Technical Datasheet M431

Product Description

Bondchem M431 is a non-flammable, new generation, two-component structural adhesives. This product represents a new level of performance for all 10:1 low shrinkage high elongation structural methacrylate adhesives. **Bondchem M431** offers a very tough and flexible bond, with high peel, fatigue and impact strength, at both low and elevated temperatures. Formulated from our innovative and bespoke blend of low-odour, non-flammable and non-carcinogenic monomers, this grade futher extends our progress into our Responsible Chemistry program.

Open Time	3-4 min
Fixture Time	7-10 min
Mix ratio	10:1
Packaging	50ml, 490ml
Percentage Elongation (SAF* method)	>200%

Typical Applications

Bondchem M431 is very versatile, and can bond a wide variety of substrates without the need for surface primers or conditioners

- Bonding locators to ACM without read-though or witness marks.
- Bonding mild steel frame to FRP and offering high vibration and impact resistance.
- Bonding fasteners to GRP and FRP moulded parts.
- Bonding and laminating composite panels.
- Composite and metal fabrication for seating construction.

Properties of Uncured Material

Resin	Low Odor Methacrylate
Colour	Off White/Amber
Appearance	Thixotropic Gel
Viscosity Brookfield T Bar	250,000 to 300,000cps
Cure System	Non Peroxide

Performance of Cured Material

ASTM D1002 Lapshear	(Average over 16 tests)
Aluminum (unprepared)	14.36 Nmm²
Polycarbonate	5.5 Nmm² Substrate Failure
HIPS	5.2 Nmm² Substrate Failure
Stainless Steel	15.33 Nmm²
Mild Steel	18.37 Nmm²
GRP	5.8 Nmm² Substrate Failure
ABS	4.77 Nmm²
Nylon	4.96 Nmm²
FRP	5.8 Nmm² Substrate Failure
Gap Fill	3mm
Temperature Range	-55ºC to 120ºC
Shore Hardness	60 Shore D
Tensile Strength at break (ISO 527 1A)	10.9 Nmm²
% Elongation at break (ISO 527 1A)	104 %
% Elongation SAF* Method	>200%
UV Stability	Excellent

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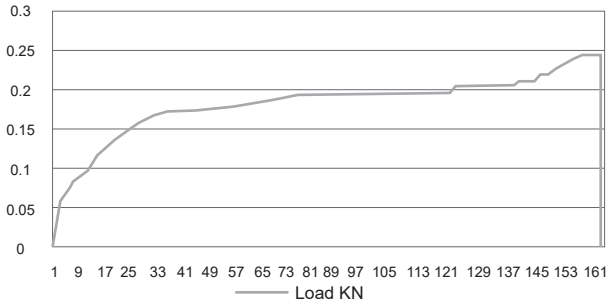
Compatible Substrates*

Aluminum	Wood
Stainless Steel	Granite
Mild Steel	Marble
UPVC	Urethanes
Polyesters	Vinyl Esters
ABS	Glav/Zinc Coated (Primed)
Acrylic	Thermoset Plastics
FRP	Gelcoats
GRP	Epoxy laminate

Load (KN)/mm Extension ISO 5271A



Instructions For Use

1. Always consult MSDS before using **M431** for the first time.
2. Carry out surface preparation where required.
3. Remove nut, attach mixer nozzle and replace nut.
4. Dispense sufficient adhesive to ensure equal mix and uniformed color.
5. Apply adhesive to one surface and assemble components carefully, clamping if required.
6. It is always easier to remove any excess adhesive prior to cure using a suitable cleaner.
7. Allow the adhesive sufficient time to achieve handling strength before moving or unclamping components.
8. **M431** will remain slightly tacky on open surfaces for 24hours unless speed cured at 80ºC for 20 min.

Curing Cycle

Once mixed at the 10:1 ratio the working time of the **M431** is the period whereby the adhesive remains fluid and is easily transferrable between two or more mating surfaces. Temperature, volume and substrate have a direct effect on the length of this period as the **Bondchem M431** cures by an exothermic reaction. Higher temperatures and larger volumes speed the reaction causing a reduction in open and cure time. Lower temperatures and smaller volumes slow the reaction time extending both the open time and ultimate full cure time.

Packaging

Bondchem M431 is available in 50ml and 490ml Nylon cartridges.

Storage & Shelflife

Bondchem M431 should be stored unopened in suitable hazardous storage conditions for adhesives that are cool, dry location and out of direct sunlight. Stored correctly, this grade can offer a 12 month shelf life from it's manufacture in the UK.

Health and Safety in Use

Bondchem M431 is a structural methacrylate and should not be used without consulting the MSDS, which contains full information regarding the use of this product, including Transport, Disposal, Toxicological, Exposure Controls, Accidental Release and First Aid measures essential to the safe use of this product.

Internal test ref SAF comparative dog bone analysis, test specification available on request.

****Contact your Bondchem representative for full information and usage instructions.***