Concast Precast
Industrial Frames - Warehouse

- C4 Beams
- Columns

- Grid Jumper Beams
- Gutters

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PRECAST CONCRETE SPECIALISTS
Industrial Warehouses are generally designed using a beam and column arrangement. The beams in these structures are often required to be long span, to create large open plan areas for storage or manufacturing. To cater for these long spans, Concast use its C4 beam. This is a pre-stressed roof beam with a 4’ pitch, which are available at spans of up to 36 m, and generally at bays of 6 m.

Multiple spans can be accommodated using our valley detail (as shown on page 3). It is recommended that expansion joints (i.e. double columns) should be used where building length exceeds 60m. Mezzanine levels or other intermediate levels can be accommodated easily through incorporation of other products such as wall panels, stairs and landings, as well as ordinary reinforced beams and columns.

Concast’s Service

Concast is the leading provider of precast Industrial Frames in Ireland, having worked on hundreds of such developments throughout the country and in the UK.

Concast provide a complete service - from initial design or re-working existing designs, to creating a detailed project plan, manufacturing, transporting and expertly installing our precast concrete products on site. As these units are precast, they have our standard high quality finish and fast erection time on site.

C4 Beams

Concast’s C4 is a pre-stressed beam with a 4’ pitch, suited for ‘A’ frame buildings, which can economically achieve clear spans of up to 36m. The C4 is ideal for buildings which require a high degree of flexibility, with single or multiple bays.

Benefits:

- Less columns are required due to the longer bays, which also decreases the foundations requirements.
- Large clear span capabilities allowing increased design flexibility.
- Columns can be designed to support overhead gantry cranes.
- Decreased maintenance costs as the frame is virtually maintenance free.
- Hygiene ledges where dust and dirt congregates are minimised, which is ideal for high precision industries such as food processing or high technology plants.

Manufacture:

The beams are cast vertically in a steel mould, with automated hydration and vibration. This process provides a fair faced finish on both sides of the unit.
Connection Details

**Typical Parapet Eaves Detail**
- External sheeting
- Flashing piece
- Bearing pad
- Precast column
- Sheeting stepped around upstand

**Typical Valley Detail**
- Roof purlins cleat fixed to precast beams
- Precast gutter dowel fixed to roof beam
- Bearing pad
- Precast column
- Flashing piece supplied and fixed by others on site

**Isometric View of C4 Frame**
- Precast roof beams
- Precast gutter
- Precast column
- Precast roof beam
- Struts/tie rods
- In-situ floor slab
- In-situ pad foundation

**Connection Details**
- Precast roof beam cleat fixed to column
- Gutter dowel fixed to roof beam
- Roof beam cleat fixed to column
- Flashing piece supplied and fixed by others on site
- Roof Purlins cleat fixed to precast beams
- Precast gutter dowel fixed to roof beam
- Bearing pad
- Precast column
Grid Jumper Beams

Grid Jumper beams act as transfer beams in C4 structures. They reduce the requirement for columns, as every second C4 beam can bear directly onto the Grid Jumper, with no column below it. This also reduces the requirements for foundations.

These beams are typically rectangular in shape and provide a concrete corbel for the C4 beam to bear on to. The depth of these units can be altered to suit the requirements of a particular job.

Grid Jumper beams can also be designed to take C4 beams on each side, if required in the central bay of a warehouse.

Gutter Beams

Gutter beams span between C4 beams on the warehouse structure. They can be pre-stressed units, or ordinary reinforced, and can span ~ 6m. They act as ties giving a robust design. They also ensure a clean fascia line at eaves level. Openings through the units for connecting these gutters to drains can be cast at regular intervals, as required by the client.

Samples of connection details and typical cross sections for gutters have been included on the previous page.

Conclusion

Concast’s range of products for Industrial and Warehouse applications can suit any client requirement. Specific products such as Grid Jumper beams, Gutter beams, Parapet Columns and C4 beams make design of Warehouse units through precast cost effective and simple. These products are delivered to site with a high quality finish, and offer the quick erection times, typical for precast.

For more information on Concast’s products, please contact:

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