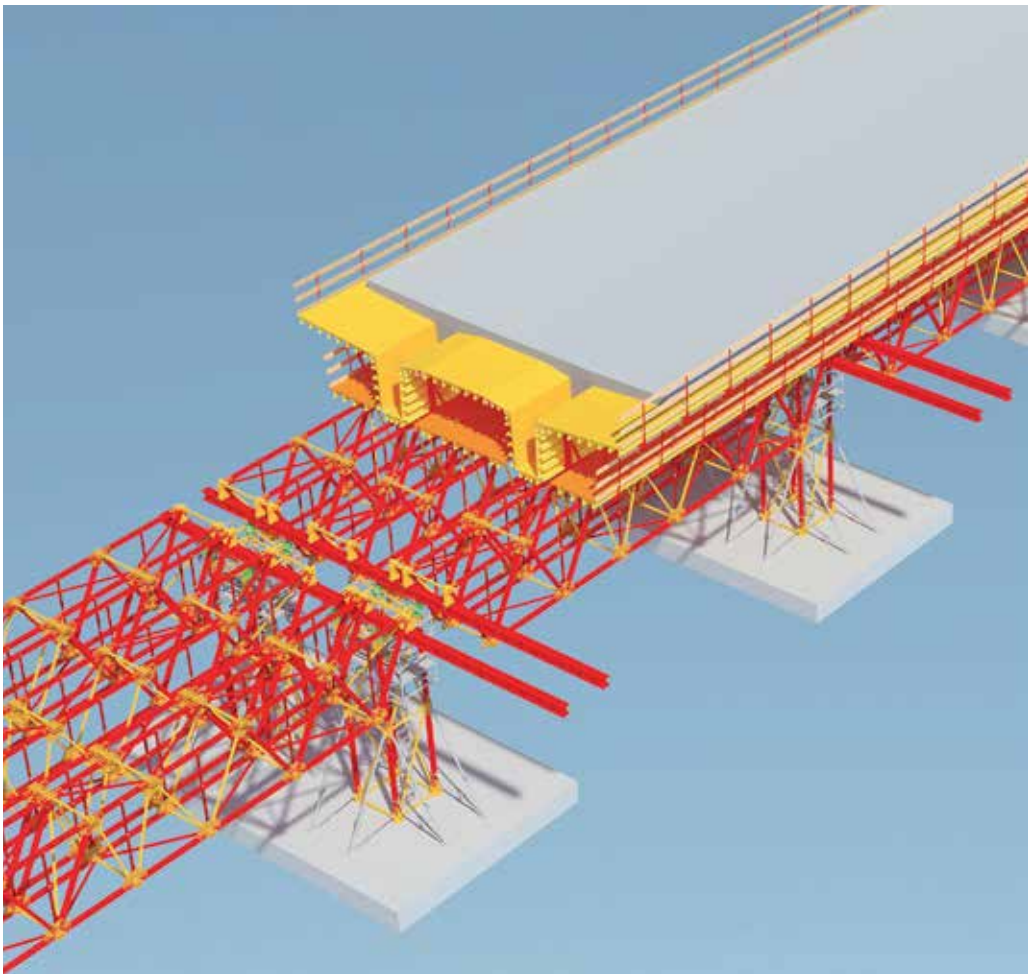
ALPHAKIT

The easy to handle shoring construction kit for truss girders, shoring towers and pedestrian bridges

Product Brochure – Issue 04/2019



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Issue 04/2019

Publisher

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Project examples
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Important information

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

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. To ensure 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 still be available. Please note that 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.

ALPHAKIT

The easy to handle shoring construction kit for truss girders, shoring towers and pedestrian bridges

ALPHAKIT is the new construction kit for shoring solutions up to 30 m height and bridging spans of 27.75 m. The system makes an impressive case due to its fast assembly procedure thanks to the proven fitting pin connections.

With only a few individual and lightweight components along with fast assembly operations, ALPHAKIT provides a high level of efficiency when installing truss girders, shoring towers and pedestrian bridges.

Thanks to the innovative, constructive solution, the 2.62 m long ALPHAKIT Steel Waler only weighs 44 kg. Complete girder packages and towers can be pre-assembled on the ground by hand. This considerably reduces crane requirements. It is only then required for erecting towers and flying in the girder packages.

In contrast to conventional solutions which feature numerous bolt connections, Fitting Pins are the main connecting means for the ALPHAKIT.

Most connections are made by means of 2 Fitting Pins which in turn considerably reduces the workload.

Simple bracing solutions ensure that horizontal forces are transferred through the entire shoring construction down to the foundations. The transfer of horizontal loads is taken into account in all shoring applications.

PERI product development gave the highest priority to achieving a reduced number of different components, e.g. through the same profiles for truss girders, shoring towers and pedestrian bridges. With this load class, PERI has complemented its shoring portfolio also regarding medium-heavy bridge construction.

Easy pre-assembly without a crane
with easy to handle, lightweight individual components

Fast and safe assembly
due to high load-bearing connections with a maximum of 2 Fitting Pins and Cotter Pins per connection

Few core components
and a variable range of applications make the system simple and cost-efficient

Easy pre-assembly without a crane

With easy to handle, lightweight individual components

Due to the lightweight steel components, no crane is required for pre-assembling the towers and girder packages. Moreover, thanks to the light and thus ergonomic individual components, assembly can be completely carried out without any lifting gear, only by hand.

Efficient pre-assembly can be achieved by using just three workers. A crane is only required for the final assembly, such as the erection and flying in the towers and truss packages. Due to the lightweight towers and girder packages, a small crane capacity is sufficient for lifting purposes.

ALPHAKIT can be pre-assembled on the ground by hand without any crane assistance – only a minimum of space is required. As a result, the shoring system is also suitable for use on construction sites with limited space for assembly operations.

Pre-assembled girder packages can be temporarily stored on site using only a minimum of space until they are lifted to the next place of use.

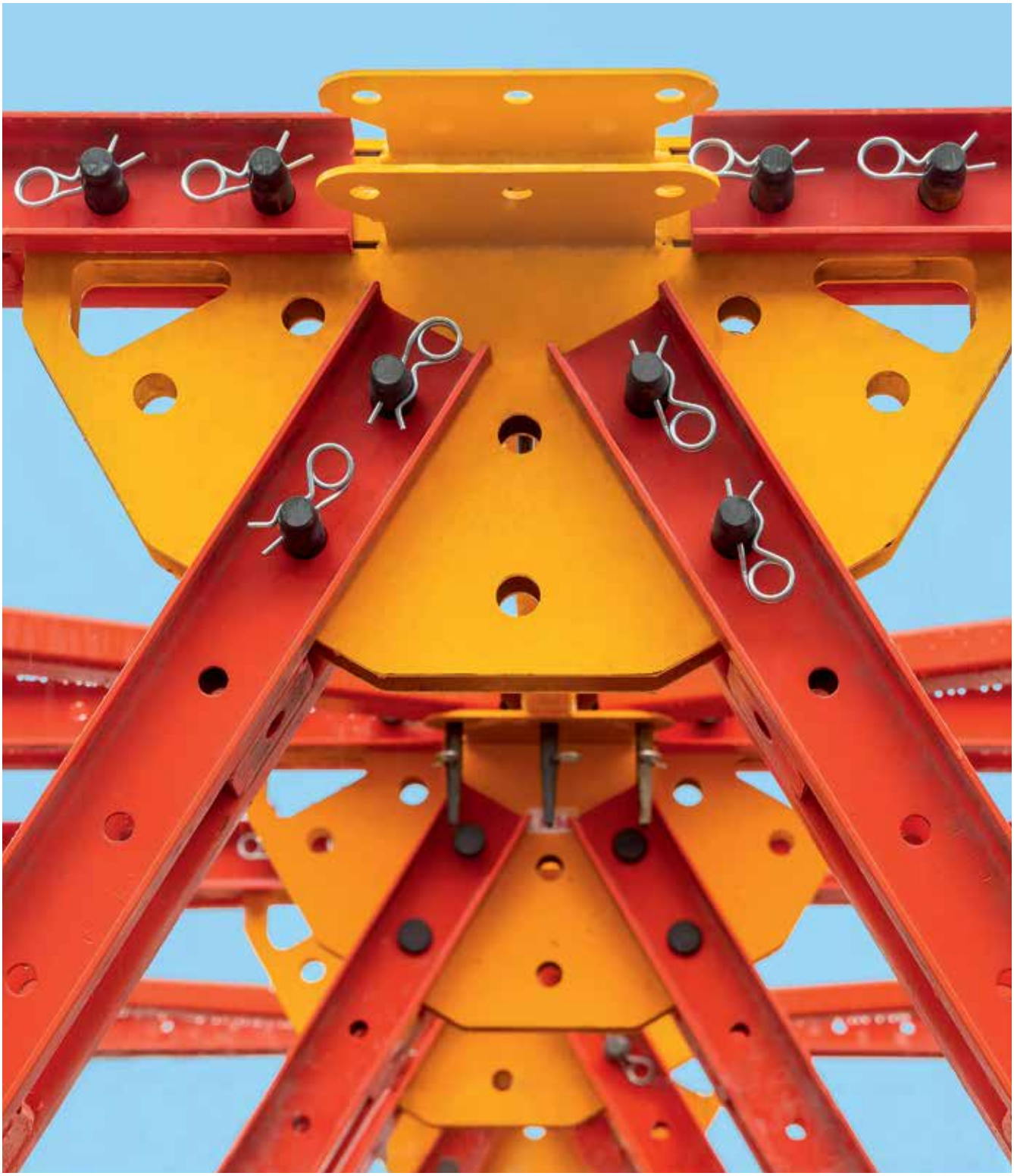
Handling the components requires a maximum of two workers.

Pre-assembled units can be delivered directly to the construction site.

The lightweight towers and girder packages do not have to be split into multiple units for lifting purposes.

Fast and safe assembly

High load-bearing connections with a maximum of 2 Fitting Pins and Cotter Pins per connection



The small number of Fitting Pins facilitates faster and safer assembly operations compared to assembly with bolt connections. The Fitting Pin connections secured using Cotter Pins can be easily and reliably inspected by means of a simple visual check.

Fast and safe assembly through integrated safety features in the system. The node connections of ALPHAKIT are realised by means of Fitting Pins. The use of a hammer is sufficient. Fitting Pins are secured quickly and easily with Cotter Pins. As a result, the connections are very easy and particularly fast with no need for time-consuming nuts and bolts.

The intuitive assembly procedure is further simplified by the shape of the self-centering Fitting Pins – making a mistake when connecting is thus almost impossible. A few hammer blows on the Fitting Pin and securing with a Cotter Pin is sufficient. No additional tools are required.

Connecting with a Fitting Pin and subsequently secured by a Cotter Pin always guarantees a secure connection. As a result, the assembled connections can be very easily and reliably inspected – through a simple visual check – without any auxiliary means.

The Fitting Pins can be re-used in the project without hesitation and are completely rentable – including Cotter Pins. Compared to conventional bolted connections, corrosion does not occur when using Fitting Pins.

The small gap of the Fitting Pin connections is determined by low truss deflection and small settlement of the towers.

When connecting the truss diagonals, only a total of 6 Fitting Pins are required as connection means.

Few core components

The variable range of applications make the system simple and cost-efficient

The completely modular ALPHAKIT system can be used extremely variably with just a few core components. The re-use of up to 70 % of the universal components ensures high utilisation rates and makes the system simple and cost-effective.

Due to the crane-free handling during pre-assembly along with a simple and quick familiarisation phase for the assembly team, the system is extremely effective.

Core components

Steel Waler

Fitting Pin Ø 32 with Cotter Pin

Fitting Pin Ø 21 x 120 with Cotter Pin

Tower components

Horizontal Posts

Diagonal Bracing

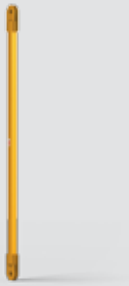
Vertical Connectors

Prop Base

Head Spindle

Truss components

Diagonal Bracing



Truss Diagonal

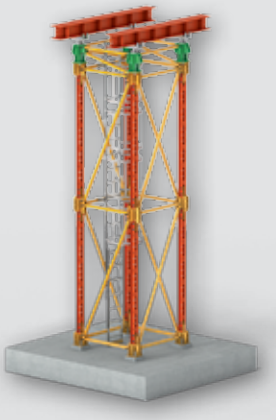
Chord Nodes

Support Chord Node

Support Node

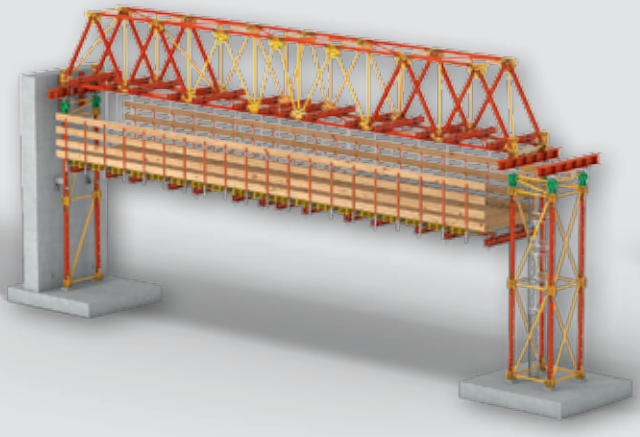
ALPHAKIT at a glance

Can be used with only a minimum of components for numerous applications

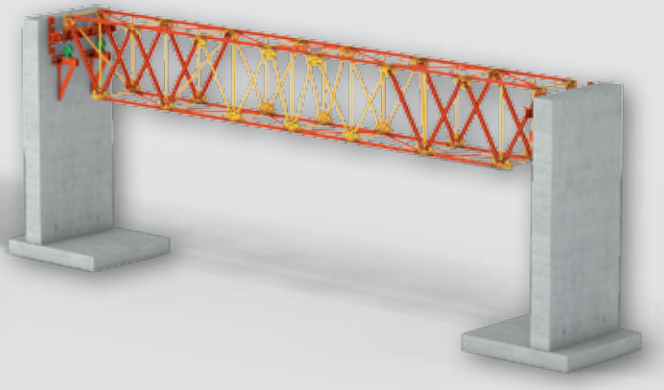


Free-standing tower

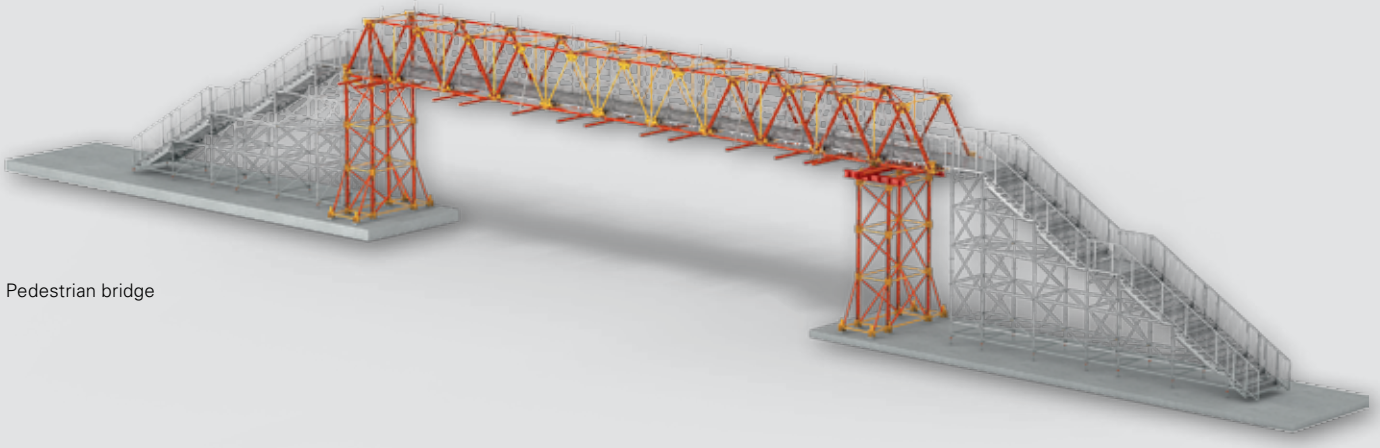
Tower with working platform



Truss girder at the top with suspended formwork



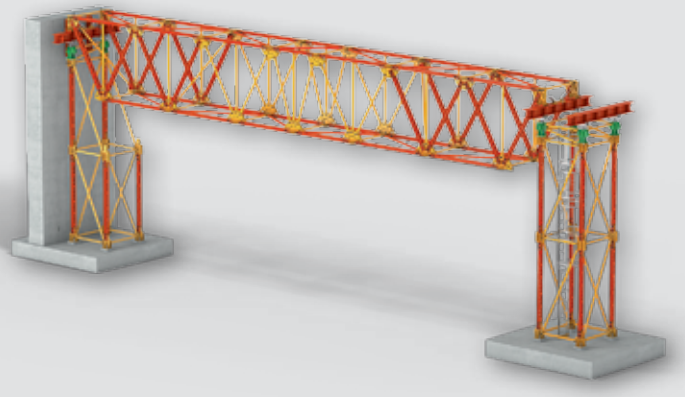
Truss girder mounted below supported on main beam brackets



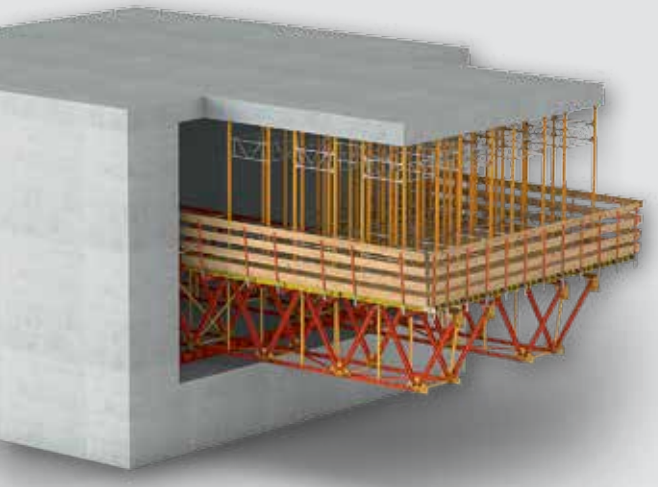
Pedestrian bridge

Tower restrained at the top

Tower section



Truss girder mounted below supported on towers



Cantilevered truss girder providing support for the formwork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Shoring towers with safe access solutions

Cost-effective tower applications for heights up to 30.00 m

The ALPHAKIT tower can transfer high loads from the formwork, in-situ concrete bridges and prefabricated parts as well as reinforced concrete structures. In the process, vertical loads of up to 300 kN per leg are permitted.

Height adjustments of +/- 75 mm are possible with the Head Spindle. If the Head Spindle is not loaded, it can be easily adjusted by hand. When under load, the hydraulic Unit HD allows controlled lowering and lifting of the Head Spindle.

The Hydraulic Unit HD consists of a lifting cylinder and hand pump. The manometer shows the pressure (bar) along with the direct force (kN). Only one Hydraulic Unit HD is required per tower.

The ladder facilitates safe access to the Head Spindle. It is quickly mounted – the ladder connection is simply inserted in the Horizontal Posts and secured with a wedge.

Areas of application of the ALPHAKIT towers

- Tower heights up to 30.00 m
- Shuttering and striking under load with the mobile Hydraulic Unit HD
- Height adjustments +/- 75 mm with the Head Spindle

Permissible vertical loads

- Up to 300 kN per leg

For anchoring the tower, the base point can be fixed in position with dowels.

The ladder provides safe access to the Head Spindle Ring.

If the Head Spindle is not loaded, it can be adjusted by hand.

Truss Girders

The lightweight shoring solution for large spans and high load-bearing capacity

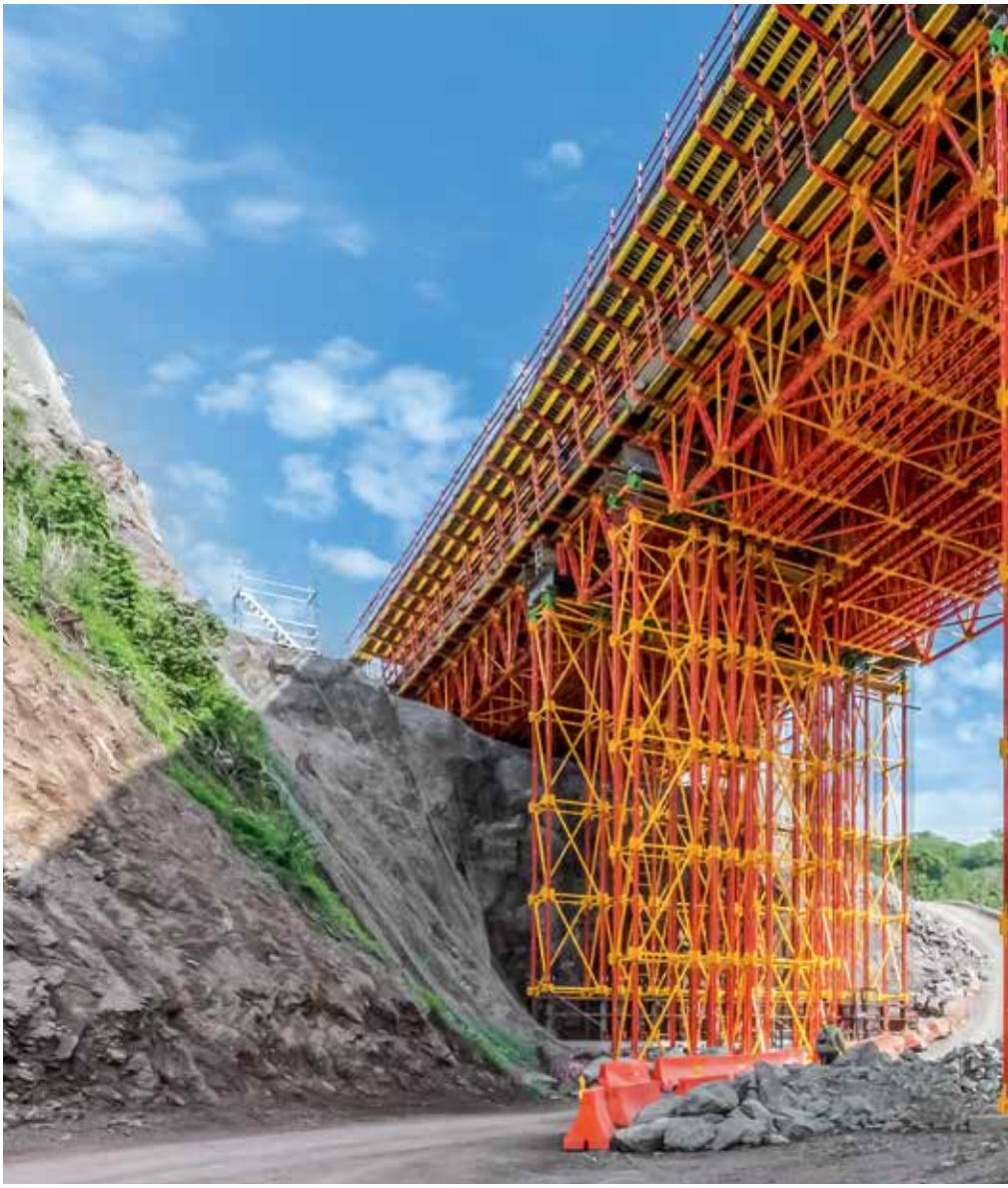
The ALPHAKIT Truss Girder serves to transfer loads from in-situ concrete or prefabricated components in bridge and building construction.

In addition to the shoring tower, the Truss Girder can also be supported on a main beam bracket or Steel Waler. As a result, temporary support can be cost-effectively realized with the help of Truss Girders also, for example, in industrial and cultural building construction.

The Cross Diagonals of a truss girder package provide additional bracing serve between the top and bottom chords in addition to the braced areas.

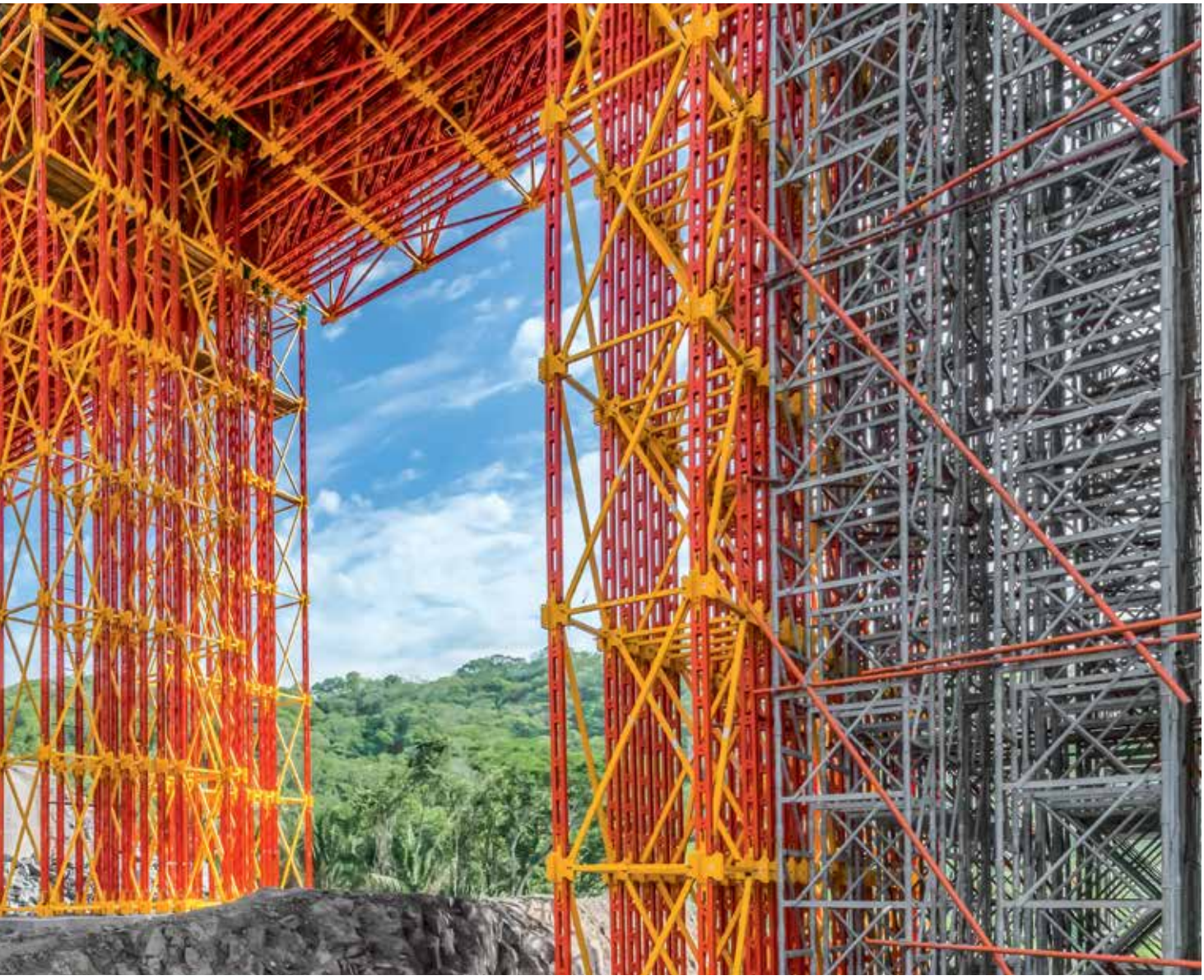
Areas of use of ALPHAKIT Truss Girders
- Span widths up to 27.75 m

Permissible bending moment of a Truss Girder Frame
- up to 800 kNm



If a Cross Diagonal is mounted on the chord nodes, 2 bolted connections can be used instead of Fitting Pins.

For moving with the crane, suitable 4-sling lifting gear is used whereby low crane capacity is sufficient.



For a larger drive-through height, the Truss Girder can also be used horizontally at the top.

For high girder positions, without any possibility of positioning the towers, the Main Beam Bracket can also be used as a girder support.

Pedestrian Bridges

Safe pedestrian crossing for temporary bridging

In the centre section of the Truss Girder, only 7 fitting pin connections are required which also reduces assembly time and effort as well as saving weight.

In order to ensure accessibility, the horizontal bracing is mounted on the outside of the pedestrian bridge by means of a simple, clever solution.

In addition to the usual VARIO Wall Formwork components, PERI UP components can also be used for the decking.

The ALPHAKIT pedestrian bridge serves as temporary shoring for allowing pedestrians to cross an obstruction.

When using ALPHAKIT as a pedestrian bridge, spans with a single-span width of up to 28.75 m can be realised. With temporary centre support, the system´s width can be flexibly adjusted and expanded. PERI UP can be used as decking and guardrails.

Areas of application of the ALPHAKIT pedestrian bridge

- Max. length single span: 28.75 m
- Standard width: 2.5 m
- Standard height: 2.5 m (constructively)

Secure access solution through the combination with PERI access technology.

ALPHAKIT in use

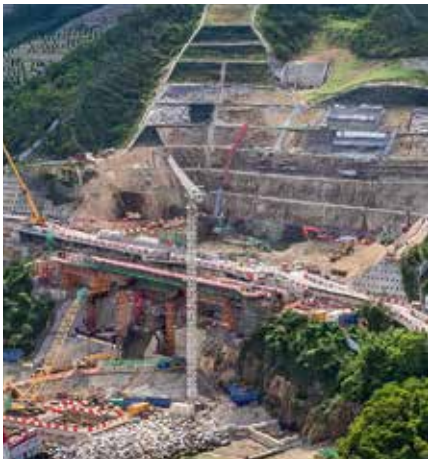
ALPHAKIT in use

Las Truchas, Mexico

Ponte Rio do Salto, Brazil

Elevated Metro Line, Hyderabad, India

Circunvalación – Río Suquia, Argentina



The Board of Management of the Chinese Permanent Cementeries (BMCPC) Footbridge, New Territories, Hong Kong

Cultural Center Gabriela Mistral (GAM), Chile

The optimal System for every Project and every Requirement

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Slab Formwork

Climbing Systems

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