

Product: **Viplanyl®**

Viplanyl is a hot-dip zinc-coated metal sheet, protected on the surface by a layer of plasticized PVC. It is intended for anchoring and finishing sheet-metal members of hydro/insulating systems based on PVC.

Properties

- High resistance of the PVC layer to environmental action, especially to the origination of surface cracks, the so-called "setting" of the surface and colour changes.
- High resistance to "white corrosion" which is given by the multi-layer coating system of both sides of the sheet metal.
- Bend properties and elasticity of the PVC at low temperatures.
- Perfect adhesion between the PVC layer and sheet metal.
- Excellent weldability with all the currently manufactured hydro-insulating PVC sheets.
- The colour of the PVC according to the wish of the customer.
- Processing of the sheet metal is possible by all the customary procedures (shearing, bending, shaping).
- The PVC layer requires no further maintenance or renewal for the entire period of its service life.
- Improved mechanical properties, especially the strength of the PVC layer.

The above-mentioned utilitarian properties of this type of plastic-coated sheet metal are given primarily by the:

- Use of high-quality flame zinc-coated sheet metal (according to DIN EN 10142), suitable for applications in the building industry – roofing, trapezoid-shaped sheet metal, etc.
- Composition of the protective coating system – perfectly degreased sheet metal, protected on both sides by a basic coat of baking varnish - the primer. The top facing side has a plasticized PVC layer of min. thickness 0,6 mm.
- Composition of the PVC layer which is manufactured by a mixing formula, developed and tested over a long period (in collaboration with prominent manufacturers of PVC additives) and stabilised in three stages against solar radiation by special stabilizing agents which guarantee high resistance to thermal degradation in the course of hot-air welding, with a lower tendency to the so-called "setting" of the surface by use of plasticizers whose flushing out by water and migration on the surface of the PVC is limited.

Resistance to Environmental Conditions

- The specially developed three-stage, stabilizing system provides an almost perfect protection against the unfavourable effects of solar radiation, especially the UV component, which is the cause of ageing. Benchmark tests of accelerated ageing on a QUV-B Tester, according to PZN 1310-98 (derived from CSN 64 6223, DIN 53 387) have proved that, not even after 10 000 hrs, were there any changes of colour and the formation of surface defects – cracks, fissures, etc.
- The tenacity of the protective PVC layer was tested according to CSN 64 0612 up to a temperature of -30 °C.
- The newly-developed plasticizing system is marked primarily by its resistance to flushing out by water and prevention of exudation (migration) of plasticizers due to solar radiation, which suppresses the so-called "setting" of the surface of the PVC layer and thus to the creation of cracks and fissures.

Weldability by hot Air

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Attainment of a high-quality, homogenous and strong joint (welded joint) between the PVC hydro-insulating sheet and the PVC layer on the sheet metal, in aggravated environmental and working conditions, on no-so-fully accessible place is enabled by:

- A sufficient thickness of the PVC layer – min. 0,6 mm.
- A similar composition of the PVC layer to the customary PVC hydro-insulating sheets.

The high resistance of the PVC coat to thermal degradation in the event. of chance overheating of welded surfaces in the course of welding (resistance to thermal degradation is tested according to PZN 1313-00.

Strength of welded joints

The strength of welded joint is tested according to PZN 1301-98 (derived from CSN 64 6223, DIN 16 726). The principle of the test is evaluation of the mechanical characteristics of the joint in shear stress at a temperature of 23 °C and their change due to dipping in water at a temperature of 23 °C for a period of 28 days and the effect of hot air 80 °C over a period of 7 days. In all cases the sheet must tear apart outside the welded joint.

Cohesion of PVC and sheet Metal

High quality adhesion between the sheet metal and PVC coat is achieved by:

- The use of a special adhesive system.
- The composition and characteristics of the adhesive system.
- The technological conditions of production.

Adhesion of the PVC coat to the sheet metal is tested by several testing method:

- Scratch test according to PZN 1312-98 at a temperature of 23 °C, after being exposed to the action of water over a period of 28 days (temperature 23 °C) or 120 hours (temperature cycle 80 °C/8 hours and 25 °C/16 hours) and after exposure in a hot air drying chamber at a temperature of 80 °C over a period of 7 days.
- Cupping test according to CSN EN ISO 1520, DIN 50 101 (Erichsen) – the depth of penetration 7 mm. Infracture of adhesion is observed at the place of a cross cut at a temperature of 23 °C and after submerging in boiling water (10 min or 60 min)
- An alternative test of adhesion is also the peeling test according to PZN 1301-98. The welded joint (between the hydro-insulating PVC sheet and PVC coat of the sheet metal) is stressed by tension in a direction parallel to the surface of the joint.

In none of the given cases can there occur infracture of the PVC coat or adhesion which would lead to separation of the PVC coat from the sheet metal.

Fire Characteristics

Plastic coated sheet metal Viplanyl is according to CSN EN 13501-1+A1:2010, art. 11 classified to Fire Reaction Class E

Use

- Anchoring clamping and finishing members for PVC sheets which are used for hydro-insulation of roofs, pools, subterranean structures, etc.

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- Tinsmith elements – sheet metal covering, flashing of roofs, terraces, balconies, loggias, attics, ledges, parapets.
- For the lining and facing of walls and ceilings in areas subject to an aggressive environment.

Assortment

The type, sheet metal thickness and colour of the protective layer of PVC depend on the requirements of the customer. The standard color is grey, brown, red; green, blue (for pools), the standard zinc-plated sheet metal is delivered in sheets of dimensions 2 x 1 m and thickness 0,6mm.

Maintenance

VIPLANYL sheet do not require any maintenance or renewal of the PVC coat for their entire lifetime (25 – 30 years).

Working

VIPLANYL sheet is worked in a manner (cutting, bending, shapping, etc.) similar to working sheet metal without any PVC coat with the difference that these sheets cannot be brazed, soldered or welded. They are joined by folding, overlapping or, as the case may be, by riveting.

Guarantee

Upon maintaining the stated recommendations, the manufacturer of VIPLANYL sheet metal guarantees the quality of the protective layer for a period of ten years.