

Installation Guideline for Tensar Glasstex[®] Grid R Asphalt Interlayer

Scope

This Installation Guideline provides a step by step guide to Contractors installing Tensar Glasstex[®]Grid R asphalt interlayer supplied by Tensar International or any of its appointed distributors. There are several product grades in the Tensar Glasstex Grid R range. This guideline applies to all products in the range.

Tensar Glasstex Grid R consists of a glass yarn grid structure stitched onto a lightweight veil. The product is penetrated with a polymer modified coating and provides a reinforcing function at low strains by way of the high tensile glass yarn in accordance with EN 15381. The veil acts as an installation aid only and supports fixing the product during installation due to its continuous structure.

The user should evaluate the suitability of the product for any specific project prior to installation. These general guidelines should be closely followed unless there is a conflict with the contract documents. In such cases clarification should be sought from the Engineer.

Storage and transport

The rolls must be transported carefully and stored in dry and clean environment on even surfaces so that deformation of the rolls is avoided. The rolls should be kept covered to protect them from sunlight and water-ingress.

Preparation of the substrate surface

- Bound asphalt layers are suitable for the installation; for the use of the product on concrete pavements an asphalt levelling layer needs to be paved prior installation.
- Potholes, joints, cracks or voids have to be filled beforehand with a suitable material.
- The surface must be even to ensure a continuous contact between Tensar Glasstex Grid R and the surface.
- Finely milled substrates with a maximum rill depth less than 10mm are acceptable for the installation of the product (Figure 1).
- The surface must be clean, free of dust and debris, dry and be in accordance with the basic requirements for conventional asphalt paving.
- Uneven or coarsely milled surfaces must first be regulated or profiled with a suitable asphalt mix; the asphalt mix used for the regulating layer should be sufficiently dense to avoid absorption of the bond coat.
- The surface onto which the bond coat is applied must have been allowed to cool to ambient temperature (if newly laid).



Figure 1: Finely milled substrate

Bond coat application

- The bond coat (referred to in EN 13808 as the tack-coat) can either be hot-applied bitumen or a bitumen emulsion; cut back bitumen products (i.e. bitumen mixed with a volatile liquid, e.g. kerosene, petrol etc.) are not suitable for the installation. For hot-applied bitumen, the penetration grade can vary from 160/220 for moderate climates to suitable lower penetration grades in hotter climates. The minimum air temperature at the time of applying the hot bitumen should be +5°C. Variances depending on site conditions should be agreed upon by the Engineer and the installer of the product.

- For bitumen emulsions these should be suitable for surface dressings and provide a bitumen solids content of $\geq 65\%$ (e.g. C 69 B4 according EN 13808). The minimum air temperature at the time of applying the bitumen emulsion should be $+10^{\circ}\text{C}$. Variances depending on site conditions should be agreed upon by the engineer and the installer of the product.
- The bond coat bitumen or emulsion proposed for the interlayer should first be approved by the Engineer.
- The bond coat should be sprayed mechanically onto the surface at a uniform rate (Figure 2). Small or localized areas can be sprayed by hand.
- Spray rates of residual bitumen: $0.5\text{--}0.9\text{ kg/m}^2$ (equates to about $0.7\text{--}1.3\text{ kg/m}^2$ of a 69% bitumen emulsion); The quantity will vary depending on the condition of the surface
- The quantity should be measured controlled and recorded. It may vary and needs to be adjusted according to surface conditions (for example porous surfaces require more bitumen).
- For overlaps, spray binder on top of the previously installed layer, slightly wider than the overlap width; avoid oversaturation
- It is recommended to calibrate the bond coat sprayer at the start of each new project and then once a day.



Figure 2: Bond coat application

Installation of Tensar Glasstex Grid R asphalt interlayer

- The installation should be carried out by trained and experienced staff.
- Installation should be performed in dry weather conditions.
- The product can be cut with a utility knife or suitable disk saw.
- The product needs to be laid into a freshly sprayed bond coat.
- The preferred method of installation is with a purpose-built interlayer installation machine. Tensar International or a local Tensar distributor can advise on the availability of this type of specialist equipment.
- If hand-laid, insert a steel bar through the roll core to assist with unwinding and to prevent bowing of the roll. Unroll the product onto the sprayed surface, applying light tension to the product and brushing to ensure that wrinkles are not formed.
- A solid and wrinkle free connection between the product and the surface should be carried out by applying pressure with a broom, or suitable alternative; in case of wrinkles, these must be cut out.
- Overlaps (See Figure 3):
 - Adjacent roll lengths should overlap 10-15 cm.
 - End-to-end overlaps should be 20-30 cm and be staggered (see Figure 3).
 - Avoid installing overlaps over cracks or joints.
- The product should be installed to within of 5 cm to the edge of the road; variances depending on site conditions should be agreed to by the installer of the product.
- In curves the product should be installed in a series of short straight sections, ensuring that the product is overlapped in all cases.
- For the rehabilitation of discrete or single cracks, or joints, the product should be installed with a minimum width of 1m centred over the crack or joint.
- Traffic on the installed product should be restricted to construction traffic necessary for the asphalt paving process.
- Operators of construction vehicles should be advised that sudden braking, or acceleration, or turning the tyres while stationary, or pushing by the paver while the truck brakes in front of the paver, must be avoided.
- If necessary, e.g. in hot climates or where excessive construction traffic is anticipated, chippings can be applied. Chippings should be evenly distributed over the installed product at a rate up to 1.0 kg/m^2 ; The chippings should be dust-free and consist of solid, hard stones with a size 2-8 mm. Excess chippings should be removed

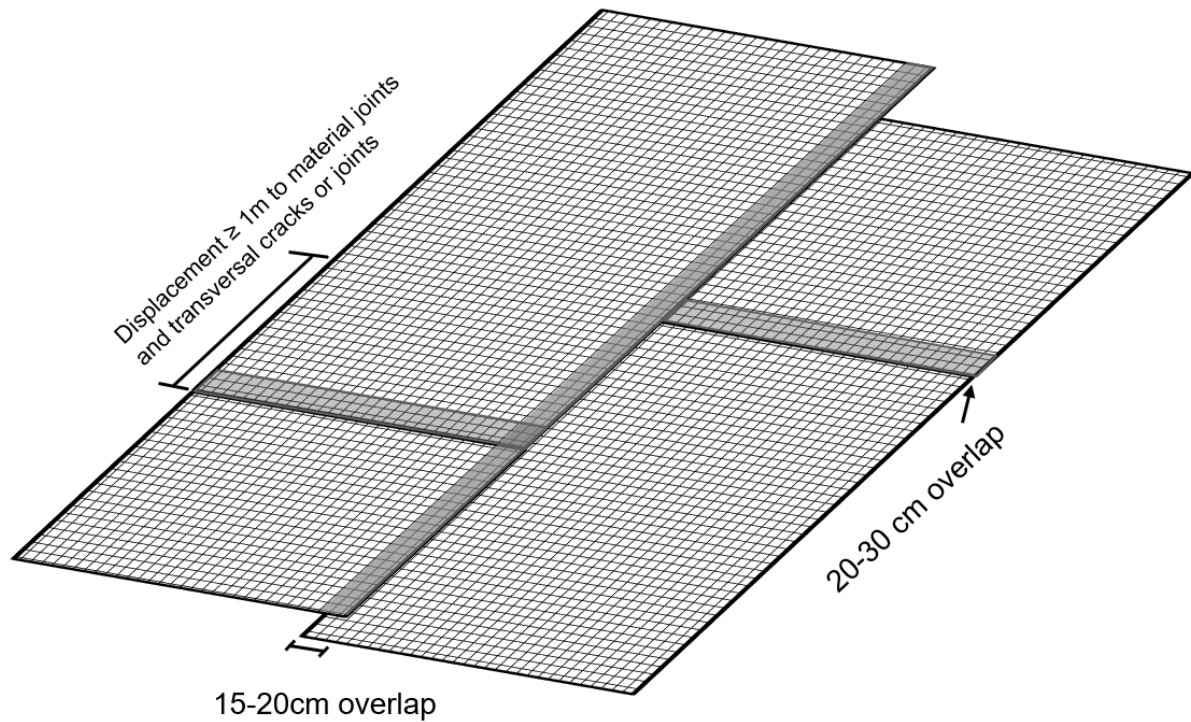


Figure 3 Overlapping of joints

Asphalt paving

- Low-temperature asphalt mixes and mastic asphalts cannot be placed directly over Tensar Glasstex Grid R asphalt interlayer.
- Paving can commence as soon as the bitumen bond coat has fully cured and the Glasstex Grid R has been bonded completely to the pavement.
- If it rains on the installed product, paving operations must stop until the surface is dry again.
- Where construction delays are not permitted, weather conditions should be considered before work commences.
- The compacted thickness of the first 'course' of asphalt placed directly over the product must be a minimum of 40mm.
- Operators of construction vehicles should avoid sudden braking, or acceleration, or turning the tires while stationary. Drivers of asphalt delivery trucks must avoid full braking while being pushed by the paver;
- Avoid locating paving joints over the product overlaps.
- Any damaged product must be cut out and replaced, with sufficient overlaps before paving.
- To ensure the integrity of the overlaps, at the start of paving, or over repaired areas, loose asphalt mix can be broadcast on the surface immediately before paving.

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