AFINITICA® ADHESIVE WELDING SUPERFLEX

PRODUCT DESCRIPTION

Technology	Cyanoacrylate
Chemical Type	Methoxyethyl Cyanoacrylate
Appearance (uncured comp. A)	Transparent gel
Appearance (uncured comp. B)	Transparent gel
Components	Two-part – requires mixing
Viscosity	High, thixotropic gel
Cure	By mixing

AFINITICA® Adhesive Welding SuperFlex is a flexible, elastic and odourless instant adhesive with exceptional adhesion to a very broad range of materials and surfaces. Curing times of only 6 minutes while a polymer with more than 200% of elongation results within 10 minutes, working times (in-mixer) up to 6 minutes, high volumetric gap filling**, instant adhesion to most plastics, wood and metals including aluminium, and to porous and irregular surfaces. The gel consistency enables application in any orientation whilst the static mixing nozzle ensures uniform and precise application for exceptional user convenience.

TYPICAL PROPERTIES OF UNCURED MATERIAL

PART A:

Specific gravity, 25 ºC, g/cm^3: 1,2

Viscosity, Brookfield, 25 ºC, mPa·s (cP):

Spindle 14, speed 1.5 rpm 100.000 to 190000

PART B:

Specific gravity, 25 ºC, g/cm^3: 1.2

Viscosity, Brookfield, 25 ºC, mPa·s (cP):

Spindle 14, speed 1.5 rpm 80.000 to 110.000

MIXED A and B:

Open time at 25 ºC: 6 – 10 minutes

Working time at 25 ºC: 4 – 8 minutes

TYPICAL CURING PERFORMANCE

Under normal conditions, the atmospheric moisture initiates the curing process. Although full functional strength is developed in a relatively short time, curing continues for at least 24 hours before full chemical resistance is developed.

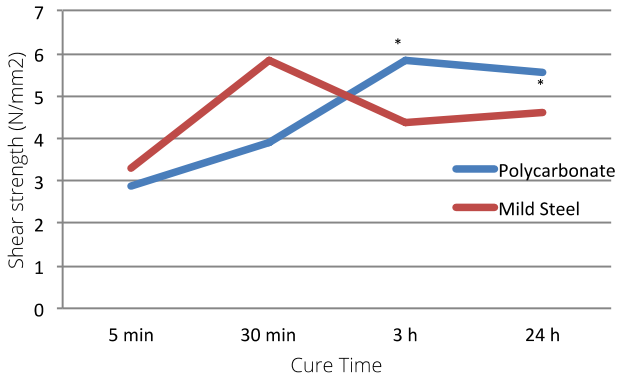
FIXTURE TIMES

Fixture time is the time at which an adhesive bond (250 mm^2) is capable of supporting a 3 kg load for 10 seconds. The fixture time will depend on the substrate. The table below shows the fixture time for different substrates using lap shears.

	Time (s)
Pine Wood	70 – 170
Beech Wood	60 – 110
ABS	40 – 80
Polycarbonate	60 – 100
Aluminium A5754	60 – 70
Mild steel	25 – 40

CURE SPEED *vs.* SUBSTRATE

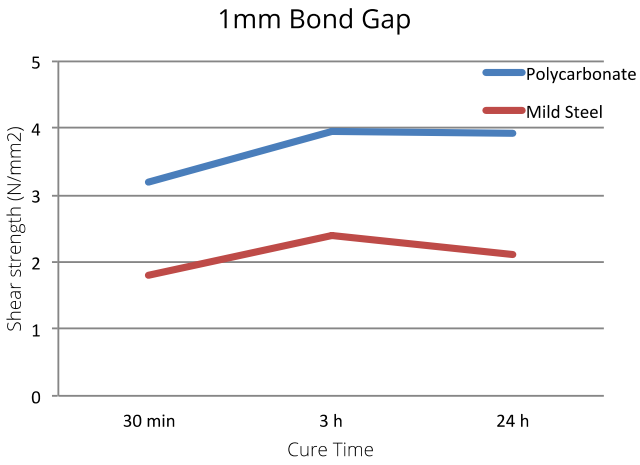
The rate and strength of cure will depend on the substrate used. The graph below shows the tensile shear strength developed with time on different materials and tested according to ISO 4587.

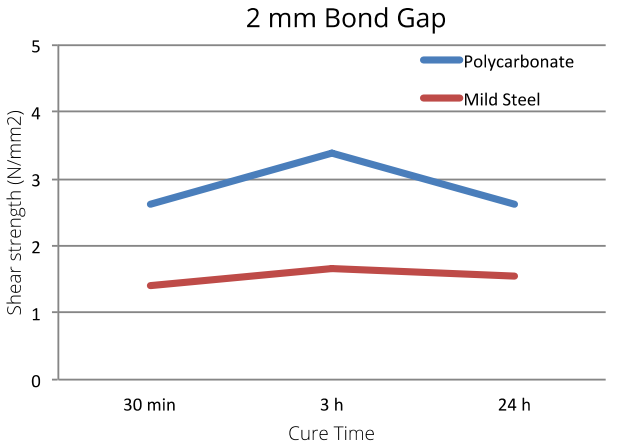


* Substrate Failure

TENSILE SHEAR STRENGTH *vs.* BOND GAP

The rate and strength of cure will depend on the bondline thickness. The following graph shows the shear strength developed with time on Grit Blasted Mild Steel, Pine Wood and Polycarbonate lap shears at different bondline thicknesses and tested according to test method ISO 4587.





TYPICAL PERFORMANCE OF CURED MATERIAL

TENSILE SHEAR STRENGTH

The shear strength will depend on the substrate. The Table below shows the shear strength for different substrates using lap shears according to ISO 4587.

Cured for 24h at 22 ºC

	Strength (N/mm²)
Pine Wood	4 – 9
Beech Wood	3 – 7
ABS	7 – 12*
Polycarbonate	4 – 9*
Aluminium A5754	6 – 9
Mild steel	6 – 13

* Substrate Failure

STRESS-STRAIN

Elasticity was measured by % elongation of the sample at break relative to initial sample length located between the sample holding clamps of the mechanical tester. The mechanical load was recorded at sample break and the Young's Modulus (YM) was automatically calculated from recorded stress-strain data.

Cured for 24h at 22 ºC

Elongation at break (%): >200
Mechanical load at break (N): >150
Young's Modulus (MPa): <2

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.
For safe handling information on this product, consult the Safety Data Sheet (SDS): Part A SDS242940 and part B SDS242941.

Directions for use: Before applying the glue, make sure the gluing surface is clean, dry and free of grease.

1) Before applying the glue, make sure the gluing surface is clean, dry and free of grease.
2) To assemble the syringe, first introduce the plunger, then exchange the cap with a mixer. Discard the first few drops.
3) Apply the material on one of the two surfaces and assemble the two parts within 1 minute.
4) After uniting the substrates, 30-45 seconds are available for repositioning depending on the substrate. Press the two parts together firmly for around 30 seconds. After releasing the pressure, wait 5 minutes before good handling strength, 10 minutes for a fully cured material and 24h for full strength.
5) Make use of the syringe or discard product at least every 2 minutes to avoid the product from polymerizing inside the mixer, if you do not want to replace the mixer.
6) After use, discard the mixer and replace the cap. Store the syringe in a cool and dry environment.
7) Optimal Storage: 2 °C to 8 °C. Storage below 2 °C or greater than 8 °C can adversely affect product properties
8) Product shelf-life: 9 months

Conversions:

(ºC x 1.8) + 32 = ºF
kV/mm x 25.4 = V/mil
mm / 25.4 = in
µm / 25.4 = mil
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm^2 x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·mm x 0.142 = oz·in
mPa·s = cP

NOTE

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