
Tips for processing water-based screen printing adhesives

Processing water-based adhesives is very much influenced by the ambient climate. You should aim for a room temperature of 20 – 23°C and a relative humidity of at least 50%. The higher the air humidity, the lower the tendency of the adhesive to form a skin and dry out. It should also be noted that the stencil emulsion always absorbs a certain amount of water. We therefore recommend moistening the stencil before printing.

When processing by screen printing, the print result can be improved by the correct adjustment of the printing unit. Blistering and surface defects can thus be mostly avoided. In general, printing should be carried out with a low squeegee speed during the flood stroke, in order to completely fill the most coarse screen mesh. When printing, you should then work at the highest printing speed. The stencil mesh should be stretched more than 20 N / cm. Printing squeegees with Shore A - hardness of approx. 75 or so-called triplex squeegee blades with Shore A - hardness 65/90/65 and slightly rounded edges are recommended. The angle of attack should be approx. 75°. Snap-off should be 3-4 mm, and printing without snap-off will also give good results.

During short printing breaks, the stencil should only be left in the press when there is no adhesive in the open screen areas and then it should be covered with a damp cloth. After 3-4 waste run-offs, the job can then be resumed. In the event of longer printing breaks, any thickened adhesive on the stencil must first be scraped off, and then it should be cleaned away from the printing press. The stencil can be cleaned with PREGAN 1014E. See separate cleaning tips.

The adhesive should be used undiluted. Thinning of max. 10% is possible, but the risk of blistering significantly increases. The movement of the printing squeegee causes the some of the water content in the adhesive to evaporate. We therefore recommend adding small amounts of adhesive regularly on the stencil, rather than a lot all at once.

Drying should take place by storing at room temperature in a rack or for industrial production, in a drying conveyor. The drying time depends on the amount of adhesive applied, the type of substrate, drying temperature and air circulation.

The highest adhesion values are only obtained with completely dried adhesive films. The adhesive applied must therefore be completely dry before any further processing is carried out. Water-based adhesives are milky cloudy when wet and become clearer as they dry. When covering with silicone paper, we recommend bubble-free lamination of the covering material.

Mould release agents, for example, remain on pressure-cast parts, and are not conducive for good adhesive wetting. It is therefore advisable to clean such parts beforehand.

With some printing inks, the adhesive has poor adhesion due to silicone additives in the printing ink. By using silicone-free matt background printing inks, the bond can be improved.

Good adhesive values are only achieved if the adhesive has a sufficient coating thickness. Wherever screen-printing adhesives are used as a substitute for double-sided adhesive tape, the use of a 21-140 mesh is recommended, as this will give you an adhesive coating thickness of approx. 50 µm when dry.

Further details on the adhesives used can be found in the relevant technical information. For more information please feel free to contact our applications technology centre: info@kiwo.de.