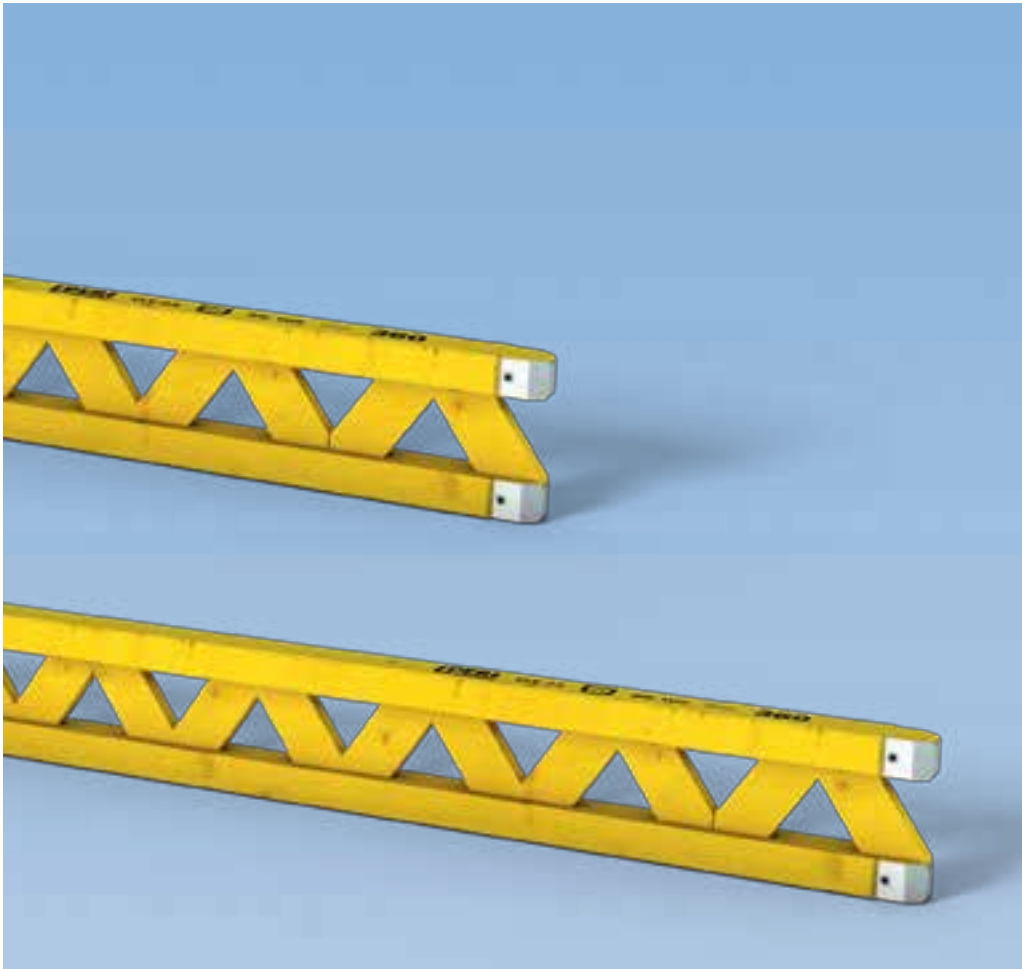


## GT 24 Formwork Girder

The versatile lattice girder with a high load-bearing capacity

Product Brochure – Issue 04/2018



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## Components

### 16 GT 24 Formwork Girder

#### Important notes

All current safety regulations and guidelines must be observed in those countries where our products are used.

The photos shown in this brochure feature construction sites in progress. For this reason, safety and anchor details in particular cannot always be considered as conclusive or final. These are subject to the risk assessment carried out by the contractor.

In addition, computer graphics are used which are to be understood as system representations. For ensuring a better understanding, these and the detailed illustrations shown have been partially

reduced to show certain aspects. The safety installations which have possibly not been shown in these detailed descriptions must nevertheless be available. The systems or items shown might not be available in every country.

Safety instructions and load specifications are to be strictly observed at all times. Separate structural calculations are required for any deviations from the standard design data.

The information contained herein is subject to technical changes in the interests of progress. Errors and typographical mistakes reserved.

# The GT 24 Formwork Girder

The versatile lattice girder with a high load-bearing capacity

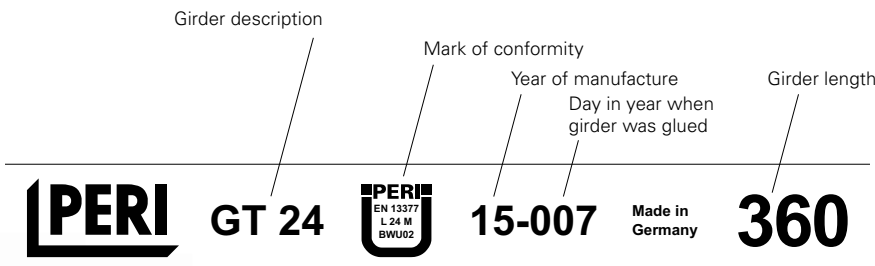
**The GT 24 Formwork Girder provides a high load-bearing capacity and rigidity. Through the use of the girder for wall, column, slab or special formwork, consequently both material quantities and workloads can be reduced.**

The cost-effectiveness of the GT 24 Formwork Girder is a result, in particular, of the long service life and reduced handling costs. The formwork girder provides a high load-bearing capacity and exceptional bending rigidity which bring decisive advantages in practical applications.

Compared to other 20 cm high formwork girders, the higher load-bearing capacity of the GT 24 results in fewer girders, steel walers or slab props for use in both wall and slab formwork. This means material and labour cost savings – with every use and on every construction site. Likewise, this applies to applications for more complex formwork operations, e.g. for infrastructure projects or special solutions.

GT 24	5.9 kg/m	<b>± 9 %</b>
VT 20	5.3 kg/m	<b>Weight</b> (production weight)
GT 24	28 kN	<b>+ 27 %</b>
VT 20	22 kN	<b>perm. bearing reaction</b>
GT 24	7 kNm	<b>+ 40 %</b>
VT 20	5 kNm	<b>perm. bending moment</b>
GT 24	887 kNm <sup>2</sup>	<b>+ 93 %</b>
VT 20	460 kNm <sup>2</sup>	<b>Bending rigidity</b>

A specific comparison confirms that the GT 24 Lattice Girder has a much higher load-bearing capacity and bending rigidity than the VT 20 Girder Formwork at the same weight.



The 24 cm high formwork girder is available in standard lengths from 0.90 m to 6.00 m in 30 cm increments with extra-long lengths up to 17.85 m on request. The girder is classified in Girder Class L 24 according to EN 13377:2002 (D).



Future viability as well as ecological and economic sustainability have a high priority for all PERI business activities. Procurement therefore takes place in accordance with ecological sustainability; The timber processed at PERI, for example, is predominantly sourced from certified growing regions.

**Particularly high load-bearing capacity**

with a 24 cm overall height and lattice construction for heavy loads and wide spans

**Long-lasting durability**

through its robust design and girder nodes with mini-dovetail jointing

**Practice-oriented**

through its proven design which simplifies the connection of site accessories



The Certificate of Conformity confirms that the GT 24 Girder corresponds to the technical rules of DIN EN 13377.



The girder nodes with mini-dovetail jointing guarantee the durability of the GT 24 Lattice Girder. The struts penetrate the chords along the whole cross-section and there are practically no cavities which could collect and hold moisture.



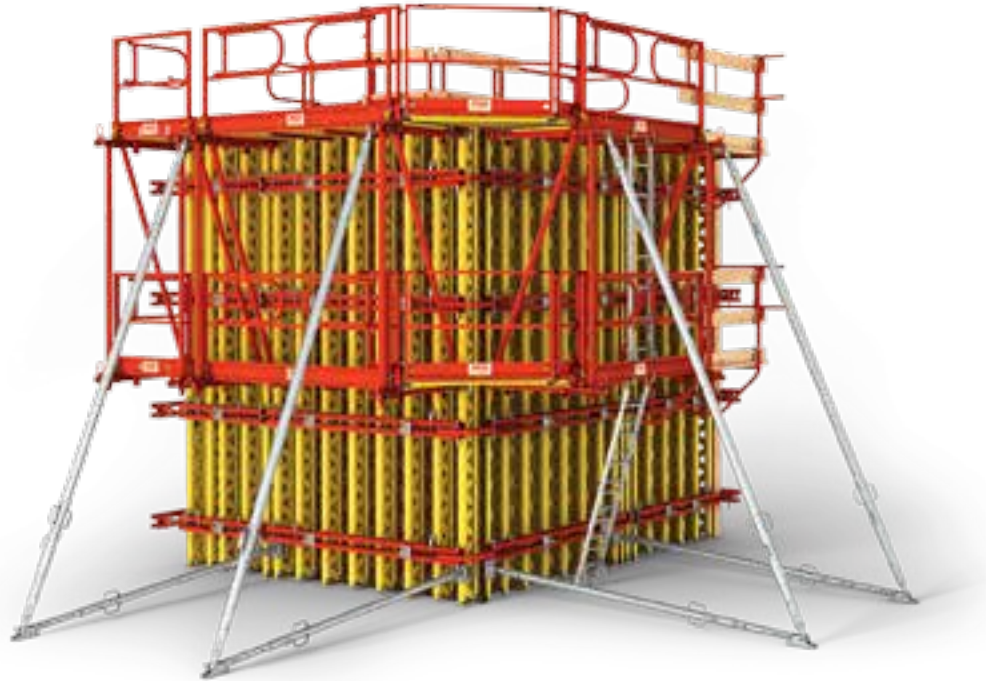
## The GT 24 Formwork Girder

Strong and cost-effective for use in wall and column formwork

**The GT 24 Formwork Girder is a central component of the proven VARIO GT 24 girder wall formwork system.**

Pre-assembled standard elements with 21 mm formlining are available for normal applications and have been designed for a permissible fresh concrete pressure of up to 60 kN/m<sup>2</sup>. Alternatively, customized and optimized large-sized elements can be planned and assembled on the basis of the VARIO GT 24 Girder Wall Formwork.

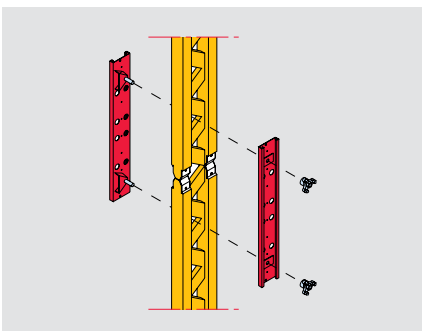
Particularly high elements can also be created with the extension splice. Likewise, special requirements regarding anchor and joint arrangements – for example, in architectural concrete projects – are easy and simple to realize using the girder wall formwork.



Standard elements can be extended up to a maximum of 8.00 m by means of the Extension Splice 24; larger heights are possible using additional overlap girders. The Extension Splice is connected through the lattice work without having to drill the girders.

For this structure, up to 14 m high walls in architectural concrete quality were constructed with VARIO GT 24 Girder Wall Formwork. The use of self-compacting concrete and the large concreting heights made it necessary to configure the wall formwork to handle a concrete pressure of 120 kN/m<sup>2</sup>.

For a sewage treatment plant, the straight wall sections were safely and quickly constructed with the VARIO GT 24 system. All formwork elements were equipped with complete platform systems.





These project-specific 14 m high VARIO elements were designed for a fresh concrete pressure of 150 kN/m<sup>2</sup> and covered using large-sized Fin-Ply Maxi plywood formlining.





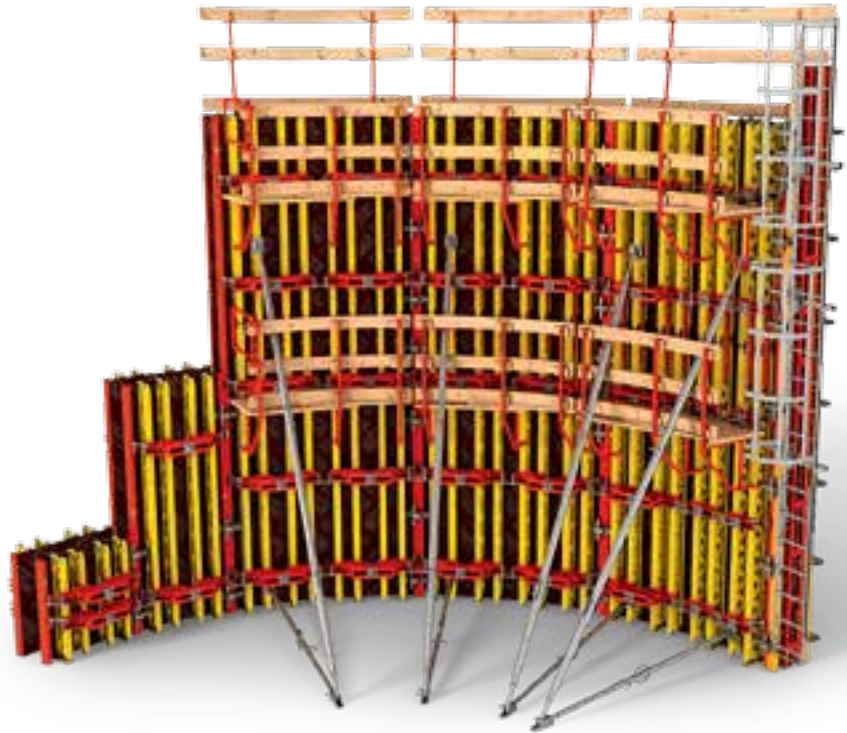
## The GT 24 Formwork Girder

Strong and cost-effective for use in wall and column formwork

**The GT 24 Formwork Girder is also used as the main component for the RUNDFLEX and GRV systems. With this circular formwork, sewage treatment plants, spiral ramps for multi-storey car parks, silos and other structures with a wide range of curvatures can be realized.**

RUNDFLEX functions with pre-assembled standard elements which can be quickly and continuously adjusted to suit any required radius (for a wall inner radius from 1.00 m).

GRV Circular Formwork, on the other hand, is characterised by the fact that circular structures can be realized without requiring any anchors. Because with this system, the fresh concrete pressure is accommodated by means of the ring tension forces in the walers of the external elements and the ring compressive forces in the walers of the internal elements.



3.60 m high RUNDFLEX formwork for construction of a sewage treatment plant with an internal wall radius of over 13.50 m.



The self-cleaning adjusting spindles of the RUNDFLEX formwork are easily adjusted to suit the required curvature by means of a ratchet spanner.



GRV is the circular formwork solution without ties and can be used for all radii. By means of the articulated connections of the GRV walers, small radii of 0.90 m can also be formed.





**Column formwork is to be designed to accommodate relatively high fresh concrete pressures as comparatively small cross-sections are concreted quickly. The GT 24 Formwork Girder with its high load-bearing capacity is used in various column formwork systems.**

The VARIO GT 24 Column Formwork is always a project-specific solution consisting of formwork girders, steel walers and selected formlining. It can be adapted to suit every cross-section, concreting height and required fresh concrete pressure. Architectural concrete requirements can also be optimally fulfilled with VARIO GT 24.

VARIO standard components and articulated walers as well as tie sets are used for the VARIO QUATTRO. The formwork can be moved as a complete unit in one crane lift and provides high-quality concrete finishes with sharp or chamfered edges.



For VARIO GT 24 Column Formwork, VARIO standard components as well as wedges and tie yokes are used. As a result, large-sized columns can be formed.

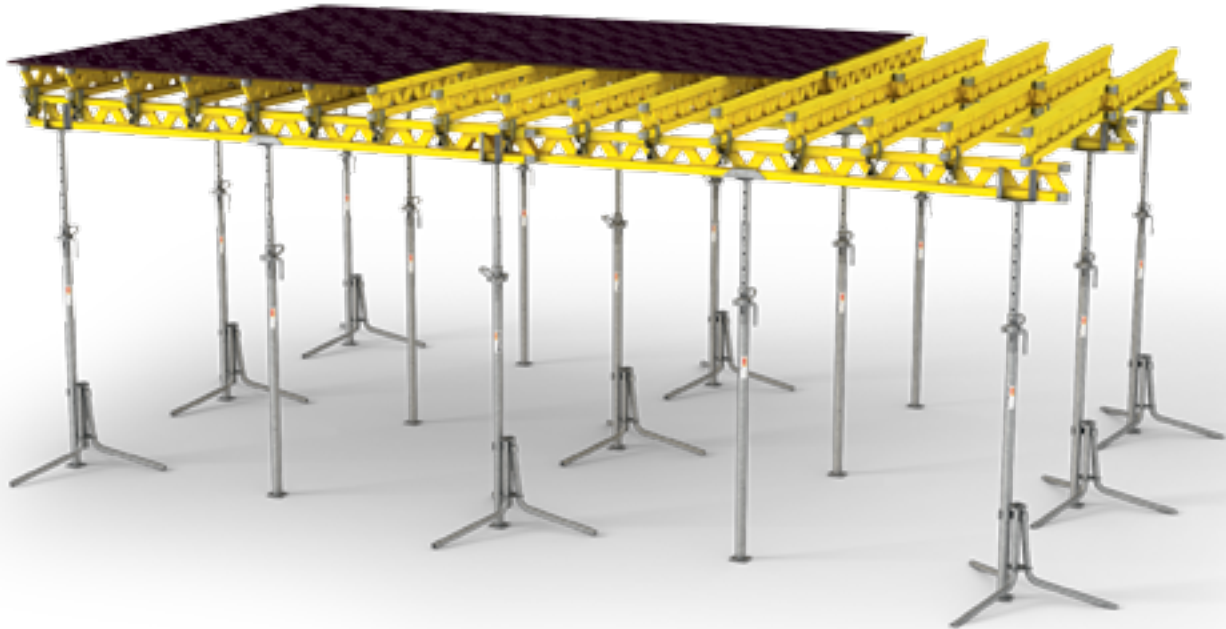


The VARIO QUATTRO Column Formwork can be moved as a complete unit by crane. The high load-bearing, articulated walers allow cross-sections of up to 1.20 m x 1.20 m.



## GT 24 Formwork Girder

Strong and cost-effective for use in slab formwork



**The MULTIFLEX girder slab formwork system is the flexibly adaptable solution for any ground plan and height. In the process, the use of the GT 24 Lattice Girder allows large spans and thus reduces the number of individual components required. The GT 24 is also the right solution for slab tables or special solutions for transferring horizontal loads.**

The high load-bearing capacity of the GT 24 Formwork Girder increases the cost-effectiveness of the slab formwork; in addition, the few system components simplify all shuttering and striking procedures as well as the logistics.

With MULTIFLEX, every slab thickness, any ground plan and all floor heights can be formed. Thereby, the GT 24 allows large spans which thus reduces the number of components to be moved.

Specifically planned formwork solutions are required in the case of more complex shapes, such as curved slab surfaces. Here, the advantages of the GT 24 Girder come to the fore.





The MULTIFLEX Slab Formwork - configured with GT 24 Formwork Girders – supports the formwork for a "network" of architectural concrete balconies which later supports a prefabricated slab.



Slab tables with GT 24 Girders and steel walers can be planned and assembled according to specific geometries. The units can be quickly moved with the help of a transportation fork.



In particular, for large slab thicknesses and high loads, slab tables are configured with the high load-bearing GT 24 Formwork Girders.

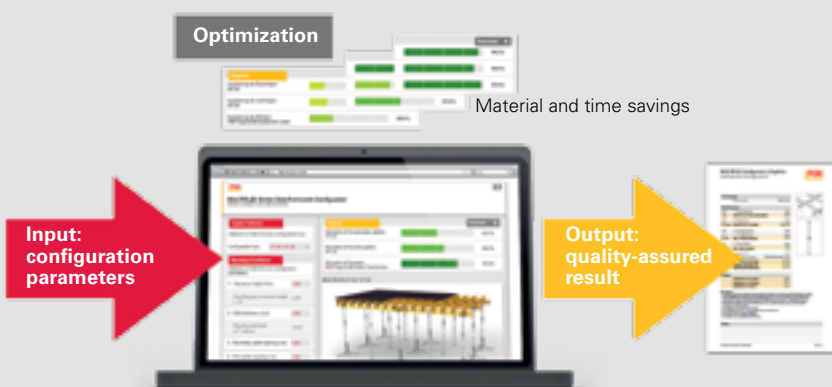
## The MULTIFLEX App

**Formwork girders and slab props or shoring can be used in a wide range of combinations with MULTIFLEX Slab Formwork. With the MULTIFLEX configurator, the user can quickly and easily optimize the girder/prop spacings as well as the props.**

The MULTIFLEX configurator determines the maximum possible main beam spacing according to the required girder combination and taking into consideration the clear room height, slab thickness and cross beam spacing. After entering the selected main beam as well as prop spacing, the tool proposes possible prop types together with the respective permissible prop loads.

As a result, the app also very clearly shows the utilization rates of the cross beams/main beams and props.

Through the selection of different girder combinations, main beam and prop spacings, the app can quickly and easily determine the optimally-utilized configuration of the MULTIFLEX.



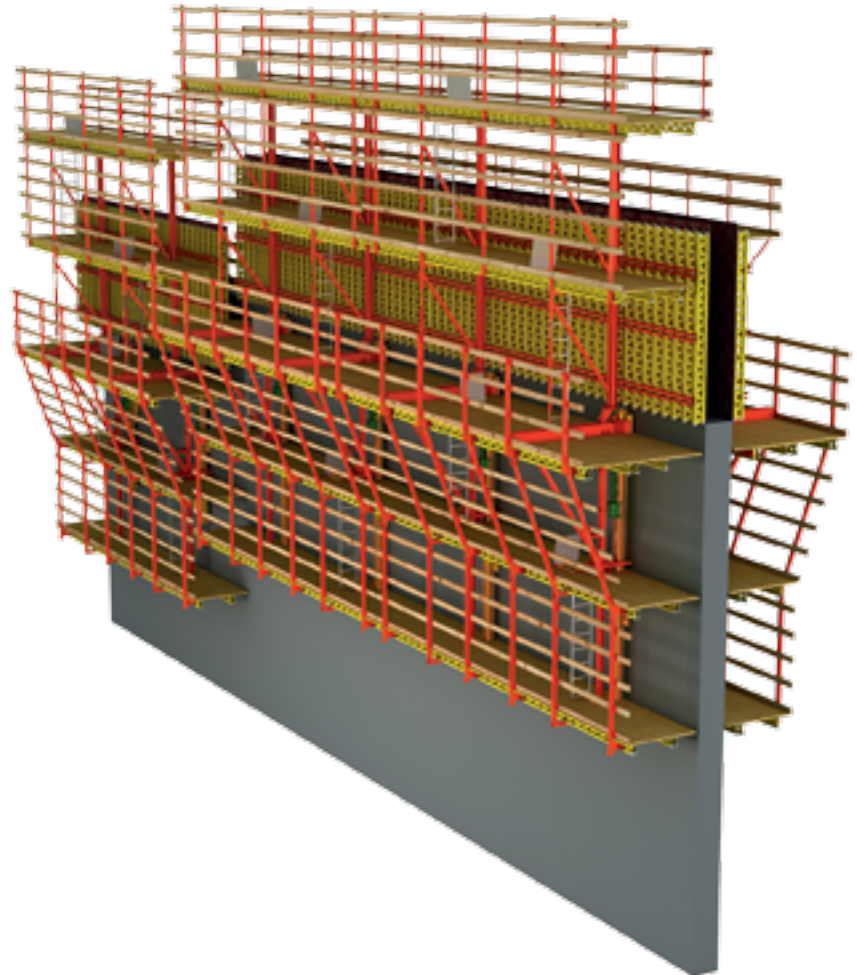


## GT 24 Formwork Girder

Strong and cost-effective for use with climbing solutions and civil engineering structures

**GT 24 Formwork Girders are frequently used for climbing systems – with crane-movable platforms as well as hydraulically operated self-climbing systems.**

Climbing systems are used for the construction of vertical as well as inclined structural elements at great heights, e.g. high-rise building walls, bridge piers and dams. In addition to simple scaffold platforms, there are other different climbing systems whereby brackets, platforms and formwork are connected to form securely mounted and movable units. Thereby, the GT 24 Formwork Girder is used very frequently for vertical formwork as well as for the execution of working platforms and platforms.



The VARIO GT 24 Girder Wall Formwork in combination with the RCS Rail Climbing System for the construction of elevator and stairwell shafts.



RCS and CB Climbing Formwork, together with the VARIO GT 24, formed the ideal climbing combination for constructing the two bridge pylons.

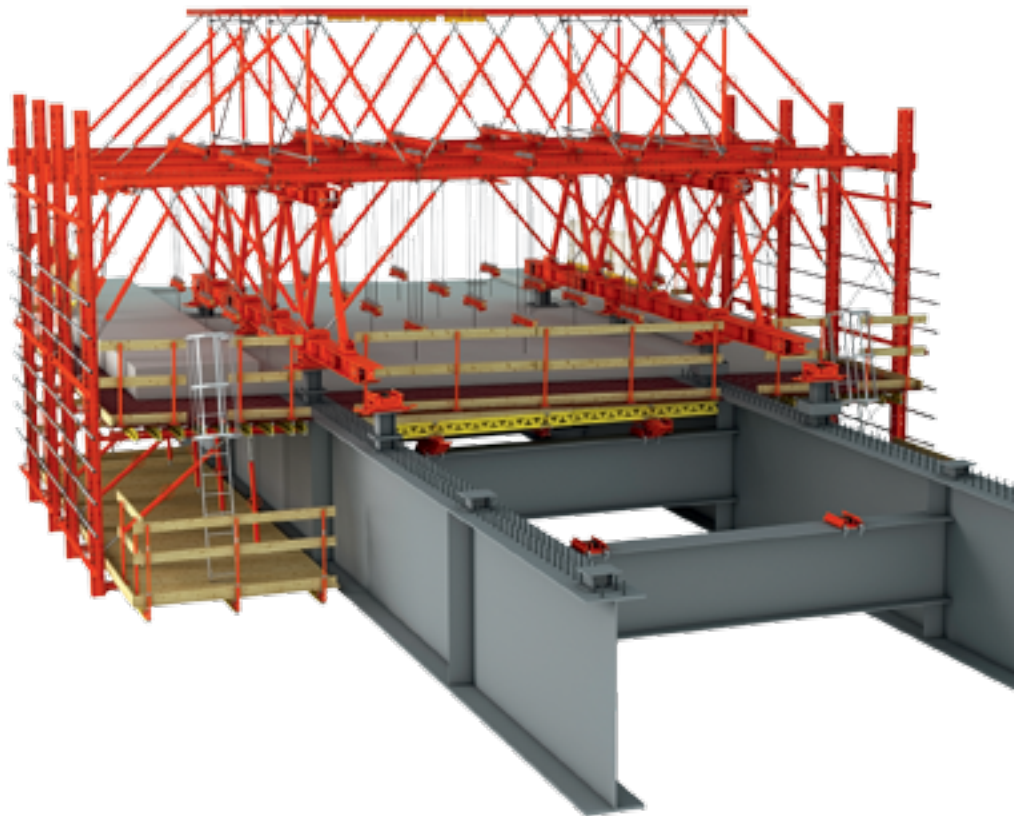


Due to the oblique-angled building corners, project-specific corner platforms were used here; load-bearing GT 24 Formwork Girders provided the support for the decking.



**In tunnel and bridge construction, almost exclusively one-offs are realized. For project-specific formwork solutions, the GT 24 Formwork Girder is used in numerous positions to provide load-bearing support for the formlining or as a sub-structure for working platforms.**

In the case of infrastructure projects, high loads in particular must be transferred and individual formwork solutions have to be planned and adapted. Here, the advantages of the GT 24 Formwork Girder with a particularly high load-bearing capacity come to the fore.



Heavy-duty shoring supports obliquely arranged VARIO GT 24 Girder Formwork. The result is a huge inclined pier for a new motorway bridge.



The construction of the superstructure formwork and falsework for this foreland bridges is based on the flexible VARIOKIT and PERI UP modular construction systems. GT 24 Formwork Girders form the sub-structure for the formlining.



For applications in tunnel construction, the GT 24 Formwork Girder allows the realization of particularly high load-bearing tunnel formwork carriages.





## GT 24 Formwork Girder

Strong and cost-effective for use with special formwork and project-specific solutions

**For the construction of complex, multi-curved reinforced concrete components, PERI provides customized free-form formwork. Based on a 3D building model, the formwork units from PERI are individually planned and assembled. On site, the formwork units can subsequently be easily assembled following a similar process to that of a system formwork.**

With freeform formwork, the highest architectural demands on geometries and surfaces can be realized. Such one-off pieces are extremely cost-effective due to a high proportion of standard elements taken from the PERI portfolio. In the process, the statically load-bearing elements are based on VARIO GT 24 Girder Wall Formwork. After use and dismantling, the system components can be used for other applications.



The Galileo Satellite Control Centre in Oberpfaffenhofen near Munich is an extraordinary architectural concrete structure: the hall is dominated by three inclined reinforced concrete towers over 9 m high. PERI planned and delivered the formwork units according to schedule and in the best quality. On site, a maximum of precision forming and an excellent surface finish was achieved.







© Hufton + Crow

The Aquatics Centre is characterized by its bold designs and extraordinary architectural concrete quality. The water sport facility was constructed for the 2012 Summer Olympic Games. For this, PERI planned, produced and delivered more than 200 customized formwork units realized using a 3D design which could then be exactly positioned and assembled together on the construction site. All formlining that came into contact with the concrete was taped so that maximum architectural concrete quality could be achieved. No rivet and screw impressions are visible on the final concrete surfaces.



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## GT 24 Formwork Girder

Strong and cost-effective for use with special formwork and project-specific solutions



The extraordinary Museum of Tomorrow was constructed in Rio de Janeiro. A customized formwork and scaffolding solution with 3,500 project-specific special formwork elements ensured that this structure was realized within the specified time-frame and on budget.

The assembly plans and data provided the basis for the dimensionally accurate CNC-controlled cutting of the formwork units and final assembly of the elements – for which approx. 60,000 m<sup>2</sup> of chip-board were processed.





### Services provided by PERI formwork assembly

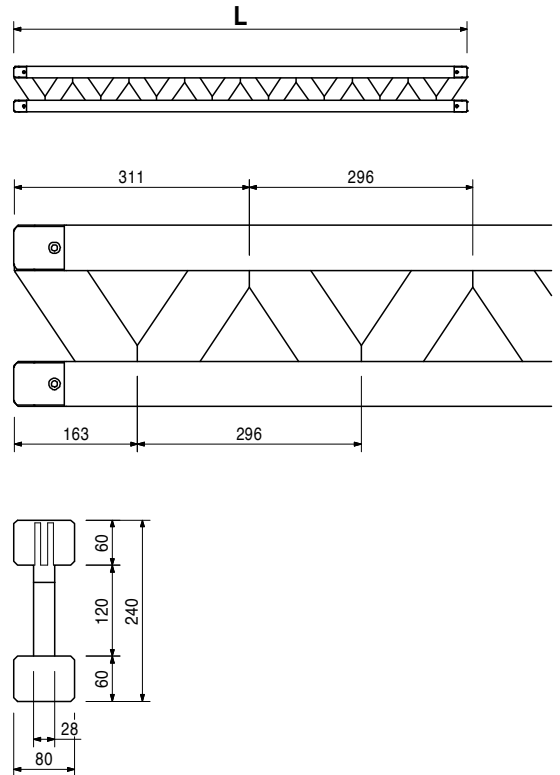
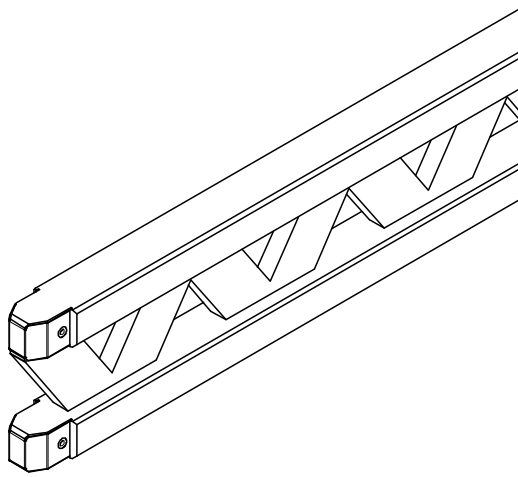
- Customized panel cutting
- Production and delivery of reveals, box-outs according to individual requirements (shape, formlining and on-site material requirements).
- Factory-made preparation of complete formwork elements matched to suit the structural requirements and individual construction planning.
- Supervisor available on-site with the aim of qualifying personnel in the handling of PERI products in order to increase efficiency and safety levels.
- Dismantling of formwork elements used at a fixed price: to reduce the workload of site personnel and reduce crane requirements and storage space.





# GT 24 Formwork Girder

Item no.	Weight kg		L
		<b>Girders GT 24</b>	
075100	5.300	<b>Girder GT 24, l = 0.90 m</b>	918
075120	7.100	<b>Girder GT 24, l = 1.20 m</b>	1214
075150	8.900	<b>Girder GT 24, l = 1.50 m</b>	1510
075180	10.600	<b>Girder GT 24, l = 1.80 m</b>	1806
075210	12.400	<b>Girder GT 24, l = 2.10 m</b>	2102
075240	14.200	<b>Girder GT 24, l = 2.40 m</b>	2398
075270	15.900	<b>Girder GT 24, l = 2.70 m</b>	2694
075300	17.700	<b>Girder GT 24, l = 3.00 m</b>	2990
075330	19.500	<b>Girder GT 24, l = 3.30 m</b>	3286
075360	21.200	<b>Girder GT 24, l = 3.60 m</b>	3582
075390	23.000	<b>Girder GT 24, l = 3.90 m</b>	3878
075420	24.800	<b>Girder GT 24, l = 4.20 m</b>	4174
075450	26.600	<b>Girder GT 24, l = 4.50 m</b>	4470
075480	28.300	<b>Girder GT 24, l = 4.80 m</b>	4766
075510	30.100	<b>Girder GT 24, l = 5.10 m</b>	5062
075540	31.900	<b>Girder GT 24, l = 5.40 m</b>	5358
075570	33.600	<b>Girder GT 24, l = 5.70 m</b>	5654
075600	35.400	<b>Girder GT 24, l = 6.00 m</b>	5950





**The optimal System  
for every Project and  
every Requirement**



**Wall Formwork**



**Column Formwork**



**Slab Formwork**



**Climbing Systems**



**Bridge Formwork**



**Tunnel Formwork**



**Shoring Systems**



**Construction Scaffold**



**Facade Scaffold**



**Industrial Scaffold**



**Access**



**Protection Scaffold**



**Safety Systems**



**System-Independent  
Accessories**



**Services**



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