °F)
- ✓ High cohesion strength after cross-linking
- ✓ High adhesion on a wide range of substrates such as: PC, PVC, PET, FRPs, fabrics, paper, synthetic paper, wood
- ✓ Clean and fast application process (Pick & Place, manually, semi- or fully-automatic)
- ✓ Low creeping due to cross-linking
- ✓ High resistance against UV exposure without yellowing
- ✓ Adhesive film isn't sticky at room temperature
- ✓ Constant and smooth film thickness
- ✓ Immediate high bonding strength allows quick further processing
- ✓ Excellent die-cutting and converting properties
- ✓ DuploTEC® 688 SBF can be integrated into a production process either as a roll, spool or an ultra-precise die-cut part

## Application instructions - processing

### Surface preparation

- Surfaces must be clean, dry and free from dust, grease, oil and release agents
- Clean by using a clean cloth & suitable solvents
- Surface energy must be at least 38 mN/m

*We advise to check the temperature resistance of materials prior to bonding.*

### Prelamination (optionally)

- Initial tack is realized by heating the PU film
- Allowed temperature range 50 – 55 °C (122 – 131 °F)
- Recommended pressure: 15 – 75 N/cm<sup>2</sup> (22 – 109 psi)

### Bonding and curing

- Recommended curing temperature: 100 °C – 160 °C (212 °F – 320 °F)
- Recommended curing pressure: 15 – 75 N/cm<sup>2</sup> (22 – 109 psi)

*Thermal transfer (time) depends on substrate thickness and its thermal conductivity and capacity. Curing can be achieved with a variety of machines, such as hot laminating machines, heat presses, fusing machines, moulding lines and comparable laminating equipment*

### Postcuring conditions

- Final strength is achieved 24 h after curing
- Cooling to <40 °C (104 °F) under pressure will reduce temperature induced stress in the bond to prevent part deformation

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Technical data	Method	Value
Glass transition temperature after curing	DSC	-50 °C (-58 °F)
Softening temperature		approx. 50 °C (122 °F)
Tensile lap shear strength (23 ± 2 °C; 73 °F)	According to DIN EN 1465	MPa
Steel (1 mm)		≥ 6
Polycarbonate (3 mm)		≥ 11
Temperature resistance, long term	Internal standard	< 150 °C (302 °F)
Temperature resistance, short term		< 180 °C (356 °F)

## Storage / Shelf life

- DuploTEC® 688 SBF has to be stored and transported at temperatures below +35 °C (95 °F) at normal humidity level of 50 – 70 % r. h.
- Shelf life is 15 months after production
- After prelamination to one substrate at ≤ 55 °C (131 °F) lamination temperature, the shelf life is three month at above mentioned conditions

## Safety precautions

- Please pay attention to the General Material Safety Information before using DuploTEC® 688 SBF the first time
- DuploTEC® 688 SBF is compliant with the requirements: Directive 2011/65/EU – RoHS and Regulation (EC) No 1907/2006 – REACH
- DuploTEC® 688 SBF is free of benzene, phenolics, toluene and formaldehyde
- DuploTEC® 688 SBF is free of APEOs and styrene according to the current GADSL guideline

## Important note

The physical characteristics contained in this data sheet represent typical or average values. All application related statements, information and recommendations herein are given to the best of our knowledge and practical experience. Many factors beyond our control and uniquely within buyer's knowledge and control can affect the use and performance of our tape in a particular application. EXCEPT AS EXPRESSIVELY AGREED IN WRITING WE DO NOT TAKE OVER ANY WARRANTY OR LIABILITY FOR THE SUITABILITY OR USABILITY OF OUR TAPES FOR CERTAIN PURPOSES AND APPLICATIONS RESULTING FROM BUYER'S SPECIAL USAGE OF THE TAPES; EXCEPT WHERE PROVIDED BY MANDATORY LEGAL PROVISIONS; WE WILL NOT BE LIABLE FOR ANY DIRECT OR INDIRECT MATERIAL OR IMMATERIAL LOSSES OR DAMAGES ARISING FROM THE USAGE OR APPLICATION OF OUR TAPES. Solely the buyer is responsible for determining the suitability of the specific tape for its use in connection with his method of application. Please consult our Technical Applications Department for specific advice.

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In case of any further questions regarding product safety (confirmation, conformity to guidelines, REACH, etc.) please use the following e-mail address: [ae@lohmann-tapes.com](mailto:ae@lohmann-tapes.com)