



# SIKA MARINE APPLICATION GUIDE

## GLOSSARY OF TERMS

Version 2/2017

**BUILDING TRUST**







## GLOSSARY OF TERMS

### **Activator**

Solvent containing adhesion promoters that increase the adhesion of an adhesive on a substrate.

### **Adhesion**

Adherence of an adhesive to a substrate.

### **Adhesive joint (bond-line)**

Gap between two components that must be filled with adhesive.

### **Aging**

Behaviour of the adhesive layer under the influence of time, temperature and environmental conditions.

### **Balanced moisture content**

Moisture content of a material (specially wood) when allowed to stabilize relative to ambient levels of atmospheric temperature and air humidity.

### **Bonding joint**

Gap between two bonding surfaces filled with adhesive.

### **Bondline**

Contact area between adhesive and substrate.

### **Breaking stress**

Stress required to produce failure or fracture in a material.

### **Clamping**

Temporary securing of components in the desired position by mechanical means, with or without the application of pressure, while the adhesive is setting.

### **Cleaner**

Chemical agent used to clean surfaces prior to bonding.

### **Coefficient of thermal expansion**

A factor that expresses the dimensional changes in a component as a function of temperature change.

### **Cohesion**

Inherent strength of a material.

### **Contact adhesive**

Laminating adhesive, applied to both surfaces of the joint. Once ready, the adhesive surface is not tacky and the bonding force results only on contact of the two adhesives surfaces.

### **Cross-linking**

Creation of a three-dimensional network through the formation of chemical bonds between molecular chains.

### **Curing / Setting**

Setting or hardening of an adhesive due to physical or chemical reaction.

### **Curing conditions**

Factors that influence the curing of adhesives, e.g. temperature, relative humidity.

### **Dew point**

Temperature at which a condensation of the air humidity occurs (depending on environmental temperature and relative humidity).

**Diffusion**

Migration of gases or liquids through materials. The hardening process of one-component PUR and silicones is limited by the speed of diffusion of water through the hardened skin or layer of the adhesive.

**Drying time**

Duration required for a primer to reach a state that will safely allow the process that follows it to be started (e.g. adhesive application).

**Duromer**

Crosslinked, mostly unmeltable plastics.

**Elastomers**

Elastomers are macromolecules with an open network structure which do not undergo plastic flow even at high temperatures approaching the point of chemical decomposition, but undergo reversible elastic deformation instead.

**Elongation at break**

Elongation that takes place before a material fails or fractures.

**ESC**

Environmental stress cracking. Cracking of thermoplastics under internal or external stress and chemicals.

**Final strength**

Strength of an adhesive joint when the adhesive has attained full cure.

**Fillers**

Additives (mostly inorganic) to improve the properties of the adhesive.

**Flash-off time**

Duration required for a primer, solvent, cleaner or activator to reach a state that will safely allow the process that follows it to be started (e.g. adhesive application).

**FEM (Finite Element Method)**

Calculation using interactive analysis methods. Calculation values are available from Technical Service Sika Industry.

**Fracture energy**

Energy that is required to cause a material to fail or fracture.

**Galvanic corrosion**

Corrosion due to the electrical contact of metals with different electrochemical potential (e.g. aluminum, steel). The use of nonconductive adhesives can stop this effect.

**Handling strength**

Strength level development at which the bonded assembly can be handled and passed on to the next stage of processing.

**Heat resistance**

The ability of a material to withstand heat without altering its state as a result of exposure to a specified temperature over a fixed period of time.

**Hygic movement**

Movement as a result of humidity content in the material. Particularly applies to wood but also affects other materials like PA (brand name Nylon). The values from wood depend on the type and the orientation of the grain (radial, tangential).

**Joint assembly**

Process of bringing the substrates together under light pressure so that the adhesive is compressed to form the adhesive bond.

**Impact resistance**

Resistance against abrupt forces (crash).

**Modulus of elasticity**

Modulus of elasticity describes the ratio of stress to strain in a rod under tension whose sides are unconstrained.

**Non-sag properties**

Resistance of an adhesive to collapse or slump when extruded as a bead.

**One-component polyurethane adhesive**

Adhesive containing isocyanate groups that cure on exposure to moisture.

**Open or working time**

Maximum period of time that may elapse between application of the adhesive and assembly of the joint.

**Organic window**

Transparent plastic such as PMMA and PC (e.g. Brand names; Plexiglas / Lexan). Thermoplastics which are prone to ESC.

**Pot-life**

Period of time during which multi-component adhesives can be processed after their components have been mixed. Pot-life depends on the ambient temperature and the quantity of batch mixed. It decreases with higher temperature and increased batch quantities.

**Primer**

A special paint coating designed to improve adhesion between adhesive and substrate. They may also have additional functions such as UV-protection of the bond line, reinforcing the substrate and some corrosion protection.

**QA**

Quality assurance.

**Reactive adhesives**

Adhesives that cure or set when exposed to heat, moisture, radiation, etc.

**Resistance**

Behaviour of an adhesive under changed environmental conditions.

**Sag resistance (see Viscosity)****Sealant**

Substance that separates a joint from any medium to which it is exposed.

**Setting**

Solidification of adhesive through physical and / or chemical process.

**Shear modulus**

Defined as the ratio of the shear stress to the shear strain in a body that undergoes simple angular deformation.

**Shelf life**

Period of time that can elapse between the manufacture of an adhesive and its use, subject to storage of the product under controlled conditions.

**Solvent**

Organic liquid that dissolves the base materials and other soluble adhesive constituents without changing their chemistry.

**Solids content**

Nonvolatile portion of components.

**Spacers**

Elastic parts, mostly self-adhesive, used to control the thickness of the adhesive. The shore hardness of the spacer should be equal to or lower than that of the adhesive.

**Substrates**

The base materials to be bonded, e.g. fabric, steel, wood, GRP.

**Tack-free or skinning time**

Time between the application of a one-component adhesive and the formation of a skin on its surface, after which point bonding can no longer take place.

**Tensile lap-shear strength**

Breaking strength of the adhesive bond joining two parallel surfaces in a single lap joint when the joint is subjected to a shearing stress by applying a tensile load centrically to the two lapped substrates.

**Tensile strength**

Breaking stress of a material under tension.

**Thermoplastic adhesive**

Plastics that soften under the application of heat (e.g. PVC, PMMA, ABS).

**Thermosetting resins**

Closely cross-linked macromolecules that do not undergo plastic deformation, even at high temperatures (e.g. Polyester, Epoxy).

**Thick-layer elastic bonding**

Elastic bonding application where the thickness of the adhesive layer exceeds 3 mm.

**Tie-coating**

An industry specific term used to indicate a bonding coat or layer applied to a material to facilitate ready adhesion with other media.

**Transmission**

Ratio of the intensity of a beam of light passing through a body, related to its original intensity. Measured in the UV (organic glazing) and visible range (mineral glazing).  
Sika stipulates limits for primerless glass bonding.

**TV-value**

Maximum workplace concentration or highest admissible concentration of evaporating solvent at a workplace.

**Two-part polyurethane adhesive**

Adhesive formed by the addition reaction of two components; main component and hardener.

**UV-radiation**

High energy part of sunlight, mainly responsible for surface degradation of organic materials like paint, sealants, etc.

**Viscosity**

Resistance to flow exhibited by fluids or paste-like substances as a result of internal friction.

**White spirit**

Petroleum spirit solvent, common used for thinning and cleaning.

**Wetting**

Ability of liquids to disperse themselves uniformly over solid materials.

**Wet bonding**

Method of bonding whereby the adhesive is applied by wetting.

# GLOBAL BUT LOCAL PARTNERSHIP



## FOR MORE MARINE INFORMATION:



[www.sika.com/marine](http://www.sika.com/marine)

### Who we are

Sika is a specialty chemicals company with a leading position in the development and production of systems and products for bonding, sealing, damping, reinforcing and protecting in the building sector and the motor vehicle industry. Sika has subsidiaries in 94 countries around the world and manufactures in over 170 factories. Its more than 17,000 employees generated annual sales of CHF 5.49 billion in 2015.

Our most current General Sales Conditions shall apply.  
Please consult the Data Sheet prior to any use and processing.



**SIKA (NZ) LTD**  
PO BOX 19192  
Avondale, Auckland  
1746, New Zealand

**Contact**  
Phone 0800 745 269  
Fax 0800 745 232  
[www.sika.co.nz](http://www.sika.co.nz)

**BUILDING TRUST**

