

Features & Benefits

- 💧 Adhesion to a wide variety of substrates
- 💧 Fast cure at room temperature
- 💧 Can be used with or without nozzle
- 💧 High shear and peel strength
- 💧 Good impact strength
- 💧 Good chemical resistance
- 💧 Crystal clear appearance

Description

PERMABOND® TA4204 is a 2-part, 1:1 toughened acrylic adhesive. It can be used to bond a wide variety of materials including metals, plastics, GRP, ceramics, wood and other substrates. It is convenient to use in an easy-to-dispense cartridge or it can be used bead on bead without a mixing nozzle.

Physical Properties of Uncured Adhesive

| | TA4204 A | TA4204 B |
|----------------------|---------------------|-------------------|
| Chemical composition | Methyl methacrylate | Methacrylates |
| Colour | Clear, colourless | Clear, colourless |
| Mixed colour | Clear, colourless | |
| Viscosity @ 25°C | Thixo paste | Thixo paste |
| Specific gravity | 1.0 | 1.0 |

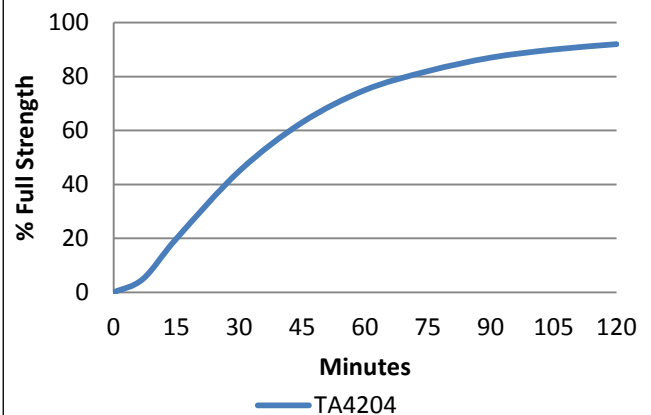
Typical Curing Properties

| | |
|--|-------------------|
| Ratio of use | 1 : 1 |
| Maximum gap fill | 3 mm (0.12 in) |
| Pot life (10g+10g) @23°C | 1:30-2:30 minutes |
| Fixture / handling time (0.3 N/mm ² shear strength is achieved) @23°C | 5-10 minutes |
| Working strength @23°C | 20-25 minutes |
| Full cure @23°C | 24 hours |

Typical Performance of Cured Adhesive

| | |
|---|--|
| Shear strength (ISO4587) | Steel: 19-21 N/mm ² (2800-3000 psi) Aluminium: 18-20 N/mm ² (2600-2900 psi) |
| Peel strength (ISO4578) | 150-250 N/25mm (33-56 PIW) |
| Hardness (ISO868) | 73-75 Shore D |
| Coefficient of thermal expansion (ASTM D-696) | 80 x 10 ⁻⁶ 1/K |
| Thermal conductivity (ASTM C-177) | 0.1 W/(m.K) |
| Dielectric constant (ASTM D-150) | 4.6 MHz |
| Dielectric strength (ASTM D-149) | 30-50 kV/mm |
| Volume resistivity (ASTM D-257) | 2 x 10 ⁻¹³ Ohm.cm |

Strength Development

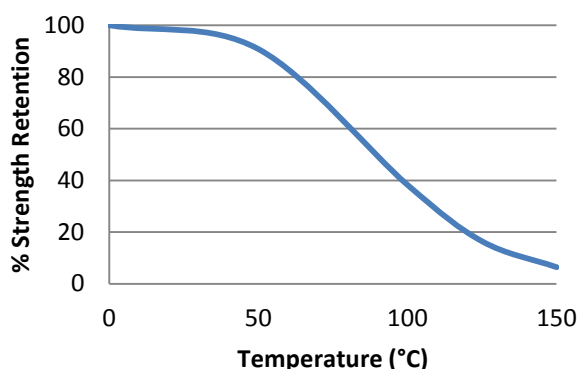


Graph shows typical strength development of bonded components at 23°C. An increase of 8°C in temperature will halve the cure time. Lower temperatures will result in a slower cure time.

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Hot Strength



"Hot strength" shear strength tests performed on mild steel. Fully cured specimens conditioned to pull temperature for 30 minutes before testing at temperature. TA4204 can withstand higher temperatures for brief periods (such as for paint baking and wave soldering processes) providing the joint is not unduly stressed. The minimum temperature the cured adhesive can be exposed to is -40°C (-40°F) depending on the materials being bonded.

Directions for Use

- 1) Surfaces must be clean, dry and grease-free.
- 2) Apply a thin bead of adhesive pre-mixed through a static mixer nozzle. If no mixing nozzle is being used, make sure one component is extruded on top of each other (not side by side).
- 3) Alternatively apply a thin layer of resin on one component and hardener on the other.
- 4) Assemble components and clamp.
- 5) Maintain pressure until handling strength is achieved. The time required will vary according to the joint design and surfaces being bonded.
- 6) Allow 24 hours for adhesive to fully cure. Accelerated cure times may be achieved by heating.

Storage & Handling

| | |
|---------------------|-----------------------|
| Storage Temperature | 2 to 7°C (35 to 45°F) |
|---------------------|-----------------------|

Additional Information

This product is not recommended for use in contact with strong oxidizing materials. This product may affect some thermoplastics and users must check compatibility of the product with such substrates.

Information regarding the safe handling of this material may be obtained from the material safety data sheet (MSDS).

Users are reminded that all materials, whether innocuous or not, should be handled in accordance with the principles of good industrial hygiene.

Surface Preparation

Surfaces should be clean, dry and grease-free before applying the adhesive. Permabond Cleaner A is recommended for the degreasing of most surfaces. Some metals such as aluminium, copper and its alloys will benefit from light abrasion with emery cloth (or similar), to remove the oxide layer.

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