

## METAL SHEET KNAHER LAMINATED® TPO

### Description:

KNAHER LAMINATED® TPO is a composite product made of a both-side galvanized sheet, which is varnished on the back side with protective varnish and coated with the laminated polymeric waterproofing membrane on the front side. KNAHER LAMINATED® TPO is made and assessed in compliance with standards EN 10169+A1 and EN 14 783.

### Use:

The product is designed for anchoring, clamping and as the end components for TPO membrane waterproofing systems. Furthermore, it can be used as the metalworker's components for terraces, balconies and sheathing roofs.

### Product details:

The type and thickness of metal sheet, as well as the colour of TPO membranes are dependent on customer requirements and can be tailored. The standard galvanized metal sheets are supplied in dimensions 1000x2000 mm and 1000x3000 mm in thickness 0.55 mm or 0.6 mm and they are laminated with TPO film in RAL 7047, RAL 7012, RAL 7040 in thickness min. 0.6 mm.

### Features:

The product has a high resistance of the TPO layer against the effects of weather conditions, retains its elasticity and flexibility even at low temperatures without requirement of any adjustment or maintenance of the surface during its lifetime. The product further features an excellent adhesion between the TPO membrane and metal sheet. It shows also an excellent weldability with waterproofing TPO membranes. The laminated steel sheets can be processed by all conventional technologies (cutting, bending, forming, welding, hot air). The colour of TPO membrane can be tailored to the customer requirements.

### Resistance to weather conditions:

High resistance of TPO membrane against weather conditions is determined by using a unique stabilization system that provides excellent protection against aging factors. TPO foil contains no plasticizers thereby it shows an excellent resistance to any change of physical and mechanical properties during its use.

### Weldability by hot air:

Hard and quality bond can be achieved by a using of sufficient thickness of the TPO layer (min. 0.6 mm) on the metal sheet. The laminated sheets KNAHER LAMINATED® TPO can be welded only to the membranes based on plasticized TPO. The TPO membrane is protected against possible thermal degradation during processing (in particular welding) by an effective thermal stabilizer.

**Cohesion of TPO membrane with metal sheet:**

The adhesion (grip) between TPO membrane and the steel sheet must be greater than cohesion of the waterproofing TPO membrane. This is achieved:

- by using of adhesive system designed specifically for joining metal sheets with TPO materials,
- by suitable TPO membrane composition,
- by optimal settings of technology and manufacturing conditions.

The cohesion of TPO membrane is tested by notch exam or other tests like peeling and cupping tests according to DIN EN ISO 1520. During the tests any cracking or breaching of adhesion **MUST NOT** be recorded, which would lead to the separation of TPO membrane from the metal sheet.

**Fire properties:**

Fire properties of KNAHER LAMINATED® TPO metal sheets were verified according to standards:

- EN 13501-1 Reaction to fire: classification - Class E
- EN 13501-5 External fire: classification - performance Broof (t1, t3)

**Maintenance:**

Laminated metal sheets KNAHER LAMINATED® TPO do not require any maintenance or renewal of the TPO layer throughout its lifetime.

**Warranty:**

Generally, the manufacturer offers a 10-year warranty on the quality of the protective layer provided when the recommendations specified in this document are respected.