

Water based UV protection varnishes

## Application Guide for water based UV protection varnishes

1. After opening the original varnish container of the 2-Component systems the recommended amount of hardener must be added while stirring properly. (analogue process for 1-Component systems, but without adding the hardener)
  - Ideally a mechanical high-speed stirrer at approximately 2000 turns is used. Avoid heat.
  - If stirred manually with a pallet knife continue mixing until all clouds have disappeared and a fully homogenous mixture is archived.
2. The viscosity of the varnish increases visibly after the addition of hardener and drops back down after 15 to 30 minutes settling time to approx. 50 seconds (measured with a 4 mm DIN cup).
3. After the settling time trapped air bubbles from the stirring process have also disappeared. In any case a filtration through a filter gauze is recommended.
4. The varnish is now with a viscosity of 60" ready for roll application. The roll must be soaked a few times with water and pressed out firmly. This helps to fill the inner volume of the roll and supports the even distribution of the varnish.
5. The imprinted substrates must be laid out flat on a clean and even base. Dust and any other foreign particles on the substrate must be firmly removed with a dry and soft cloth before applying the varnish. Avoid static build up of the substrate, as this will again attract dust from the environment.
6. As described in the technical leaflet the varnish must be applied in three phases.
  - **Wetting phase:** the pressed out roll must be filled on the substrate with varnish and the varnish firmly applied rolling in a linear direction.
  - **Film build up phase:** immediately add more varnish and distribute the liquid again over the entire substrate. Use minimum roll pressure and try to apply an even and heavy 100 my wet film coat.
  - **Auto levelling phase:** a second eventually third coat can remove big air bubbles or foam. The wet film will not now be completely free of small air bubbles or show a smooth finish. The entire degassing and gloss development will automatically happen during the auto-levelling phase within the next few minutes.
7. The coating must now be left flat for at least 2 hours at room temperature (18-25° C) and sufficient air circulation until touch dry. Overnight the varnish will dry completely but still not archive the final resistance properties.
8. By using a hot air dryer at approximately 50°C (depending on the used substrate) the drying time can be reduced to approximately 2 hours.
9. The full mechanical and chemical resistance (water, alcohol) are developed after one week when the varnish has fully reacted with the hardener.

Following this instruction and taking into account the additional information provided in the technical leaflets and with some hands on experience you will archive outstanding results with the Printcolor protection varnishes.