3M Science. Applied to Life.™



NEW Two-part high performance acrylic adhesives: also suitable for galvanized surfaces

Enhance productivity and performance

Next generation two-part structural acrylic adhesives

Low odour. Faster. Stronger. Longer shelf-life without refrigeration.

Manufacturers around the world rely on acrylic adhesives to design and produce new products – and with good reason: acrylic adhesives bond well both to plastics and metals and achieve high structural strengths faster, often on oily or contaminated surfaces.

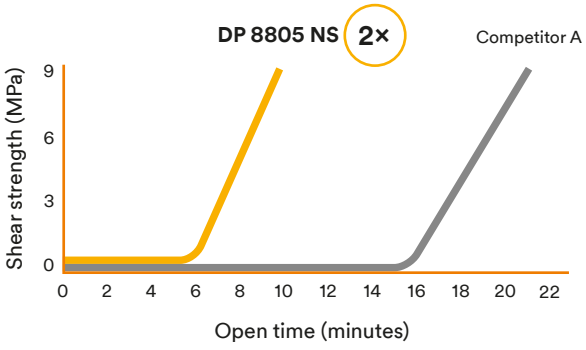
When developing a new generation of two-part acrylic adhesives, 3M researchers focused on solutions for a variety of challenges.

Faster cure

DP 8805 NS reaches an overlap shear strength of 6.9 MPa in less than nine minutes – which is twice as fast as conventional acrylic adhesives.

Rate of strength build for structural adhesives

Aluminum overlap shear bond; room temperature

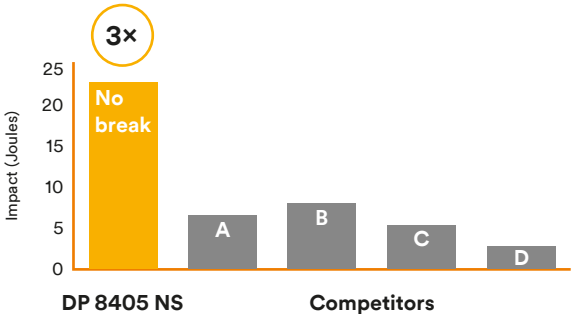


Higher impact resistance

DP 8405 NS has over three times the impact strength of conventional acrylic adhesives. This makes it ideal for many industrial applications, helping build stronger products for challenging applications.

Impact resistance of structural acrylic adhesives

Aluminum overlap shear bond; side impact; room temperature



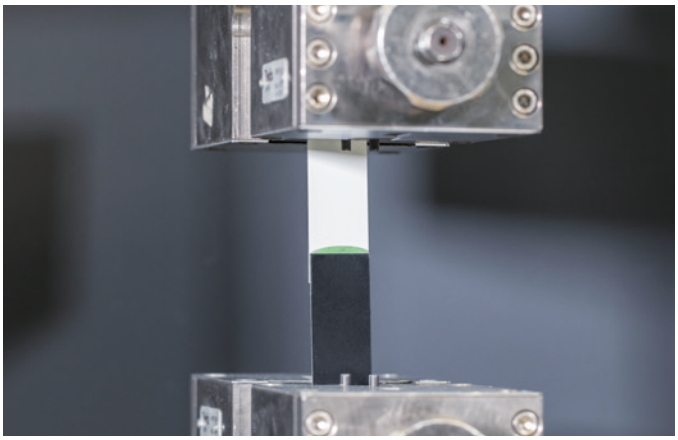
Low odour levels

Typical pungent acrylic odour is a thing of the past: all seven products convince by their reduced odour development. Four of the adhesives feature a new low odour formulation to enhance work comfort even more.

18-month shelf life without refrigeration

3M's new two-part structural acrylic adhesives do not require refrigeration, making them much easier to store. They also have an 18-month shelf life.







On the fast track to bonding: two-part acrylic adhesives stand the burn-in test

3M's next generation two-part acrylics feature defined open times, fast cure, almost odourless formulation and extreme heat resistance.

This qualifies them particularly well for use in metal structures that have to be bonded before powder coating – a common practice and a decisive factor for fast, reliable and above all cost efficient bonding in vehicle, machinery and plant engineering.

The tough and durable DP 8405 NS as well as the low-odour DP 8805 NS and DP 8810 NS have been subjected to burn-in tests on aluminum and rolling steel. 3M's laboratory tests simulated the typical powder coating line with a cycle time of approx. 30 minutes at 200°C as well as cathodic dip coating with similar exposition values.

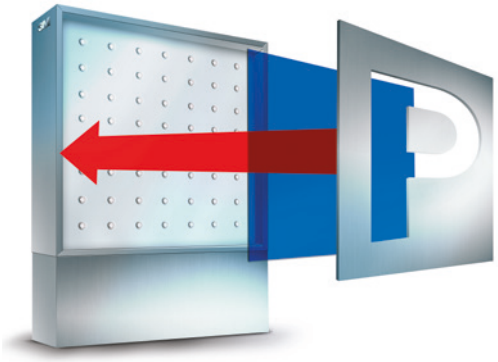
Tests were carried out on P2 etched aluminum and oiled rolling steel – that is on substrates which are commonly used in finishing processes. After curing times of 30 minutes, as well as after two and four hours at 23°C, the adhesive joints were exposed to high temperatures.

The results showed that the strength of the adhesives remains high, even when exposed to heat and high loads. Thus the temperature range of 40°C to 100°C is absolutely no problem for long-term stable adhesion – the tested products even withstand temperatures of up to 200°C with tensile shear strengths of between 1.6 MPa and 1.8 MPa.

Two-part acrylic adhesives in use: faster processing – better products

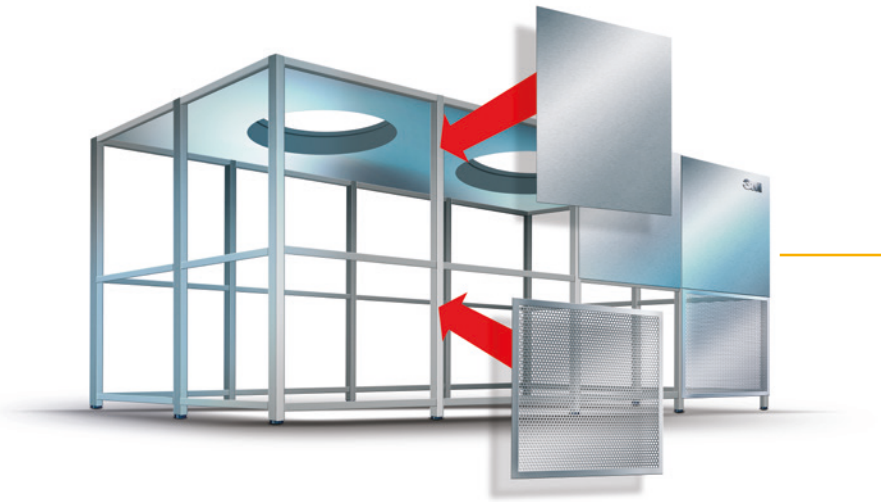
Shortening cycle times in the manufacturing process and improving product quality – these are challenges faced by many companies.

Two-part acrylic adhesives are increasingly becoming the first choice when implementing new projects in numerous markets and applications.



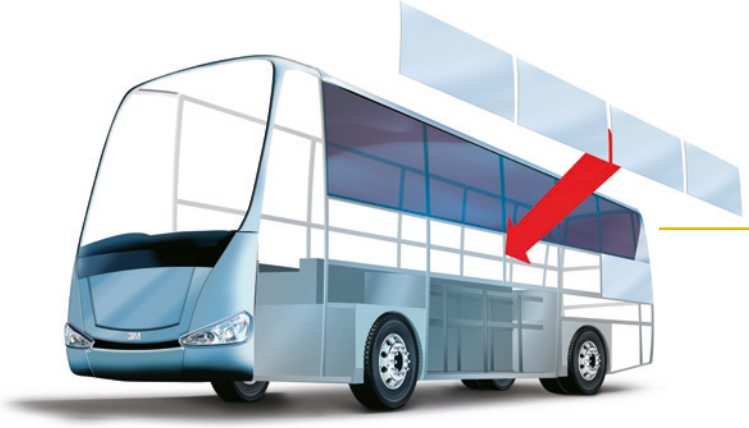
Signage

- Panel to frame bonding
- Trim attachment
- Letter bonding
- Seam sealing
- Frame assembly



HVAC

- Floor panel and drain pan to frame
- Side wall panel attachment to frame
- Stiffener to panel



Transportation

- Metal skin to metal frame
- Composite cab assembly
- Frame assembly
- Floor panel bonding
- Exterior panel bonding
- Roof bonding

NEW

Two-part high-performance acrylic adhesives: also suitable for galvanized surfaces

Low odour. Faster. Stronger. Extended shelf-life without refrigeration.

The new generation of acrylic adhesives has been winning over customers across the board since 2014. Now 3M is expanding this range. Adhesives expert Antonio Pagliuca provides information about the new products.

Dr Pagliuca, why is 3M expanding its range of two-part acrylic adhesives by three new products?

New to our range is a specialist product suitable for metal surfaces and two products with extended curing times. With these variations we are responding to feedback from the market, giving our customers an even better possibility to choose the best product for their applications. At the same time, the proven advantages – low odour and high temperature resistance – remain unchanged.

Metal as high-surface energy materials are easier to bond than many plastics. What is so special about the new two-part high-performance acrylic adhesives?

DP 8407 NS has been especially optimized as an adhesive for metals. The product is oil tolerant, elastic and contains a corrosion inhibitor. DP 8407 NS is therefore suitable not only for use on coated metals and unalloyed steels but also for bonding galvanized surfaces. Bonding these materials with conventional may cause corrosion and adhesion issues.

Which users do you primarily want to appeal to with this product?

The topic of lightweight construction plays a major role throughout the metalworking industry. DP 8407 NS is interesting here as this high-performance acrylic adhesive enables fast and efficient bonding of metal to metal – and also of metals to other materials. Conventional, non-lightweight construction compatible bonding processes such as welding or riveting can be perfectly replaced by using adhesives.





Dr Antonio Pagliuca
3M Adhesives Expert

Product features

Series 84

- Bonding metals and plastics such as ABS, PC, PMMA, PVC
- Higher impact resistance

- Viscoelastic
- Very high shear strength
- Very high impact and peel resistance
- Good adhesion to powder-coated surfaces
- Non-sag
- Slightly oil tolerant
- Low halogen content

DP 8407 NS | Two-part high-performance acrylic adhesive

- Open time of 5 to 7 minutes
- High shear strength
- Non-corrosive on steel and on non-ferrous metals
- Especially suited for bonding metals, e.g. aluminum, bronze, stainless steel, copper, brass, steel, zinc, as well as plastic materials
- High temperature resistance of up to 150°C increases load-bearing capacities of the bond

DP 8405 NS

- Open time of 4 to 6 minutes
- UL listed

DP 8410 NS

- Open time of 10 to 12 minutes

DP 8425 NS

- Open time of 22 to 24 minutes

Series 88

- Bonding plastics such as ABS, PC, PMMA, PVC as well as metals
- Faster cure (rapid strength build up)

- Viscoelastic
- Very high shear strength
- Very high impact resistance and peel strength
- Elevated temperature resistance of up to 100°C
- Good adhesion to powder powder coated surfaces
- Non-sag
- Slightly oil tolerant
- Low odour (compared to other acrylic adhesives)
- Low halogen content

DP 8805 NS

- Open time of 3 to 5 minutes
- Enhanced flow behaviour (reduced thread formation)
- UL listed

DP 8810 NS

- Open time of 8 to 12 minutes
- Enhanced flow behaviour (reduced thread formation)
- UL listed

DP 8825 NS

- Open time of 22 to 24 minutes

Specifications

Product	Color	Mix ratio volume B:A	Cure time in minutes	Handling strength in minutes	Flow behavior	Shear strength in MPa	Peel strength in N/mm	Temperature range in °C
DP 8405 NS	green	10:1	4 to 6	14 to 16	Non-sag	30.0	9.6	- 40 to 90
DP 8407 NS	gray	10:1	5 to 7	20 to 24	Non-sag	31.3	–	- 40 to 150
DP 8410 NS	green	10:1	10 to 12	14 to 16	Non-sag	27.1	11.2	- 40 to 90
DP 8425 NS	green	10:1	22 to 24	42 to 46	Non-sag	26.0	9.0	- 40 to 90
DP 8805 NS	green	10:1	3 to 5	6 to 8	Non-sag	27,0	4.7	- 40 to 100
DP 8810 NS	green	10:1	8 to 12	16 to 20	Non-sag	25.6	5.6	- 40 to 100
DP 8825 NS	green	10:1	22 to 24	42 to 46	Non-sag	21.0	5.2	- 40 to 100

Applicators and accessories

Cartridge size	Product description	Code
45 ml cartridge	Manual applicator	7000033012
	10:1 plunger (PLB)	7000062909
	Quadro nozzle	7000062907
490 ml cartridge	Pneumatic applicator	7000062908
	Quadro nozzle	7100015959



Important notice:

The values presented above have been determined by standard test methods and are average values not to be used for specification purposes. Our recommendations on the use of our products are based on tests believed to be reliable but we would ask that you conduct your own tests to determine their suitability for your applications. Please take all safety and occupational health and safety regulations into account when using this product. All questions of liability relating to this product are governed by the Terms of Sale subject, where applicable, to the prevailing law.

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