NETZSCH

Proven Excellence.

NETZSCH *Epsilon* - Improving Dispersion

Business Unit
GRINDING & DISPERSING

NETZSCH *Epsilon* - IMPROVING DISPERSION

Udo Hautsch & Dominik Kastl | NETZSCH-Feinmahltechnik GmbH, Selb | Germany

EFFECT OF BETTER DISPERSION ON THE FINAL PRODUCT

After trials with a European paint manufacturer, salt spray tests were carried out for two products. The products were a 2-component epoxy primer and a 2-component acrylic one-coat paint. Both coating systems provide active corrosion protection, i.e. they contain zinc phosphate as an anti-corrosion pigment. The primer has been approved for Deutsche Bahn TL918300, Sheet 3. The one-coat paint is a standard product in steel and plant construction, a mass-produced product made by a large number of paint manufacturers.

Sample 0 = Dissolver
Sample 1 = Epsilon
Sample 2 = Dissolver and mill

Mill: *LabStar Discus*®, 1 mm *ZetaBeads* (test number 8205722).

The samples were painted with a dry coating thickness of approx. 80 µm and, after one week of air drying, subjected to a corrosion protection test for 500 hours. Prior to the salt spray test, the samples were each scored in the same pattern.

RESULTS

2K Epoxy primer, Sample 0
Infiltration at the scribe 3-5 mm
Delamination at the lattice interface GT 5 mm
Degree of blistering 0

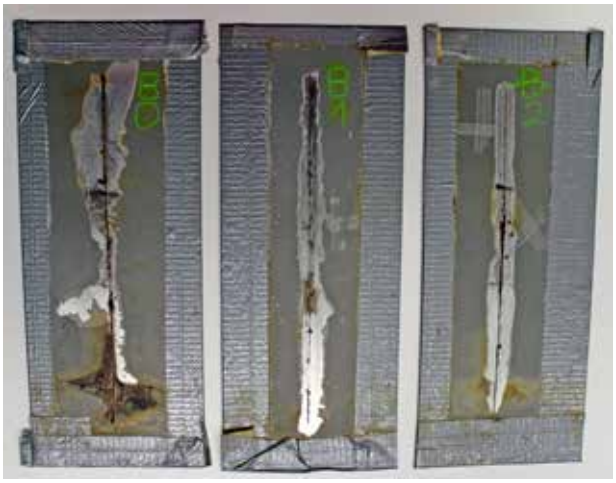
2K Epoxy primer, Sample 1:
Infiltration at the scribe 1-2 mm
Delamination at the lattice interface GT 2-3 mm
Degree of blistering 0

2K Epoxy primer, Sample 2:
Infiltration at the scribe 1-2 mm
Delamination at the lattice interface GT 0 mm
Degree of blistering 0

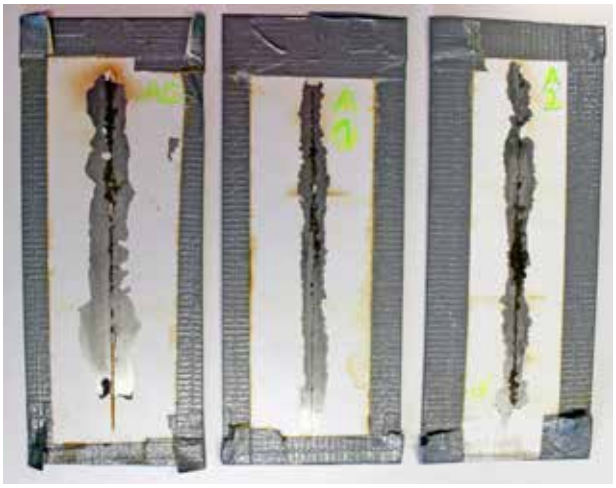
2K Acrylic one-coat paint, Sample 0
Infiltration at the scribe 3-5 mm
Delamination at the lattice interface GT 3-4 mm
Degree of blistering 0

2K Acrylic one-coat paint, Sample 1
Infiltration at the scribe 2-3 mm
Delamination at the lattice interface GT 0 mm
Degree of blistering 0

2K Acrylic one-coat paint, Sample 2
Infiltration at the scribe 3-5 mm
Delamination at the lattice interface GT 0 mm
Degree of blistering 0



Sample of 2K epoxy primer



Sample of 2K acrylic one-coat paint

The grindometer finenesses were almost identical with the dissolver and the Epsilon (approx. 15 µm), and finer with the mill (approx. 10 µm). For the 2K epoxy primer, the result with the Epsilon is better than with the dissolver and the ground product is, in turn, better than with the Epsilon. The quality of the dissolver is today's standard. With the Epsilon, production can be carried out without operator influence and thus with constant quality. Grinding is not necessary, as the benefit does not justify the additional effort.

For the 2K acrylic one-coat paint, the result with the Epsilon is better than with the dissolver. Grinding was too intensive for this product, which can be seen from the stronger infiltration as compared to the Epsilon sample.

Here too, the dissolver quality is standard, grinding is not necessary. However, the quality and the production process can be improved with the Epsilon.

The salt spray test was organized by Udo Hautsch in consultation with the customer. The customer is positively impressed by both the result and the service of performing this test.

The advantages the customer gains due to the simple and repeatable achievement of a very good dispersion quality are as follows:

- improved corrosion protection
- higher storage stability/less or no settling
- consistently good flow and processing properties, rheology and flow characteristics
- reduction of adjustment work, e.g. for viscosity, color, etc., thus saving time and simplifying the process

With the *Epsilon*, a modern, highly efficient production plant with up to two production tanks can be implemented, which combines the advantages of inline dispersing with the very low energy input (low temperature increase) of NETZSCH dispersing technology.

APPLICATION SPECIALIST PAINTS & COATINGS

UDO HAUTSCH

NETZSCH
Feinmahltechnik GmbH
Sedanstraße 70
95100 Selb | Germany

Tel.: +49 9287 797 214
Fax: +49 9287 797 149
Mobil: +49 173 242 2970
udo.hautsch@netzsch.com
www.netzsch.com

The NETZSCH Group is an owner-managed, international technology company with headquarters in Germany. The Business Units Analyzing & Testing, Grinding & Dispersing and Pumps & Systems represent customized solutions at the highest level. More than 4 000 employees in 36 countries and a worldwide sales and service network ensure customer proximity and competent service.

Our performance standards are high. We promise our customers Proven Excellence – exceptional performance in everything we do, proven time and again since 1873.

Proven Excellence.

Business Unit Grinding & Dispersing – The World's Leading Grinding Technology

NETZSCH-Feinmahltechnik | Germany
NETZSCH Trockenmahltechnik | Germany
NETZSCH Vakumix | Germany
NETZSCH Lohnmahltechnik | Germany
NETZSCH Mastermix | Great Britain
NETZSCH FRÈRES | France
NETZSCH España | Spain
ECUTEC | Spain

NETZSCH Machinery and Instruments | China
NETZSCH India Grinding & Dispersing | India
NETZSCH Tula | Russia
NETZSCH Makine Sanayi ve Ticaret | Turkey
NETZSCH Korea | Korea
NETZSCH Premier Technologies | USA
NETZSCH Equipamentos de Moagem | Brazil

NETZSCH-Feinmahltechnik GmbH
Sedanstraße 70
95100 Selb
Germany
Tel.: +49 9287 797 0
Fax: +49 9287 797 149
info.nft@netzsch.com

NETZSCH®

www.netzsch.com

G&D · WhitePaper *Epsilon* - Improving Dispersion · EN · 06/23 · Technical specifications are subject to change.