

Installation Instructions **Silent Plus**

Read and follow the manufacturer's instruction carefully. **Safety notices:**

- The Rothfuss Noise Protection Gabion Silent Plus needs only to be erected on subsoil with sufficient load capacity in accordance with the Installation Instructions.
- During installation wear safety shoes!
- Caution! Fall hazard during assembly!
- Climbing and stepping on the Rothfuss Noise Protection Gabion Silent Plus is prohibited.
- Caution! Metal wires can have sharp points and edges!
- Wear safety gloves. Take care that no sharp ends of metal wire protrude from the basket construction.
- The risks must be assessed and safety measures taken.

Foreword:

The Silent Plus gabion is a gabion developed by the Rothfuss Company for noise protection purposes. Since its construction principle may be used to reduce both transitory noise and reflected noise, it may be found in various forms.

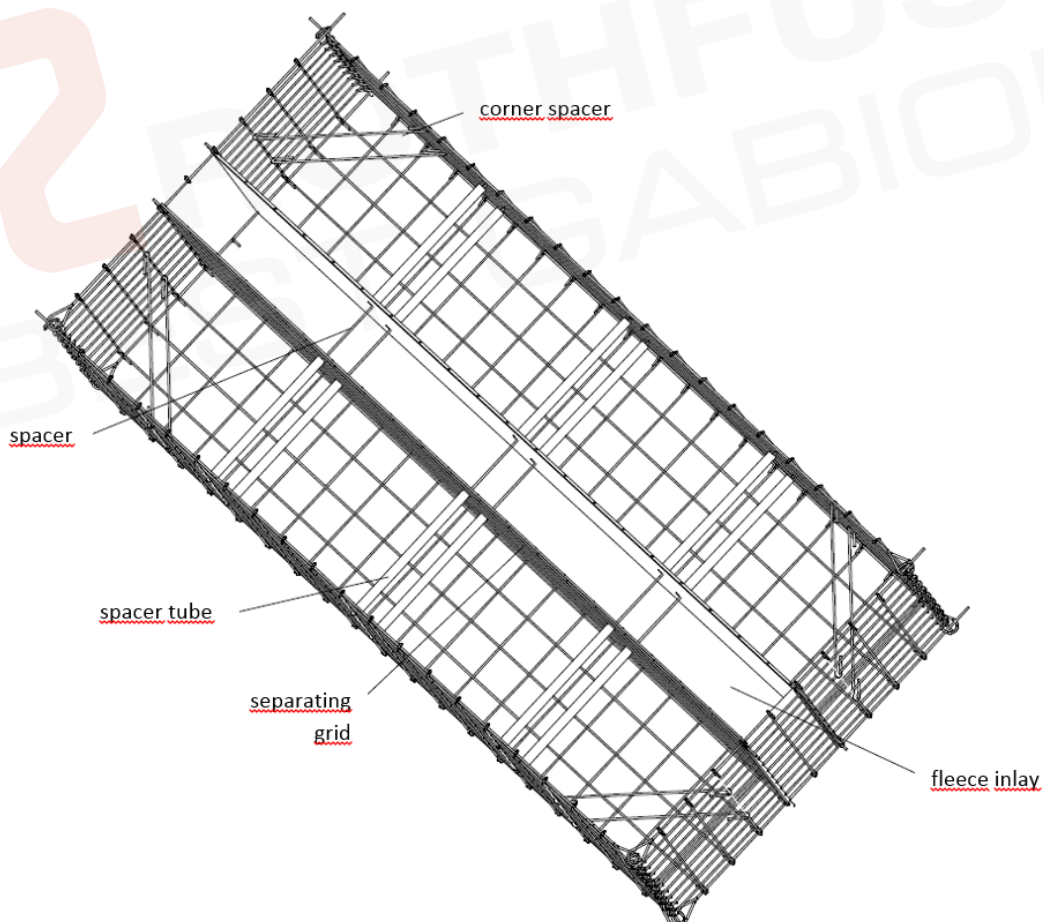
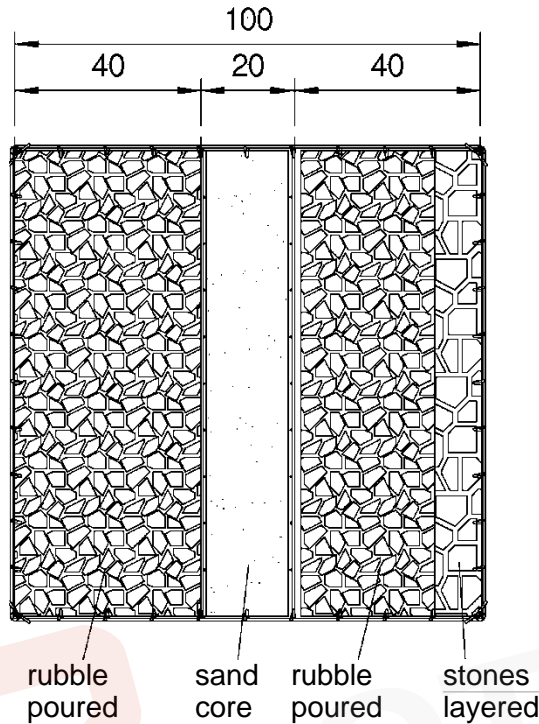


Diagram: Construction principle for the Silent Plus gabion

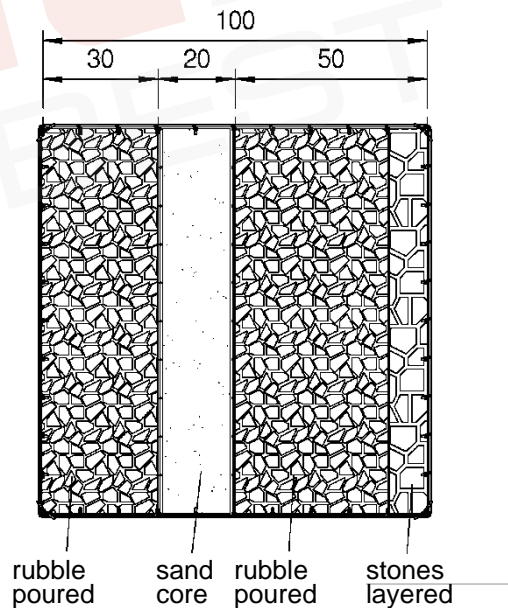
The following sections illustrate the different construction methods recommended.

1. Versions of Silent Plus to reduce transitory noise:

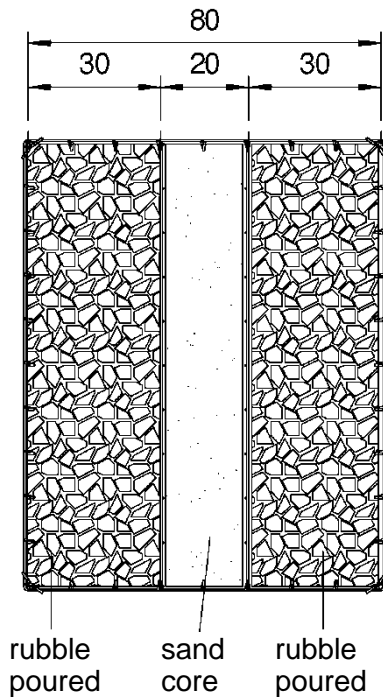
Both outer chambers can be optionally poured or layered.



The 50 cm wide chamber can be optionally poured or layered.
 The 30 cm wide chamber must be poured.

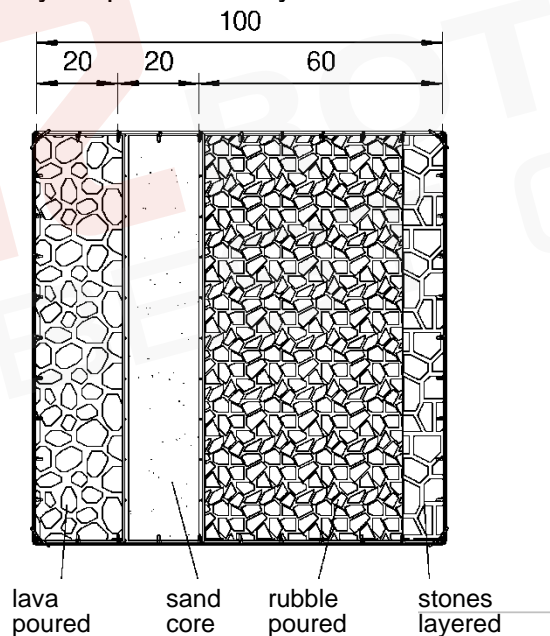


Both chambers must be poured.

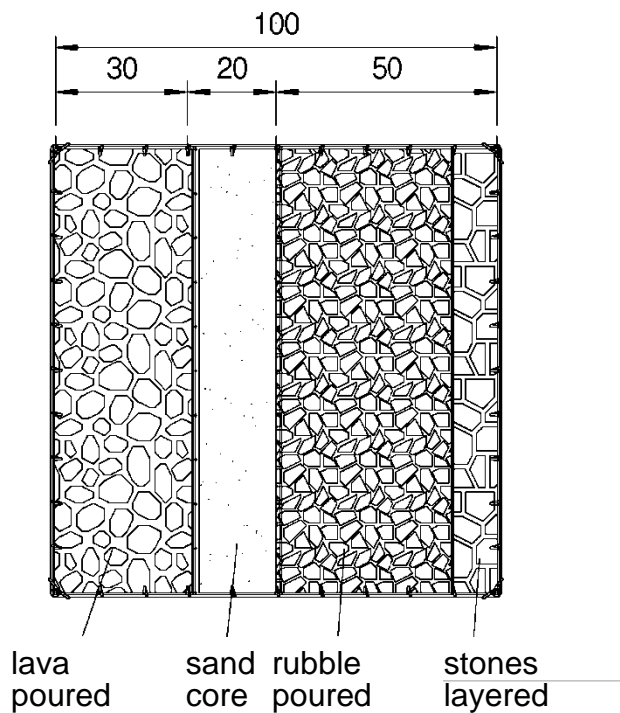


2. Versions of Silent Plus to reduce transitory and reflected noise:

The 20 cm wide chamber must be filled with lava and must be poured. The outer grid must have a mesh width of 5x10 cm. The 60 cm wide chamber may be poured or layered with rubble.



The 30 cm wide outer chamber is filled with lava and must be poured. The associated outer grid must have a mesh width of 5x10 cm.
 The 50 cm wide chamber can be poured or layered with rubble.



Note:

Please consult the Installation Instructions for Monotec gabions for the construction of the basket casing.

WARNING!

Please comply with the different placement of the corner spacers in the Installation Instructions for Monotec gabions. These can vary for starting and end baskets and for narrow chambers.

3. Components of the Silent Plus system

Note: Here you will find additional components vis-à-vis the Monotec system.

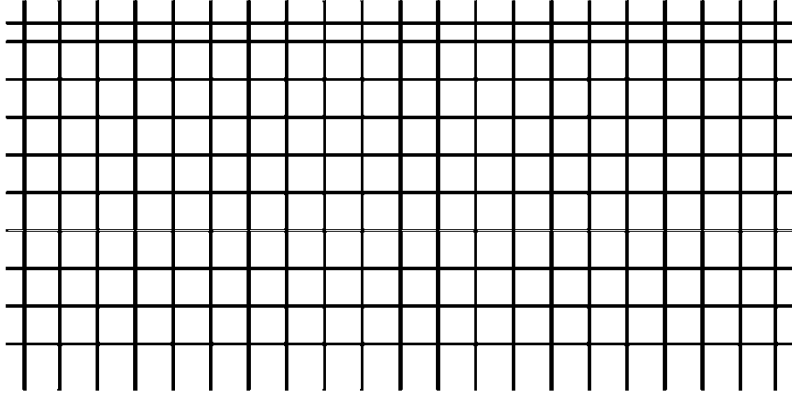


Diagram: Separating grid

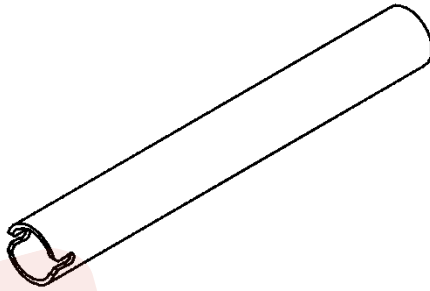


Diagram: Spacer tube

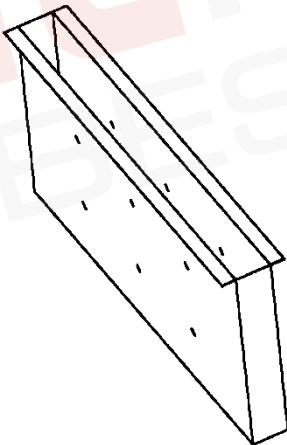


Diagram: Sandbag

Optional filling aids (not included in the contractual scope of delivery)



Diagram: Curved tube as assembly aid

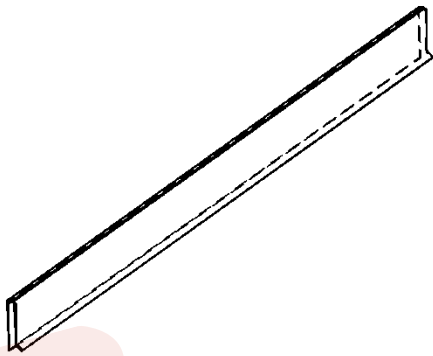


Diagram: Assembly rails.
It is advisable to use 4 assembly rails.

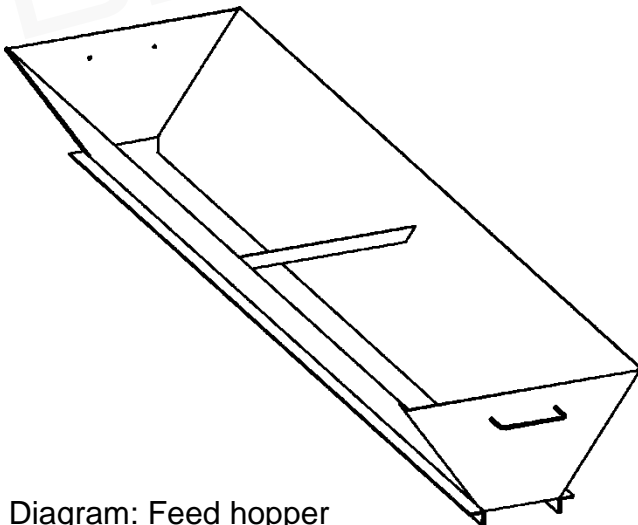


Diagram: Feed hopper

1. Constructing the separating grid.

Once you have organised the basket, install the separating grid. Please ensure that the protruding ends of the wire of the sides of the separating grid lie towards the centre of the basket on the vertical wires. This serves to give good support against the pressure of the sand core.

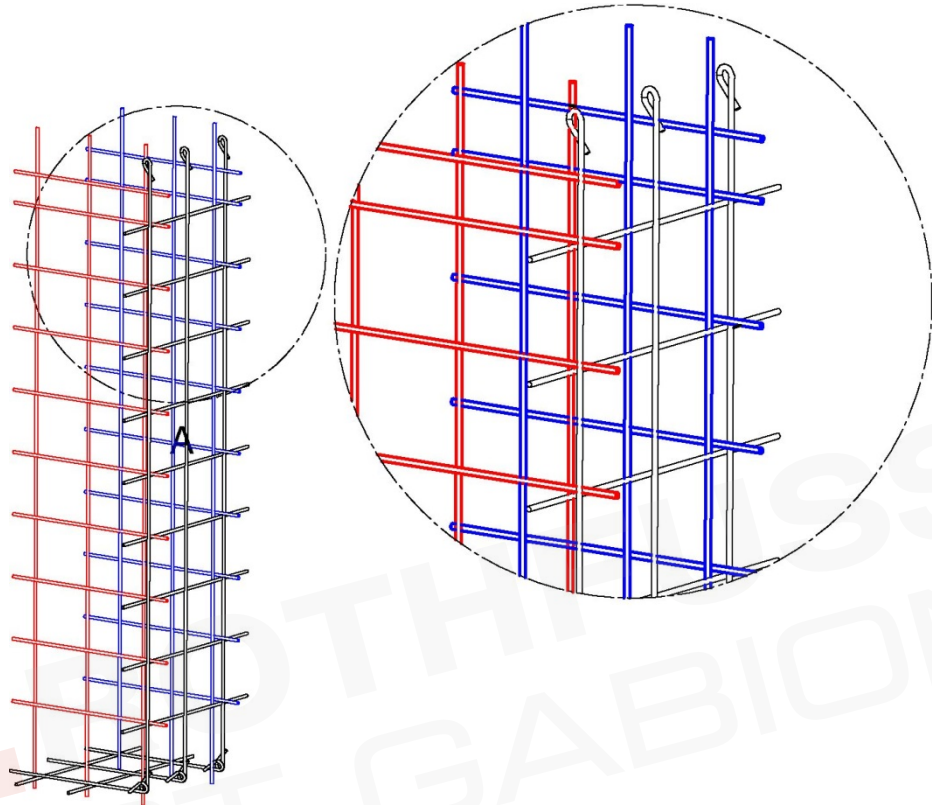


Diagram: Installation of the separating grid from the side.

Bend every protruding wire on the top in the centre and at the bottom around the vertical wires of the lateral grids of the basket.

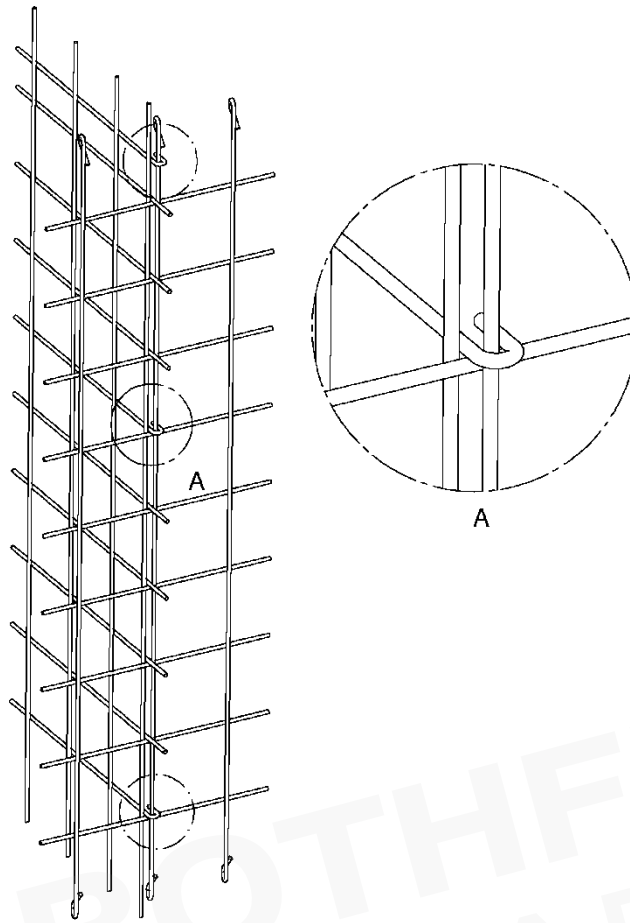


Diagram: Laterally fixed separating grid

This ensures that both the separating grid and the lateral grid of the basket are fixed.

5. Insert bag

Please place the bag in the centre chamber between the two separating grids.

The bags are longer than the inner dimensions of the basket. Since the bags bulge outwards slightly between the mesh of the separating grid when being filled with sand, they become shorter when filled. This is balanced by the over length. The bag is already slit at the factory in the places, where the spacer must be threaded. This ensures that the predetermined over length between the spacers and the side wall grids is maintained.

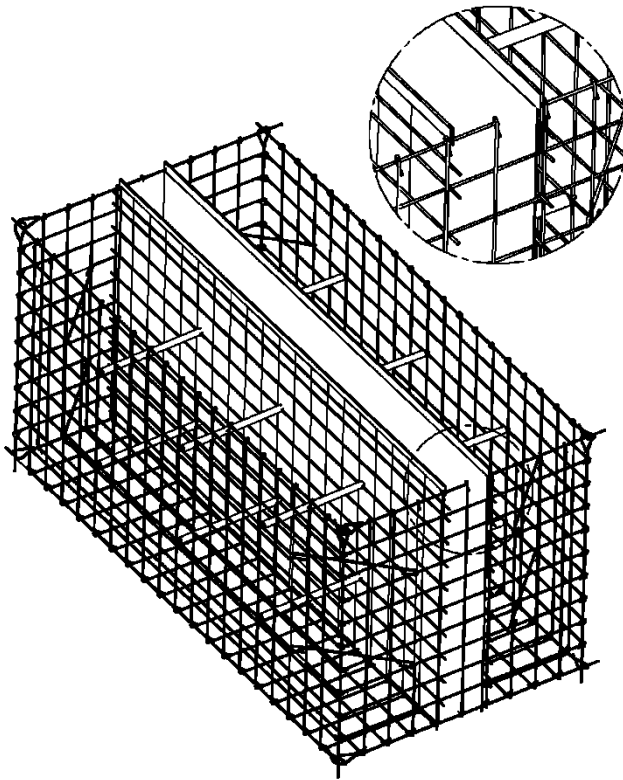


Diagram: Sandbag inserted in the basket and fixed in place with assembly rails.

6. Assembling the spacers

Now push the spacers through the slit into the bag. Suspend the spacers in the predetermined suspension positions.

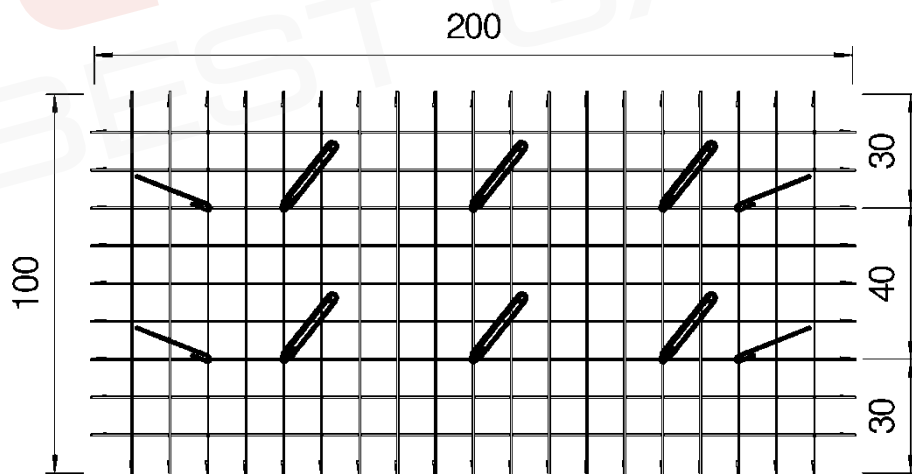
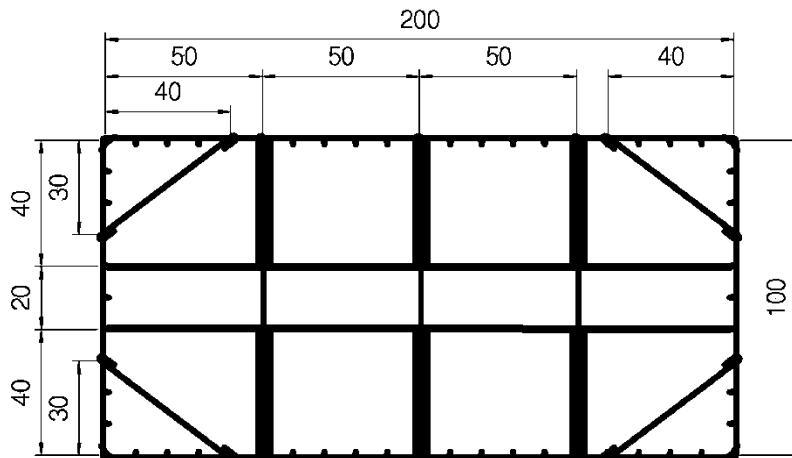
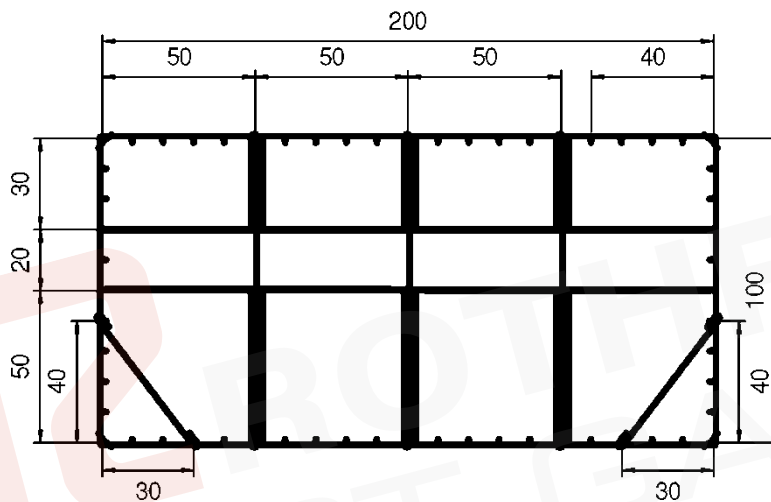


Diagram: Spacer positions in front view; Spacer positions in plan view

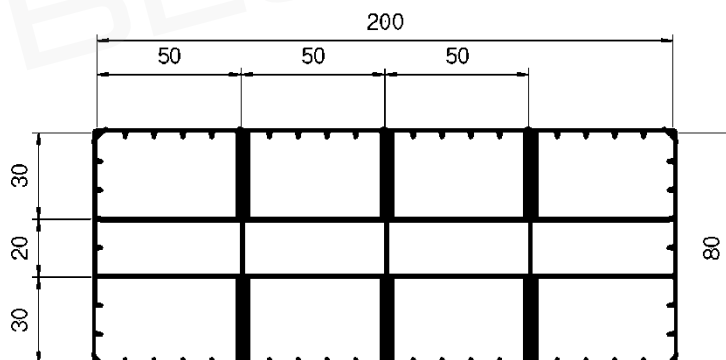
Spacer positions for chamber construction: 40 cm, 20 cm, 40 cm



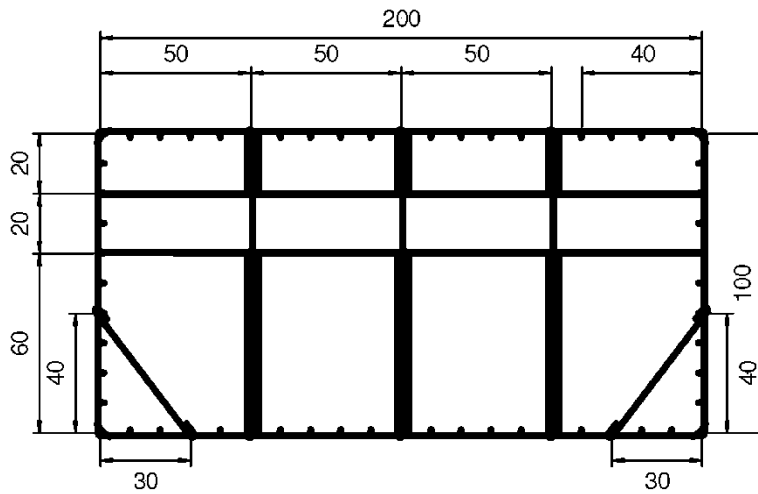
Spacer positions for chamber construction: 30 cm, 20 cm, 50 cm



Spacer positions for chamber construction: 30 cm, 20 cm, 30 cm



Spacer positions for chamber construction: 20 cm, 20 cm, 60 cm



7. Assemble spacers and spacer tubes.

Please insert the spacer through both slits in the sandbag. Now slide the spacer tube on one side and suspend the spacer in the correct suspension position. Insert the spacer tube with the slit onto the span wire on the separating grid.

Then slide the spacer tube on the other side onto the spacer. Suspend the spacer on the outer grid in the correct suspension position.

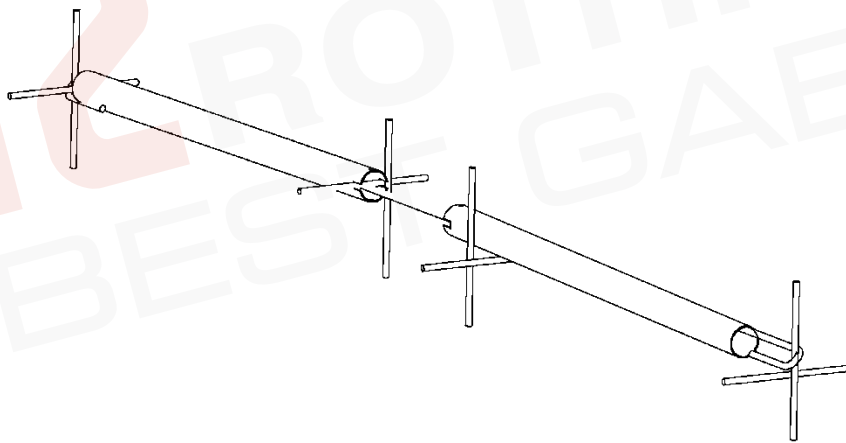


Diagram: Suspension of the second spacer

Now insert the spacer tube with the slit onto the span wire on the separating grid.

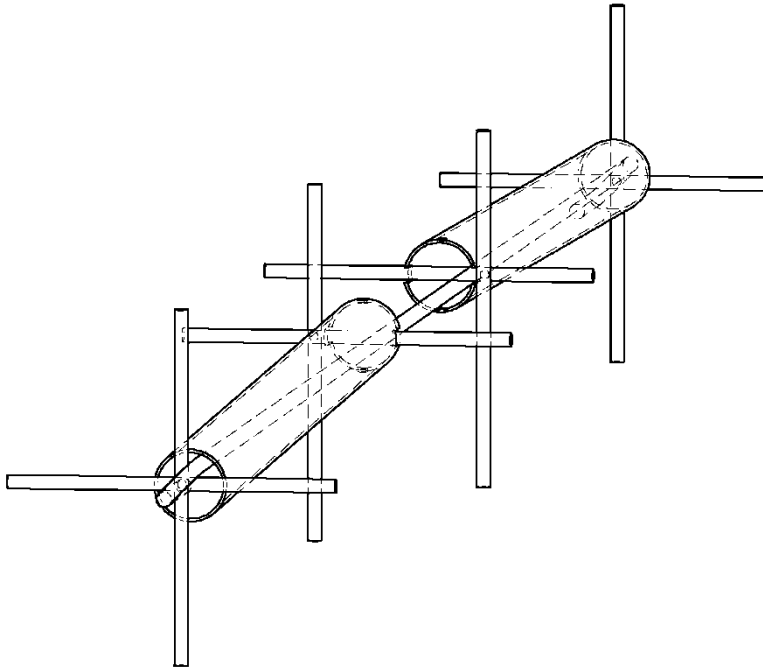


Diagram: Schematic diagram - inserted spacer tubes



Diagram: Correctly assembled spacer with spacer tube

8. Fixing bags on the separating grid.

The bags are higher than the separating grid and are banked above the protruding ends of the wires on the separating grid. Please ensure that the bags are not dragged downwards when being filled with sand.

Note:

In order to prevent the bags being dragged downwards, when being filled, it is advisable to fix them in place by inserting one rail. This effectively prevents the bags from subsiding during filling. We shall be delighted to supply this assembly aid to you on request.

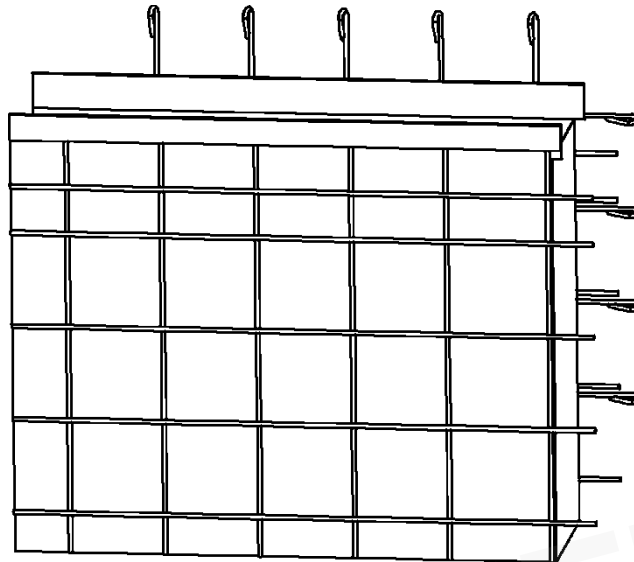


Diagram: Inserted assembly rails

9. Filling a sandbag.

First of all, fill the sandbag. If you pour in stones as a first step, stones can get into the mesh of the separating grid in the central chamber, which is required for filling with sand. This would reduce the efficiency of the noise insulation.

Start by filling the sandbag with a few shovelfuls of sand at the outer lower corners and take care in doing so that the sandbag abuts the side walls of the basket correctly. Once filled, the sandbag must abut the lateral grids along the entire width of the central chamber. Only in this way can it be ensured that no loss of sound insulation will be lost on the vertical joints.

When filling the sand core you must infill in layers (30-40cm) and compact these down slightly.

Note:

It is advisable to fill the sandbag with the aid of a feed hopper, which can be positioned on the assembly rails.

We shall be delighted to supply this assembly aid to you on request.

2. Filling the outer chamber.

Now you can infill the outer chamber with the designated stone material, again infilling in layers.

3. Closing the cover grid.

When closing the cover grid please take note of the following:

- a) The sandbag must be filled to such a width that once closed, the cover grid curves slightly upwards. The cover grid should press into the sandbag.
- b) If a levelling layer is required, do not insert this between the two basket layers until you have finally positioned and filled the sand core of the basket located above. This ensures that no stones end up lying on the sand core, as this could impair the sound insulation efficiency.

4. Start and end baskets.

Stones should be visible through the sides of the start and end baskets. This looks more attractive and protects the fleece bag from being destroyed by the UV rays from the sun.

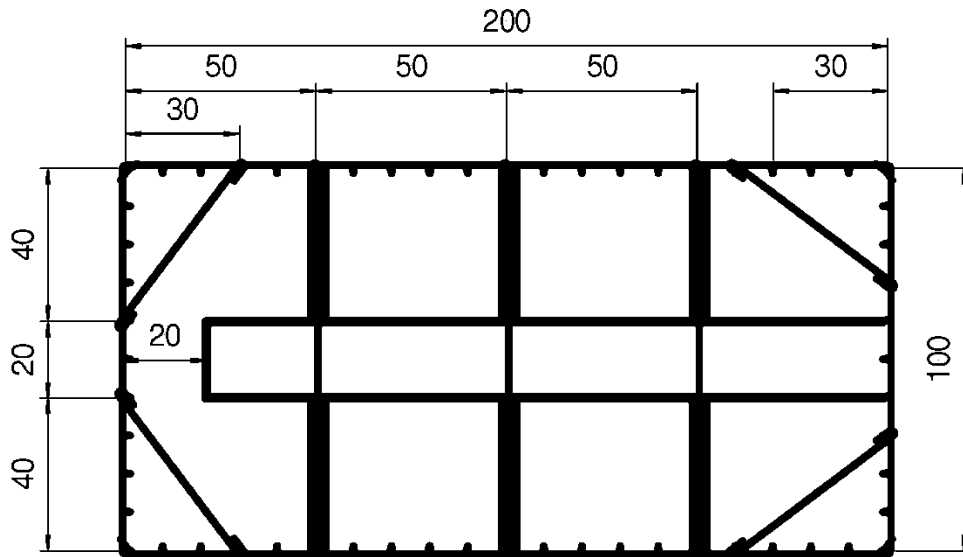
WARNING: The fleece bag is not UV stable and will be destroyed by solar radiation. If, for reasons of noise insulation, you have to place the sand core in the start and end baskets right up against the edge of the basket, you must protect the fleece bag from solar radiation with roofing felt or black plastic sheeting.

Bend one of the two separating grids by 90° to a length of 20 cm. Shorten the other separating grid by 20 cm.

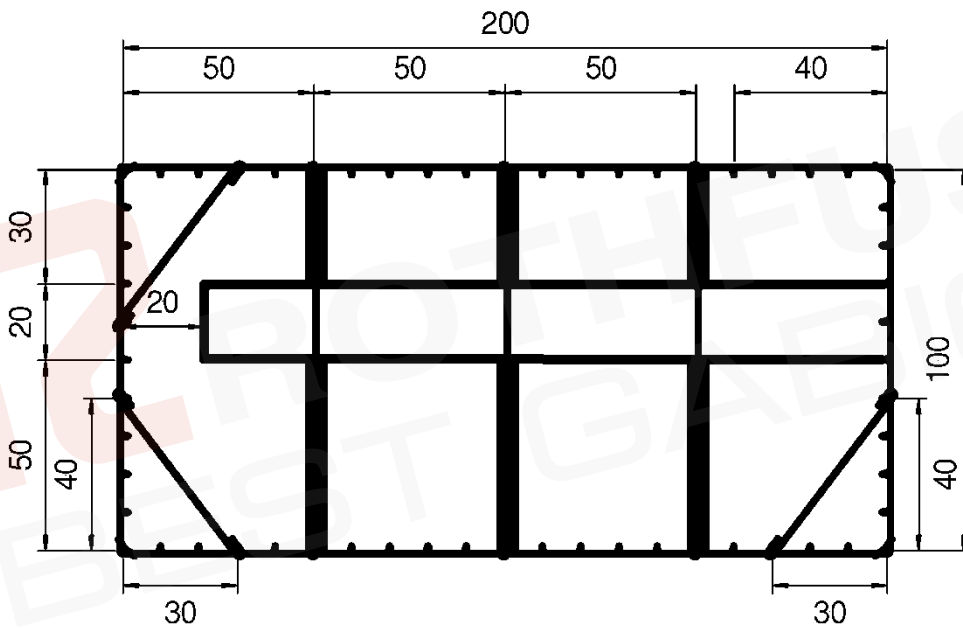
Fold over the end of the bag, so that it becomes 20 cm shorter and insert it.

Assemble the corner spacers in accordance with the following diagrams. (The start baskets are illustrated. The end baskets must be correspondingly constructed from the right with stone filling.

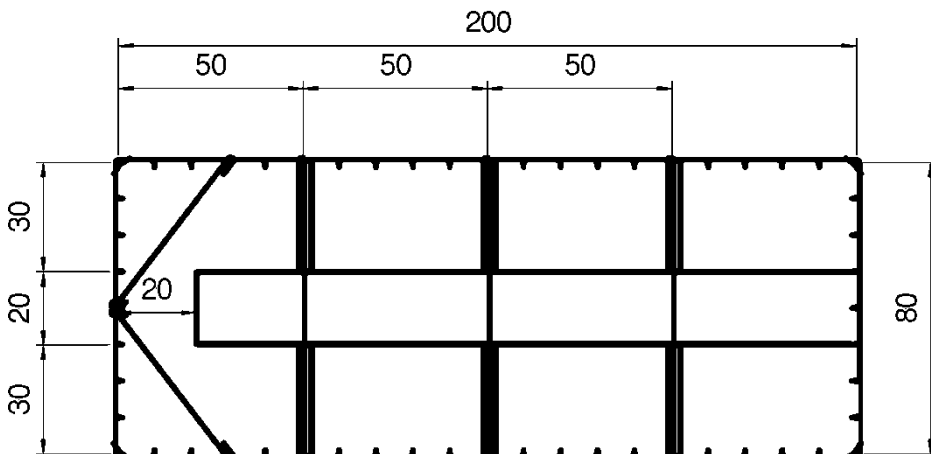
For chamber widths of 40 cm, 20 cm, 40 cm:



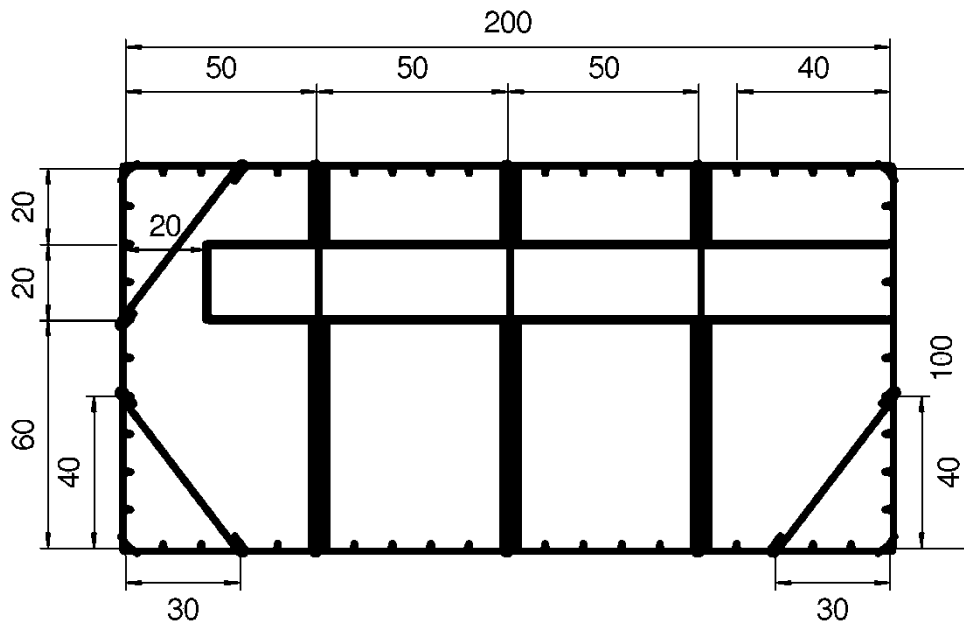
For chamber widths of 30 cm, 20 cm, 50 cm:



For chamber widths of 30 cm, 20 cm, 30 cm:



For chamber widths of 20 cm, 20 cm, 60 cm:



13. Topmost row of baskets with covered sand core.

The sand core in the topmost row of gabions is 15 cm lower. A 15 cm thick layer of rubble is inserted on top of it. This has several functions. It makes the basket look more attractive. It protects the fleece bag from destruction by solar UV radiation. It prevents sand being blown out of the bag by the wind.

In addition in the topmost layer a strip of roofing felt, approx. 30 cm wide, is inserted, covering the sand core. This prevents water seeping into the sand core and prevents the sand core material from shifting.

WARNING: The fleece bag is not UV stable and will be destroyed by solar radiation. If, for reasons of noise insulation, you have to place the sand core in the start and end baskets right up against the edge of the basket, you must protect the fleece bag from solar radiation with roofing felt or black plastic sheeting.

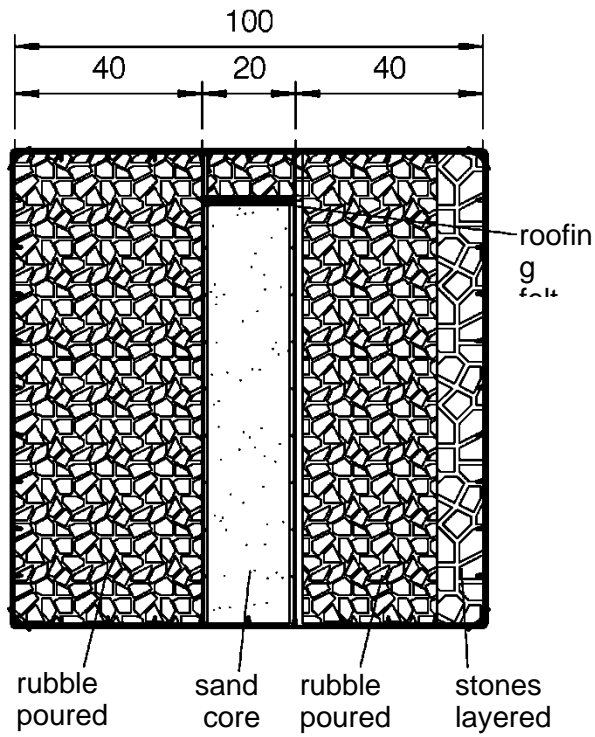


Diagram: Topmost row of gabions with covered sand core