



BISON PRECAST

a Forterra brand

OMNIA BRIDGE DECK

Technical Installation Guide

Preparation of supports, delivery and offloading information.

General

Omnia Bridge Deck Planks are generally laid on Structural Steel beams, and whilst the details and recommendations below may apply to other structures, they are primarily written for Steelwork structures.

Preparation

Bearings

All bearings should be structurally acceptable before any Omnia planks are placed. Any variation in levels of bearing will need to be addressed prior to the planks being delivered.

Prevention of grout loss

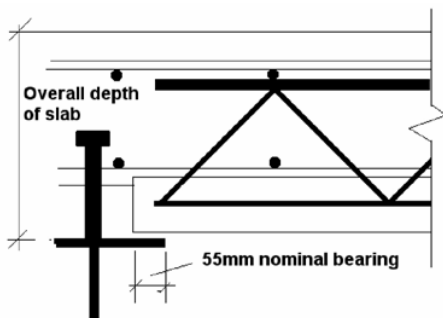
Flanges of steel that will be supporting Omnia Bridge Deck planks will need to have a 12mm deep bituminised compressible strip applied, available from Illbruck Alfes, Washington, Tyne & Wear, 0191-419-0505 (or similar).

Temporary Supports

Omnia Bridge Deck planks are always designed to be erected without any temporary props during the construction sequence.

Minimum Bearing Dimension

All planks will be designed to have a minimum bearing of 55mm both ends, therefore the minimum plank length will be 'clear span + 110mm' to a maximum of 3.80m.



Safety Notes

Notwithstanding the above, propping may be necessary in the following circumstances:-

1. Where the top or diagonal bars of the Omnia lattice has been cut or damaged.
2. Where the bearings are not true and or level.
3. Where a bearing of less than 40mm is provided.
4. Cantilever sections and adjacent to the edges of large openings.

Delivery

Omnia Bridge Deck planks are generally delivered on articulated vehicles palletted in batches of 24 planks (6 deep x 4 wide) and will be delivered to a previously agreed sequence of planks and times/dates.

Depending on the spans of the planks, each delivery will have approx. 130m² of planks.

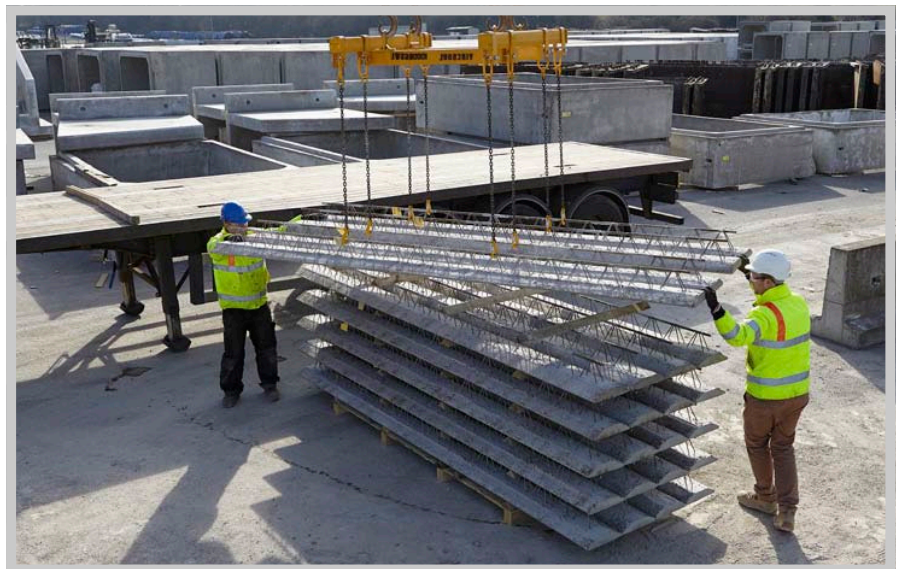
Except where agreed previously, the first delivery of planks will come with a lifting frame which should be used to lift a layer of planks.

Offloading

We would recommend that full pallets of planks are offloaded adjacent to their ultimate position on the structure, and then each layer is lifted and placed in position at a later date.

All personnel who are required to be on the trailer bed whilst on site should be protected from falling from height in accordance with "The Work At Height Regulations 2005"

A lifting frame will normally be provided to suit 4 planks and will weigh approx 500kg, however if required, a larger frame can be provided (weighing approx. 750kg) to lift 8 planks, in which case pallets need to be placed adjacent to each other.



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Lifting, placing in position, sealing joints and completion of slab.

Lifting Weights

Each plank weighs 36kg/m and each pallet will normally have 24 planks. The pallet weight will need to be calculated prior to uplifting from the vehicle, and the layer weight of 4 (or 8) planks will need to be calculated before lifting to the structure.

Pallet Weight

A pallet of 24 planks 3.60m will weigh:
24 x 3.60m x 36kg/m = **3110kg**

Use the calculator below:

$$\underline{\hspace{2cm}} \text{ Planks x } \underline{\hspace{2cm}} \text{ m x } 36\text{kg/m} = \underline{\hspace{2cm}} \text{ kg}$$

Layer Weight

A layer of 4 planks 3.20m long plus frame will be:

$$4 \times 3.20\text{m} \times 36\text{kg/m} = 461\text{kg} \text{ plus } 500\text{kg} \text{ frame} = 960\text{kg}$$

$$4 \text{ planks x } \underline{\hspace{2cm}} \text{ m x } 36\text{kg/m} = \underline{\hspace{2cm}} + 500\text{kg} = \underline{\hspace{2cm}}$$

A layer of 8 planks 3.40m long plus frame will be:-

$$8 \times 3.40\text{m} \times 36\text{kg/m} = 979\text{kg} \text{ plus } 750\text{kg} \text{ frame} = 1729\text{kg}$$

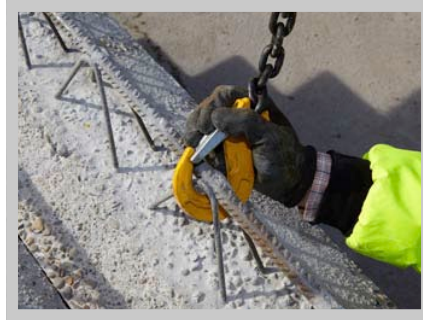
$$8 \text{ planks x } \underline{\hspace{2cm}} \text{ m x } 36\text{kg/m} = \underline{\hspace{2cm}} + 750\text{kg} = \underline{\hspace{2cm}}$$

Erection

Handling

Units must be lifted and placed without jerking to prevent cracking to the panel or damage to the lattice.

Always lift Omnia panels by the lattice with the hooks positioned under the diagonal.



Protection against falls

In line with the PFF Code of Practice, the erection of Omnia units will be subject to the application of a hierarchy of safety systems as recommended by the HSE. There is a range of measures available from passive systems such as working platforms, staging, safety nets and air bags to active systems such as work restraint/fall arrest using safety harnesses.

Completion of Slab

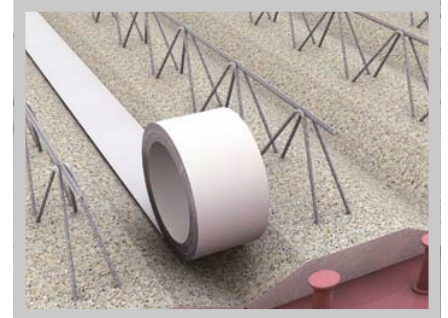
Placing in position

Panels lifted in sets of 4 will be approx 1200mm wide (8 planks will be 2.40m wide) and will need to be butted together to close any gap between them, minimising the risk of grout loss. It is recommended that a method of setting adjacent 'sets' be adopted so that each set is placed at 1200mm dimensions.

This will keep the layout of the planks close to that on the drawing, the amount of gaps to a minimum, and reduce the risk of any cutting or make-ups due to creep.

Joint Grouting

Joints will need to be addressed to prevent grout loss during concreting. Various methods can be used, and we would suggest a bead of sand/cement grout towelled along all joints.



Placing of Reinforcement

Reinforcement will need to be placed in accordance with the Structural Engineers requirements and one layer may need to be threaded through the diagonals.

Other layers are placed between and over the lattice.

Concreting

The slab will then be concreted in accordance with the Structural Engineers specification.

