

Check list

for the employment of waterborne coatings

Facts for the use of waterborne coatings in principle to consider and/or to clarify are:

1. Pretreatment

- For substrates to be coated with waterborne coatings are to be paid attention must to a clean, grease-free surface.
- Suitable pretreatments are:
 - degreasing – water based / alkaline
 - shot blasting
 - chemical pretreatment

2. Spraybooth and spraying area

- Dry exhaust possible
- Water-sprinkled:
 - possibly more foaming power to consider
 - coagulation must be co-ordinated with the waterborne system (attempts - with coagulation central manufacturer)
 - possibly coating mud delivering
 - with 1k systems recycling concepts are possible

3. Application

- in principle no restriction in the application techniques
- all parts must be rustproof implemented
- no combination of nonferrous and ferrous metals is allowed - electro-chemical procedures can lead to destruction of the less precious metal parts. Also the waterborne coating may be separated and/or coagulated
- New plant, devices and pipes should be cleaned before start-up, i.e. freely by fats and other contamination, e.g. oils, dust
- Air rate of descent 0,3 – 0,5 m/sec
- for electrostatic processing:
 - perfect isolation of the coating lines and the entire plant
 - isolating setting up the paint supply
 - alternatively: External loading or potential separation systems
 - caution!! coating lines and paint supply are under high voltage

4. Thinner

- For the dilution of waterborne coatings to spraying viscosity and also for cleaning the application devices distilled or demineral water must be used.
- Hard, lime containing water can lead to coagulation of waterborne coatings.

5. Cleaning

- 2K-Hydro primer and/or coatings without hardener as well as after hardener mixture with EFD-Cleaner 400744 or FREIOTHERM-ETL-Thinner 400910.
Thinner 400910 mixed with demin. Water or Water < 15° german hardness up to a mixing ratio 1 : 9
- EFDEDUR-Hardener for waterborne coatings are not water-thinnable!
Cleaning only with organic cleaners e.g. EFD-Thinner 400312

6. Mutual processing of solventborne and waterdilutable coating materials

- Solventborne-and waterborne coating can affect each other with contact mutually disturbing. This can point itself to film disturbances such as crater, specks or gloss changes. It can lead also to changes of viscosity up to thickening. Also reactions of incompatibilities may be concerned.
- With change of solvent to waterborne coating (or in reverse) the application devices must be cleaned very carefully
- Expiration of Cleaning (solventborne to waterborne-coating)
 1. Rinses with the assigned solvent
 2. Rinses with thinner 400910
 3. Possible rinse between with Cleanerliquid 400744
 4. Rinses with demin. water
 5. Fill in water-coating

When changing a waterborne to a solventborne coating should be proceeded in reverse order.

7. Site condition

- Applikation:
 - Humidity: 40 - 60 % relative humidity - optimal value
 - Temperature: 18 - 25 °C - optimal value
- Flash off:
 - Absolutely need during a forced drying process and with baking enamels
 - Temperature 18 - 30 °C
 - Humidity: 40 - 70 % relative humidity
 - At least 3x air change/ h - solvent and water must be transported away
 - Air fall-velocity 0,5 - 0,7 m/sec

- Drying:
 - Air drying:
 - provide for sufficient change of air: air flow 0,3 - 0,7 m/sec.
 - Humidity < 65 % relative humidity

 - Forced drying process:
 - pay attention on the flash-off time
 - recirculation air drying necessarily
 - consider to cooling for block- and packing firmness

 - Oven drying:
 - recirculation of air necessarily
 - do not bring coated parts directly into the oven
 - at temperatures < 90°C pre-drying and in a second step at the appropriate temperature (140 - 180 °C) to bake the system.

In principle:

For drying waterborne coatings it must be ensured that a sufficient air movement and present low humidity, that water from the surface of the coating can be removed.

8. Two-component-System

- At most of two-component-systems the end of the potlife is not in form of viscosity increase recognizably. Therefore a two-component-system-plant is recommended.
- For 2C EP primer the degradation of the adhesion and corrosion protection is observed after end of the pot-life
- 2C of polyurethane finishing paints show during excess of the indicated potlife a loss of gloss.
- Often with 2K polyurethane finishing paints reaction blistering by CO₂ – education (secondary reactions of the polyisocyanate hardener and water) is observed at dry film thickness > 80µm.

9. WASTE-DISPOSAL

- Waste water from equipment cleaning, enamel residue 2-K coating above the working time, also mixed, must be disposed as special refuse.

More information contains our safety - and technical data sheets.