

## ... an unappreciated exotic material!?

Enamel is the name for a fused glassy protective coating made from silicates. The carrier material is mostly metal or ceramic which is coated at high temperatures.

Enamelling combines the positive properties of glass and metal. Enamelling at temperatures of up to 900 °C produces a fresh composite material from fusing enamel with metal. Enamelled products have a practically indefinite service life and are permanently protected from corrosion.

Enamel consists of glass-forming oxides and those ensuring both adhesion on the carrier material and colouring. The basic constituents are homogeneously mixed and melted. The glowing melting mass is cast in water, chilled and the grainy, glass-like frit which arises is then finely ground. A few days in storage are needed before this enamel slip can be used.

The objects to be enamelled are annealed, etched in acid, neutralised with alkaline solutions and washed. The basic slip is deposited by means of dipping or spraying and fired at 850 °C to 900 °C. This causes the enamel layer to fuse together to a glass coating. The objects in question can then be coated with one or a number of enamel layers which are fired one by one at temperatures between 800 °C and 850 °C.

Further informations under  
<http://www.dueker.de>



Visko-Jet mixer



### GLASS LINING TECHNOLOGIES

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## Special Glass Lining

Enamel – a material with a broad function profile

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# Technical Enamel ...

Resistant. Clean. Eco-Friendly. Variable. Individual. Special.

Technical enamel belongs to the all-round materials in surface technic. With its broad function profile, is predestined for use in many areas.

Enamelling can be adjusted to meet specific demands depending on the area of application. By fusing the base materials with the enamel surface finish, enamelling fulfils manifold demands by the use of various grades of enamel with different focal points. This depends on whether it is used in drinking water supply systems, for material chemistry, the treatment of waste water, in the pharmaceutical industry under GMP conditions, or to meet stipulated hygienic design requirements.

Industrial enamel is more than “just” a coating ...

In contrast to the other customary surface coatings such as wet lacquer, powder lacquer and synthetic linings, the distinguishing feature of enamelling lies in intensive, physio-chemical bonding to the base material.

It reveals itself in the diffusion processes from base material and enamel. This gives rise to a true bonding layer.



Pillar hydrant



Enamelled tub



Pump shank



Tee



Valve body



Pump shaft



Connection shaft

## Properties:

- Resistant to chemicals
- Resistant to acids
- Glassy and scratch-resistant
- Hygienic
- Corrosion-proof
- Highly durable
- Abrasion resistant
- Non-combustible
- Physiologically safe
- Recyclable
- Temperature-constant
- Little maintenance needed
- Economical
- Environmentally friendly