Connection recess tube

For prefabricated elements

MADE IN

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Connection recess tube

The connection recess tube is used for creating a recess in the concrete slab, this enables the precasted walls to be connected to other members in the building.

The tubes are adapted to a standard slab thickness of 150mm. Where thicker slabs are necessary, the tube is paired with an extension. The extension increases the possible thickness up to 250mm.

The connection recess tubes are available in two standard lengths – 300 & 400mm. Both lengths are availbale in two different versions:

Standard version with all components made of plastic. Needs to be reinforced with “S-stirrup” and “J-stirrups” according to detail 5.2.

Reinforced version with a cast metal lower part (foot) made of a special Zinc alloy that is suited for corrosivity class 4 which allows the foot to be mounted directly to the mold side without any risk of rust staining or damaging the slab. It is reinforced only with ”S-stirrups”, according to detail 5.3.

Assembly

The standard version is assembled with 2 pcs of S-Stirrups Ø8x500 alongside the tube, see green color in figure 5.2. It is also assembled with 2 pcs of J-stirrups Ø12x850mm around the lower part of the tube, see purple color in figure 5.2. The width of the S-stirrups should be chosen so that it corresponds to the distance between the reinforcement meshes. Centrum of the tube is placed at least 75 mm perpendicular to the face of the slab. In the longitudinal direction the distance to the end of the wall should be at least 275 mm. As a rule of thumb, the tube is placed in the middle of the slab, perpendicular to the face.

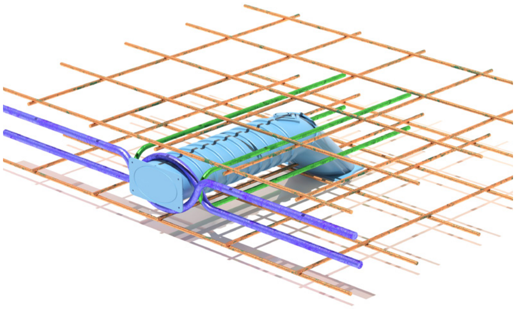

Figure 5.2 Assembly of standard version.

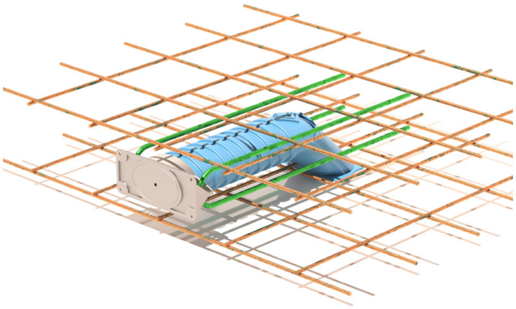

Figure 5.3 Assembly of reinforced version.

The reinforced version is assembled only with 2pcs of S-Stirrups Ø8x500 alongside the tube, see green color in figure 5.3. The stirrups are mounted through the holes in the Zinc casted foot.

Casting at site

When casting inside the recess tube at site, a shrink free concrete with a strength of at least the same as used in the concrete surrounding the tube shall be used, minimum strength is C30/37.

Design

When designing connections between floor-/ground slabs and walls, see figure 5.4, both horizontal and vertical loads shall be taken in consideration. For example, it can be loads that occur at a progressive collapse. In figure 5.4 an example of a threaded coupling at the top of the lower wall and a threaded bar up through the suspended slab into the recess tube is shown. Reinforcement is placed around the threaded rod.

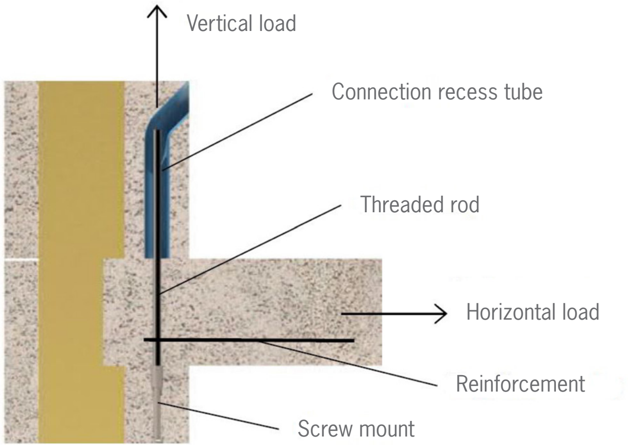

Figure 5.4 Connection joist and wall.

At horizontal tension ties, the suspended slab shall be connected to both the lower and upper wall. Depending on how the suspended slab is reinforced and coupled to the walls the load can act either near the lower face of the suspended slab, in the middle of the suspended slab or near the upper face of the suspended slab. Depending on where the load is assumed to act, the load is distributed to the lower and upper wall accordingly. The closer the lower wall that the load is assumed to act, the bigger the load will be at the lower wall´s coupling. The closer the upper wall that the load is assumed to act, the bigger the load will be at the upper wall´s connection tube.

Load capacity connection tubes

In table 5.1 load capacities are given for shear strength. The shear load is part of the horizontal load, see figure 5.4, that is assumed to act at the lower part of the connection tube. In table 5.1 load capacities are given both for ultimate limit state and accidental action.

The following conditions shall be met:

- Concrete quality in the wall slab minimum C30/37
- The connection tube is filled at site with shrink free concrete that has the same strength as the concrete used in the wall.
- The wall slab thickness shall be minimum 150 mm
- The connection tubes are assembled according to the instructions

Design load capacity, shear force		
Connection tube	**Ultimate limit state (kN)**	**Accidental action (kN)**
Standard	40	50
Reinforced	40	50
Design load capacity, pull out		
Standard	80	100
Reinforced	80	100

Articles

Connection recess tube are sold as complete packages (loose parts can be ordered).

	Art. nr.	Description	Weight (kg)
	8900192	DUS - 300x75 Reinforced	0,97
	8900188	DUS - 300x75 Standard	0,25
	8900193	DUS - 300x100/125 Reinforced	1,04
	8900189	DUS - 300x100/125 Standard	0,32
	8900194	DUS - 400x75 Reinforced	1,02
	8900190	DUS - 400x75 Standard	0,30
	8900195	DUS - 400x100/125 Reinforced	1,09
	8900191	DUS - 400x100/125 Standard	0,37
	8900186	DUS - Foot, plastic	0,02
	8900187	DUS - Reinforced foot, Zinc	0,73
	8900181	DUS - Lock	0,03
	8900184	DUS - Tube 300	0,21
	8900185	DUS - Tube 400	0,26
	8900219	DUS - Telescope complete	0,38

Environmental policy

Joma promotes a sustainable and long-lasting environmental development, without ever compromising the best interest of the customer's needs.

Our objective is to keep the overall environmental impact of our enterprise, products and services within the limits of what man and nature can handle. Joma's environmental improvements are to be made at a pace that is technically and financially possible for the company.

Our environmental commitment involves the following:

- We will fulfil the requirements of applicable laws and regulations, and strive to make continual environmental improvements. We will also inform ourselves of and take into consideration the present and future requirements of our customers that could affect our environmental commitment.
- The environmental impact of our enterprise, due to e.g. emissions, noise and waste products, will be controlled and evaluated on a regular basis and, if possible, reduced.
- We will strive to reduce the use of raw material and energy resources.
- When developing products and processes, the overall environmental impact will be taken into consideration.
- When designing new products, we will strive to use material that is kind to the environment and that facilitates recycling. The choice of packaging will be done according to the same principles.
- As we make technical acquisitions, we will strive to achieve the highest recycling level possible from production waste and worn-out products/production equipments.
- We will influence our vendors and contractors to contribute to the fulfilment of Joma's environmental policy.
- We aim for our transportations to always be rendered more effective and improved for the purpose of reducing the negative effects on the environment.
- All our employees will have the information and instructions necessary to do their work in an environmentally responsible way.
- In promoting an environmental development, we will keep an open mind towards customers, vendors, authorities and the public.

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We have assessed products at Byggvarubedömningen. This means that our products are assessed based on chemical content, life cycle and sustainable supply chains. We thereby contribute to making it easier to build sustainably.

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SundaHus i Linköping AB (publ) operates in the construction and property sector and helps companies and organizations to create non-toxic and long-term valuable built environments through simple and effective solutions for conscious material selection.

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Notes

Version 1.1