

## Recommendations for the installation of noraplan<sup>®</sup> and norament<sup>®</sup> floor coverings in vehicles

**nora**<sup>®</sup> rubber floor coverings are easy to handle, with just a few points you need to remember, all of which are listed in the instructions

### Checking the subfloor

An impeccable, permanently dry subfloor is required for installation. If the subfloor exhibits one or more than one of the defects listed below, it is absolutely essential that these be eliminated prior to installation.

- Major unevenness
- Cracks in the surface of the subfloor
- Insufficiently dry subfloor
- Insufficiently firm subfloor
- Surface of the subfloor too porous or too rough
- Surface of the subfloor soiled, e. g. by oil, wax, paint residues
- Incorrect height of subfloor in relation to adjacent parts of the vehicle (level out joints, bores and connections)
- When using nora<sup>®</sup> floor coverings to cover elements with external radii, e. g. wheel housings, heating elements etc., minimum radii of 3.5 cm must be ensured
- A permanent connection of the subfloor elements has to be ensured to avoid flooring separation or vibration cracks

At the time of installation and of adhesive bonding, the subfloor temperature must be **at least 15° C**. Ensure that the noraplan<sup>®</sup> or norament<sup>®</sup> floor coverings have the required subfloor temperature. Especially in wintertime, the floor coverings have to be stored on site for several days.

In order to reduce tension in the floor coverings and to make sure that the temperature of the flooring is in line with the temperature of the installation site, we recommend spreading the flooring at the installation site well in advance. The humidity has to be below 75 %.

**Please make sure the material is properly stored on site:**

**noraplan<sup>®</sup> rolls have to be stored upright!**



**norament<sup>®</sup> tiles have to be stacked accurately, face to face and back to back.**



**Important: Any defects must be reported immediately!**

Material defects which are visible prior to installation cannot be acknowledged when claimed after the installation.

When installing several rolls/tiles in the same vehicle/room, the floor covering must have identical batch numbers to avoid variations in colour between different production batches

All established adhesive systems (neoprene/PU/acrylic adhesive/dry adhesive tape) can be used after consulting the respective manufacturer and nora systems. The specified serrated blades have to be employed. When using the dry adhesive tape nora<sup>®</sup> dryfix 750 or installing nora<sup>®</sup> nTx floor coverings please observe our respective special installation recommendations.

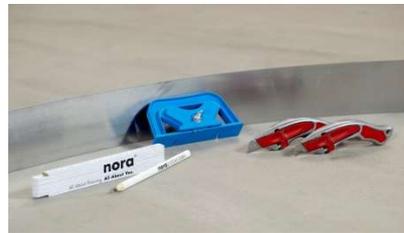
We recommend to install square norament<sup>®</sup> tiles in broadloom fashion.

These installation recommendations do not replace our detailed installation recommendations. When processing adhesives and other installation products please observe the relevant guidelines issued by the respective manufacturer as well as the regulations laid down in the Ordinance on Hazardous Substances.

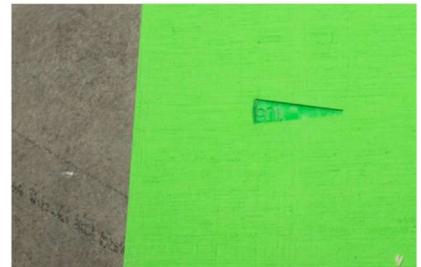
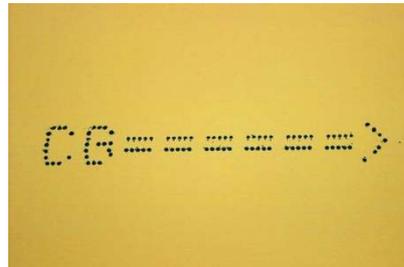
As we have no influence on proper processing routines, we cannot assume any liability for the processing result.

Please also see our “**General remarks** for the installation of nora<sup>®</sup> floor coverings, stairtreads and accessories”.

**Required tools for seam cutting and installation**



**Pay attention to the arrows on the floor covering's back; make sure these arrows are all pointing in the same direction.**



Vacuum clean the subfloor



Unless both edges of noraplan<sup>®</sup> rolls are factory-cut, a seam cut has to be carried out. This has to be done prior to fixing. In case of butt joints these have to be cut before the seams. The procedure is the same as described hereafter for the cutting of the seams.

First measure the width of the sheet; after the cutting of the seam the width of the sheet must not exceed 1.22 m resp. 1.20 m (ultra grip). Unroll noraplan<sup>®</sup>, overlap both sheets as much as necessary, placing the factory-cut edge over the uncut edge.



Straighten the factory-cut edge with the nora<sup>®</sup> seam cutter alongside a steel straight edge (approx. 1 cm off the factory-cut edge), thereby cutting into the sheet underneath, i. e. slightly slitting it. As an alternative to the nora<sup>®</sup> seam cutter a railcut (Wolff) can be used. A linocut, however, is **not** suitable.



In practice we found it best to detach the half-cut strip with a hooked blade. We do not recommend cutting the underlying edge after embedding the floor covering as this implies the risk of the seam being compressed.



When installing norament<sup>®</sup> experience has shown that it is best to cover the whole room or larger subdivided areas with loose tiles first, and then cut the border tiles, tiles for door openings, pipe apertures, etc. This way the tiles can adapt to the temperature of the subfloor. It has to be ensured that no production residues are being brought onto the area yet to be installed or the back of the floor coverings.



After the cutting of the seams/tiles fold back half of the sheets or turn over the rows of tiles. This method has the advantage of avoiding crooked joints or the shifting of joints because the tiles positioned on the floor serve as a stop for the tiles still to be installed.



Vacuum clean the subfloor and the back of the flooring again before applying the adhesive.



A suitable adhesive (neoprene/ PU/ acrylic adhesive/dry adhesive tape) is chosen after prior consultation with the respective manufacturer and nora systems.



Move the noraplan sheets approx. 10-20 cm into the fresh adhesive to avoid an adhesive line.



The required airing time depends on the temperature, the humidity and the absorbency of the sub-floor concerned. Therefore, it has to be ensured that the adhesive's open time is exceeded on no account, i. e. it is imperative to embed the flooring while the adhesive is still fresh. Make sure the adhesive has properly transferred to the back of the floor covering. If the adhesive does not transfer to your fingertip anymore this indicates that the adhesive is already too dry and that a proper wetting of the flooring's back is often no longer possible. Please observe additional information provided by the manufacturer, especially when using 2-component reactive adhesive.



When the floor covering is embedded, it has to be ensured that the entire back of the floor covering is completely covered with adhesive. Position flooring edges without applying pressure. Under no circumstances should they be pressed or crushed. The breadth of the joints must not exceed 0.3 mm.



Turn over the norament<sup>®</sup> tiles and place them accurately into the adhesive.

Carefully rub the floor covering on its entire surface into place, for instance with a cork board. Then press it down into position both longitudinally and transversely with a heavy iron roller (approx. 50 kg). When acrylic adhesives are used, repeat this procedure after a while (depending on the temperature), in particular at the ends and seams. Counterbend projecting edges and corners, and press them on again. Hollow parts or the like have to be weighed down until the adhesive has properly bonded.



Any adhesive residues on the surface of the flooring have to be removed immediately with nora<sup>®</sup> liquid wax.

During the installation and the bonding of the adhesive, nora<sup>®</sup> floor coverings have to be protected against extreme heat or temperature fluctuations, e. g. as a result of direct sunlight or in rooms where glazed elements reach down to the floor.

Due to the given movements/vibrations in vehicles the flooring seams have to be sealed (see below or installation recommendation "Joint sealing") - 24 hours after installation at the earliest!

A sufficient bonding time of the adhesive has to be ensured. The floor covering must be protected if it needs to be walked on or further processed before the adhesive has bonded.

If necessary, a wet or damp cleaning may only be carried out after the adhesive has bonded, i. e. after at least 48 hours. Please observe our detailed cleaning and maintenance recommendations for the installed nora<sup>®</sup> floor covering which can be downloaded from our homepage.

The installed floor covering should be covered until inspection and approval.

To carry out a siteform-coving we recommend nora<sup>®</sup> profix 50 or 90 (see separate installation recommendation).



**Special note:**

When installing **noraplan<sup>®</sup> unita** and **noraplan<sup>®</sup> ultra grip** increased blade wear is to be expected with double seam cuts, cutting, milling, etc.

## Joint-sealing of nora<sup>®</sup> floor coverings

Due to the given movements/vibrations in vehicles the flooring seams have to be sealed. Due to its higher bonding strength to the grooved seam edges we recommend the use of nora<sup>®</sup> 1-component cold weld. It is also possible to use nora<sup>®</sup> hot welding rod.

We recommend nora<sup>®</sup> 1-component cold weld for the sealing of joints between nora<sup>®</sup> floor coverings and rising elements like wheel housings etc.

If joints have to be sealed longitudinally as well as transversely 12 hours have to pass between the two work steps.

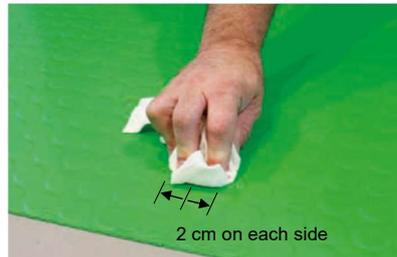
### A. nora<sup>®</sup> 1-component cold weld

A 300 ml cartridge with approx. 450 g nora<sup>®</sup> 1-component cold weld will produce approx. 20-25 r.m./cartridge, depending on the joint width.

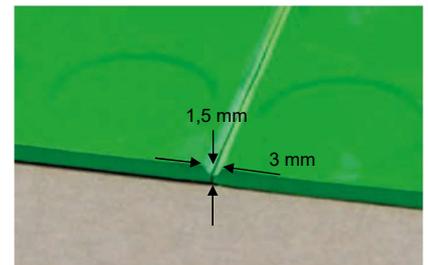
#### Required tools for the joint sealing with nora<sup>®</sup> 1-component cold weld



Apply nora<sup>®</sup> liquid wax to seam areas. Ensure that no wax penetrates the joints; if necessary, re-groove with the joint cutter. Leave liquid wax to dry completely!



Cut open or mill out joints centrally with the joint cutter or electric milling machine. Joint width approx. 3.0 mm joint depth max. 1.5 mm



For shockfree milling on high pastilles, a steel straight edge is placed under the running wheels of the milling machine.



Remove milling chips (vacuum cleaner).



First seal the joints along the car. After the cold weld has cured, seal the seams across the car if applicable.

To do so the 1-component cold weld is spread into the joints without leaving any gaps until a small bulge develops above the seam.



Immediately after application the cold weld is pressed into the joint with the nora<sup>®</sup> smoothing spatula by running this evenly over the joint. Thereby, the surplus cold weld is pressed to the left and right of the joint.

You have to make sure that the cold weld pressed to the sides is entirely separated from the compound in the joints. Hold the spatula in a position as flat as possible to avoid the development of hollow joints.



The surplus of cold weld pressed to the sides can be removed after approx. 12 hours.



Once all joints have been correctly sealed, the cold weld paste should be allowed to settle and fully cure prior to being walked upon.

**It is important to note that any spilt cold weld paste must be removed immediately as cleaning at a later stage is not possible. Even if no initial cleaning is required after installation, wax residues must be removed approx. 12 hours after joint sealing and at least 48 hours after installation with a suitable basic cleaner or oil and grease remover and a suitable method.**

When sealing joints with any cold weld paste it is state of the art that the compound will dip slightly during the curing process.

## B. nora<sup>®</sup> hot welding rod

The joint sealing of noraplan<sup>®</sup> floor coverings installed in vehicles can also be carried out with nora<sup>®</sup> hot welding rod.

Round, diameter approx. 4.0 mm

Packaging unit: Roll with approx. 100 r.m., weight approx. 1.3 kg/roll

Consumption:

Sheets (1,220 mm wide) approx. 0.85 r.m./m<sup>2</sup>

Tiles (610 mm x 610 mm) approx. 3.50 r.m./m<sup>2</sup>

You can use the same tools as when sealing the joints of plastic floorings.

Execution 24 hours after installation at the earliest.

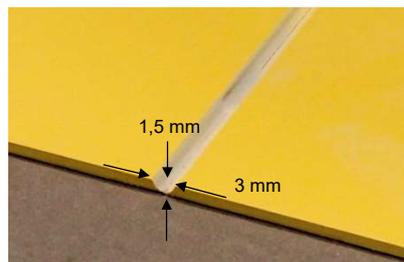
### Required tools for the joint sealing with nora<sup>®</sup> hot welding rod



The joints are milled out or cut open centrally with an electric milling machine or the joint cutter.



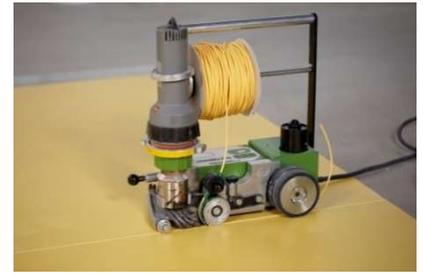
Joint width approx. 3.0 mm  
joint depth max. 1.5 mm



Remove milling chips (vacuum cleaner).



The hot welding rod is fitted using either the hand-operated hot welding gun with fast-welding nozzle or a welding machine with teflon roller. The operation temperature of the device is reached when the hot welding rod wells out slightly on the left and right edge of the joint. The processing temperature is 350-400° C. When using a welding machine to process the hot welding rod set the speed to 2 r.m./minute. The operating speed and temperature can be set on most welding machine.



If the temperature cannot be set, adjust the operating speed accordingly.



Directly after welding use the Mozart knife with the 0.7 mm distance sledge to carry out the first cut.



After cooling down the second cut is carried out with the Mozart knife without the distance sledge.



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