

## Biresin<sup>®</sup> PUR pastes

### Processing Instructions

#### Material Preparation

- The material should be processed at 20°C or above. The resin (component A) must be homogenised before use by stirring: stir for at least 10 minutes when supplied in 50 litre drums and at least 15 minutes when in 200 litre drums. Use a suitable mixer or utilise the refill station which is part of the application equipment (as supplied by Tartler and Dekumed). Replace the container lids tightly after homogenising.

#### Preparation of Machine

- Fill the tanks of the machine with the resin and hardener, either manually or using the refill station. In the case of the polyol, any material remaining in the drum after transfer to the tank can be drained into the next full drum.
- Ensure the in-situ stirrer within the resin tank of the machine is running.
- Maintain the resin temperature to at least 20°C, or preferably 25°C utilising the machine heating control system within the resin tank. This ensures the optimum viscosity for even application and for the merging of one bead (single strip of extruded paste) into the next.
- During application of the paste it is necessary to continue to employ the in-situ stirrer and recirculation facilities of the machine to obtain a constantly homogenised mix. Depending on the type of machine, it may be necessary to apply pressure to the tanks in order to ensure material is delivered to the pumps to prevent them running dry (observe the technical instructions of the machine producer).
- Mixing ratios now need to be checked by actually measuring the weight of material delivered to the mixing head. To do this use disposable paper cups to take simultaneous shots of resin and hardener directly at the mixing head. Weigh the cups to check the ratio. Always make a pre-shot before checking the mixing ratio to be sure the working pressure has stabilised in the supply lines leading to the mixing head.
- If the ratio needs adjustment refer to the technical instructions provided by the machine producer.
- For equipment with an electronic flow control facility the displayed values should be observed. If the mixing ratio needs to be changed appropriate action should be taken - this may involve adjustment to mixing ratio, material temperature or flow rate.
- For the most reliable paste application process we recommend equipment fitted with an electric motor mixing head and full electronic control, which are available from the producer of the machine.
- When all the above is complete, the machine is ready for dispensing

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- The delivery rate depends on the output of the machine but also needs to be set for the design of tools to be made. The range is between 1.0 to 5.0 litres per minute.
- For application of the material a 2.5 m long transparent plastic hose with a reinforcing fabric inlay is attached to the outlet of the static mixer tube. The diameter of the plastic hose depends on the machine's output capacity and the required delivery rate, but normally 19 mm diameter provides a practical and consistent solution for good bead formation and merging of applied beads one to the next.
- If the applied material shows any sign of sagging, this can be corrected by a small adjustment to the length of the plastic hose. The optimum length of the hose depends on the delivery rate and the type of final application nozzle used. (The minimum length of the hose is 1 metre). Depending on the geometry of the model to be produced, the paste can be applied either directly from the plastic hose or with an „Auftragsdüse MV70“ nozzle (available from Sika Deutschland GmbH) – which is attached to the end of the hose. The hose and the nozzle should not be re-used because there is a risk of contamination, soft areas or entrapped air bubbles. The steel static mixer can be cleaned with Sika<sup>®</sup> Reinigungsmittel 5; but plastic mixers have to be thrown away after use.



### Processing Instructions, continued

- Before starting, dispense 0.5 litre through the nozzle as waste to provide a test shot. After completion of the application the electric mixer must be flushed with air and then cleaned with Sika® Reinigungsmittel 5. A clean machine will have an extended life and help avoid dispensing problems, breakdowns and expensive repairs.
- During the production of a model surface or other part, the whole construction should be placed on an even and flat support, bearing in mind the weight of the substructure plus the additional weight of paste could cause distortion. Therefore ensure the support is strong enough. Another consideration is the heat produced by the paste as it hardens which can also affect the support structure. Therefore use materials that can withstand the heat generated without distortion.
- After application the paste has to be cured at room temperature for a minimum of 8 to 10 hours while still on the strong and flat support. Machining of parts made of Biresin® PUR pastes that have been cured at room temperature is possible at the earliest from 10 to 24 hours after application (Rate of cure depends on workshop temperature and the thickness of the paste, see also TDS).
- Parts can be machined with hard metal cutting tools as well as with hand tools.
- Small faults, air bubbles and small corrections can be made good with standard polyester fillers.

### Shut Down of Machine

- Clean the mixing head with Sika® Reinigungsmittel 5, and all parts up to the valves on the mixing head which can be disassembled, have also to be cleaned and then treated with Sikamoll® liquid.
- After long periods (> 3 d) without use the material has to be homogenised again using a stirrer or the machine's recirculation function. This is essential to avoid separation of the product: settlement of heavy fillers to the bottom of the tank and floatation of the light fillers to the top.
- Silica gel filters should be placed in the vents at the top of the tanks to prevent moist air entering. During storage all drums and tins must be closed tightly to avoid moisture ingress.
- For long term storage, complete cleaning is necessary and the resin and hardener tanks must be emptied completely. The tanks can be cleaned with Sika® Reinigungsmittel 5 – but not the pumps and tubes.
- The fittings should not be stored in a bath of Sika® Reinigungsmittel 5.
- All valves and fittings should be treated with Sikamoll® liquid, and Sikamoll® liquid should also be poured into each tank. The machine should then be run for approximately 10 min using the recirculation facility and the contaminated material discarded. The operation with Sikamoll® liquid should then be repeated and the Sikamoll® liquid left in the tanks.
- All tanks should then be closed tightly. The machine can then be stored.



## Legal Notice

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