



PRODUCT DESCRIPTION

DrSails® is a two-component fast and flexible epoxy based adhesive system capable to cure in the most extreme conditions, even underwater. Once mixed at room temperature reaches high strength flexible bond to almost materials performing high structurability.

TYPICAL APPLICATIONS

Ideal for bonding a full range of materials: metals, wood, composites, sailcloth, wetsuit and plastics. Can be charged with fillers and diluted with acetone for laminating.

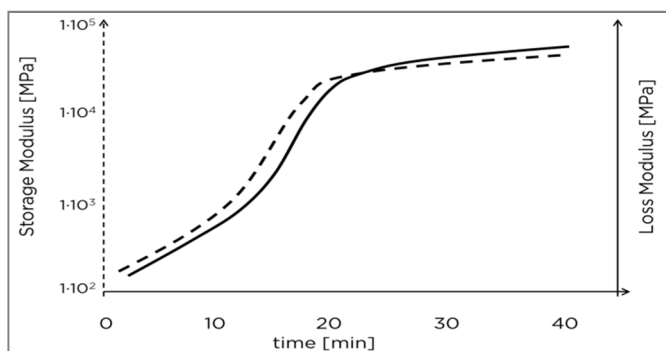
PROPERTIES OF UNCURED MATERIAL

Resin	Typical Value	Range
Chemical Type	Bisphenol-A epoxy	
Appearance	Off-white viscous liquid	
Odour	Light	
Density (g/ml) @ 25°C	1.17	
Viscosity (cP) @ 25°C	26500	25000-40000
Flash Point (TCC) (°C)	12	
Hardener	Typical Value	Range
Chemical Type	Modified Polyamine	
Appearance	Yellowish viscous liquid	
Odour	Strongly Sulphur	
Density (g/ml) @ 25°C	1.2	
Viscosity (cP) @ 25°C	24500	20000-40000
Flash Point (TCC) (°C)	>55	
Mixture	Typical Value	Range
Appearance	Off-white viscous Liquid	
Density (g/ml) @ 25°C	1.19	
Mix Ratio (R:H) by Vol.	1:1	
by Weight	1:1	

TYPICAL CURING PERFORMANCE

Cure Speed

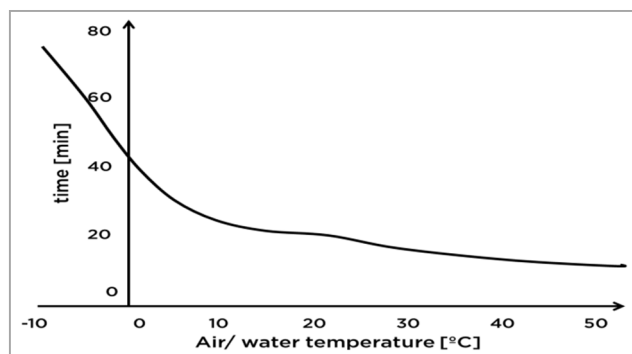
The graph below shows the Storage Modulus (MPa) and Loss Modulus (MPa) over time, on aluminium shear strength with an average bondline gap of 0.6 to 0.8mm on 0 to 50Hz steady state flow procedure on reological parameters.



Curing Properties

(Air/water @ 25°C unless noted)	Typical Value
Working Life , minutes	8
Tack Free Time, minutes	22
Full Cured Time, hours	24

The graph below shows the curing time over. The information displayed ensure optimal uses from - 10 to 50°C



TYPICAL PROPERTIES OF CURED MATERIAL

(Air/water @ 25°C unless noted)	Typical Value
Tensile Strength, MPa (psi) @ 20min	28.8
Tensile Elongation, (%) @ 20min	144
Hardness Shore A (ASTM 2240)	63
Flexural Strength (ISO 178), Mpa (psi)	4.5
Glass Transition Temperature (Tg) ,°C	8 to 18

PERFORMANCE OF CURED MATERIAL

Shear Strength vs Substrate

(Substrates cured for 7 days @ 23±2°C)

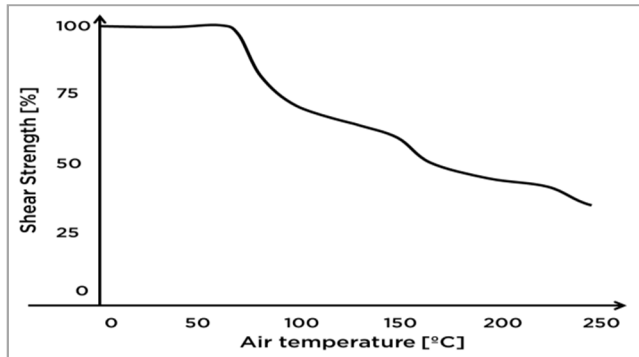
Substrate	Typical Value
<u>Single Overlap ISO 527-3:1996</u>	N/mm ² psi
Dacron®	>0.5 >72.5
Mylar® with Twaron® 1650	>0.2 >29.1
Tafetta® with Twaron® 1650	>0.82 >118.9
NS 3Di® Kevlar®/Dyneema® (80/20)	>0.99 >143.6
Cuben® Fiber Film	1.3 188.6
PVC liner isopropanol etched	1.3 188.6
<u>Single Overlap ISO 11003-2:2001</u>	
Stainless Steel AISI-304	8.2 1189.3
Iron UF111	8.6 1247.3
Aluminium 6063	5.6 812.2
ETP Copper	7.4 1073.3
Polycarbonate	10.4 1508.4
Polyamide	3.6 261.1
PVC	5.2 754.2
Pine wood	4.9 710.7
Iroko wood	7.6 797.7
Oak wood	5.3 768.7
Teak wood	6.9 1000.8
FGR PET matrix	18.2 2639.7
CFR epoxy matrix	20.1 2915.3

* Values with ">" sign determines substrate failure

TYPICAL ENVIRONMENTAL RESISTANCE

Hot Strength

Test Procedure: ISO 11003-2:2001
Substrate: Stainless Steel AISI 304
Bondline Gap: 0.25 to 0.3mm
Cure procedure: 24h @ 25°C



Saline Fog Atmosphere Strength

Test Procedure: ISO 9227
Substrate: Mylar® with Twaron® 1650
Bondline Gap: 0.25 to 0.3mm
Cure procedure: 24h @ 25°C

	Typical Value	
Single Overlap ISO 527-3:1996	N/mm ²	psi
Mylar® with Twaron® 1650	>0.18	>26.1

UV Exposure Atmosphere Strength

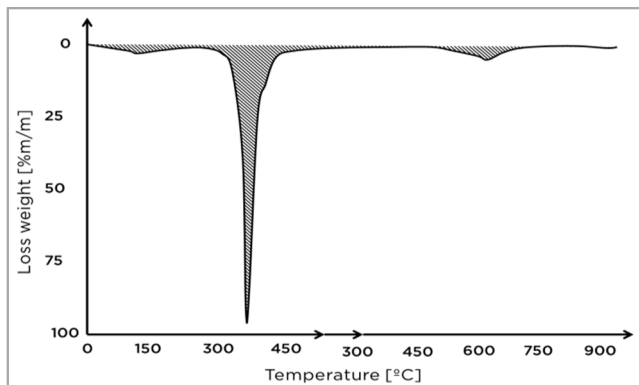
Test Procedure: ISO 4892-3
Substrate: Mylar® with Twaron® 1650
Bondline Gap: 0.25 to 0.3mm
Cure procedure: 24h @ 25°C

	Typical Value	
Single Overlap ISO 527-3:1996	N/mm ²	psi
Mylar® with Twaron® 1650	>0.19	>27.5

* Values with ">" sign determines substrate failure

Thermal degradation

Test Procedure: TGA (N₂ and AIR)
MidPoint degradation: 385.44°C



GENERAL INFORMATION

For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS).

Regulatory Notice

This product is regulated by the European Community Regulation No 1907/2006 and may not be exported without license. See the Material Safety Data Sheet for details.

Directions for use

1. For high strength structural bonds, removal of surface contaminants such as paint, oxide films, oils, dust, mold release agents and all other surface contaminants.
2. Use gloves to minimize skin contact. DO NOT use solvents for cleaning hands.
3. **Syringe container:** Syringe ensures correct mixed ratio of the two components. Remove the syringe cap and expel a small amount of adhesive to be sure both sides are flowing evenly and freely. If automatic mixing of resin and hardener is desired, attach the mixing nozzle to the end of the cartridge and begin dispensing the adhesive. **Coaxial cartridge:** To use simply insert the cartridge into the application gun and start the plunger into the cylinder using light pressure on the trigger. Use conventional high viscosity caulking gun. Remove the syringe cap and expel a small amount of adhesive to be sure both sides are flowing evenly and freely. If automatic mixing of resin and hardener is desired, attach the mixing nozzle to the end of the cartridge and begin dispensing the adhesive. **Bulk container:** Mix thoroughly by weight or volume in the proportions specified in Properties of Uncured Material section. Mix vigorously approximately 15 seconds after uniform color is obtained.
4. For maximum bond strength apply adhesive evenly to both surfaces to be joined.
5. Application to the substrates should be made within 5 to 8 minutes. Higher temperatures will reduce this working time.
6. Keep parts from moving during cure. Contact pressure is necessary. Maximum shear strength is obtained with a 0.2 to 0.5mm gap bond line.
7. Excess uncured adhesive can be cleaned up with ketone type solvents.

Storage

Product shall be ideally stored in a cool, dry location in unopened containers at a temperature between 8°C to 28°C (46°F to 82°F) unless otherwise labeled. Optimal storage is at the lower half of this temperature range. To prevent contamination of unused product, do not return any material to its original container. Shelf life was guaranteed for 36 months in described conditions.

Data Ranges

The data contained herein may be reported as a typical value and/or range. Values are based on actual test data and are verified on a periodic basis.

Note

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing,

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AUTHORIZED DEALER DETAILS

