LEAD2 FIX
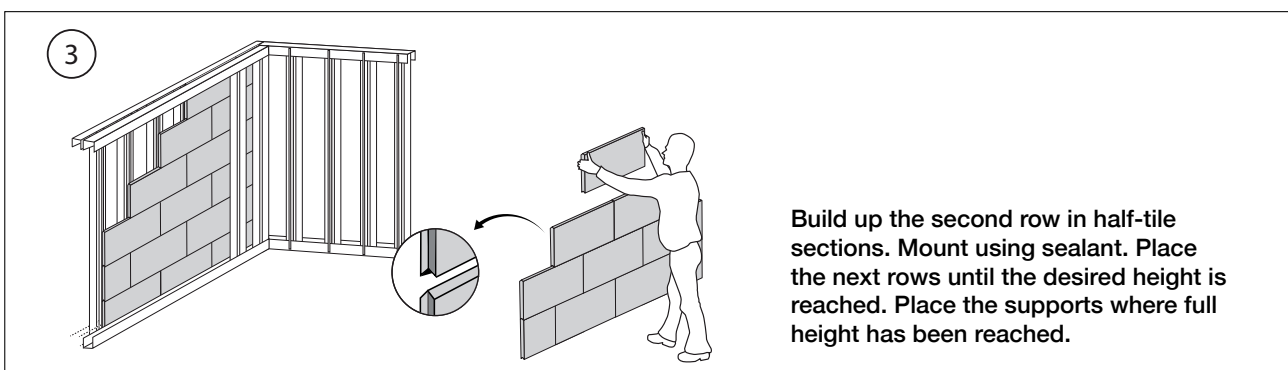
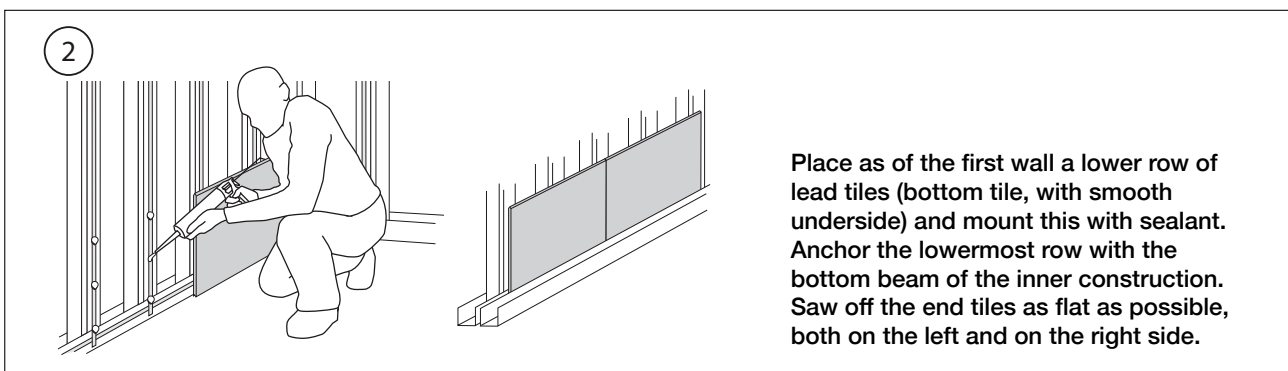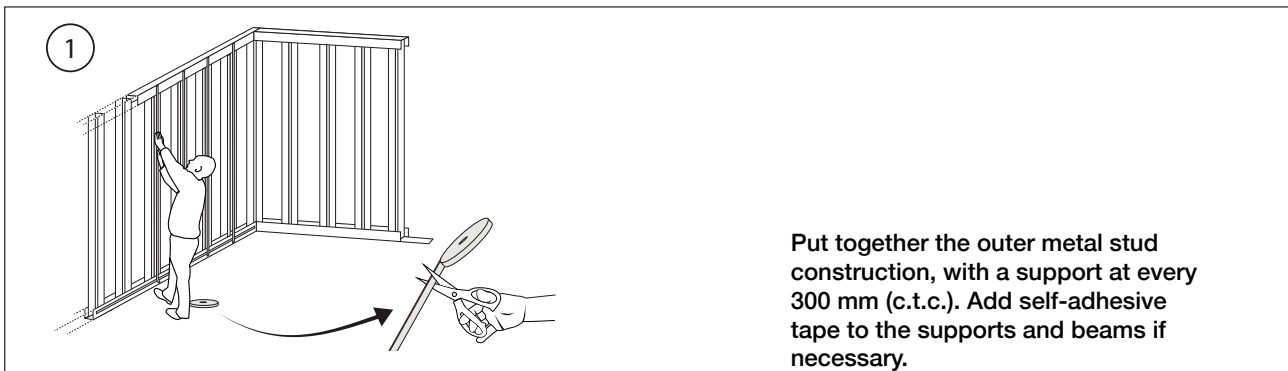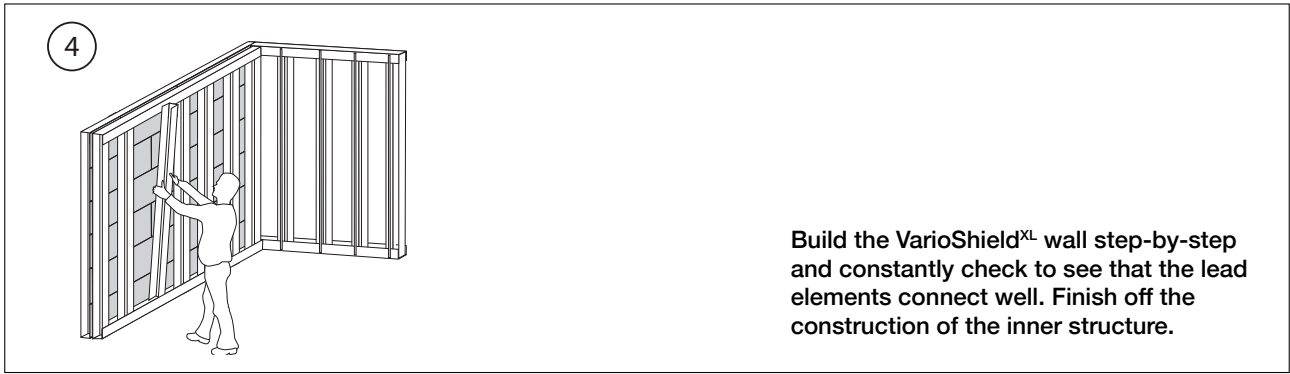SMART SOLUTIONS IN RADIATION SHIELDING

VarioShield XL

Varioshield XL Assembly Manual

This manual describes in a number of clear steps how to build a radiation-proof room using the VarioShield XL lead tiles of Lead2Fix. VarioShield XL is a handy lead tile with an interlocking V-shaped groove, which provides a radiation-proof end result without the need of an extra lead strip between the tiles. The tiles are mounted between an inner and outer construction of reinforced metal stud profiles.

General guidelines

- The thickness of the lead tiles that are used depends on the source of radiation that would eventually be used in the space, and is determined in consultation with a radiation expert.
- The edges of the grooves are vulnerable. Therefore avoid at all times any deformation when transporting and assembling this product.
- In order to ensure effective protection against (strong) sources of radiation, the tiles have to be mounted as carefully as possible.
- Ensure you are working on a flat surface without any irregularities.
- VarioShield XL can be cut precisely to size using a circular track saw.
- Use reinforced metal stud profiles (C75 and U75) with a 2mm steel thickness.
- Use acid-free sealant and/or self-adhesive tape to mount the lead tiles on metal stud profiles.

1 Put together the outer metal stud construction, with a support at every 300 mm (c.t.c.). Add self-adhesive tape to the supports and beams if necessary.

2 Place as of the first wall a lower row of lead tiles (bottom tile, with smooth underside) and mount this with sealant. Anchor the lowermost row with the bottom beam of the inner construction. Saw off the end tiles as flat as possible, both on the left and on the right side.

3 Build up the second row in half-tile sections. Mount using sealant. Place the next rows until the desired height is reached. Place the supports where full height has been reached.

4

Build the VarioShield^XL wall step-by-step and constantly check to see that the lead elements connect well. Finish off the construction of the inner structure.

5

Lead strip 30 mm

C75 weighted (2 mm)

U75 weighted (2 mm)

VarioShield^XL

Lead strip 30 mm

VarioShield^XL
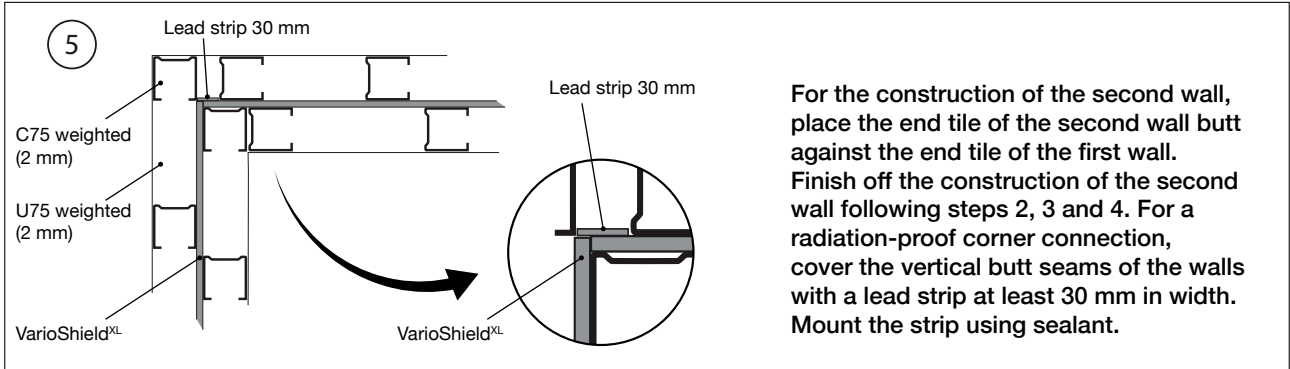
For the construction of the second wall, place the end tile of the second wall butt against the end tile of the first wall. Finish off the construction of the second wall following steps 2, 3 and 4. For a radiation-proof corner connection, cover the vertical butt seams of the walls with a lead strip at least 30 mm in width. Mount the strip using sealant.

6
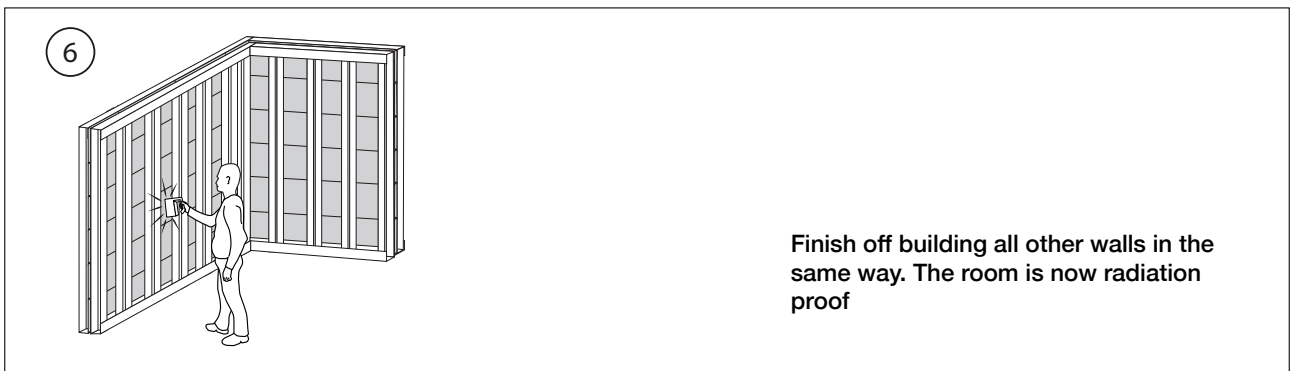
Finish off building all other walls in the same way. The room is now radiation proof

The advantages of VarioShield^XL:

- VarioShield^XL lead tiles weigh around 25 kg and can be handled within the norms of health and safety.
- System can be installed quickly and simply, also by a single person.
- The tiles can be easily mounted using sealant.
- Wiring can be concealed using the double metal stud system.
- Speedy installation, thereby saving time and money.
- VarioShield^XL has been tested and approved by Applus RTD

Product description

VarioShield^XL is delivered in the standard dimensions of 400 x 600 mm; it is also available in other dimensions. Lead thicknesses: as of 8 mm.
Application: as a radiation-proof wall for protecting against harmful radiation (x-rays, PET, CT etc.) in hospitals, clinics, laboratories, industry and nuclear installations.

Transport and storage

VarioShield^XL is delivered on Euro pallets. Individual elements can be transported by hand. Store and use on a dry and even surface. Please be careful when handling the tiles: the edges of the grooves are vulnerable to knocks and can deform as a result. This would have an adverse effect on the radiation-proof properties.

Processing and assembly

Use gloves when handling the VarioShield^XL. Wear a dust mask when working with the tiles and ensure there is an extraction system in use when cutting tiles by machine. Mount using acid-free sealant. Do not use screws.