



TITAN

BUILD YOUR LEGEND

Installation Guide

Geogrid

For Asphalt Reinforcement

**Spartan Road Grid™ Composite Series
Fiberglass Geogrid**

INSTALLATION GUIDE

SPARTAN ROAD GRID™ COMPOSITE

Storage Information:

- Store at temperatures above - 29°C (- 20°F).
- Storage location should be dry, preferably covered and free of dust, dirt and moisture.
- Do not allow excessive mud, fluid concrete, asphalt, or other deleterious materials to get in contact with the reinforcement mesh materials.
- If stored outdoors, the rolls must be covered with proper water proof covering.
- Store rolls upright on end.
- Rolls remain in wrapping until use.



Surface Preparation:

- Pavement should be clean, dry, and clear of all dust, dirt, and debris. It is recommended that a sweeper should pass over the road surface multiple times to ensure sufficient debris has been removed.
- Road surface temperature should typically be between 5 °C (40 °F) and 60 °C (140 °F) and between 5 °C (40 °F) and 46 °C (110 °F) if the asphalt surface is less than 24 hours old.
- Seal cracks exceeding 6 mm (0.25") in width using an approved sealant or the appropriate leveling course mix.
- Repair potholes and failed or cracked sections of pavements as instructed by the engineer.
- Badly damaged or rough pavement may require milling or the placement of a leveling course.



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Tack Coat Application:

- The use of a tack coat facilitates adhesion and bonding between the fiberglass grid composite and asphalt layers. Tack must be completely cured prior to paving. The fiberglass grid composite should be laid with NW geotextile component on the bottom side.
- Tack coat needs to be applied uniformly over the prepared surface at a rate of **0.9-1.36 L/m² (0.2-0.3 Gal/yd²) using a calibrated distributor truck, ensuring that the application rate remains constant**
- It is recommended that only asphalt cement tack coats are used. The best results are obtained when the same asphalt cement that was used to make the HMA mix is used as the tack.
- Performance Grade binder (PG-64 or equivalent) is strongly recommended and provides very good results when applied. More care and considerations are required in relation to curing time when using emulsified tack coats such as SS-1, or SS-1h. If SS tack coats are used, knowing the composition of the SS is important.
- Clean Bond Coat (CBC) 50% versions can also be used instead of conventional tack-coat.
- Tack must extend 75mm (3") beyond the fiberglass grid composite on all sides.
- Other types of tack coat require pre-approval by a manufacturer's representative.



Tack Coat Application - Correct Installation Method

Uniform Distribution of Tack Coat

- Uniform distribution of the tack coat is observed. No gaps in the tack coat can be seen.
- If the distributor truck cannot apply the tack coat in a homogenous manner, then proper cleaning of the distributor truck is required.
- It is recommended that a vertical distance of the sprayer bar is approximately 305mm (12") above the pavement.

Allow Tack Coat to Break

- Allow sufficient time for the tack coat to break before paving can begin.
- Tack coat should turn from a brown color to a black color.
- This process is very important and requires the utmost patience. Curing of the tack coat will depend upon a number of factors including ambient temperature, surface temperature, humidity, wind velocity and more.



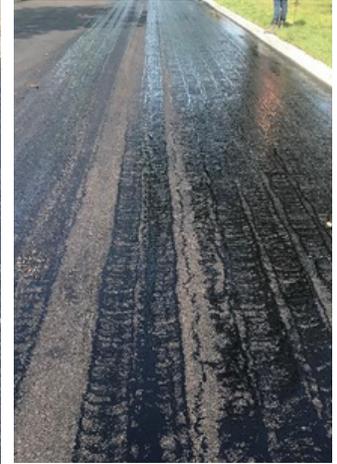
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Tack Coat Application – Incorrect Installation Methods

Nonuniform Distribution of Tack Coat

- An unacceptable installation is observed when gaps in the tack coat are present.
- If the distributor truck cannot apply the tack coat in a homogenous manner, then proper cleaning of the distributor truck is required.
- Areas of insufficient or non-uniform prime, tack and joint coating coverage shall be reapplied by the contractor.



Tack Coat Was Not Allowed to Break

- Insufficient time for the tack coat to break did not occur. Tack coat is still brownish in color.



Installation Details:

SAFETY PRECAUTION:

It is recommended that workers wear gloves and safety glasses while handling fiberglass geogrid composite.

IMPORTANT

- Ensure that the surface is clean and clear of all dust, dirt, and debris.
- Ensure that the surface is level so that the geogrid can make solid contact with the base course.
- Ensure that ALL surface preparation instructions have been completed as detailed.
- **DO NOT** place Spartan Road Grid™ on surface when wet, or contaminated with oil, soil or excessive dust.
- **DO NOT** place asphalt during wet or freezing weather that prevents conformance with specified requirements.
- The width of the tack coat application must extend 75 mm (3") beyond the Titan fiberglass geogrid composite on all sides.

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Installation Details Cont'd:

- Spartan Road Grid™ Composite may be placed directly over a tack-coated finely milled surface, provided that all surface preparations have still been considered.
- Place Spartan Road Grid™ Composite over the tack coat surface when the tack coat is just starting to cure.
- Ensure that the Spartan Road Grid™ Composite's leading edge is sufficiently fastened to the road so that enough tension can be applied to the fiberglass grid composite.

Placement:

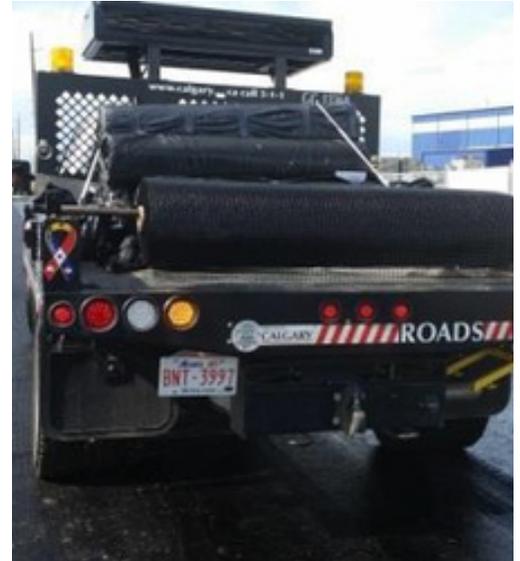
There are two primary ways that Titan Fiberglass Grid can be placed on an asphalt surface:

Mechanical ** Highly Recommended**

- Using a pickup truck or trailer - that has been modified so the geogrid can be mounted on the back.
- A LOW ROLL placement is important. A closer roll device to the road surface will allow for a smooth wrinkle free application.
- Used for full-width installations but can also be used for detail repairs that are sufficiently large.
- Helps maintain tension during placement.

Manual

- Physically placing by hand.
- Used for localized areas of road.
 1. Ensure that the geogrid's leading edge is aggressively fastened to the road so that sufficient tension can be applied to the fiberglass geogrid.
 2. Roll out the entire length of the geogrid and tension from the end of the roll. Tension should be continually applied until the remaining area of geogrid can be fastened to the road.
 3. Overlap transverse joints by 75-150 mm (3-6") in the direction of the paver and overlap longitudinal joints by 25-50 mm (1-2").
 4. The surface of the fiberglass geogrid may be rolled with a rubber-coated drum roller or a pneumatic tire roller with one or two passes to facilitate bonding.



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Placement Cont'd:

5. Traffic should be kept to a minimum while the grid is exposed. If travel on the geogrid is necessary, it should be kept below **5 MPH** with no sudden stopping or starting.

- Static front wheel turning should be kept to an absolute minimum.
- Any sections damaged by construction traffic must be removed and patched prior **to paving**.
- Geogrid must be kept free of mud, dust and other debris during construction.

Wrinkle Removal:

- Wrinkles and wrap-ins during fiberglass geogrid installation need to be removed. To avoid them ensure that the geogrid is installed under sufficient tension. In some cases (e.g., on curves with tight radii), it may be necessary to cut the grid in short sections.
- Caution should be taken to ensure that all wrinkles are removed before paving. To remove:
 1. Try pulling the grid tight to smooth out surface.
 2. If wrinkles are still present, cut the middle of the wrinkle.
 3. Lay it back on itself to minimize the amount of differential height in the grid during paving.
 4. Aggressively fasten the repair area to eliminate lifting or movement of the grid in that location.

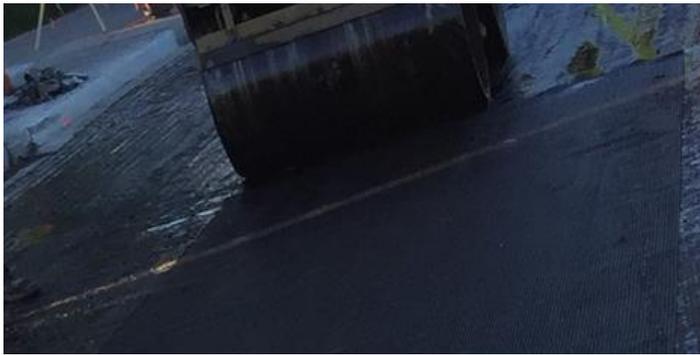


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Hot Mix Overlay:

- Allow tack coat to cure before paving.
- The recommended asphalt overlay thickness is a minimum of 50 mm (2") thick once compacted.
- The paving should be done within 24 hours of when Spartan Road Grid™ composite is installed.



Design Guidelines:

Titan offers free project pre-designs that provides optimal recommendations and determines required overlays and thicknesses. Please contact one of Titan's Technical Sales Representative's for details.



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