



GlasGrid® GG

Installation Procedures



The installation manual sets general recommendations for a successful installation of ADFORS GlasGrid GG50, GG100, GG200. Specific project conditions should be reviewed with a technical representative of Saint-Gobain ADFORS who can provide expert assistance during installation.

■ Installation Follow-up

- Transport and Storage
- General Site Review
- Weather Considerations
- Installation
- Overlap and Custom Fitting
- Test for Proper Adhesion
- Boundary Conditions
- Tack Coat
- Paving
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ADFORS GlasGrid GG100

■ Transport and Storage

- Maintain storage of product in manufacturer's original packaging until ready for installation.
- ADFORS GlasGrid GG must be stored in dry, dust, dirt free environment and kept such at the job site.
- Prevent material from coming into contact with debris, asphalt, vegetation, any liquids, such as water, oil, or other deleterious materials.
- Store and transport at temperatures between minus 30 °C and 80 °C and with a maximum relative humidity of 85%.
- Pallets with product should be stored and transported on dry and flat surface.
- It is not recommended to stack pallets with rolls or to store unsecured rolls on top of the pallets with rolls.

■ General Site Review

- Prior to the installation of ADFORS GlasGrid interlayer system, evaluate and complete repairs to the existing pavement.
- Existing pavement should show no signs of poor drainage, pump-ing of fines, excessive deflections or structural instability. Sub-grade repairs shall be made to all areas where structurally instability is present.
- Potholes and cracks larger than 6 mm should be filled and compacted with appropriate material. Seal cracks between 3 mm and 6 mm with appropriate crack filler.
- The surface receiving the interlayer must be dry, dust-free mechanically cleaned by sweeping and vacuuming and be free of oil, vegetation, sand, dirt, water, gravel, and other contaminants prior to placement of interlayer reinforcing. **(Pic. 1)**
- Moisture and dirt will interfere with adhesion of the grid to the pavement surface. Therefore placement should not be under taken, if rain is likely to fall prior to covering the grid with an asphalt mat overlay. Grid that is placed and will not adhere due to moisture or dirt shall be removed and replaced at the contractor's expense.
- ADFORS GlasGrid GG can be installed directly on an old asphalt surface or on a levelling/binder course. **(Pic. 2)**
- Receiving surface shall be smooth, with the existing cracks pretreated. Milled surfaces shall receive a levelling course prior to the ADFORS GlasGrid installation.
- For maximum performance ADFORS GlasGrid GG should be installed over a recently placed levelling or binder course with a minimum thickness of 20 mm **(Pic. 2)**. Full contact between surface and grid must be ensured.
- Consultation with an ADFORS technical specialist is recommended for any undescribed application.



Pic. 1: Ultra High Pressure technology to clean the surface



Pic. 2: Typical installation and glue activation on a levelling course

Weather Considerations

- Local weather guidelines must be maintained for paving (e.g. temperature, precipitation).
- Extra care should be taken when paving at either end of the temperature range. As an example, the use of a particular type of tack coat material may benefit the process in hot weather conditions over another type.
- Should the surface containing ADFORS GlasGrid become wet; it should be left undisturbed until fully dried out. The traffic on the ADFORS GlasGrid while it is wet may break the bond.

Installation

- ADFORS GlasGrid GG and tack coat must be installed and applied by trained personnel. Fabric tractor installation is recommended. Alternatively manually installing ADFORS GlasGrid is possible using the correct equipment. **(Pic. 3, 4)**
- Commence placement of ADFORS GlasGrid only if previously described conditions are fulfilled.
- Reinforcement grid shall be installed with adhesive side facing down using sufficient pressure to eliminate ripples. Remove any ripples by pulling the grid tight. Cutting of the grid can be done on tight radii to prevent ripples.
- The surface receiving the reinforcement shall be between 5 °C and 40 °C and support ADFORS GlasGrid installation. Fresh laid asphalt surface must harden with respect to the local paving guidelines. Is recommended to permit new paved asphalt surface to cool at least once to 40 °C. If temperatures are outside the recommended application temperatures, contact a SG ADFORS technical specialist for consultation.
- Place and secure the leading edge of material onto pavement in the direction of the work. Once the leading section is secure proceed dispensing the balance of the roll until the roll is completed using a tractor, truck or hand device moving slowly away.
- Full contact between the lower surface and grid must be ensured.
- After proper grid placement the activation of the self-adhesive by rolling the material with a rubber coated drum roller or a pneumatic tire roller is recommended **(Pic. 2)**. Roller tires shall be kept clean to the satisfaction of the Engineer.
- Rolling of the material with one or two passes should be sufficient to develop a strong bond to the true and levelling course. **(Pic. 2)**
- Protect the asphalt reinforcing grid until placement of the finished asphalt topping. If installed interlayer is damaged due to not sufficient protection and traffic on site it needs to be removed and replaced at the contractor's expense.
- Place the asphaltic overlay course within 24 hours the interlayer reinforcing grid is placed.



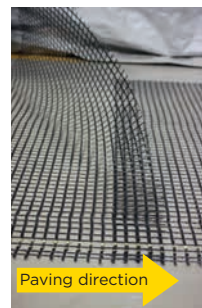
Pic. 3: Fabric Tractor Installation of ADFORS GlasGrid



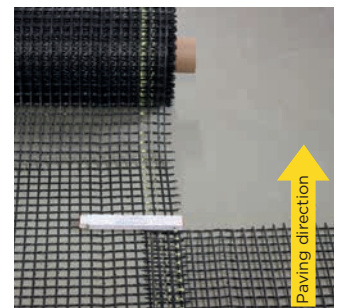
Pic. 4: Manual Installation of ADFORS GlasGrid

Overlap and Custom Fitting

- ADFORS GlasGrid GG must be applied without ripples. Sufficient tension during application will eliminate this problem.
- Overlap at end of end roll joints 100–150 mm. Ensure that the overlaps are shingled in the direction of paving. **(Pic. 5)**
- Overlap longitudinal joints at minimum 50 mm. **(Pic. 6)**
- ADFORS GlasGrid GG can be custom cut to fit around structures by using a sharp utility knife or other similar tool. Reinforcement laid out and rolled over ironworks (i.e., manhole covers, drainage grates, etc.) shall be removed in such an areas by cutting the reinforcement grid.
- ADFORS GlasGrid GG does not bend or stretch around curves. Shortened lengths should be placed in these areas.
- Overlapping areas shall be arranged that areas do not coincide with paving lanes, cracks, joints or seams in the base. Overlapping area should be kept in minimum distance $\geq 0,5$ m.



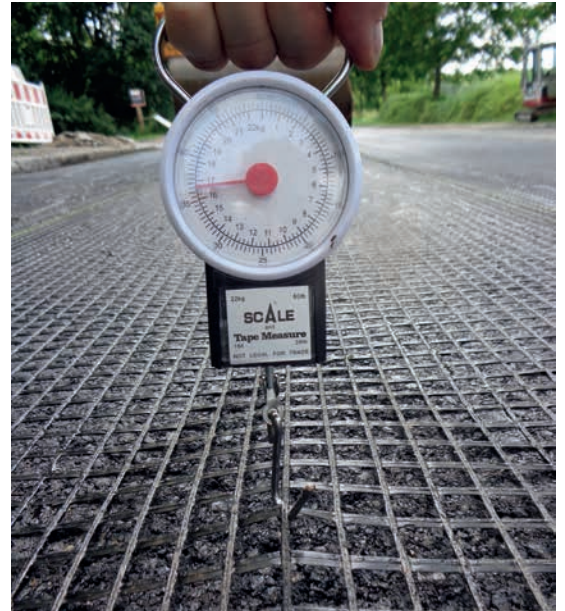
Pic. 5: End of joints



Pic. 6: Longitudinal joints

Test for Proper Adhesion

- Cut 1 m² of ADFORS GlasGrid GG.
- Place the grid on area that is representative of the project condition.
- Activate self-adhesive glue by rolling with a recommended rubber-tired roller.
- Insert hook of calibrated spring balance under center of ADFORS GlasGrid GG.
- Pull upward until ADFORS GlasGrid GG starts to pull away from the surface.
- If result is 9 kg or more it is OK to pave. If less than 9 kg do not continue installation ADFORS GlasGrid GG without corrective action to address this issue. **(Pic. 7)**
- Consult the manufacturer if grid does not meet this pull rating and do place asphalt topping until an acceptable adhesion is achieved.
- If bond is not achieved then determination of the cause is required. This is typically due to contamination on the smooth surface, in the form of either water or debris.
- After application, provide a minimum of one test per 300 m² of surface area and record result in kg.



Pic. 7: Adhesion pull out test

Boundary Conditions

- Prior to paving, only construction and emergency vehicles should be allowed to drive on installed ADFORS GlasGrid GG and with max. speed up to 20 km/h.
- Vehicles should limit turning and breaking on installed ADFORS GlasGrid GG.
- To reduce the crack stresses distribution over individual cracks and distresses installation width has to be kept ≥1,0 m (minimum 0,5 m each side from the crack).
- To reduce potential transfer of tack to the equipment tires, stone chips for example 1-1,5 kg/ (1-3 or 2-5 mm grain size) can be applied over the grid depending on project requirements.
- Extra care should be taken when paving at either end of the temperature range. For extreme heat, a higher grade of PGAC may be considered to address high temperature conditions.

Tack Coat

- Apply tack coat per project requirements. **(Pic. 8)**
- Generally recommended is tack coat application after GlasGrid GG installation.
- If tack coat is specified by project or required by order of procedure on site to be applied before the installation of ADFORS GlasGrid GG, it may be applied in the opposite order. We recommend consultation with SG ADFORS technical specialist.
- The general recommended final tack coat spray rate should accommodate range of potential project/environmental local conditions, type of GlasGrid GG and type of emulsion. Recommended is polymer modified cationic emulsion with minimum 65 % bitumen content (as example C65BP3) with breaking class ≥ 3 and should meet the requirements listed in EN 13808. If there is different project requirement for the emulsion, it should be consulted with SG ADFORS technical specialist before application. Application rate vary depending on site conditions between 0,2-0,5 kg/m² residual bitumen content. **(Tab. 1)**
- Tack coat must be completely cured prior to paving. **(Pic. 9)**

ADFORS GlasGrid GG Total Residual Tack Coat Rate Recommendation (100% solids)	
New Asphalt Surface	Heavily Oxidized Asphalt Surface
0,20 - 0,35 kg/m ²	0,35 - 0,50 kg/m ²
<p>Application rate formula: $R = A * \frac{100}{S}$</p> <p>R... total emulsion application rate for project A... project application rate defined by 100% bitumen required S... solid concentration of the used emulsion</p>	<p>Example: Project application rate is 0,3 kg/m² [100% bitumen]. For project is used emulsion with 65% solid content.[C60BP1-S].</p> $R = 0,3 * \frac{100}{65} = 0,5 \text{ kg/m}^2$

Tab. 1: ADFORS GlasGrid GG Total Residual Tack Coat Rate Recommendation

■ Paving

- Hard breaking and/or locking up of the trucks wheels on the grid shall be prohibited to not damage installed grid during the truck move and dispensing mix into the paver.
- Once tack coat is fully cured and ADFORS GlasGrid GG secured it is recommended to pave within 24 hours.
- Installed ADFORS GlasGrid GG system shall be covered by hot asphalt layer with minimum width after compaction 40 mm generally recommended is minimum width 50 mm overlay after compaction. **(Pic. 9)**
- Paving in high slopes, tight curves and in areas with high shear forces applied to the pavement structure are generally considered as critical.
- Stop paving immediately if ADFORS GlasGrid GG moves or ripples.
- Ensure slow, vibration-free running of compaction roller during the first pass over applied HMA layer. Compaction should be managed before the asphalt layer cools to a temperature ≤ 100 °C. Avoid running the compacting roller backwards over an adjacent part of the HMA that has already cooled to a temperature ≤ 100 °C.



Pic. 8: Tack coat application over ADFORS GlasGrid GG

■ Health & Important Issues

- Because fiberglass is considered as a skin irritant, workers should wear protective clothes, gloves and glasses while handling ADFORS GlasGrid GG.

■ Final Note

- The installation of any asphalt reinforcement interlayer shall follow the local regulations for asphalt road construction.
- This guideline outlines recommendations for a quality installation and is based on familiarity with the product, and the consolidation of decades of project site experiences.
- If you have any questions or unique installation parameters, do not hesitate to contact us.
- Warranty claims cannot be based and forced on present information in this guideline. Each project should be consulted with a SG ADFORS technical specialist.
- In as much as Saint-Gobain ADFORS has no control over installation design, installation workmanship, accessory materials, or conditions of application, Saint-Gobain ADFORS does not warrant the performance or results of any installation or use of ADFORS GlasGrid. This warranty disclaimer includes all implied warranties, statutory or otherwise, including the warranty of merchantability and of fitness for a particular purpose. The purchaser and/or user should perform its own tests to determine the suitability and fitness of the product for the particular purpose desired in any given situation.



Pic. 9: Pave Overlay



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