

Agomet® F 347 (2347)

Gap filling methacrylate adhesive requiring minimal surface treatment

Properties

Agomet F 347 is a cold curing reaction adhesive for metal and plastic bonds. Joints bonded with Agomet F 347 possess a high impact resistance over a wide temperature range. Particularly below zero down to -40°C, high tensile shear and peel strengths are attained. Bonds can be handled within about 20 minutes, the final strength is reached after 12 hours. The adhesive can be processed with hardener paste as well as with hardener lacquer ("no mix" process).

Depending on the method of processing, Agomet F 347 fills joints up to a gap width of approximately 5 mm. With many bonds, an expensive pretreatment of the parts to be joined is not necessary, or it can be reduced to a minimum.

Bondable Materials

Metals such as steel, aluminium, copper, brass, titanium, magnesium, and their alloys; ferrites, zinc respectively hot-galvanised steel, lead.

Plastics such as rigid PVC, ABS, polystyrene, polycarbonate, polyphenylene oxide, polyester molded parts, and many others.

Agomet F 347 proves its particularly good adhesiveness especially on otherwise difficult to bond surfaces such as yellow-chromalized, powder-coated or painted metals, surface-coated aluminium, and many others.

Viscosity

approximately 70 Pa.s at 23°C.

Density

approximately 1.1 g/cm³

Processing

Surface Preparation

Agomet F 347 develops excellent strength values even without an expensive preparation of the parts to be joined. For optimum results, all surfaces to be joined should be free of loose contaminants such as dust, oxides, grease, mold release agents, or plasticizers. A simple wipe with a solvent such as ethyl acetate or butanone (alcohol in case of plastics) is adequate. Normal drawing or rolling oil residues are integrated by Agomet F 347 without difficulty and can remain on the surfaces to be joined.

Mixing Ratio

Agomet F 347 sets at room temperature after adding Agomet Hardener paste. For this purpose, 100 parts of adhesive are homogeneously mixed with 2 to 5 - preferably 3 - parts of Agomet Hardener paste or 10 parts of Agomet Hardener D.

Time

With 3% hardener paste, the processing time of a 20 g batch is 8 - 10 minutes.

Joint, Gap Width

For optimum strength values, the most favourable amount of adhesive to be applied is 150 - 250 g/m² (0.15 - 0.25 mm).

Bonding

1. With Hardener Lacquer (NO-MIX PROCESS)

Subject to the field of application, Agomet Hardener Lacquer 2 is applied to both or just one of the surfaces to be joined (by spraying, brushing, roller coating, dipping). The hardener lacquer dries sufficiently in about 4 minutes to allow further transporting of the parts.

Surfaces coated with hardener lacquer can be stored at room temperature up to several weeks without a decrease in the activity of the hardener. After the hardener lacquer has dried, Agomet F 347 is applied to one of the two surfaces to be bonded. Immediately thereafter, the parts are joined and fixed under contact pressure. The polymerisation starts as soon as the adhesive touches the hardener lacquer, and requires about 20 minutes until the joined parts reach a condition in which they can be handled with adequate ease.

Attention: With gap widths up to 0.4 mm, it is sufficient to apply the hardener lacquer to only one of the parts to be bonded. For larger gaps, the hardener lacquer must be applied to both sides. Gaps wider than 0.8 mm should be avoided when working with hardener lacquer.

2. With Agomet Hardener Paste

For this purpose, 2 to 5 - preferably 3% - AGOMET HARDENER PASTE are mixed into the adhesive.

3. With Agomet Hardener D

Agomet F 347 can also be applied with dosing machines. In this case, mix in 10 % Agomet Hardener D.

Both our TWIN 500 and the MINI CARTRIDGE SYSTEM provide an easy to handle, clean and simple application method. Our ready-to-use cartridges contain the ideal adhesive-hardener-mixture, and the hardener's red color allows to check the mixture at a glance.

Bonding Performance

Tensile Shear Strength	Aluminium/Bondur F44 (AlCuMg 2pl:) <i>according to DIN 53 283, test specimen: 100 x 25 x 1.6 mm, bonded area: 3 cm², pretreatment: degreased, roughened</i>	approx. 18 N/mm²
Impact Resistance as a function of the temperature	Aluminium/Bondur F44 (AlCuMg 2pl:) <i>test specimen: 100 x 25 x 1.6 mm, bonded area: 3 cm², pretreatment: degreased, roughened.</i>	Temperature: 90°C 6.5 KJ/m² RT (23 °C) 9.0 KJ/m² - 20 °C 10.5 KJ/m² - 40 °C 15.0 KJ/m²
Behaviour at elevated test temperatures	Agomet F 347 bonds tolerate brief temperature loads of up to 30 minutes at 180°C without destruction of the joint, provided the bonded area itself is not subjected to additional stress.	

Advice

Shelf life Please see labels: a minimum of 6 months in the original unopened container.

Handling Precautions

Caution

Our products are generally quite harmless to handle provided that certain precautions normally taken when handling chemicals are observed. The uncured materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should be taken to prevent the uncured materials from coming in contact with the skin, since people with particularly sensitive skin may be affected. The wearing of impervious rubber or plastic gloves will normally be necessary; likewise the use of eye protection. The skin should be thoroughly cleansed at the end of each working period by washing with soap and warm water. The use of solvents is to be avoided. Disposable paper - not cloth towels - should be used to dry the skin. Adequate ventilation of the working area is recommended. These precautions are described in greater detail in the Material Safety Data sheets for the individual products and should be referred to for fuller information.

All recommendations for the use of our products, whether given by us in writing, verbally, or to be implied from the results of tests carried out by us, are based on the current state of our knowledge. Notwithstanding any such recommendations the Buyer shall remain responsible for satisfying himself that the products as supplied by us are suitable for his intended process or purpose. Since we cannot control the application, use or processing of the products, we cannot accept responsibility therefore. The Buyer shall ensure that the intended use of the products will not infringe any third party's intellectual property rights. We warrant that our products are free from defects in accordance with and subject to our general conditions of supply.

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