Permabond® Structural Acrylics

Permabond structural acrylic adhesives are suitable for bonding a wide variety of materials. The rapid, room-temperature cure coupled with high strength and durability make these adhesives ideal for demanding applications where speed and ease of application of the adhesive is important.

Permabond structural acrylic adhesives are suitable for a variety of applications.
They are ideal for structural bonding of metals, composites, plastics, glass, wood and other materials. Permabond's structural acrylic adhesives have excellent durability. They resist tensile, peel, cleavage, and impact forces as well as resisting the stresses of differential thermal expansion found when bonding dissimilar materials.

They are formulated with resistance in mind, so are suitable for applications that involve exposure to oils, greases, moisture and weathering.

Typical applications include :

- Magnet bonding (particularly for electric motors)
- Metal & glass furniture manufacturing
- Structural bonding - e.g. aluminium panels
- Rear view mirror attachment
- Signs

Permabond offers several types of structural acrylic adhesives:

No-Mix Adhesive & Initiator (Surface Activated)
Initiator is applied to one of the bonding surfaces and the adhesive to the other. Suited to bonding tight fitting parts, this system provides a long open time and a short cure time.

Bead on Bead Part A & Part B
A bead of one part is applied directly over a bead of the other part. No mixing is required. When the two components are pressed together, enough mixing will take place to cure the adhesive.

2-Part
Adhesive is supplied in convenient 1:1 cartridges for use with a dispensing gun. Adhesive is dispensed directly onto the substrate material via a static mixing nozzle.

Single Component - No mixing required
These adhesives are simple to apply and cure with or without an activator (activator can be used to reduce cure times to seconds and to cure through larger gaps).

Benefits

- Extrememly high strength bonds increase design possibilities.
- Excellent durability to impact, peel, shear, and thermal expansion increases part life.
- Room temperature cure eliminates ovens and other equipment.
- Rapid cure increases daily output to reduce production costs.
- Bond a wide variety of substrates to increase design freedom.
- Many non-flammable grades available.
- Technical support- application specialists available for assistance with joint design, adhesive selection and production process.

Permabond®
Engineering Adhesives

Permabond Structural Acrylic Adhesives Selection Guide

This table represents a selection of the complete range of Permabond structural acrylic adhesives. For more detailed technical information and Technical Data Sheets, please visit www.permabond.com. To discuss your specific application requirements, please call the Permabond Helpline. Our technical advisors will recommend the best adhesive from our existing range or assist in developing a custom formulation.

Grade	Description	Colour	Viscosity mPa.s =cP	Max. Gap Fill (mm) in	Fixture time	Working Strength (mins)	Shear Strength (MPa) psi	Service Temperature (°C) °F	Availability
No-Mix Adhesive & Initiator - (also known as Surface Activated)									
TA430 & Initiator 41	Very high strength bonding of metals, plastics, ceramics and wood. Fast cure on close fitting parts.	Resin: Amber Initiator: Brown Mixed: Amber	20rpm: 20,000 2.5rpm: 50,000	(0.5) 0.02	1-2 mins	40-60 mins	(15-25) 2,200 - 3,600	(-55 to 120) -65 to 250	Worldwide
TA435 & Initiator 41	Very high strength bonding of metals, ferrites and thermoplastics. High impact applications.	Resin: Amber Initiator: Brown Mixed: Amber	20rpm: 30,000 2.5rpm: 70,000	(0.5) 0.02	1-2 mins	30-60 mins	(15-25) 2,200 - 3,600	(-55 to 120) -65 to 250	Worldwide
TA436 & Initiator 43	Very high strength bonding of metals, ferrites and hard plastics. High impact and high temperature applications.	Resin: Amber Initiator: Green Mixed: Green	20rpm: 25,000 2.5rpm: 60,000	(0.5) 0.02	20-30 secs	30-60 mins	(15-25) 2,200 - 3,600	(-55 to 150) -65 to 300	Worldwide
TA437 & Initiator 41	For high temperature ferrites to metals applications. Note this product will cure without Initiator - see below.	Orange	20rpm: 40,000 2.5rpm: 130,000	(0.5) 0.02	20-30 secs	30-60 mins	(14-20) 2,000 - 3,000	(-55 to 200) -65 to 390	Worldwide
TA439 & Initiator 43	Methacrylic acid free structural adhesive for magnet bonding. Non-corrosive, ideal for sealed electric motors. High temperature resistance.	Resin: Amber Initiator: Green Mixed: Amber	20rpm: 1,000	(0.15) 0.006	20-40 secs	3-5 mins	(20-25) 2,900-3,600	(-55 to 165) -65 to 330	Worldwide
TA459 & Initiator 43	Methacrylic acid free structural adhesive for magnet bonding. Non-corrosive, ideal for sealed electric motors. Maximum gap fill.	Resin: Blue Initiator: Green Mixed: Green	20rpm: 20,000 2.5rpm: 80,000	(0.5) 0.02	20-40 secs	3-5 mins	(20-25) 2,900 - 3,600	(-55 to 165) -65 to 330	Worldwide
TA4246 & Initiator 46	No-mix MMA with initiator for highest strength bonding of metal, glass, composites and plastics.	Resin: Amber Initiator: Brown Mixed: Amber	20rpm: 28,000	(0.5) 0.02	1-2 mins	15-30 mins	(33-35) 4,800 - 5,000	(-40 to 120) -40 to 250	Worldwide
Bead on Bead									
TA440	Bead on bead for rapid very high strength bonding of metal, glass, wood and rigid plastics.	Resin: Amber Initiator: Green Mixed: Green	20rpm: 10,000 (mixed)	(0.5) 0.02	15-30 secs	30-60 mins	(15-25) 2,200 - 3,600	(-55 to 120) -65 to 250	Worldwide
Single Component									
TA437	For high temperature ferrites to metals applications. Note cure speed can be increased with Initiator 41 see above.	Orange	20rpm: 40,000 2.5rpm: 130,000	(0.5) 0.02	5 - 10 mins	1-2 hrs	(14-20) 2,000 - 3,000	(-55 to 200) -65 to 390	Worldwide

† Cure-speed is dependent on gap, substrates being bonded and temperature. For further information please contact Permabond for individual technical & safety data sheets.

Grade	Description	Colour	Viscosity mPa.s =cP	Max. Gap Fill (mm) in	Fixture Time	Working Strength (mins)	Shear Strength (MPa) psi	Service Temperature (°C) °F	Availability
2-part Mix Acrylic									
TA452	2-part 1:1 rapid set, low odour, non-flammable, metal bonder	A; Red B: Green Mixed: Brownish Purple	4,500 (mixed)	(0.5) 0.02 with nozzle (0.2) 0.008 bead on bead	2-3 min nozzle life	6-9 mins	(28-32) 4060-4640	(-55 to 130 [150 peak]) -65 to 270 [300 peak]	Worldwide
TA4522	2-part 1:1 low odour, non-flammable, metal & plastic bonder	A: White B: Green/Blue Mixed: Green	4,500 (mixed)	(0.5) 0.02 with nozzle (0.2) 0.008 bead on bead	4-7 min nozzle life	10-15 mins	(21-23) 3045-3335	(-55 to 130 [150 peak]) -65 to 270 [300 peak]	Worldwide
TA4605	2-Part 1:1 polyolefin bonder - suitable for bonding untreated Polypropylene and Polyethylene as well as other materials.	A: Off-white B: Almost colourless Mixed: Off-white	125,000 (mixed)	(1) 0.04	5-10 mins	2-4 hours	Polypropylene: (>8) >1200	(-55 to 100) -65 to 215	Worldwide
TA4610	Slower curing version of TA4605.	A: Off-white B: Almost colourless Mixed: Off-white	210,000 (mixed)	(1) 0.04	12-15 mins	6-8 hours	Polypropylene: (>8) >1200	(-55 to 100) -65 to 215	Worldwide
TA4611	2-Part 1:1 polyolefin bonder - suitable for bonding untreated Polypropylene and Polyethylene as well as other materials. No micro beads for smaller gaps.	A: Off-white B: Translucent Mixed: Off-white	21,500 (mixed)	(0.5) 0.02	10-16 mins	6-8 hours	Polypropylene: (>8) >1200	(-55 to 100) -65 to 215	Worldwide
TA4631	2-Part 1:1 polyolefin bonder - suitable for bonding untreated Polypropylene and Polyethylene as well as other materials. No micro beads for smaller gaps. Low Odor	A: White B: White Mixed: White	21,500 (mixed)	(0.5) 0.02	12-18 mins	6-8 hours	Polypropylene: (>8) >1200	(-55 to 100) -65 to 215	Worldwide
TA4660	2-Part 2:1 nylon bonder	A; Yellow B: Black Mixed: Dark green/grey	100,000 (mixed)	(1) 0.04	25 mins	2 hours	PA6 (>10) >1450	(-40 to 120) -65 to 250)	Worldwide
2-part • 1:1 Mix MMA									
TA4200	2-part 1:1 rapid curing, gap filling, toughened. Ideal for structural bonding of aluminium.	A: Cream B: Cream Mixed: Cream	45,000 (mixed)	(4) 0.16	7-10 mins	25-35 mins	(23-25) 3,300-3,600	(-40 to 150 [180 peak]) -40 to 300 [350 peak]	Europe
TA4202	2-part 1:1 very rapid cure. Can be applied bead on bead; multipurpose.	A: Pink B: Green Mixed: Light amber	4,000 (mixed)	(0.5) 0.02	2-3 mins	20-25 mins	(24-25) 3,500-3,600	(-40 to 150 [180 peak]) -40 to 300 [350 peak]	Europe
TA4204	2-part 1:1 very rapid cure. Can be applied bead on bead; multipurpose. Crystal clear appearance.	A: Clear B: Clear Mixed: Clear	55,000 (mixed)	(3) 0.12	1-2 mins	20-25 mins	(19-21) 2,800-3,000	(-40 to 150 [180 peak]) -40 to 300 [350 peak]	Europe
TA4205	2-part 1:1 rapid cure. Can be applied bead on bead; multipurpose. Crystal clear appearance.	A: Clear B: Clear Mixed: Clear	100,000 (mixed)	(3) 0.12	3-4 mins	25-30 mins	(19-21) 2,800-3,000	(-40 to 150 [180 peak]) -40 to 300 [350 peak]	Europe
TA4207	2-part 1:1 rapid cure. Full cure in 1 hour! Multipurpose.	A: Straw B: Yellow Mixed: Straw	3,500 (mixed)	(0.5) 0.02	8-10 mins	25-30 mins	(>28) >4050	(-40 to 150 [180 peak]) -40 to 300 [350 peak]	Worldwide
TA4210	2-part 1:1 longer handling time than TA4200, gap filling, toughened. Ideal for structural bonding of aluminium.	A: Cream B: Cream Mixed: Cream	45,000 (mixed)	(4) 0.16	20-25 mins	50-60 mins	(23-25) 3,300-3,600	(-40 to 150 [180 peak]) -40 to 300 [350 peak]	Europe
TA4810	2-part 1:1 develops strength rapidly. Toughened, ideal for structural bonding of plastics & unprimed metals.	A: Off-white B: Amber Mixed: Cream	175,000 (mixed)	(2) 0.08	10-15 mins	50-60 mins	(21-28) 3,000-4,000	(-40 to 120) -40 to 250	Americas
TA4820	2-part 1:1 longer handling time than TA4810. Toughened, ideal for structural bonding of plastics & unprimed metals.	A: Off-white B: Amber Mixed: Cream	200,000 (mixed)	(2) 0.08	30-35 mins	100-120 mins	(21-28) 3,000-4,000	(-40 to 120) -40 to 250	Americas

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