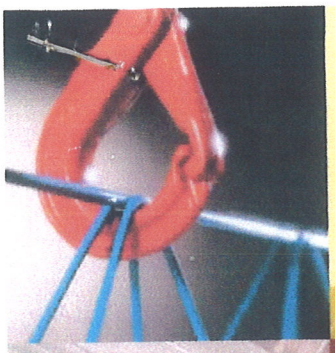


Wide slabs of reinforced concrete

A strong base for fast construction at low cost

Introductory text

Floor panels or wide floor slabs: these are the ideal substrate for loadbearing concrete floors.

Kaiser-Omnia we make floor panels entirely to measure. For any space and in any shape. We create the requisite recesses at the start during the production process. We also install the required built-in parts in advance and modify the under-reinforcement.

Discover the advantages, our production process, our delivery and installation tips and also see the specification guidelines.

What are wide slabs?

Wide slabs are used as the constructive and aesthetic underside of a concrete floor. They are the ideal substrate for loadbearing concrete floors and can be manufactured in all shapes, up to 7 cm thickness.

These wide slabs are available in various widths: 1m20, 3m40, 3m and room-wide.

Our wide slabs are provided with under-reinforcement, with a flat and smooth surface on the underside. After placing the wide slabs the pipework is laid and the upper reinforcement applied.
Finally, concrete is poured onto the plates up to the desired floor thickness. The result is a solid concrete floor where the load is perfectly distributed.

Advantages

- **Form**

Because we make wide slabs to measure, you save time on site and use less materials. As regards the shape, we follow the contours of the design when manufacturing wide slabs, for whatever kind of space.

- **Reinforcement**

The full bottom reinforcement is incorporated into the wide slabs when we deliver them. You therefore only have to assemble them. Beams can be created in the floor and it is possible to make openings.

- **Integrated parts**

All the integrated parts are mounted in advance in the correct location. Provisions for electrical, sanitary, air-conditioning and heating services can be built in without any problems.

- **Durability**

Kaiser - Omnia wide slabs are produced in a professional manner and comply with the most stringent standards:

- optimum resistance against environmental influences
- optimum fire resistance
- Finishing

The large surface area of the wide slabs means there are few joints. The smooth frame surface also provides an ideal substrate for spray plastering. The end result is a solid monolithic floor that ensures good noise insulation and the perfect distribution of the floor load. wide slabs are the solution for a rapid, simple and robust construction.

- **Weight**

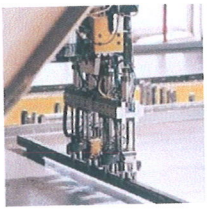
Kaiser - Omnia wide slabs weigh less than the standard wide slabs available on the market. This has its advantages: not only do you require less transportation, you can also use a crane with a lower lifting capacity on your site than with standard wide slabs. It goes without saying that this also has financial advantages.

Production process

- **Drawing the layplan**

The layplan will first be created in consultation with the contractor. As soon as the contractor and the consultancy bureau have approved the layplan, the production process can start.

- **Formwork with robot**



Wide slabs are shuttered on movable metal tables. The central computer sends all the necessary information to the formwork robot. This robot applies the transverse and longitudinal settings and also makes the openings.

- **Reinforcement**

Creating the reinforcement
The reinforcement is specially custom made for every floor panel. The client has a choice of various diameters of high-quality reinforcement rods.

Reinforcement in the formwork
The reinforcement is placed fully automatically in the formwork and offers an optimum concrete top layer depending on the required fire resistance

- **Concreting**

When concreting we take account of the thickness of the wide slab. When pouring we constantly weigh the quantity of concrete to guarantee the correct thickness. The computer control of the concreting machinery ensures that the concrete is distributed extremely precisely over the entire surface.

- **Storage in dry room**

We store the newly concreted floor panels on steel tables which are heated constantly at the right temperature with the precise humidity level, taking into account the desired concrete strength.

- **Stripping**

After 8 hours in the drying chamber, the precast element will be hard enough to be dismantled and transported.

Delivery & fitting

Are Kaiser - Omnia wide floor slabs going to be delivered soon to your site? We will tell you stage by stage the best way to deal with the delivery and fitting. Be sure also to read our assembly manual for floor panels for more information.

Step 1

Unloading

Our wide slabs are **delivered** on trucks with a length up to 18 m and a clearance height of at least 4 m. If you are expecting a delivery, make sure that the crane and the low loaders can access the site without difficulties. Take account of any street obstructions, sharp corners, parked cars, etc.

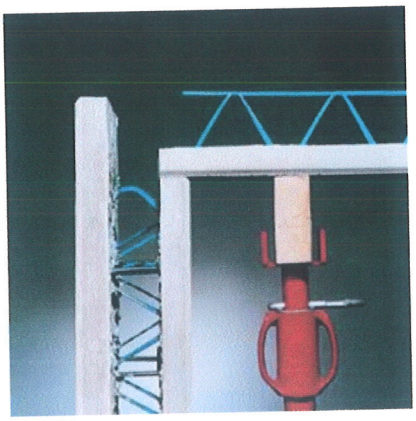
The wide slabs are **unloaded** from the lorry using the site crane, and **they are usually placed directly** in their intended locations according to the placement plan. Hook the carabiner hooks in the diagonals and never on the top concrete reinforcing bar. The standard weight of the wide floor slabs is approximately 125 kg/m2 at a thickness of 5 cm.

If the wide slabs are **temporarily stored on the construction site**, then store them on a flat and sufficiently strong substrate. Put the panels on 2 square timbers that are as long as the panel, so the flat underside is not damaged. The square timbers are best laid at 1/5 panel width from the edge. It is necessary to use 3 or 4 square timbers for panels exceeding 4.5 m. It is possible to stack a maximum 10 panels on top of each other.

Step 2

Falsework

Before you fit the wide floor slabs install the falsework. The distances between the mounting props are stated in the layplan. Always place the yoke beams transverse to the lattice girders. The 50 mm bearing area counts as support. A bed of mortar is recommended!



Fitting

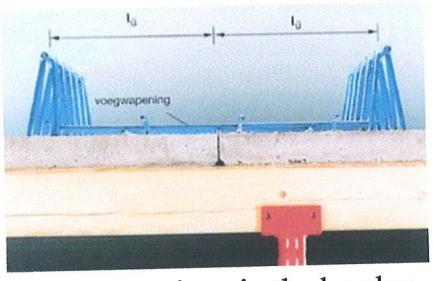
Preferably lay the wide slabs straight from the truck in the correct position. All wide floor slabs are numbered in the installation drawings. Lower the slab completely horizontally onto the bearing surface and install the floor slabs with precamber.

Openings

Potential openings in the floor are often provided for during the production of the wide slabs . The openings and edges will be shuttered up to the level of the finished floor on the site. If the openings for the supply of electrical power were not made during production, they can be drilled **longitudinally along the bottom** after placement. Caution: if drilling takes place from the top, parts of the smooth underside will break off!

Step 3

Strengthening the joints



Strips of reinforcement mesh or individual rods are placed over the joints between the floor panels as joint reinforcement. The specifications for this reinforcement are given in the layplan.

Cleaning the panel surface

If the upper face of the wide slab has become soiled, clean it in order to ensure good adhesion between the wide slab and the freshly poured concrete. The surface must be made dust-free and moistened before pouring the concrete.

Pouring the concrete

The concrete must be poured and sealed according to the required quality and consistency in one single operation. The reinforcement must not shift or sink during this operation.

Removal of the props

Only remove the props when the concrete has sufficiently hardened.

Specification guidelines

Scope

The works comprise:

- preparation of the bearing surfaces,
- delivery and fitting of:
  - the props and any necessary formwork
  - the floor panels as described below
  - the additional reinforcement
  - the compression slab
  - making the necessary provisions for openings
  - removing temporary equipment
  - if need be cleaning the visible surfaces and finishing the edges.

General description – Materials

A loadbearing concrete slab is formed by combining **thin slab shaped precast structural components** and an **in situ concrete layer**.

The precast components are provided with mesh girder reinforcements, which ensure the necessary rigidity during handling and good adhesion to the cast-in-place layer.

The upper surface of the floor panels is roughly finished for optimal adhesion to the cast-in-place layer. The underside is smooth according to C.I.B. scale N° 3. The floor panels are produced using C30/37-2b-F3-14 concrete and reinforced with steel quality BE 500 S or DE 500 BS.

The lengthways and cross reinforcements are welded to each other using automated machinery to guarantee a perfect mesh distance. Wide slabs are designed with a standard width of 2400 mm. The thickness of the floor panels can vary from 50 mm to 70 mm depending on the required concrete coverage and the longitudinal and transverse reinforcement.

The necessary recesses are provided for in the factory on the basis of the plans.

General description – Laying

The contractor shall ensure during transportation and stacking at the site that there are no unacceptable stresses on the concrete and the steel. The props between the wide slab floor components need to be placed sufficiently close to each other during storage. If the construction is to remain visible after fitting, then any impurities must be removed from the joints.

The reinforcement of the floor components, the compression slab and its reinforcement are implemented and applied in accordance with the indications in the concrete study according to the NBN B15 standard (most recent versions with their addenda).

The bearing width is at least 3 cm (on steel profiles or concrete beams) and 5 cm (on loadbearing masonry).

Coordination
The layplans must be submitted in good time to the architect, the engineer, the consultancy, etc. for approval.

Measuring code: per m2
Measurement of the surface area of the floor to be realised, the lay-on length and protruding reinforcements included, broken down according to the total thickness. Recesses are not deducted. All other components, works and supplies are included in the unit prices for the measurements listed above.

What are wide slabs with weight-saving components

This floor system is based on the classic wide slab floors. Weight-saving components are attached to the top of the panel during production.

The wide slabs are provided with bottom reinforcement, with a flat and smoothed surface on the underside.

The weight-saving components are anchored to the concrete, so pouring on concrete up to the desired floor thickness can occur without a hitch.
The result is a solid concrete floor that provides perfect load distribution.