

## The detailed filigree slabs transport instruction

### BASIC INFORMATION

Filigree floor slabs fulfil the role of permanent formwork, they are intended for the production of composite ceilings and are manufactured according to individual workshop documentation provided by the manufacturer. The documentation includes: a slab assembly diagram, overconcrete reinforcement design and drawings of individual elements together with dimensions and weight, which is selected individually for the crane diagram and its load capacity.

### TRANSPORT

Prior to loading, the individual elements have its own transport strength. Transport takes place on standard trailers. Elements are arranged horizontally in several layers and the load is secured with transport belts.



### PLACE OF UNLOADING THE ELEMENTS

The trailer should be placed on a stable and level ground, within the range of optimal operation of lifting devices. Unloading should be proceeded without the necessity of avoiding obstacles. All bystanders and other materials must be removed from the unloading zone in order to minimise the risk of an accident or significant material damage.

### PRELIMINARY PROCEEDINGS PRIOR TO UNLOADING

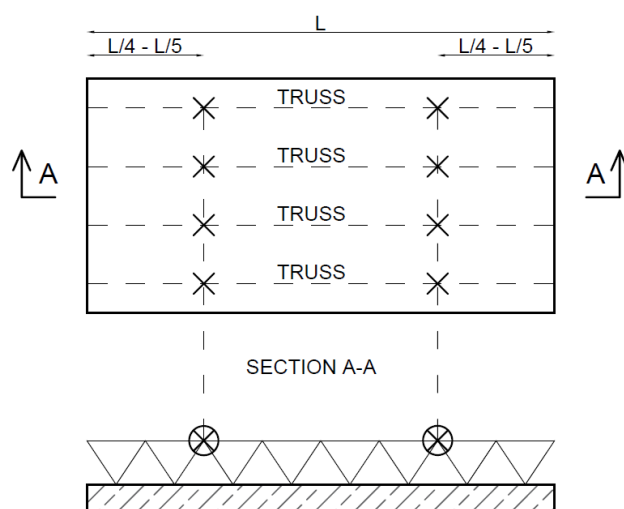
Prior to unloading, check that the delivery complies with the delivery note and the agreed assembly plan. The delivered elements should be assessed for possible transport

damage. All damage and deviations should be recorded in the transport document and send back to the manufacturer along with the photo on the delivery day. In the event of any damage that may affect the safety of unloading, the manufacturer should be consulted. Particular attention should be paid to cracks, nicks and deformations of the trusses.

Prior to lifting the first element from a given delivery, make sure that the lifting devices and slings are suitable, efficient and properly load-bearing. Good visibility for the crane and radio communication between the crane operator and the hook operator should be ensured.

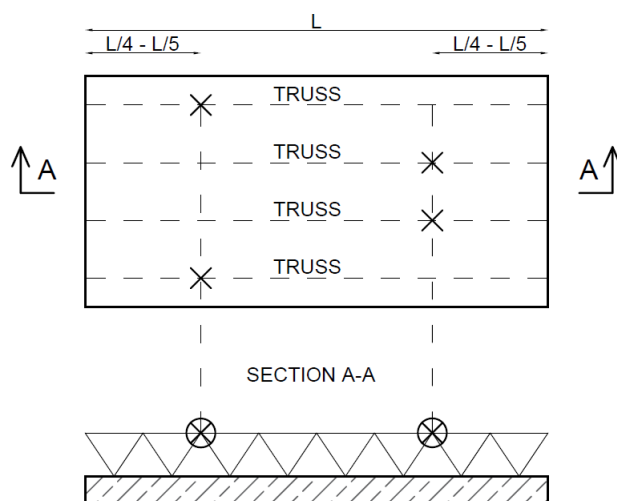
## UNLOADING

After removing the transport locks, the hoisting elements should be carried out smoothly, without unnecessary jerks and sudden movements, controlling the even tension of all slings. Lifting can only begin after all employees have left the filigree floor element. For vertical transport, traverses (multi-hook slings) should be used, enabling the hooks to be attached to each truss on both sides of the slab in accordance with the diagram below.

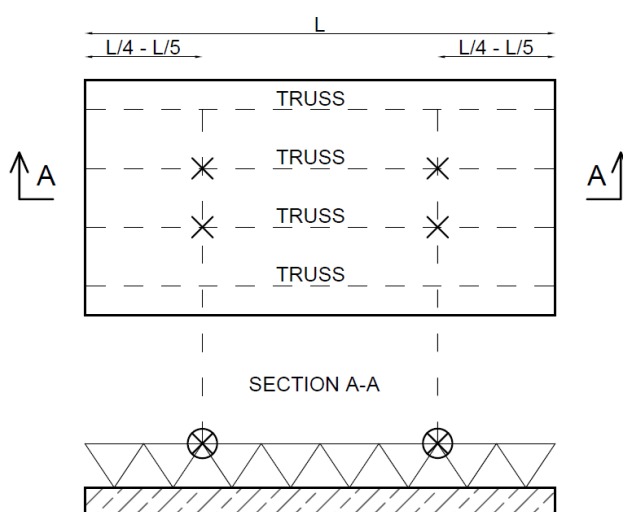


In the absence of a dedicated traverse, it is allowed to use four-hook slings under the following conditions:

- the distance between the hooks attachment place and the transverse edge of the panel should be approximately  $1/4 \div 1/5$  of the total length of the slab;
- the hooks location as is shown in the drawing below - two hooks in the nodes of the end of trusses, two hooks on the opposite side of the slab in the nodes of the middle trusses;

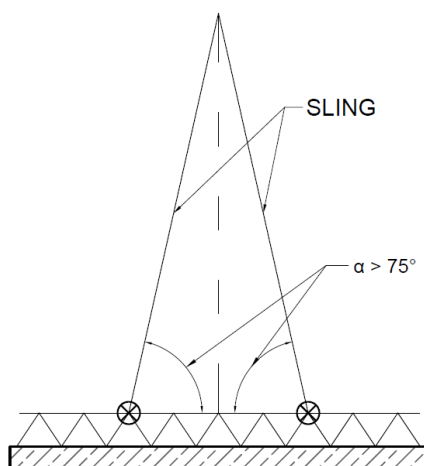


- the hooks location as in the drawing below - two hooks in the nodes of the central trusses.



Regardless of the slings used, the following rules should be followed during vertical transport:

- always attach the hooks to the trusses' nodes (as shown in section A-A above);
- the angle between the sling and the slab plane should not be less than  $75^{\circ}$ ;

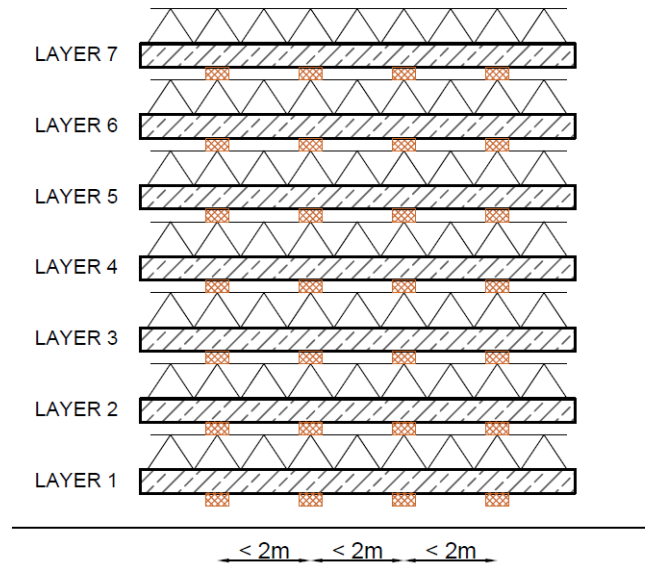


- when lifting, pay attention to the arrangement of the whole element. Avoid deflection, counter-arrowing, tilting or warping of the slab, which may damage it;
- for slabs with a more complicated shape (cut-outs, holes), evenly select the places of hooking in relation to the centre of gravity of the lifting element. Each time a trial lift of the filigree slab should be performed.

### **A SHORT-TERM STORAGE**

Temporary storage of the slabs on site should be avoided as much as possible. It is recommended assembling directly from the trailer. If it is necessary to store the elements on the construction site, an even and stable storage yard should be prepared. Prefabricated slabs are stored only horizontally, in accordance with the sequence of building in into the newly build facility, to avoid unnecessary shifting of the slabs. Arrange the elements in piles of similar dimensions. It is unacceptable to stack larger slabs into smaller ones. The height of the pile should be a maximum of 7 layers of filigree slabs, depending on the conditions on the site (proximity to slopes, stability of the substrate, etc.).

**MAX 7 LAYERS**



It is recommended to use wooden spacers between the prefabricated slabs, placed over the trusses' nodes in one vertical position. It is unacceptable to store the first layer directly on the unprepared floor / ground. The first layer should be placed on square-sawn timber 10 x 10 cm. It is unacceptable to store any kind of other elements directly on the top layer of the slabs.

## The detailed filigree slabs assembly instruction

### PREPARATORY WORK – STAGE I

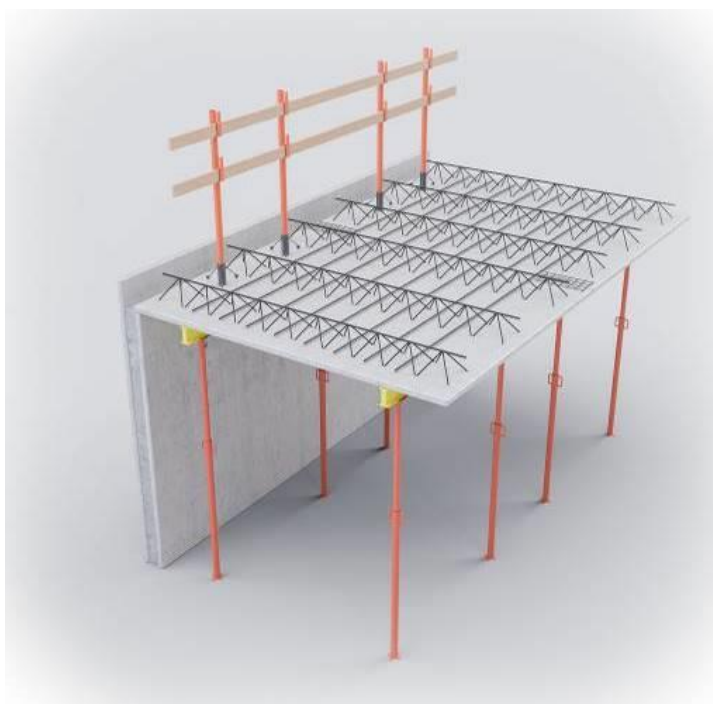
Prior to the assembly of slabs, check the level of permanent supports (walls, binders, beams, etc.) and temporary supports (Perri, Docka, Ulma or other system supports) and their stability. The design documentation includes the details of the spacing (depth and support method) of permanent and temporary (assembly) supports.

The assembly supports are positioned transversely to the trusses in the slabs. The guidelines for the spacing of supports, specified in the design documentation, should be followed at all times.

### FILIGREE SLABS ASSEMBLY

The elements are placed in accordance with the arrangement and direction specified in the design documentation. Each prefabricated element is uniquely described and marked with a number.

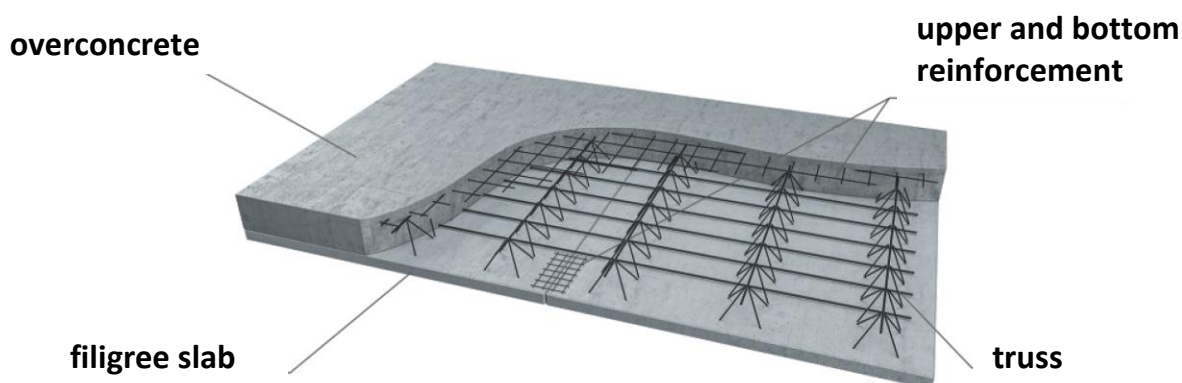
After completing the assembly, check the correct support of the slabs on the supports beams. If necessary, seal the gaps between the slabs or permanent supports.



Temporary reinforcement that strengthening the openings, can be removed after the entire floor is concreted and its full strength is achieved.

## PREPARATORY WORKS – STAGE II – PRIOR TO EXECUTION OF THE OVERCONCRETE

Before commencing of the concreting, the reinforcement should be made in accordance with the design documentation (bottom butt reinforcement, upper support reinforcement, reinforcement, reinforcement of tie beams, binders, hidden beams, etc.). It is necessary to remember about the execution of the submerged installation, preparation of the formwork of the ceiling edges and the openings. The next step is to remove waste and dirt and then moisten the surface of the slabs with plenty of water.



## CONCRETING PROCESS (OVERCONCRETE LAYER)

The design documentation and construction regulations clearly define the rules for using construction joints and expansion joints.

Concreting the rims is most often performed simultaneously with concreting the upper layer of the ceiling (overconcrete).

The concrete mix should be fed from a low height to minimise dynamic



impacts and spread it evenly to avoid local overloading of slabs and supports.

### **CARE OF OVERCONCRETE AND DISMANTLING OF TEMPORARY SUPPORT BEAMS**

The overconcrete should be maintained in accordance with the concrete care technology, taking into account the prevailing weather conditions (temperature, wind, sunlight) to avoid shrinkage cracks. In the initial phase, the overconcrete should be protected against rainfall.

The stages of dismantling the supports are described in detail in the design



documentation. This is done after the overconcrete reaches its structural strength.