THE SIGNIFICANCE OF COATING MATERIALS CONTAINING MICACEOUS IRON OXIDE

An important function of micaceous iron oxide in coating materials is the increased level of corrosion protection. With their plate-like structure, particles of micaceous iron oxide and aluminium are particularly effective in covering the substrate, which makes them preferred options for use in corrosion-protection coatings. With suitable formulation and application, the pigment structure results in diffuse light reflection, so that in contrast to high-gloss coatings, unevenness in the metal surface becomes significantly less conspicuous.

AESTHETIC ASPECTS

The plate-like structure of metal pigments, specifically large differences of weight and reflection characteristics, result in what is known as the polychromatic effect. This multi-colour effect is particularly evident with, for example, dark shades of blue and green; it is more noticeable, the further the shade is from the colour of the mica or aluminium itself.

Variations in coating thickness strengthen this multi-colour effect depending on the lighting conditions and the angle of view and can result in a very different visual appearance. The appearance of the micaceous iron-oxide coating should be seen as relative; its tough corrosion protection is undoubted.

The appearance is dependent:

- on the colour shade
- on the application method
- on the application conditions
- on the product (formulation)
- on the object concerned
- on the observer
The decision to use a protective coating containing micaceous iron oxide is directly affected by the application method, which is significant in achieving the best usual results. Dividing into working areas should be considered as early as during the scaffolding erection stage. Profile edges, riveted joints or similar structures are appropriate choices for connection points.

Increased layer thickness gives a somewhat more glossy appearance and therefore a seemingly different shade of colour where materials overlap. With high-grade two-pack polyurethane materials this appearance can be disconcerting; with coating materials containing mica and based on bitumen or epoxy resins, weathering results in a gradual convergence of the colours.

**APPLICATION METHODS**

**Brush application:**
Apply the material in cross coat generously. For finishing, always move the brushes in the same direction. Uniform application and a uniform "direction" of the mica particles will result in more uniform reflection of the incident light and a significant reduction in the formation of stripes.

**Roller application:**
Roller application using thick film systems gives a very distinctive structure which will result in a "cloudy" surface. The appearance can be improved by using a brush for finishing the last step of process.

**Conventional high pressure spraying:** (cup gun and pressure fan)
A uniform spray pattern is achieved with adequate material and air pressure. Round-jet nozzles are less suitable than wide spray nozzles. The distance between the object and the spray gun should be kept as constant as possible. This increases the chance of achieving a uniform appearance of the spray pattern.

**Airless spraying:**
Coating materials containing micaceous iron oxide can be applied particularly effectively and economically with this method. The correct choice of the nozzle and sufficient material pressure must be suitable to achieve a spray jet with good atomization. Also in this case, the result is very dependent on the correct distance to the object and uniform movement of the spray gun. A material pressure that is too low will result in edge stripes in the spray and hence uneven layer thickness and the formation of stripes on the object. Information about nozzle sizes, material pressure and the addition of thinner where appropriate for certain conditions is available in our product data sheets.