



IN COOPERATION WITH



COATING SYSTEMS FOR INDUSTRIAL PRESSES

Waterborne polyurethane coatings for a durable finish

VisionWorks in

POLYISOCYANATES

PREPOLYMERS

DISPERSIONS

UV SYSTEMS

The project: development of a highly resistant coating for industrial machinery

A coating system was needed to protect unrefined cast-iron surfaces. It was expected to level and mask the surface irregularities of the rough metal and yield an attractive finish in various colors and with different gloss levels.

The challenge: a low VOC system with good resistance to abrasion and hydraulic fluids

In addition to outstanding adhesion on the rough unrefined metal, the coating was expected to have high resistance to the abrasion caused by the ceramics processed on the presses. A further requirement was resistance to the hydraulic fluids used for lubrication. The system was to be used in formulating a high-density textured primer and a low-viscosity topcoat for application by spraying. A key requirement was that the system cure at ambient temperature or in a stream of warm air because it was impossible to bake the presses weighing more than ten tons.

Raw materials from Bayer:

Bayhydrol® polyacrylate dispersion

Desmodur® or Bayhydur® isocyanate crosslinker

| | The coating |
|---------------------------------------|--|
| Manufacturer | Tego Becker S.r.l. |
| Primer | Beckaqua 501 (100-130 µm DFT) |
| Topcoat | Beckaqua 601 (50-70 µm DFT) |
| Drying time (dust free) | 1-2 h RT |
| Through-drying time of topcoat | 24 h at RT |
| Gloss of topcoat | 20 and 85 at 60° |
| Cross-hatch | GT 0 |
| Oil resistance | No variation after 48 h (SAE 30 W at RT) |
| Salt spray test | < 1 mm after 240 h |
| Substrate cast | Iron or steel |
| Applicator | Domenicali |

The solution: a waterborne two-component polyurethane system based on Bayhydrol®

All project requirements were satisfied using a waterborne two-component polyurethane system to formulate a high-density primer that yields the required textured masking effect and a two-component topcoat in both gloss and semi-matte variants. The coating system cures well at ambient temperature and under forced drying conditions, yielding good film appearance and resistance to mechanical impact and chemicals.

Bayhydrol®/Bayhydur® – coating raw materials for customized problem-solving

Legislative requirements are forcing the users of coatings to adopt more environmentally friendly technologies. For this reason, waterborne coatings are of considerable interest. Customers who require very high-grade coatings can choose from a wide range of aqueous polyols and polyisocyanates to tailor two-component polyurethane formulations that meet their individual requirements. The end user retains the familiar benefits of polyurethane coatings: outstanding optical properties, good weather stability, excellent mechanical properties and chemical resistance. At the same time, he profits from an innovative and environmentally compatible technology.





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