Zinc-magnesium
hot-dip galvanized coatings for profiles

Increased corrosion protection with improved environmental performance
From spring 2014, RP Technik will be the first systems house to use zinc-magnesium coatings as basic corrosion protection for its steel profiles.

**Zinc-magnesium hot-dip galvanized coatings**

- The magnesium content in the zinc molten pool is generally around 1-2% by weight.
- System also specified in product standard EN 10346 for steel types S220GD – S250GD – S280GD – S350GD.
- Zinc-magnesium hot-dip galvanization (abbreviation: ZM) is currently the most efficient strip-alloy galvanization system for structural steels.
- The structure of the particularly dense coatings is composed of zinc solid solution and zinc-magnesium. Magnesium plays a crucial role here by forming an adhesive boundary layer on the steel substrate.
- For RP Technik, this was reason enough to become the first systems house to use zinc-magnesium hot-dip galvanized coatings as basic corrosion protection for its steel profiles. ZM 130 is the standard quality
Material specifications

- The future material specification is S280GD+ZM130-B-O (= steel type S280GD with an elastic limit of ≥ 280 MPa – zinc-magnesium metal coating with a minimum coating mass of 130 g/m² (which corresponds to an average layer thickness of 10 μm) – surface type B = improved surface as a result of temper rolling – surface treatment O = oiling for temporary corrosion protection).
- Steel type S280GD mechanical properties are slightly above those of standard structural steel S235 - structural analyses are transferable
- RP Technik is the only steel systems house to offer surface type B (= improved surface pursuant to EN 10346 / Chapter 7.5.2.2). The temper rolling process creates a substantially smoother surface in comparison with standard surfaces – a prerequisite for an improved paint surface
- Temporary corrosion protection by means of oiling prevents in particular the formation of white rust and thus makes the pre-treatment of welded window and door frames prior to coating simpler and safer.

Greater resistance to corrosion with reduced layer weights, a reduction in the zinc coating weight of 50% or more, plus considerable benefits in terms of cost-effectiveness, environment protection and sustainability.

→ RP Technik is to reduce its zinc consumption by up to 30 tons in 2014!

Advantages:

- Improved protection against red rust on surfaces
- Improved corrosion protection on cutting edges
- Better protection against infiltrations at scratches and in mechanical damage areas
- Layer weight halved with further improved corrosion protection in comparison with standard zinc coatings
- Reduced tendency to form white rust
- Better weldability thanks to reduced layer thickness
- No negative influence on the coating’s technological values
- Material savings due to reduced layer weight
- Improved sustainability rating
- Wet and powder coatings can still be applied
- All usual process steps maintained during coating