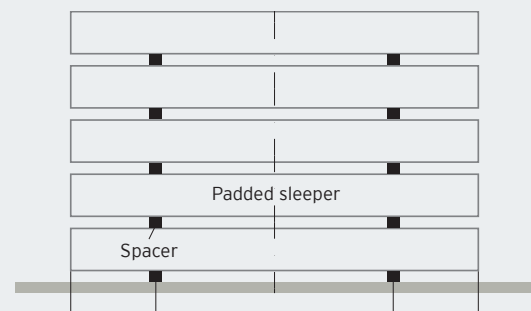


# Guideline for the Installation of Under Sleeper Pads for Steel Sleepers

## 1. Transport and Storage

- Always transport in original packaging
- Damaged packaging shall be immediately repaired (using plastic foil and adhesive tape)
- Storage should be in a dry environment in original packaging
- Protection from direct sunlight is preferred
- Once the original packaging is removed, Under Sleeper Pads (USPs) must be kept dry
- Temperatures below  $-20^{\circ}\text{C}$  and above  $+50^{\circ}\text{C}$  should be avoided
- Do not stack pallets and parcels
- Under Sleeper Pads are subject to normal thermal expansion/shrinking. This physical effect is completely reversible
- Storage conditions (and temperature) should match installation conditions; in case of big temperature differences between storage and production area, it's recommended to condition/temper Under Sleeper Pads for at least 24 h
- Usually padded steel sleepers are stacked on top of each other and stored outside.
- The maximum number of sleepers with a weight of 300 kg per sleeper to be stacked: 10 (width of the spacer min. 100 mm, see illustration on the right)
- Attention has to be paid during transportation to avoid mechanical damage



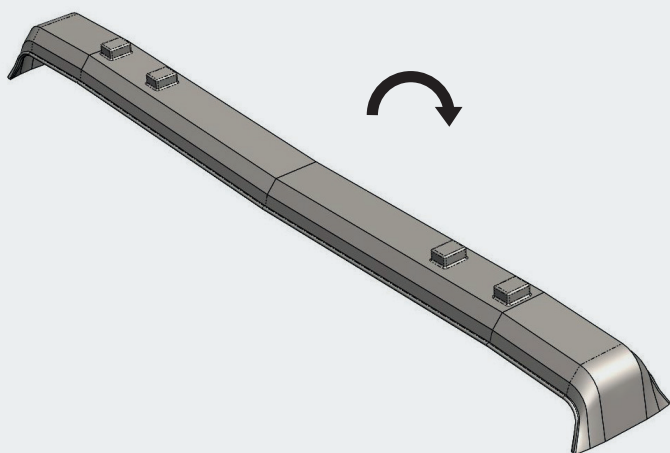
## 2. Adhesive Bonding of USPs

For installation on steel sleepers, the under sleeper pads are delivered without a connection layer (flock or mesh), in order to enable adhesive bonding.

### 2. Adhesive

The adhesive is provided with the pads by Getzner Werkstoffe and is solvent-free. The safety data sheet and instructions for use have to be taken into account.

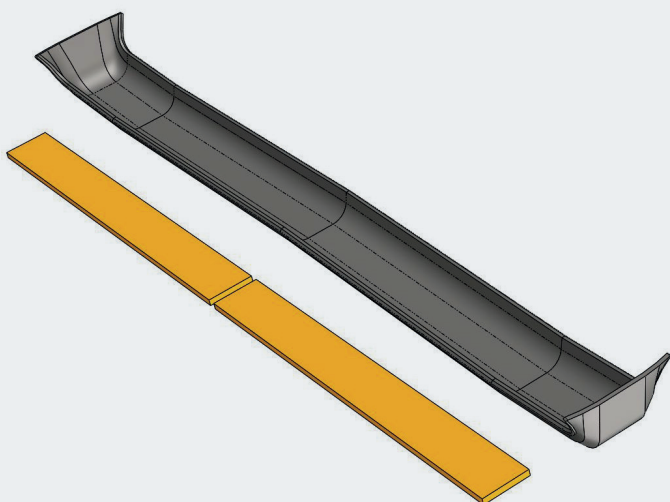




## 2.2 Steel Sleeper

The sleeper surface to be bonded has to be dry and clean (grease-free), flat and smooth (the rougher the more adhesive is required). The surface should not have cavities. Please also consider the instructions for use of the adhesive.

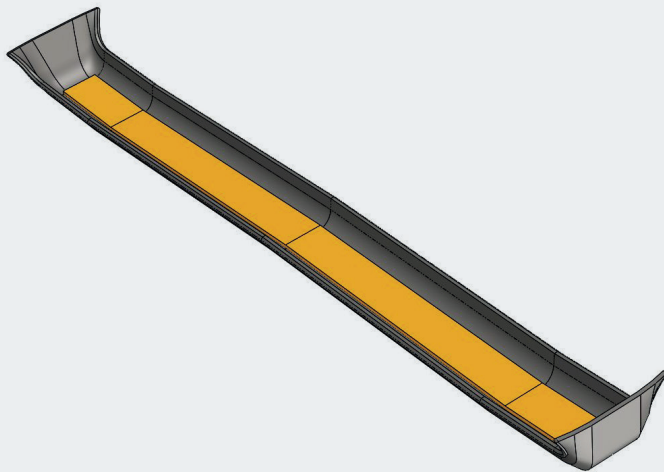
Lay the sleeper upside down



## 2.3 Implementation

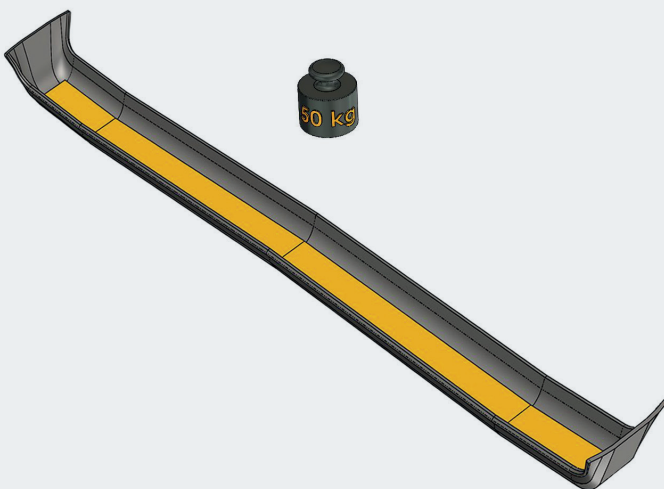
Lay the sleeper upside down and clean the surface if necessary. Prepare the adhesive as described in the instructions for use provided by the adhesive manufacturer. Please mind temperature and pot life.

Apply the glue on the under sleeper pads



The prepared adhesive is applied on the under sleeper pads. If the pad is divided in parts, the joints also have to be bonded. The required amount of adhesive is given by the roughness of the sleeper surface. Normally 0.5 to 2 kg adhesive is used per sleeper.

#### Place the sleeper pad on the steel sleeper



The under sleeper pad is placed centrally on the sleeper. During curing time the pad should be evenly loaded with at least 50 kg. After bonding there should not be any cavities, which are not filled with adhesive. The adhesive layer should be as even as possible (not more than 5 mm thickness difference), in order to avoid any influence on the system stiffness.

#### Load the surface evenly with at least 50 kg



### 3. Recycling

Unused Under Sleeper Pads or pieces thereof can be recycled in standard waste containers.

At the end of the lifetime of the padded steel sleeper the Getzner Under Sleeper Pads can be removed from the sleeper mechanically and recycled thermally. All our materials are non-hazardous to the environment.

### 4. Disclaimer

This guideline only serves to support the customer or his authorised specialist in the installation of Getzner USPs. Getzner Werkstoffe draws the attention to known design errors and problems. This guideline was compiled with the utmost care based on Getzner's current knowledge.

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