MANUAL FOR DOUBLE WALLS

Manual for mounting Kaiser Omnia double walls

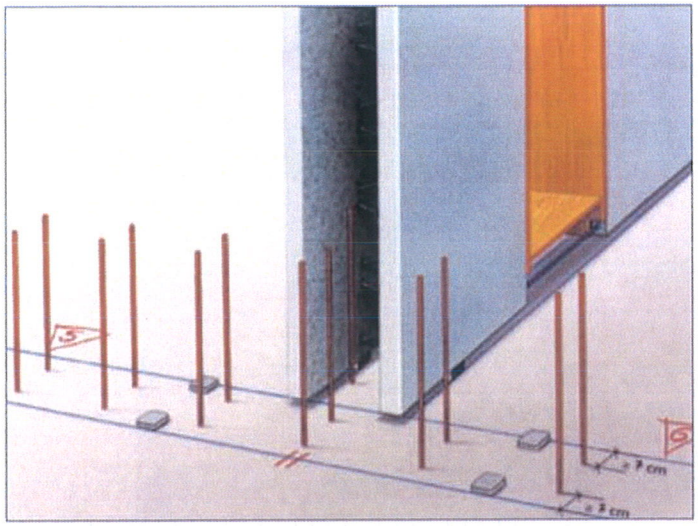
What is a Kaiser Omnia double wall?

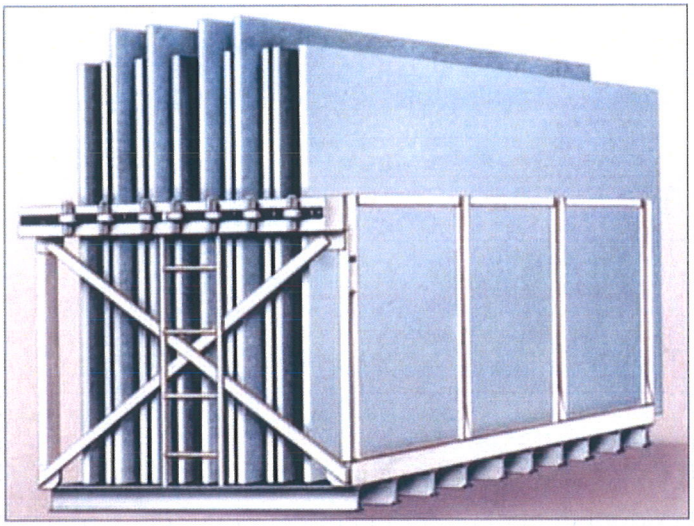
The reinforced double wall consists of two thick smooth concrete plates, at least five centimetres thick, connected by two open web girders. The elements contain the necessary top and transverse reinforcement, calculated according to the standard stability requirements, which are built in at the factory. During manufacture, consideration is also taken of all recesses and built-in parts. After assembly on the construction site, the Kaiser Omnia double wall is finished to become a complete wall with filling concrete poured on site. After concrete is poured and hardened, this wall forms a monolithic whole in physical structural terms.

What materials are required for mounting?

To mount the Kaiser Omnia double wall you need: a levelling instrument, an electric drill with concrete bits, a spanner, a multifunctional socket spanner, a grinding wheel with diamond blade, a cable drum, a level (1.5 m to 2 m), a 5-ton chain hoist, two crowbars, two nail pullers, a hammer, a sledgehammer, a tape measure, a folding meter, oil chalk, keys. For each wall element, you need a set of shores, screws, plugs and base plates in various thicknesses. We recommend two angle irons for each corner of the structure.

Always see to it that the material that is used for assembly fulfils the relevant safety standards and has the necessary certification. Make certain that you always wear a safety helmet, suitable gloves, suitable clothing and shoes.





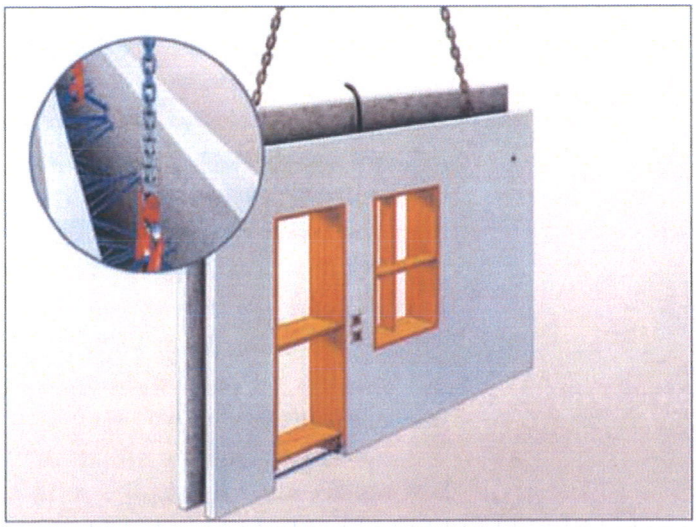
How is the floor slab prepared?

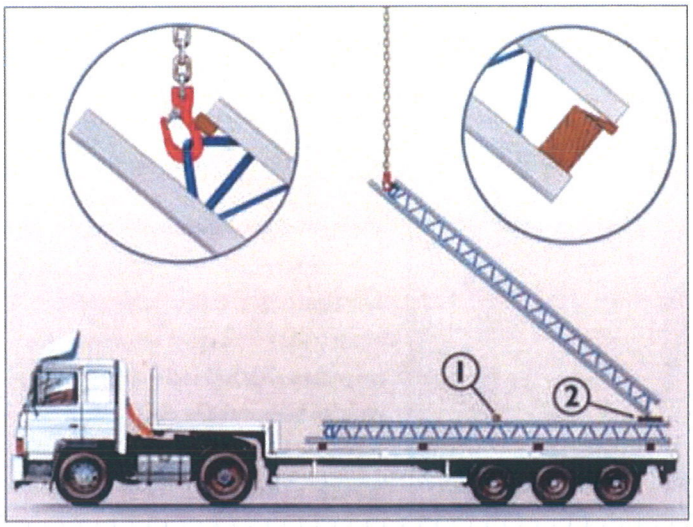
When pouring concrete on the floor slab, you must always see to it that the coupling reinforcement is placed in the right way. The distance from the wall surface to the coupling reinforcement must be at least 7 cm. No reinforcement mesh must be used as coupling reinforcement! Before mounting the Kaiser Omnia double wall, the surface is traced on the floor slab. This can be done by placing wooden piles on the ground surface against which the walls can be aligned. See to it that the piles are anchored to the ground surface. The length of the elements, the joints (standard 1 cm) and the doors must be sketched and the identification number of the assembly plan must be traced.
Shim plates are used to compensate for unevenness of the floor. These are levelled at the required height before assembly. If not agreed otherwise, the joint under the Kaiser Omnia double wall equals 3 cm. If the complete thickness of the wall is required for the pressure transfer, the joint height must be maintained in accordance with the current standards. Four supports must be levelled per element (under both shells at +- 50 cm from each end of the wall).

What factors are important during delivery?

For smooth delivery, one must ensure that deep loaders, inner loaders and the forklift have unobstructed access to the site. You may need to request roadblocks for this purpose. You must also bear in mind sharp corners and parked cars. The clearance must be at least 4 m and the allowed ground unevenness is at most 25 cm over 6 m length. For stability, the place where the truck is parked must be level, since otherwise it is possible that the walls may fall over. The mobile crane requires a standing surface of at least 8 x 6 m.

Always see to it that:
- The hoisting cables have been inspected and have the right load capacity;
- The crane operator and the person responsible for unloading have eye contact with each other at all times;
- You always wear a safety helmet, suitable gloves, suitable clothing and shoes.





Unloading the delivered walls

Walls that are delivered vertically

Sufficiently long hoisting cables must be used in order to guarantee an angle of at least 60°. Always see to it that the element remains level. If necessary, use a leveller or a chain hoist.

Horizontal

In exceptional cases, the walls may be delivered horizontally. On request, we can also supply you with specially developed hoisting hooks with which you can lift the elements horizontally and place them horizontally again beside the truck. In this case, you must see to it that the ground is sufficiently stable and horizontal. Between the hoisting hooks and the concrete element, we advise that you place a wooden beam in order to distribute possible local loads. You can then pull the elements vertically with the transport anchors that were installed at the factory. Here, once again, we advise that you place a wooden beam between the hoisting hooks and the concrete element. Always bear in mind that the chains or cables must be long enough to guarantee an angle of 60°. The maximum weight per hoisting anchor is 2 tons.

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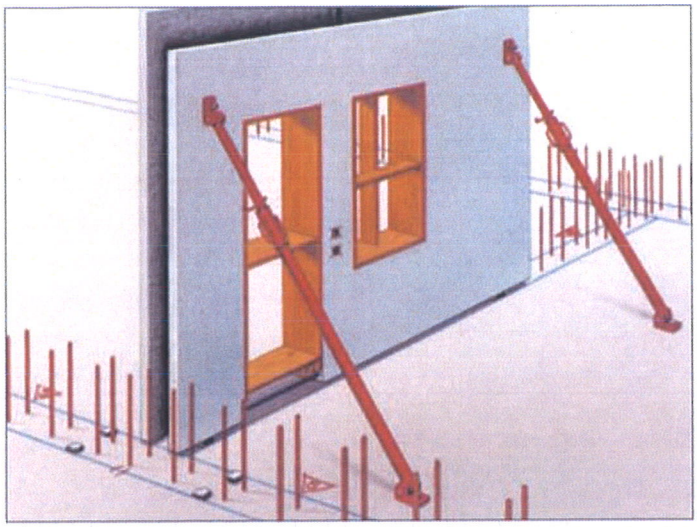

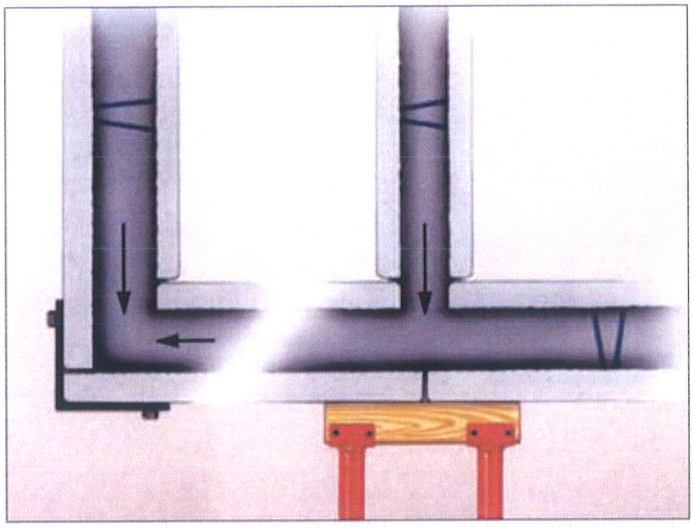

Installing the walls

Three people are needed to install Kaiser Omnia double walls. Make certain that when a new element is swung, the elements already in place are not touched. Allow the element to descend slowly and if necessary bend any holding beams that may be extending sufficiently to the side. Place the element on the outline and the adjustment projections. See to it that you always maintain perpendicular joints of +- 2 cm. If necessary, the position can be corrected with a crowbar and then secured in place with keys.

Fasten each element in place with two pulling and pressing shores. There are screw sleeves in the walls to fasten the shore. The other side of the shore is anchored in the floor slab with anchor bolts. You may unhook the crane hooks only after the elements have been secured in place and inspected.

Now place the joint and angle reinforcement. Do not forget to form the notches.

Correctly applying concrete

Finish the joints as follows:

- Horizontal joints must be shored and if necessary formed.
- Vertical joints must be formed if the joint is greater than 1 cm. You can use assembly foam to do this.

Reinforce the angles using angle irons or wooden planks. For T-connections, you can use shores.

Before the walls are placed in concrete, you can place the broad plate. To do this, the walls must be placed in a mortar bed or be sufficiently keyed. The internal surface of the walls must be moistened before pouring the concrete.

The concrete must be poured in accordance with the applicable guidelines (sections of +- 70 cm). The next section may only be poured after the concrete from the previous section has hardened sufficiently. The filling concrete must be vibrated correctly.

Important: the acceptable concrete pressure must not exceed 30 kN/m^2.
We advise that you vibrate during +- 60% of the filling time.