



Crestabond[®] M7-05

Methacrylate Structural Adhesive Technical Data Sheet

Description

Crestabond M7-05 is a toughened, two component acrylic adhesive designed for bonding composites, thermoplastics and metals. Crestabond M7-05 is a primerless adhesive, requiring only minimal surface cleaning of the substrates to be bonded.

Features

- Primerless metal application
- High strength and modulus
- Fast setting and curing
- Excellent environmental resistance
- Ready-to-use two component adhesive

Benefits

- Speeds assembly process
- Replaces mechanical fasteners
- Reduce labour
- Bonds difficult metals and plastics

Characteristics of Crestabond M7-05

Characteristics	Typical Value
Working Time (Gelttime) ¹	4 – 7 Minutes
Fixture Time	18 – 22 Minutes
Gap Filling	1 – 5 mm
Flash Point	10°C
Mixed Colour	Off White

1. Working time measured with 12g mass of adhesive with 1:1 mix ratio by volume at 24°C.

Physical Data – Uncured

Property	Typical Value	
	M7-05 Adhesive	Activator
Specific Gravity	0.98 – 1.02	0.98 – 1.02
Mix Ratio (by volume)	1.0	1.0
Mix Ratio (by weight)	1.0	1.0
Viscosity	50,000 – 70,000 cPs	30,000 – 50,000 cPs
Colour	Off White	Off White
Stability at 20°C ²	6 Months	6 Months

2. Stability defined from date of manufacture when left un-opened in the original containers and stored between 15°C and 23°C.

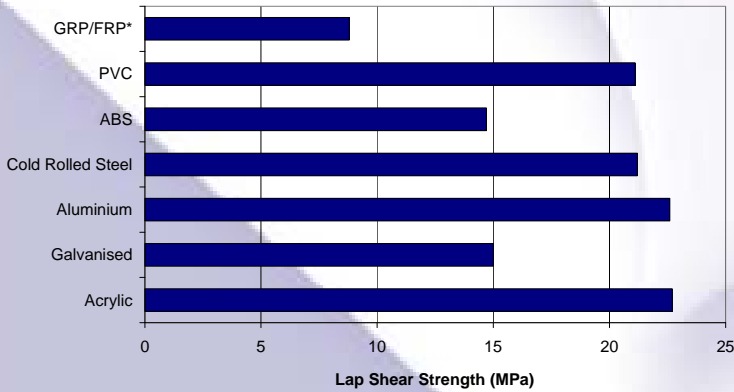
Physical Data – Cured

Property	Typical Value
Tensile Strength	23 – 26 MPa
Tensile Modulus	1300 – 1700 MPa
Tensile Elongation	30 – 44%

Tested to ASTM D638.

Bond Joint Strength – Typical Lap Shear Strengths (MPa) at 23°C

Values are based on substrate failure where marked by *

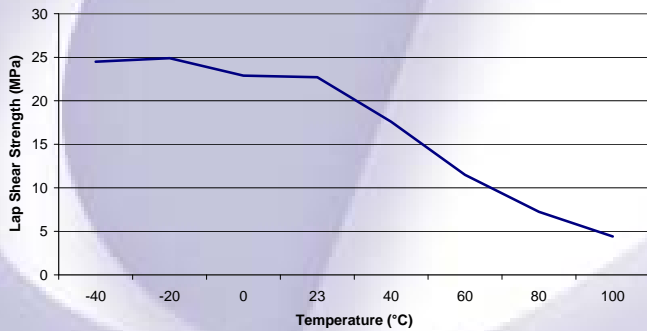


Material	Surface Preparation	Bondline Thickness	Test Method
GRP	Solvent Degrease	3.00mm	ASTM 5868
PVC	Solvent Degrease	0.76mm	ASTM 2564
ABS	Solvent Degrease	0.76mm	ASTM 2564
Cold Rolled Steel	Degrease, Abrade & Degrease	0.26mm	ISO 4587
Aluminium	Solvent Degrease	0.26mm	ISO 4587
Galvanised Steel	Solvent Degrease	0.26mm	ISO 4587
Acrylic	Solvent Degrease	0.76mm	ASTM 2564

Please contact Scott Bader Technical Services for information on other substrates.

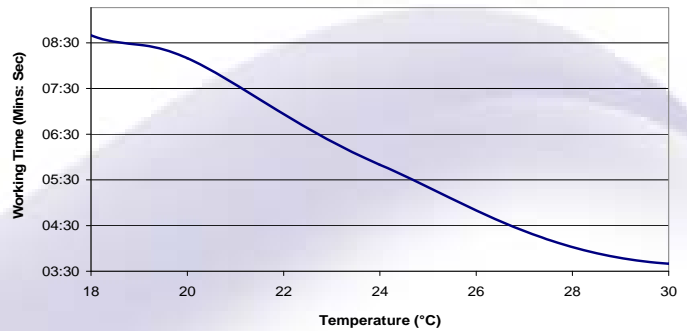
Temperature Performance Lap Shear Testing

Tested to ISO 4587:2003 0.26mm bondline, aluminium 6061-T6, acetone wipe surface preparation.



Working Time Testing

The time taken for a 12g mass to reach 30°C at different ambient temperatures.



Recommended Substrates

Metals

Aluminium
Stainless Steel
Carbon Steel
Powder Coated Metals
Galvanised/Zinc Coated Metals

Thermoplastics

Acrylic
Styrenics
ABS
PVC/CPVC

Composites

GRP/FRP
Epoxy³
Polyester & DCPD Modified
Vinyl Esters
Urethanes
Gel Coats⁴
Carbon Fibre

- Surface preparation of epoxy laminates may be necessary and testing should be performed to ensure sufficient bond strength is achieved.
- Surface preparation is likely to be needed on gel coat surfaces to ensure no release agents are present.

Please contact Scott Bader Technical Services for information on other substrates and advice.

Surface Preparation

The surface to be bonded can affect the strength and durability of the bond joint. Appropriate treatment may be required to ensure that there are no traces of oil, grease or dirt through the use of a degreasing agent, for instance acetone or another degreasing agent on the joint surfaces.

Mechanically abrading or chemically etching degreased surfaces can make bond joints more durable and stronger. If abrading, a second treatment of degreasing is required.

Do not use gasoline (petrol), low grade alcohol or paint thinners.

i) Metals

The surface should be clean and dry by using an alcohol/solvent wipe and allowing the solvent to evaporate before application.

ii) Thermoplastics

The surface must be clean, dust-free and dry. A suitable solvent such as iso-propanol can be used to degrease.

iii) Composites

The surface must be clean, free of dust and dry. This can be achieved by the use of proprietary strippable cloths such as peel-ply (without lubricant contaminants). The laminate should be fully cured prior to bonding and if the laminate surfaces are more than 3 days old, it is recommended that the surface must be cleaned with a suitable solvent or cleaner with a lint-free, clean cloth prior to bonding.

Surface preparation is likely to be needed on gel coat surfaces to ensure no release agents are present. However, when bonding epoxy laminates please test bond strength prior to application.

Application

Prior to bonding, ensure the substrate surface is clean by following instructions provided. Bulk dispensing equipment should be in good operating condition. Check the cartridge outlet for any obstructions and remove as necessary to ensure product flows easily. Dispense the adhesive at slow rate initially onto a non-bonding surface until the bead colour is uniform. Check the dispensed bead for cure quality before beginning the bonding assembly. Dispense enough adhesive to fill the bond gap before parts are mated. Avoid dry bond by using adequate pressure to mate parts, and clamp properly to prevent joint movement.

All these processes must be completed before the working time of the mixed adhesive expires. To ensure thorough cure, the adhesive must be applied at temperatures between 18°C and 26°C. The viscosities of both adhesive and activator are affected by temperature. To ensure consistent dispensing in meter-mix equipment, adhesive and activator temperatures should be held reasonably constant throughout the year.

For industrial/commercial use only. Not to be used in household applications. The user must determine the suitability of a selected adhesive for a given substrate and application. Contact your local Scott Bader representative for questions or assistance with the selection of adhesives for your use. This product is intended for use by skilled individuals at their own risk. Recommendations contained herein are based on information we believe to be reliable. The properties and strength values obtained under controlled conditions at the Scott Bader laboratory.

Storage

The shelf life for Crestabond M7-05 is 6 months from date of manufacture when stored at the recommended temperature of between 15°C and 23°C. Long term exposure above 23°C will reduce the shelf life of these materials. Prolonged exposure above 35°C should be avoided as the product will thicken and become unusable, additionally the reactivity of the product is quickly diminished. The expiry date is indicated on the cartridge labels.

It should be stored in its original container out of direct sunlight. The bulk product or cartridge material should be opened only immediately prior to use, and it's highly recommended that products should never be frozen or exposed to temperatures above 35°C during shipping or storage.

Packaging

Crestabond M7-05 is supplied in 20 litre pails, 200 litre drums and 400ml cartridges.

Health & Safety

See separate Material Safety Data Sheet.

All information on this data sheet is based on laboratory testing and is not intended for design purposes. Scott Bader makes no representations or warranties of any kind concerning this data. Due to variance of storage, handling and application of these materials, Scott Bader cannot accept liability for results obtained. The manufacture of materials is the subject of granted patents and patent applications; freedom to operate patented processes is not implied by this publication.