

HIGH-PERFORMANCE PU TO METAL BONDING WITH LOW TEMPERATURE (20-65°C) CASTABLE PU'S USING CILBOND 49SF AND CILCURE B

It is well established that **Cilbond 49SF** requires a high temperature pre-bake (above 70°C, but ideally above 80°C) to achieve maximum environmental resistance. Without the pre-bake the cement/metal (C & M) bond could give problems in severe environments.

When low temperature PU systems (especially MDI quasi prepolymer systems) are being used for producing articles which may be subjected to harsh environmental conditions, special bonding techniques are required.

BONDING PROCEDURE

1. Produce the metal surface suitable for bonding, either by grit blasting/degreasing techniques or by a proprietary chemical conversion system such as iron or zinc phosphating. High performance bonding depends on good metal preparation.
2. Mix **Cilbond 49SF** and **Cilcure B** in the weight/weight ratio
Cilbond 49SF : Cilcure B
10 PARTS : 1 PART

Stir gently whilst adding the **Cilcure B** to the **Cilbond 49SF**. Stand 15 - 20 minutes and stir again gently prior to use. Ideally, do not use any mixed system after 8 hours.
3. Apply a thin coat of mixed **Cilbond 49SF** and **Cilcure B**. Dry for at least 1 hour at 20 - 25°C. If possible, apply some heat and/or air-flow to improve drying rate. It is essential to ensure all high boiling solvent has evaporated in this first coat.
4. Apply a second thin coat of mixed **Cilbond 49SF** and **Cilcure B**. The objective is to apply an overall dry coating thickness of 15 - 25 micron. Do not use if the mixed material is over 8 hours old.
5. Allow coated metals to dry thoroughly. This can take 1 - 2 hrs or even longer if the ambient temperature is below 20°C. If possible use warm air and ventilation to increase the drying rate.
6. It is possible to leave the coated metals to dry overnight and in some cases this is the preferred method, because any residual trapped solvent may act as a release agent.
7. Do not leave coated metals more than 24 hours after coating before casting the PU.
8. Cast the PU onto the dried coated metals and allow at least 24 hours for the bond to fully develop prior to any applied stress or immersion in any fluid.

APPLICATIONS FOR THIS SYSTEM INCLUDE:

- Continuous sub-sea or underground use.
- Hot water and other hot aqueous-based liquids.
- High temperatures associated with static or dynamic stress.
- Aggressive printing inks and cleaning solvents, which can attack many adhesives.

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