

AFINITICA® AF04

PRODUCT DESCRIPTION

Technology	Cyanoacrylate
Chemical Type	Ethyl Cyanoacrylate
Appearance (uncured)	Transparent, colourless to straw coloured liquid
Components	One part – requires no mixing
Viscosity	Low
Cure	Humidity

AFINITICA® AF04 is designed for the assembly of difficult-to-bond materials which require uniform stress distribution and strong tension and shear strength. The product has excellent bonding properties to a very broad range of materials, including metals, plastics and elastomers. AFINITICA® AF04 is particularly suited for bonding porous or absorbent materials such as wood, paper, leather and fabric.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific gravity, 25 °C, g/cm ³ :	1.06
Viscosity, Brookfield, 25 °C, mPa·s (cP):	
Spindle 21, speed 50 rpm	325 – 450

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.

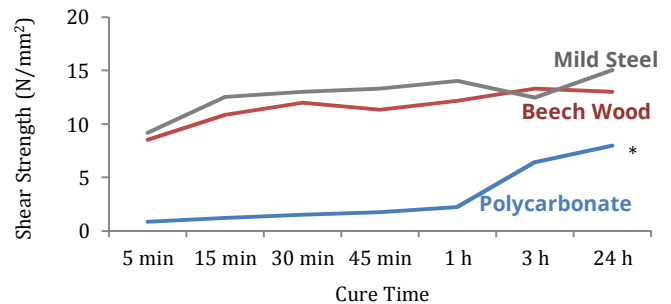
FIXTURE TIMES

Fixture time is the time at which an adhesive bond (250 mm²) 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	20 – 30
Beech Wood	15 – 30
ABS	15 – 45
Polycarbonate	25 – 45
Aluminium A5754	10 – 20
Mild steel	15 – 25

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

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 °C

	Strength (N/mm ²)
Pine Wood	9 – 11*
Beech Wood	12 – 14*
ABS	11 – 12*
Polycarbonate	7 – 8
Aluminium A5754	8 – 9
Mild steel	18 – 23

* Substrate Failure

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): 242932

Directions for use:

1) Before applying the glue, make sure the gluing surface is clean, dry and free of grease.

2) Apply adhesive to one of the surfaces. Do not use items like tissue or a brush to spread the adhesive.

3) Assemble the parts within a few seconds. The parts should be accurately located, as the short fixture time leaves little opportunity for adjustment.

4) Bonds should be held fixed or clamped until adhesive has fixture.

5) Product should be allowed to develop full strength before subjecting to any service loads (typically 24 to 72 hours after assembly, depending on bond gap, materials and ambient conditions).

6) Optimal storage: 2 °C to 8 °C. Storage below 2 °C or greater than 8 °C can adversely affect product properties.

7) Product shelf-life: 12 months

may be covered by one or more United States or foreign patents or patent applications.

Conversions:

$$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$$

$$\text{kV/mm} \times 25.4 = \text{V/mil}$$

$$\text{mm} / 25.4 = \text{in}$$

$$\mu\text{m} / 25.4 = \text{mil}$$

$$\text{N} \times 0.225 = \text{lb}$$

$$\text{N/mm} \times 5.71 = \text{lb/in}$$

$$\text{N/mm}^2 \times 145 = \text{psi}$$

$$\text{MPa} \times 145 = \text{psi}$$

$$\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$$

$$\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$$

$$\text{mPa}\cdot\text{s} = \text{cP}$$

NOTE

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