



DuploTEC[®] Structural Bonding Films

The benefits of tapes & liquid adhesives.

The best of both worlds

Combined high-tech adhesive technology for completely new solutions.

Efficient bonding solutions need to meet increasingly demanding industrial requirements. Regardless of whether they are used in lightweight construction, miniturization, automotive, textile or electronics, our solutions more than meet these requirements in terms of their engineering, cost and quality. In DuploTEC® SBF, the Lohmann "Bonding Engineers" have developed adhesive films that combine structural bonding performance with the ease of handling offered by adhesive tapes. The benefits are improved cost-efficiency, increased process reliability and better product quality.



Versatile

Bonds almost every kind of material and provides excellent freedom of design, construction and material.



Structural

Provides strength for high static and high dynamic loads by spreading the load evenly across the surface.

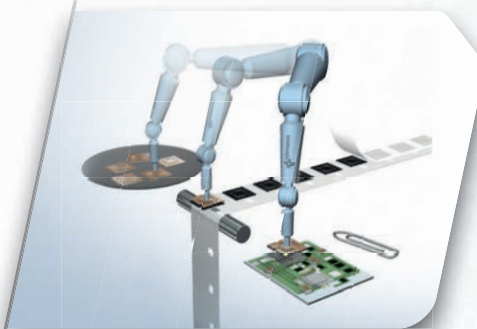
Three technologies for every requirement.

The DuploTEC® SBF range comprises three different technologies known as "Topaz", "Amber" and "Onyx." They provide strength for high dynamic as well as high static loads and possess good heat, environmental and chemical resistance. At the same time, they provide sealing and protection against aggressive liquids, gases and corrosion. No matter how demanding your requirements, using DuploTEC® SBF will ensure you overcome the limitations of conventional bonding technologies.



Pre-assembled

Rolls, spools and die-cuts combine high precision geometry with pre-defined adhesive layer thicknesses.



Manual to fully automated

Established processes like pick and place make small or large batches easy to achieve.

Overcoming boundaries

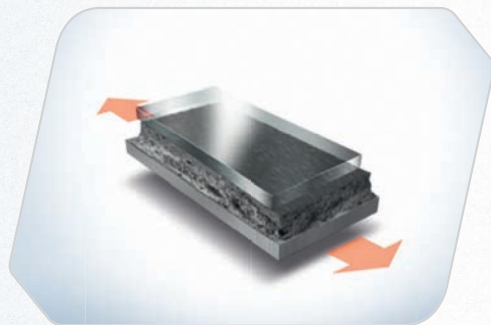
DuploTEC® SBF: the powerful alternative to conventional bonding solutions.

Depending on the material, a large number of mechanical joining processes or technologies can be realized using liquid adhesive or thermoplastic film. Nevertheless, limitations exist that can negatively impact product quality and incur additional costs.

- The limitations of traditional bonding solutions

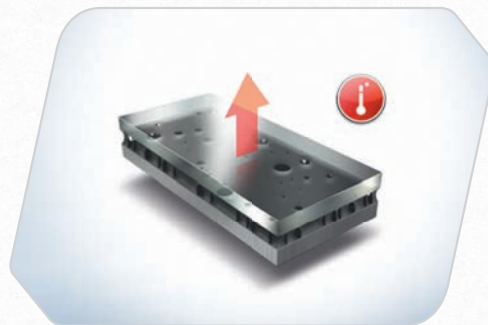
Adhesive Tape

- ⊖ Limited ability to compensate dynamic & static forces
- ⊖ Low heat resistance
- ⊖ Low environmental- and chemical stability



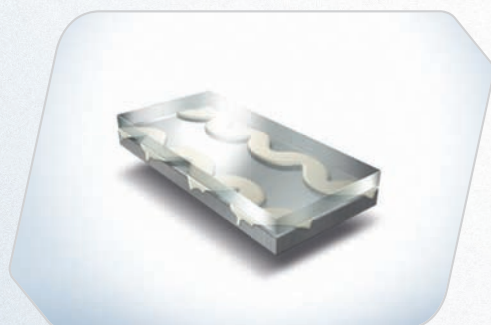
Thermoplastic film

- ⊖ Low static and dynamic shear strength
- ⊖ Heat reversible
- ⊖ Low environmental and chemical resistance



Liquid adhesive

- ⊖ Pot life and cure time
- ⊖ Soiling's and adhesive bleed
- ⊖ Additional dosing and mixing processes
- ⊖ Requires complex safety



Mechanical Mounting

- ⊖ Local tension peaks & material stress
- ⊖ Impairments in design
- ⊖ Risk of corrosion due to damage of material
- ⊖ Excess weight

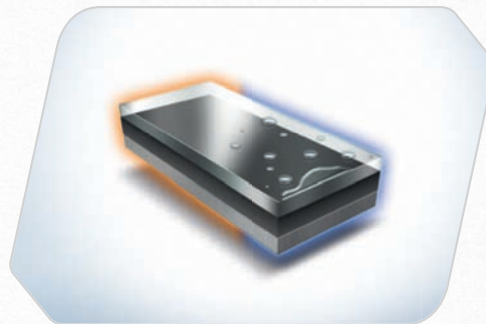
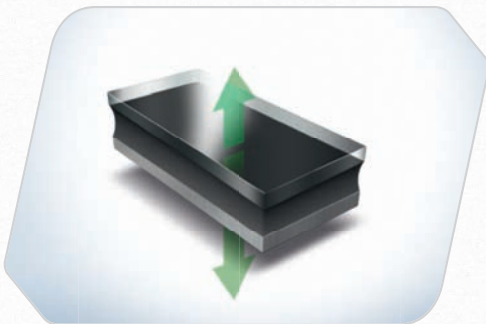


Providing an ideal solution for the strong and flexible bonding of different materials, DuploTEC® SBF-technology overcomes the boundaries of constructive bonding.

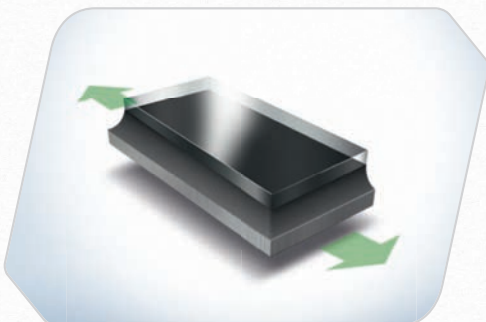
+ Structural bonding with DuploTEC® SBF

- ⊕ Uniform and defined adhesive layer thickness
- ⊕ Faster and cleaner processing
- ⊕ Fast automated application
- ⊕ Easy handling thanks to pre-prepared die-cuts
- ⊕ High static and dynamic loads

- ⊕ Improved heat resistance
- ⊕ Reduced handling
- ⊕ Precision adhesive layer thickness
- ⊕ Reliable bonding of different materials
- ⊕ No stress points thanks to even loading



- ⊕ High environmental and chemical resistance
- ⊕ Design freedom thanks to small adhesive surfaces
- ⊕ Protective barrier guards against corrosion
- ⊕ Potential for weight reduction
- ⊕ Clean adhesives and pollutant-free processes



Discover innovation in triple pack on the following pages.



Topaz



Amber



Onyx

DuploTEC® SBF
Topaz Technology

Strong, flexible and quick to process:
Thanks to rapid networking at low
temperatures, this is the ideal adhesive
film for short cycle times.



High-performance polyurethane bonding system with excellent elasticity during final adhesion.

Technology:

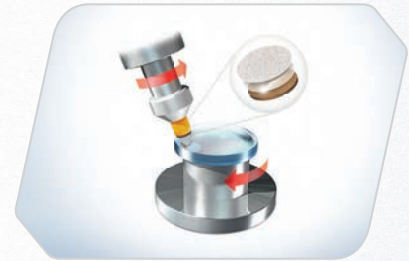
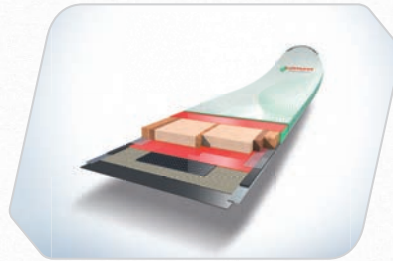
- Solvent-free dry adhesive film
- Latent reactive with structural adhesive properties

Benefits:

- Cures in seconds at low temperatures
- Adapts easily to customer requirements
- Individual and precise adhesive dimensions down to 0.3 mm width
- Elastic and latently even after curing
- High heat and chemical resistance

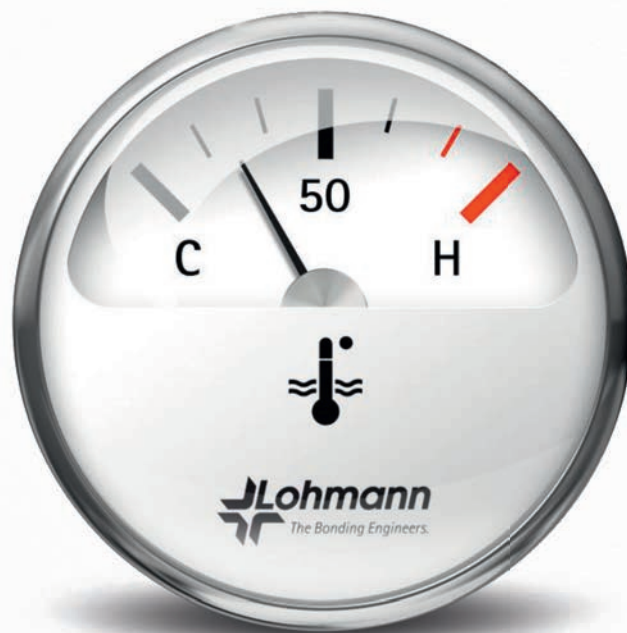
Process:

- Can be pre-applied to substrates at 50 - 60 °C
- 3 months storage stability after pre-application
- Cures at 70 - 160 °C
- Curing time from 3 seconds
- Pressure min. 15 N/cm



DuploTEC® SBF Amber Technology

The advantages of tape and liquid adhesives are: Ease of handling, fast curing and strong bonding. The ideal adhesive film for temperature sensitive components.



The first commercially available cyanoacrylate adhesive system on a roll.

Technology:

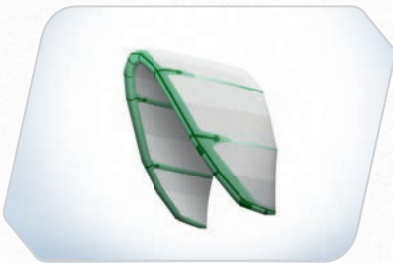
- Bonding film with initial adhesion
- Reactive with structural adhesive properties
- Patents pending

Benefits:

- Combined benefits of tape and liquid adhesive
- Adhesive tape is easy to apply
- Instant bonding enables easy, secure fixing
- Particularly suitable for temperature sensitive materials

Process:

- Auto-curing system, which cures at room temperature under moisture
- Curing at 23 °C from 48 h
- Curing at 70 °C 1 h



DuploTEC® SBF Onyx Technology

The benefits of pressure-sensitive and structural bonding combined: High initial adhesion, extreme resistance and easy application. The safe choice for high-strength bonds.



Heat-curing epoxy adhesive systems and tapes with semi structural till high-strength properties.

Technology:

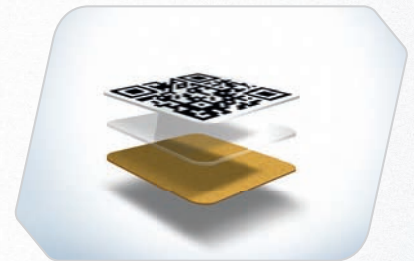
- Bonding film with initial adhesion
- Reactive adhesive films and adhesive tapes with flexible properties high-strength or structural adhesive bonds.
- Different formulations, thicknesses and coating technologies

Benefits:

- As easy to apply as adhesive tape
- Compensation of high static and dynamic forces
- Very high resistance to aging and chemicals
- High temperature resistance

Process:

- Curing at 130 - 180 °C
- Curing time min. 10 minutes
- Pressure min. 1 N/cm²



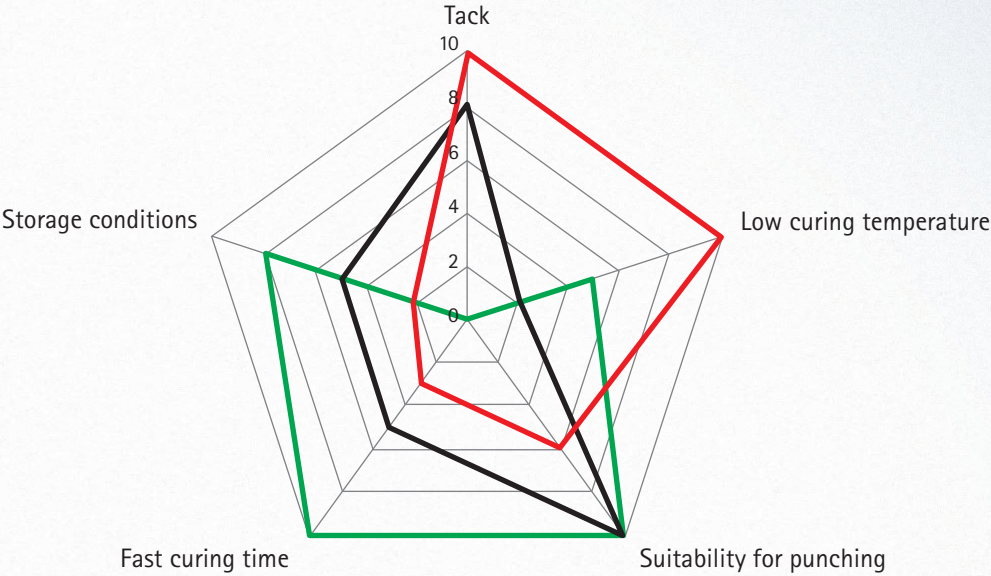
High-tech features

Whichever technology you choose, your benefits are clear.

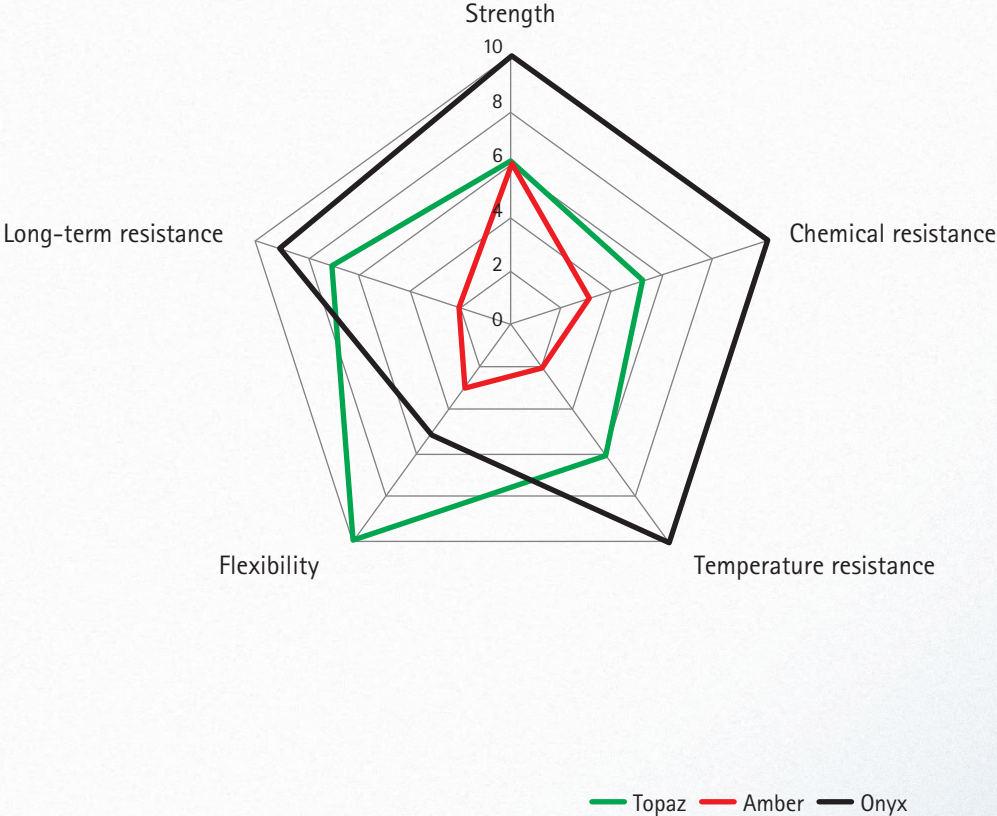
Each technology has its own character, specific advantages and applications. Use this overview to decide for yourself, which ones best meet your application's requirements.

DuploTEC® SBF:	Topaz			Amber	Onyx	
Chemistry	Polyurethane	Polyurethane	Polyurethane	Cyanoacrylate	Epoxy	Epoxy
Adhesive	TS 40	TS 41	TS 43	TS 71	TS 83	TS 82
Character before curing	Dry adhesive film	Dry adhesive film	Dry adhesive film	High adhesion	Low adhesion	High adhesion
Curing temperature	≥ 120 °C	≥ 70 °C	≥ 100 °C	≥ 20 °C	≥ 130 °C	≥ 130 °C
Curing time	Seconds	Seconds	Seconds	Days	Minutes	Minutes
Character after curing	Flexible & semi structural	Flexible & semi structural	Flexible & semi structural	Firm & semi structural	Firm & structural	Firm & semi structural
Color when cured	Transparent	Transparent	Translucent	Translucent	Translucent	Gray
Thicknesses	20 µm	20 - 40 µm	15 - 200 µm	40 µm	10 - 35 µm	70 - 2000 µm
Ideally suited for	PC/PVC	Textile/PET/PVC	Textile/PC/CFK	Elastomers	Metal/PEEK	Glass/Metal

Process performance



Product performance



Smart Bonding Approach

Lohmann is your expert partner for everything from the initial idea to process integration and more. Lohmann service provides the key to your long-term success. After all, that's what the **Smart Bonding Approach** is all about.





Application

Providing a perfect adhesive solution is about knowing how, where and under which conditions, which adhesive should be used. Our application engineers show you what's possible and engage with you to define the right adhesive technology for your needs.



Tools

A self-adhesive solution is only as good, safe and efficient as the production process it is being used in allows. To get the most out of your solution, we provide you with a wide range of tools and accompany you through the detailed engineering.



Product selection

Applying our knowledge of the specific bonding application, we find the adhesive that best meets your needs. To do this, we either re-develop an existing solution or create a new one.



Service

At Lohmann we offer an all-in customer support. In our "Bonding Arena" all our adhesive solutions become graspable in the truest sense of the word, so that we can immediately test which could be the right solution for you. This takes place in a simulation area, which realizes the workflow: product requirements, product selection, pretreatment, prototyping, assembling and component testing. This gives you the opportunity to try and test your application or product before integrating it into your production process. As you can see, a real demonstration of the Lohmann value chain.

The best bonding solution is the one that meets the precise needs of your application. And how do we find it? By advising and supporting you from the initial idea right through to its integration in your process. Our philosophy in three words: **Smart Bonding Approach.**