

Harsch Bau GmbH & Co KG, 75015 Bretten, Germany

Prepared for great things with 72 m beam formwork and 20,000 kN prestressing force

■ Mark Küppers, CPI worldwide, Germany

As a family-run construction company, Harsch has been assisting its customers with their construction projects for over 100 years. The experience in turnkey construction with fixed price and guaranteed completion date has made the group of companies what it is today: a reliable partner when it comes to industrial and commercial buildings as well as the production and assembly of precast concrete elements. With two precast concrete plants, Harsch can optimally plan production and logistics according to the customers' needs. The plant in Gondelsheim was recently extensively modernised. In addition to a spacious new production hall, the company invested in a 72 m hydraulic beam formwork system from Howal, among other things. The associated prestressing line equipment for up to 20,000 kN prestressing force was supplied by the Paul company.

The Harsch group develops individual special designs for its customers. This not only fulfils design requirements, but also shortens construction times and thus saves costs. Harsch takes over the planning up to the complete project development. The team of experts is available to its clients from the first draft to completion and beyond. The production of precast concrete elements, civil engineering, underground construction and road construction as well as the areas of supply and pipeline construction, ready-mixed concrete production, demolition and building materials recycling round off the extensive range of services.

As one of the largest medium-sized companies in the region, Harsch employs 500 motivated people.

Precast concrete elements are on the rise

The production of precast concrete elements has been gaining in importance at Harsch for several years. In the two precast plants in Gondelsheim and Lischma in Laupheim, precast concrete elements are produced under controlled conditions, independent of weather and other environmental influences. The precast concrete elements are mainly produced for customers and projects in the entire southern German region.



The new production hall with roofed-over outdoor area in Gondelsheim.

Both precast concrete plants together offer over 30,000 m² of production space and 20,000 m² of storage space, 5,500 m² of which is roofed over. This provides optimal storage conditions for the high-quality fair-faced concrete precast elements. Harsch manufactures up to 20,000 m² of fair-faced concrete façades per year.

The plants are certified and quality-controlled according to EN standards. The production and transport of components up to 100 t and walls up to 25.00 x 4.00 m are possible. The direct connection of both plants to federal roads has a favourable effect.

The annual production capacity is around 100,000 t. The precast elements are produced not only for the company's numerous own projects, but also on behalf of customers for third-party projects, using modern plant technology such as the new hydraulic beam formwork from Howal and the prestressing equipment from Paul.



72.00 m Howal Hystanplus type 220 beam formwork

Hystanplus hydraulic beam formwork

Howal's 72.00 m Hystanplus Type 220 beam formwork, with a maximum crown or useful height of 2.20 m, can be divided into four 18.00 m sections. These can be moved individually or coupled together.

The base frame is equipped with vibration dampers and support bearings for external vibrators. The total width of the formwork when open is approx. 3.00 m, plus the working scaffold. Both side shields are hydraulically retractable (stroke on one side 1000 mm, on the other side 200 mm).

On each of the transfer tables there are telescopic stand lances that serve to suspend the top and bottom chord inserts. The top chord inserts are adjustable in height and inclination segment by segment by means of the telescopic lances. On the top chord inserts, there are transversely movable longitudinal shutter holders for wood covering by the customer for different top chord widths (max. top chord width 80 cm). The bottom chord inserts can be shifted by the thickness of the formwork skin by means of spacer plates, which enables fast conversion to T-cross-sections.

With the Hystanplus hydraulic beam formwork, parallel-chord I or T-beams or also gable roof beams with a maximum crown height of 2.20 m can be produced. The maximum top chord width is 800 mm, the standard bottom chord width is 400 mm (with a web thickness of 150 mm). Otherwise, the web thickness can be selected variably.

The beam formwork can also be used to produce rectangular cross-sections up to a width of approx. 1200 mm.



Staircase moulds



Moulds for beams and columns



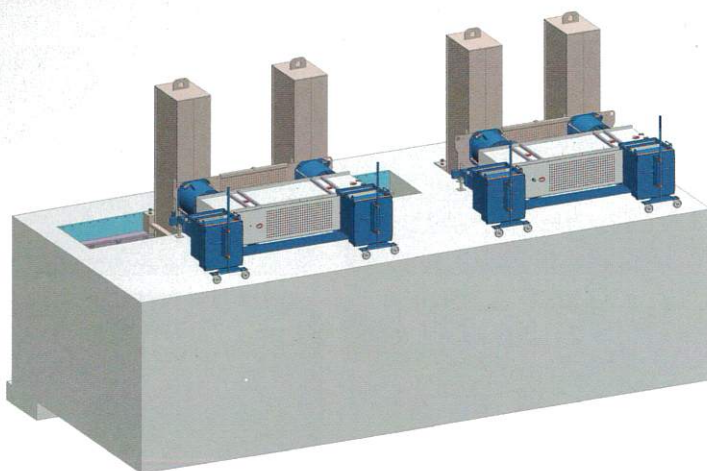
Tilting tables and special designed moulds

Address:
HOWAL GmbH
Am Reutgraben 4
D-76275 Ettlingen-Ew.

Mailing address:
HOWAL GmbH
Postfach 417
D-76258 Ettlingen

Phone:
+49 (0)72 43-9 49 73 - 0
Fax:
+49 (0)72 43-9 06 45

Internet:
www.howal.com
Email:
info@howal.com



Harsch is prepared for great things with robust prestressing line equipment for the production of particularly heavy components and a prestressing force of up to 20,000 kN.

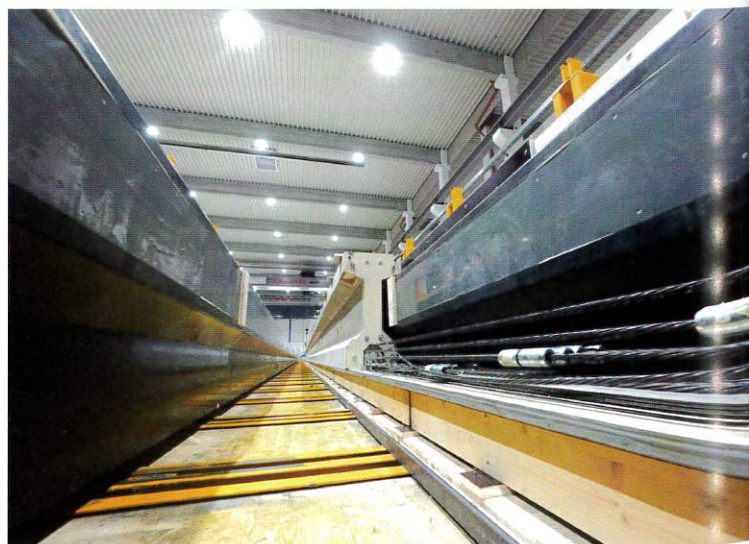


Prestressing line equipment from Paul

Harsch is prepared for great things with robust prestressing line equipment for the production of particularly heavy components and a prestressing force of up to 20,000 kN. With a hole pattern of 50 mm with 12 x 30 holes in the transverse anchor plate, large forces can be clamped with equally large flexibility in the clamping pattern.

High quality with low wear on the formwork is ensured by the double-sided tension release, which also minimises slippage in the formwork.

The release unit presented at the bauma 2019 can extend the cylinders by a factor of 2.5 faster without load, which is particularly noticeable with the very large cylinders of almost 60 litres. The new development with two-stage delivery rate shows its full potential with this oil volume: the extension at low pressure (up to 50 bar) takes place at 16.5 l/min. During the actual release, the short stroke to remove the support shell, with 4.2 l/min at high pressure (up to 450 bar).



Howal's 72.00 m Hystanplus Type 220 beam formwork, with a maximum crown or useful height of 2.20 m, can be divided into four 18.00 m sections.



With the Hystanplus hydraulic beam formwork, parallel-chord I or T-beams or also gable roof beams with a maximum crown height of 2.20 m can be produced.

The protective boxes on castors suspended from the transverse anchor plate make work easier and provide additional protection for the employees. They can be pushed to the side for the installation of the strands and anchorages or for prestressing. They are then placed behind the strands again and play their part in protecting against the consequences of any prestressing steel breakage.

However, so that not only the big demands are covered, the line can be converted by means of relocatable and bolted abutment anchor posts. Then precast elements can be produced and prestressed on two smaller lines with twice the capacity instead of on one 20,000 kN line.

Technical data:

- Prestressing force: 20,000 kN
- Support length: 2,650 mm
- Transverse anchor plates with 12 rows of 30 holes in 50 mm grid
- Guards movable on both sides, easy access for prestressing
- 4 detensioning cylinders each with 10,000 kN; diameter 710 mm, weight 2,135 kg, oil volume 59.6 l each.



The Primus tandem tilting table can be decoupled if necessary so that two individual tables can then be used.

Primus tandem tilting table

Howal's entire scope of supply for the new production hall in the Gondelsheim plant included a Primus tandem tilting table, 4.5 m x 26 m, in addition to the hydraulic beam form-work. This can be decoupled if required, so that two individual tables can then be used. Primus tilt tables are characterised by homogeneous compaction. This is achieved by the design with a very torsion-resistant central tube and cantilever arms that taper outwards.

FURTHER INFORMATION

HARSCH



Harsch Bau GmbH & Co KG
Rinklinger Straße 7
75015 Bretten, Germany
T +49 7252 77444
F +49 7252 776248
beton@harsch.de
www.harsch.de

Betonwerk Harsch GmbH & Co KG
Industriestraße 15
75053 Gondelsheim, Germany
T +49 7252 77400
F +49 7252 776479
www.harsch.de

HOWAL

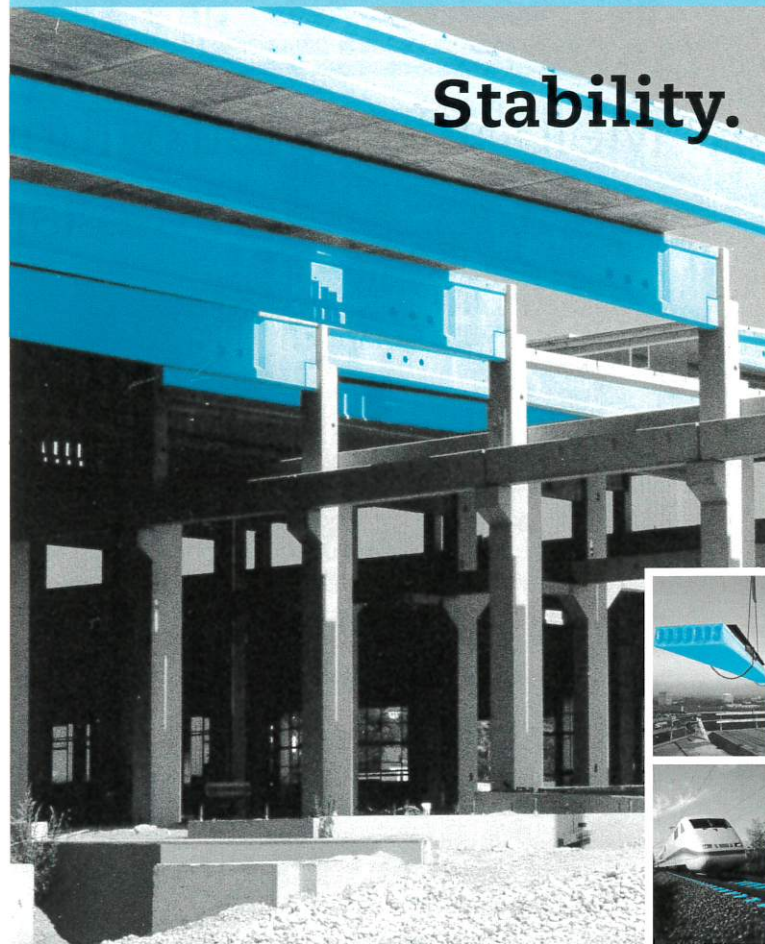


Howal GmbH
Am Reutgraben 4
76275 Ettlingen, Germany
T +49 7243 949730
F +49 7243 90645
info@howal.com
www.howal.com



Maschinenfabrik GmbH & Co. KG

Paul Maschinenfabrik GmbH & Co. KG
Max-Paul-Str. 1
88525 Dürmentingen, Germany
T +49 7371 5000
F +49 7371 500111
stressing@paul.eu
stressing.paul.eu



Stability.

Prestressing of precast concrete elements

PAUL supplies

- Prestressing installations incl. planning work
- Anchor grips
- Prestressing machinery (single-/multi-stressing jacks)
- Strand pushing and cutting equipment
- Automatic prestressing machines for railway sleepers
- Prestressing equipment for bridge construction (prestressing cables and stay cables)

The experts in
Prestressed Concrete Technology.
stressing.paul.eu

Paul at YouTube



stressing-channel.paul.eu

Max-Paul-Str. 1
88525 Dürmentingen
Germany
☎ +49 (0) 7371/500-0
☎ +49 (0) 7371/500-111
✉ stressing@paul.eu