

Smartfloor - Modular Floor System

Smartfloor installation & assembly instruction

General view of the Smartfloor



Modular floor system



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Foreword

Dear reader,

These Installation Instructions serve to provide all information required for a correct and safe installation of the Smartfloor. The Smartfloor is designed and constructed in accordance with state-of-the-art technology and recognised safety standards.

Inspect the underside of the vehicle floor and note wiring, cross members, frames, fuel tanks and other possible obstructions before beginning installation.

This document must not be reproduced or duplicated, in full or in part, without the prior, written permission of the manufacturer.

Guarantee

Use only original spare parts, hardware or spare parts which have been approved of by the manufacturer.

If spare parts other than these are used, this can have a negative effect on the specified characteristics, the functionality and safety of the Smartfloor. Using non-original or unauthorised spare parts will render the guarantee null and void.

Contact us to order spare parts or accessories.

1. Safety

Explanation of symbols and signs

To improve understanding, the following conventions should be met for these instructions:



DANGER!

Warns of a situation of immediate danger, which will lead to severe or fatal injuries if not avoided.



WARNING!

Warns of a potentially dangerous situation, which will lead to severe or fatal injuries if not avoided.



CAUTION!

Warns of a potentially dangerous situation, which will lead to slight or minor injuries or material damage if not avoided.



ATTENTION!

Indicates a potentially dangerous situation, which can cause material damage if not avoided.



Gives a reference to important information in other sections and documents.



Contains general notes and useful information.

1. Safety

The installation company itself is responsible for adherence to the safety regulations when installing the Smartfloor. Installation is carried out at the sole risk installation company. The manufacturer will accept no liability whatsoever for damage caused during installation of the Smartfloor. Unless such damage is caused by grossly negligent or intentional breach of contract on the part of the manufacturer. In addition to the information given in these installation instructions, local legislative regulations must be taken into consideration, in particular those regarding safety and accident prevention.

Documents

In addition to this manual, the following documents and additional documents are available on the Smartfloor website download section:

- The Sika Aktivator, safety data sheet
- The Sikaflex, safety data sheet



1.1 Intended use

The Smartfloor described in this manual is only intended for vehicle floor conversion.

Intended use also requires that:

- All data in this manual is observed and understood.
- All safety instructions are observed and understood.



Incorrect installation of this product can lead to damage or even personal injury!

This product may not be used when:

- Any malformation to the product or damage have been discovered.
- Product parts are incomplete.

1.2 Personnel requirements

The Smartfloor must only be installed by trained, specialist personnel:

- Who have read and understood these installation instructions.
- Of whom it can be expected, that they will execute the job entrusted to them in a responsible and reliable manner.
- Who have been expressly assigned by the vehicle's owner to install the Smartfloor.

2. Installation

2.1 Safety information for installation



DANGER!

Danger through use of unsuitable installation materials.

Unsuitable installation materials are unable to withstand the traffic forces encountered during operation of the vehicle. Multiple risks of injury for passengers can arise as a result of this. Material damage can be caused. Therefore:

- Only use the installation materials provided for installation.



DANGER!

Danger through screws becoming loose.

If screws are not tightened to the specified torque, they can become loose during operation of the vehicle. This can result in accidents being caused. Therefore:

- Tighten all fastening screws to the torque specified in section 2.7, page 10.
- If any of the vehicle's original screws are loosened or removed for installation of the Smart-floor, they must be re-tightened to the torque specified by the vehicle manufacturer.



ATTENTION!

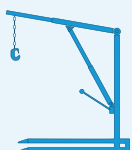
Material damage can be caused by incorrect installation. Therefore:

- Read these Installation Instructions thoroughly before installation, so that you are familiar with the entire installation procedure.

2.2 Checklist before installation

Tools needed:

1. Hammer
2. Tape measure
3. Drill with bit size Ø 10,5mm
4. Wrench/Torque wrench
5. Caulking gun (electric/air pressure, suitable for 600ml sausage)
6. Steel rod
7. Hoist crane (preferred)
8. Hand gloves
9. Jig saw (if applicable)
10. Cleaning cloth
11. Spirit level/Tri square
12. Knife (carpet cutter)
13. Paint roller

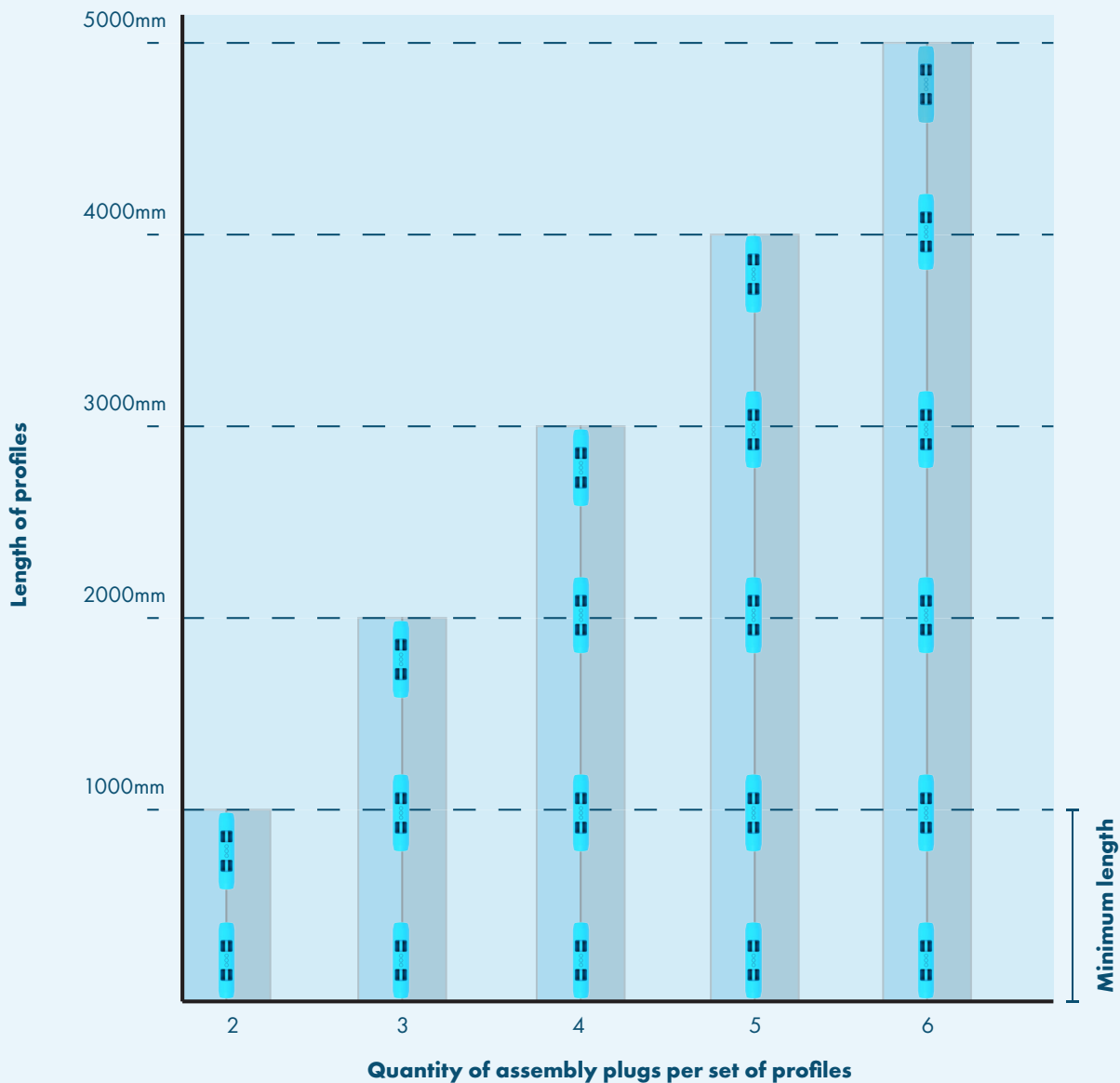


2. Installation

Installation materials:

Before starting installation, check the completeness of the supplied installation materials according to the floor drawings:

- ✓ Profiles & hardware
- ✓ Sika Aktivator 205
- ✓ Sikaflex 552AT
- ✓ Assembly plugs (aluminium or plastic)
- ✓ Silicone sealant (optional)
- ✓ Floor drawing of the Smartfloor
- ✓ Sika Sens 4615 (carpet glue)



2. Installation

2.3 Alignment of the profiles

The Smartfloor is made up of a number of specially designed profiles.

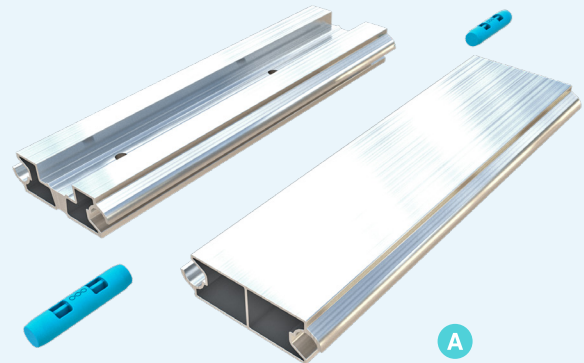
1. Check front and back side, place back side towards you.
2. Position profiles in correct assembly order (**A**).

How to spot the backside of the profiles:

- Left connection surface pointing upwards
- Right connection surface pointing downwards

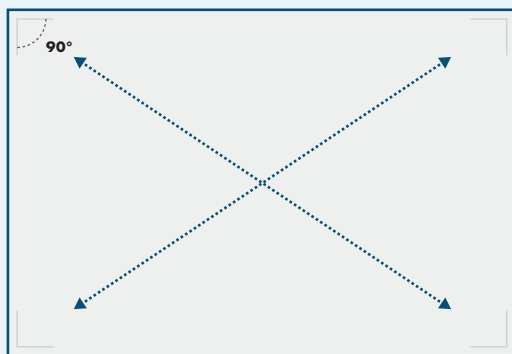


View backside profile

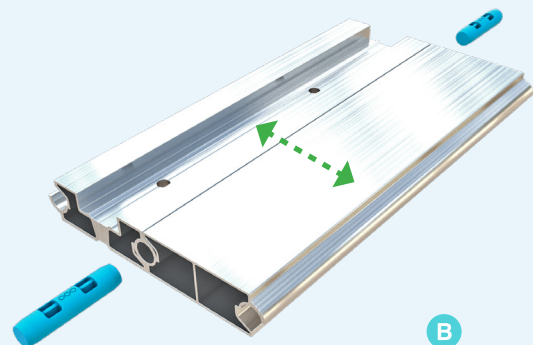


2.4 Connecting the profiles

- Connect profiles according to floor drawing (**B**).
- Before inserting the plugs, check squareness of the floor when connecting all the profiles.



Top-view floor shape with profiles



Inserting the assembly plugs

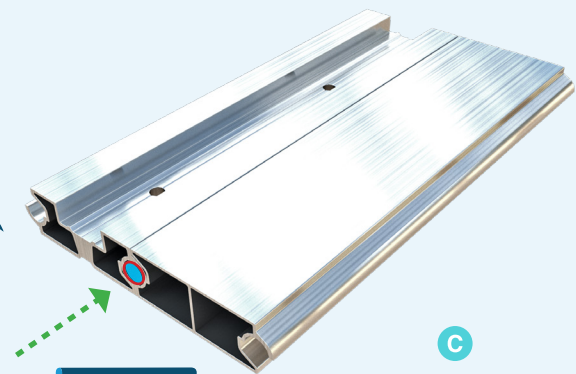
- Insert the assembly plugs with a hammer and steel rod into the round shaped holes, which are formed by the profile connections (**C**).



Check the diagram in [section 2.2 on page 7](#) for the correct amount of assembly plugs.



It is also possible to place the Smartfloor into the vehicle in separate assembled parts. Keep in mind that this will also change the cleaning and glueing process into separate parts and the following steps!



2. Installation

2.5 Determine carpet size & glue applying

1. Roll out the chosen carpet to make a cut.
2. Cut off the length size needed for the Smartfloor (**A**).

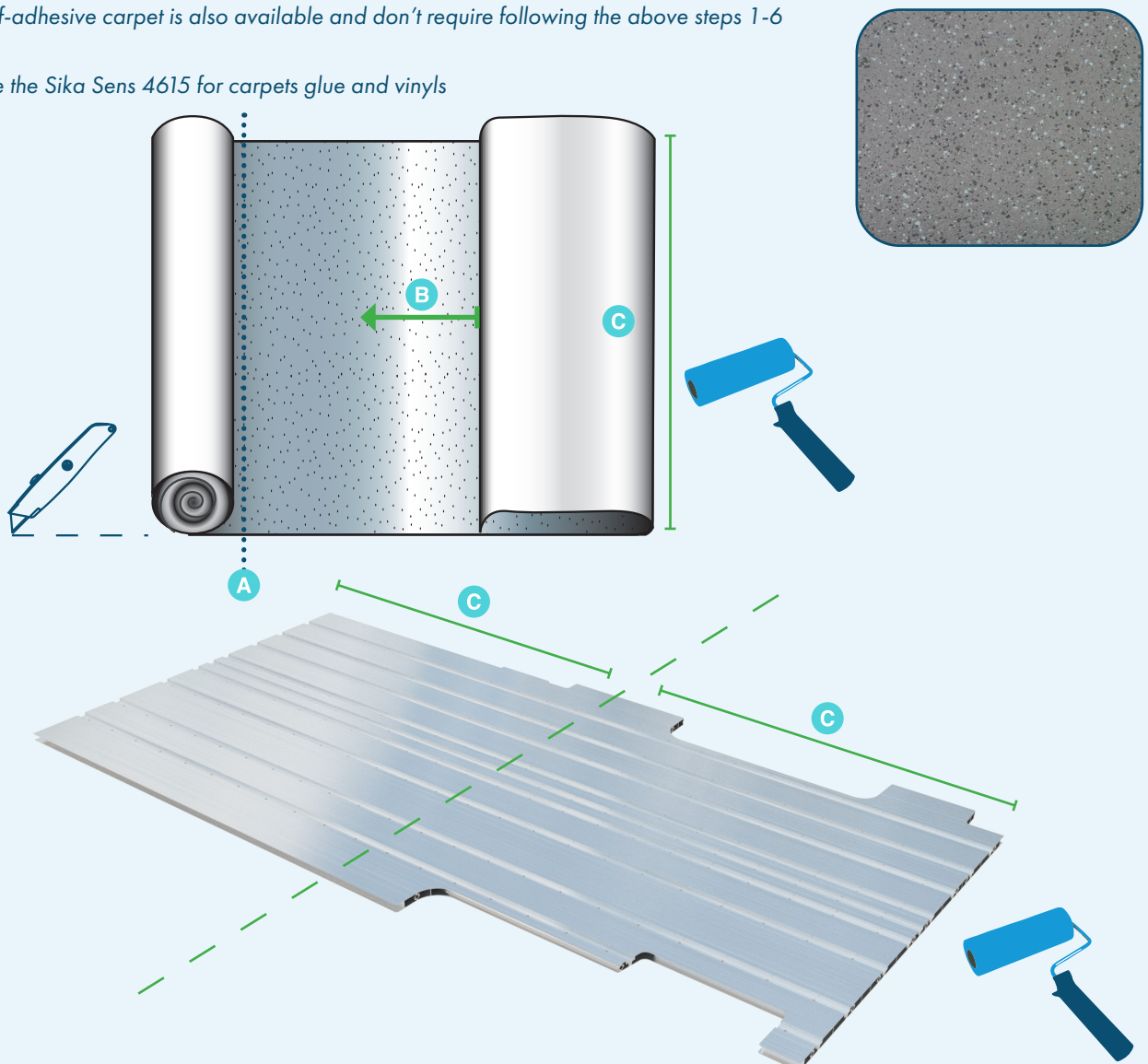
The following steps apply to non self-adhesive carpet:

1. Ensure Smartfloor and carpet are free of debris before applying the glue.
2. Fold the carpet half way back to glue underneath the carpet and on top of the aluminium floor (**B**).
3. Apply glue to the surface of the Smartfloor and the carpet (**C**).
4. Wait for approximately 5 minutes to let the glue dry a little bit. ⌚
5. When drying is done fold back the carpet half evenly and in small steps. Push the carpet with pressure onto the Smartfloor.
6. Repeat previous steps for the other carpet half.



Self-adhesive carpet is also available and don't require following the above steps 1-6

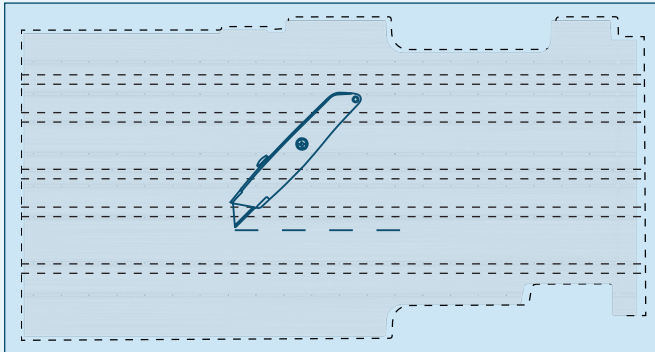
Use the Sika Sens 4615 for carpets glue and vinyls



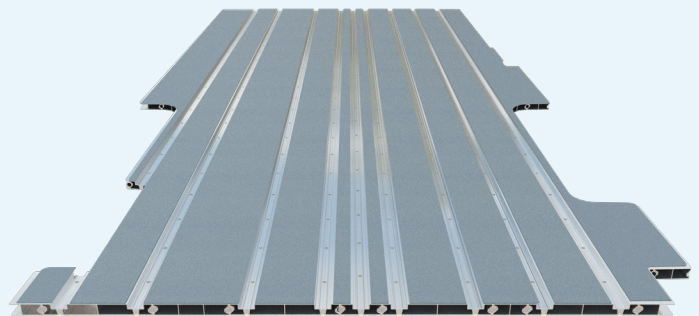
2. Installation

2.6 Trimming carpet floor

Remove the unwanted parts of the carpet along the edges of the aluminium floor.
Also remove unwanted pieces of carpet from the airlines channels where the airlines will be placed.



Top-view of the Smartfloor carpet cut-out

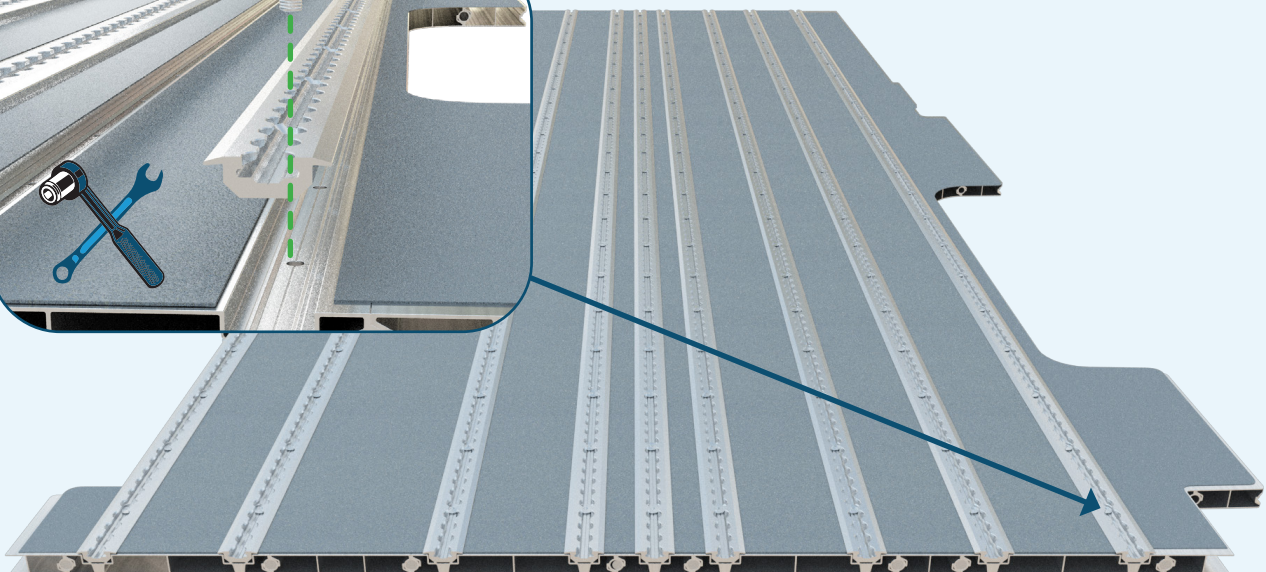
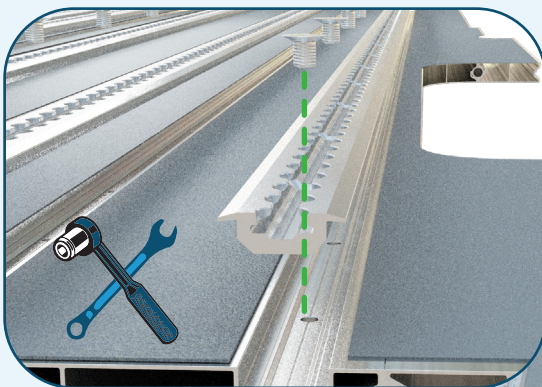


2.7 Mount & secure the Airline rails onto the Smartfloor

1. Place the Airline rail into the designed airline channels of the Basic profiles.
2. Check if the hole pattern is corresponding with the holes of the profile and rail.
If this doesn't correspond, than you have to switch sides and rotate the airline 180 degrees.
3. Mount the Airline rail into the Smartfloor Basic profiles with the supplied M10x25 A2 stainless-steel bolts (class-70) .



These bolts need to be tightened to a torque of 18Nm with a tolerance of $\pm 10\%$.



2. Installation

2.8 Cleaning the Smartfloor & vehicle floor

Cleaning/priming of the Smartfloor and vehicle floor with Sika Activator 205.

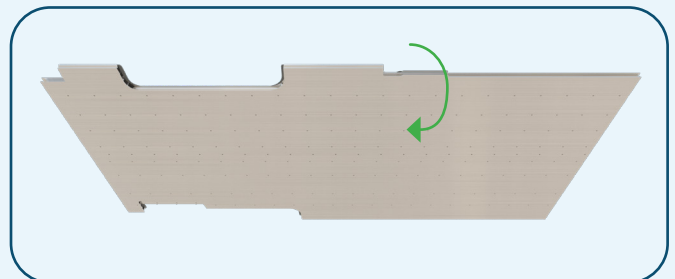
i The Sika activator is a 1 component alcohol-based cleaning liquid, which cleans and activates the bonding surfaces.

The treated surfaces need to be clean, dry and free of grease, oil and dust.

! It is advisable to wear suitable personal protective equipment during the cleaning of the floors.

1. Clean underneath the Smartfloor with a clean cloth & Sika Activator 205. Always clean the treated surfaces in 1 direction, from the front to the back.
2. Repeat previous step on the vehicle floor.

! It is critical to let the surface dry for 5 - 10 minutes!



View underneath the Smartfloor



2. Installation

2.9 Applying glue and plastic spacers

Caulking gun glue preparation

Gather the number of Sikaflex 552AT glue tubes necessary to glue the Smartfloor. Insert the Sikaflex 552AT glue tube into the caulking gun. Use the recommended tip 8 mm hole with a 9 mm height guide. This controls the flow and height of the glue beads throughout the floor.



Use approximately 600 ml Sikaflex 552AT per m².

Vehicle floor filling & height adjustment with spacers

Fill up the large gaps between the chassis ridges with plastic spacers for height adjustment in the lower vehicle floor areas.

1. Apply glue on those areas of the vehicle floor where the plastic spacers will be installed.
2. Lay the spacers down on top of the glue and press it down. Repeat the above steps throughout the floor.

Glue layer on vehicle floor surface for the Smartfloor

Start from the front of the vehicle.

3. Apply glue to all the higher floor surfaces of the vehicle, that will make contact with the Smartfloor and start from the front side.
4. Apply glue to all the holes in the vehicle floor, that are out of use. This will block moisture and noise.

Apply approximately 150 mm (6") 552AT beads evenly and consistently across the floor from left to right. This includes placing glue on top of all the spacers!

leave an interval of approximately 50-100 mm (2-4") between rows of glue.



The optimal temperature for gluing the floor is between 15°C (59 F) and 25°C (77 F) with a relative air humidity of 40-50%.



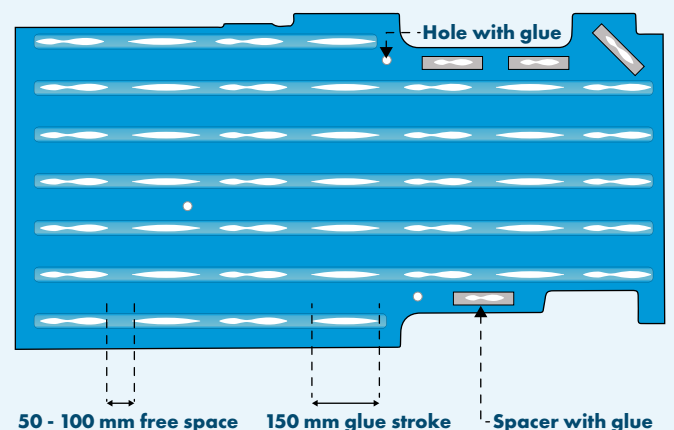
It is critical to install the Smartfloor into the vehicle within 10-15 minutes after completing the glue laying process. After 15 minutes, the glue will start setting and leaving a dry film on the top surface of the glue bead.



Plastic spacer placement



Glue with caulking gun



Top-view of vehicle floor with glue and spacers

2. Installation

2.10 Placement of the Smartfloor into the vehicle



For placement of a one piece fully assembled Smartfloor into the vehicle, a minimum of 2 persons are required.



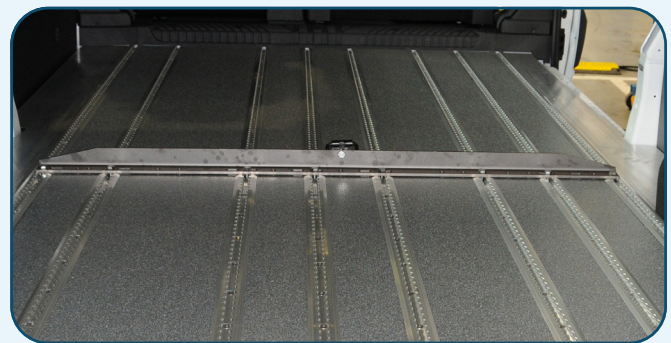
It is very advisable to do a dry fit when you place the Smartfloor for the first time



Attach hoist bar to the floor when using a hoist crane

Use the same bolts of the Airline rails to attach the hoist bar to the Smartfloor. Make sure that the hoist bar position is in the centre of the Smartfloor.

- Apply the necessary torque to the bolts to keep the hoist bar straight and tight. This will keep the Smartfloor flat.
- Avoid any bulging of the floor during floor placement.



Hoist bar

Place Smartfloor onto the vehicle floor

1. Move the Smartfloor into the vehicle (figure A).
2. Lower the Smartfloor onto the glue layer and vehicle floor.
3. Walk over the whole floor surface to put extra pressure for optimal glue connection.
4. Then check if the Smartfloor lays flat with a ruler.



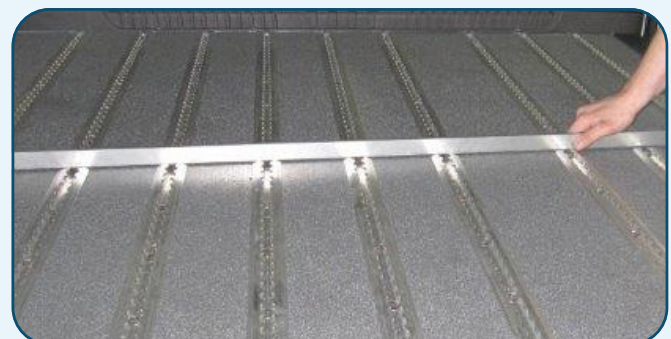
Do not force the Smartfloor in its final position!



Keep in mind that adjusting the Smartfloor position after placing it onto the glue layer isn't possible!



Hoist crane



Straight ruler check

Installation Manual

2. Installation

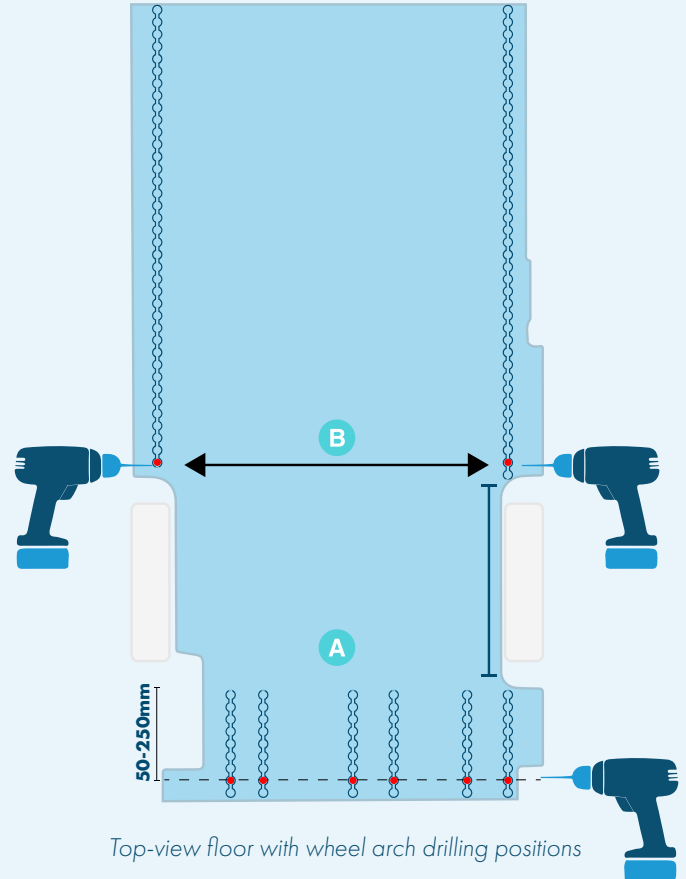
Drilling positions through vehicle floor

Each rail must be thoroughly secured to the vehicle with a lock plate at the end of each rail.

This also applies to rails terminating in front of a wheel arch. See position **(A)** and **(B)** at the figure on the right. Lock plate offset distance from the backside is between 50–250 mm (1.96"–9.84").

- Check underneath the bottom of the vehicle for the most suitable position to drill without any obstacles.
- Use 1 of the first 3 holes in the rail of the Smartfloor to determine drill position at the backside of the vehicle.
- Drill completely through the Smartfloor and vehicle floor with size Ø10,5.
- After drilling use anti-corrosion spray to protect against corrosion.

These drilled holes will be the lock plate mounting positions for the next step.



Lock plate mounting for securing the Smartfloor

For securing the Smartfloor to the vehicle, use the supplied lock plates and M10x60 bolts A2 stainless-steel with nuts (class-70).



If required, M10x200 bolts can be supplied with the Smartfloor kit.



The bolts with lock nuts need to be tightened, until the lock plates lay flat underneath against the vehicle floor. Also the Smartfloor should stay level and straight during mounting.

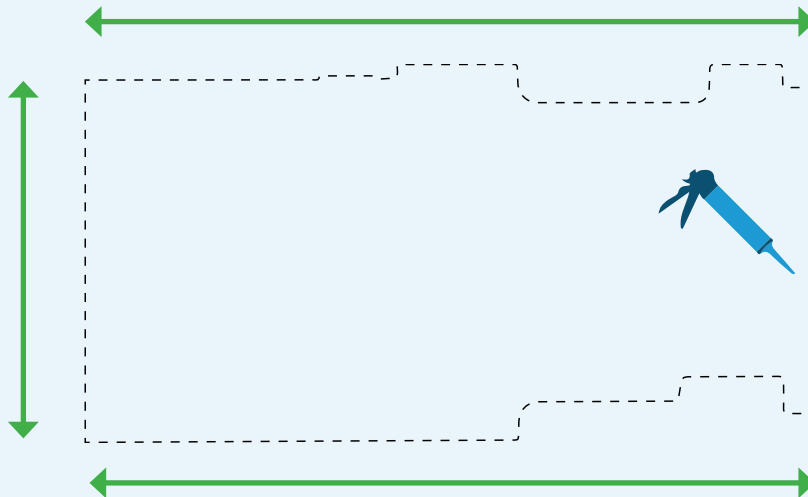


View from underneath vehicle

2. Installation

Applying Silicone (optional)

For the finishing touch after the Smartfloor is installed, apply an evenly amount of silicone along the outer edges.



Floor End Cover Strip (optional)

Mount and apply a cover strip at the backside of the Smartfloor for the final touch to cover the profile holes and finishing look.



Installation complete!

Contact and support

For service and technical support please contact us:

Smartfloor B.V.
Bedrijvenpark Twente 415
7602 KM Almelo
The Netherlands

