1. QuickPrime 1K PU universal

General comments:

Quick Prime 1K PU universal is a single component, solvent-based polyurethane resin. It hardens when the solvent evaporates, and cross-links form as moisture is taken up from the air and the surface to be coated. This leads to an extremely wear-resistant film with very high impact strength. *Quick Prime 1K PU universal* has a transparent yellowish colouration which becomes more marked in the face of ultraviolet radiation. *Quick Prime 1K PU universal* acts temporarily as corrosion protection for metallic services like for example sand-blasted steel. *Quick Prime 1K PU universal* is also used for levelling and scratch coats and for preliminary surface treatment (bonding coats) for subsequent coating systems.

Advantages:

- Hardening takes place as a result of moisture from the surroundings and/or from the surface to be coated, e.g. concrete.
- Concrete with a residual moisture content of ≤ 10% and damp(*) concrete can be primed without any problems, and a strong bond is formed with the substrate.
- The application of a top coat with a Polyurea spray system is possible relatively soon after the primer has been applied, both on metal (minimum waiting time about one hour) and on concrete (minimum waiting time about 0.2 to 2 hours) depending on the substrate dampness)
- Highly suitable with QPR filler (reinforcing pigment) or, e.g. with fire-dried quartz sand, as re-profiling mortar or levelling or scratch coating on site for repairing drying cracks, erosion, holes, pores and many other types of flaw.
- Long curing times of up to 12 hours.

Disadvantages:

- Contains solvents → VOC = 494 g/l
- Without a filler acts as a barrier against moisture but not against damp (concrete)
- Compared to *Quick Prime 2K Epoxy SF*, low resistance to temperature changes either when wet or dry.

Preferred substrates:

Steel, concrete, wood and GRP (based on either epoxy resins and vinyl ester resins.)

(*)Definition of damp:

Definition of "damp" (pursuant to definition RiLi SIB): The surface has a damp, matt appearance without a shiny water film. The pore system of the concrete base must not be saturated, i.e. water drops must sink in, leading after a short time to the original matt appearance of the surface.

2. QuickPrime 2K Epoxy SF

General comments:

Quick Prime 2K Epoxy SF is a dual component, modified epoxy resin for priming metallic and mineral surfaces and substrates. It is also used for levelling and scratch coats and for preliminary surface treatment (bonding coats) for subsequent coating systems. For metallic surfaces like steel *Quick Prime 2K Epoxy SF* forms a temporary corrosion protection and for mineral substrates like concrete, hydrophobic surface protection and substrate strengthening. In the case of a mineral base it reduces the danger of shrinkage and crack formation and seals the surface pores. Once it has set, *Quick Prime 2K Epoxy SF* acts as a barrier to the penetration of moisture and water vapour into the base material.

Advantages:

- Solvent free → 0% VOC
- Concrete with a residual moisture content of ≤ 10% and damp concrete can be primed without any problems, and a strong bond is formed with the substrate.
- Highly suitable with QPR filler (reinforcing pigment) or, e.g. with fire-dried quartz sand, as re-profiling mortar or levelling or scratch coating on site for repairing drying cracks, erosion, holes, pores and many other types of flaw.
- Without a filler acts as a barrier against either moisture or damp (steel, concrete)
- Highly suitable for stainless steel
- Excellent bonding even for steel which has not been sandblasted
- High resistance to temperature changes when either wet or dry.

Disadvantages:

- Compared with e.g. *QuickPrime 1K PU universal*, one must wait considerably longer (minimum of 6 to 8 hours, depending on the parameters of the surroundings) before a top coat can be applied with a Polyurea spray system.
- Less suitable for substrates like wood and GRP on the basis of vinyl ester resins
- Short curing times of approximately 40 to 60 min. (at 20°C).

Preferred substrates:

Steel, stainless steel, concrete and GRP (only on epoxy resin base)

Comments on damp barriers (and damp retarders)

In practice the term "damp barrier" is still often used although it is in fact not correct because only materials like for example metal (aluminium or copper foil) or glass can truly be designated as barriers.

The correct term to use in this connection is "damp retarder", which is applicable when it cannot be completely ruled out in concrete constructions that water vapour or water resulting from capillary forces emerges from within, i.e. from the concrete base. (The reason for this is normally an insufficient external insulation of the construction).

The retarding or excluding effect of this coating depends on:

1) The water vapour diffusion coefficient µ, i.e. the polymer formation and degree of cross-linking of the coating
2) The coating thickness

In order to generate a damp barrier or retarder it is in practice hence often insufficient to apply a thin layer of approximately 30 to 80 µm to, for example, an epoxy undercoat. Instead, to produce the required effect, a resin/ curing agent mixture combined with appropriate additives (reinforcing pigments or other mineral fillers) is applied as a layer of at least 1 to 2 mm thick.

This total mixture of resin, curing agent and filler can be applied for flooring as a free-flowing sealing compound with a smoothing trowel or rubber float (or spiked roller!). For vertical walls the aforementioned mixture must be applied as a thixotropic filler (which hardens rapidly) by means of a wide smoothing trowel.

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