

SHOULDERING LOADS

ALPHAKIT



ALPHAKIT Shoring Con- struction Kit

ALPHAKIT is the easy-to-handle shoring construction kit for heavy-duty truss girders, shoring towers and pedestrian bridges.

This practical modular system is ideal for medium-duty bridge construction and provides you with lightweight individual components with a sophisticated design. The ALPHAKIT Steel Waler weighs only 44 kg at a length of 2.62 m, and can even be carried on one person's shoulder if required. With a maximum load-bearing capacity of 300 kN, the relative performance of the steel waler is comparatively unique. The small number of core components also gives you a wide range of application options and makes the system simple and cost-effective.



ALPHAKIT impresses with its particularly quick and easy assembly process, enabling you to pre-assemble the small number of lightweight components by hand and on the ground, without the need for lifting equipment. This reduces crane occupancy times and crane capacity and ensures high efficiency on your construction site. The crane is only needed to erect the towers and fly in the girder packages.

In contrast to conventional solutions with many screw connections, ALPHAKIT fitting pins are the main means of connection. This means that most connections are made using two fitting pins and one cotter pin per connection, which significantly reduces the amount of labour and manpower required.

Simple bracing solutions ensure that the horizontal forces are transferred through the entire shoring structure to the foundations. The transfer of horizontal loads is taken into account in all shoring applications without restriction.



Low number of core components

ALPHAKIT offers you a particularly simple and cost-effective system for your construction site with just a few versatile core components. The components are also intuitive to use, enabling you to get your fitters up to speed quickly. This makes the system particularly safe and efficient in equal measure.

Simple pre-assembly without a crane

Due to the low weight of the steel components, you will not need a crane for the pre-assembly of the towers and girder packages. You can assemble the components entirely by hand – without any lifting equipment. No more than two people are required for the handling process. You will only need a crane for the final assembly stage, which involves erecting and flying in the towers and girder packages.

Compact solution for confined spaces

Pre-assembly takes up very little space. This also makes the system suitable for use on construction sites where space is limited. Alternatively, pre-assembled girder and tower packages can be delivered directly to the construction site. The ability to reuse up to 70% of the universal components also ensures extremely low logistical costs.

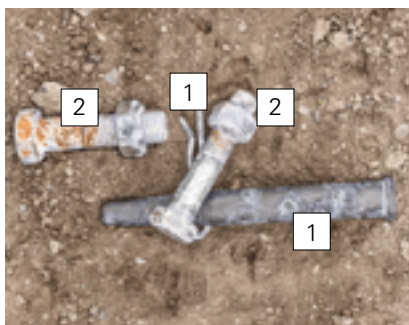
You can find more information here.



Heavy-duty connections



The node connections are made with self-centring fitting pins that can be fitted quickly and easily with a hammer. You do not need any additional tools. The bolts are then secured with cotter pins, eliminating the need for time-consuming screwing work.

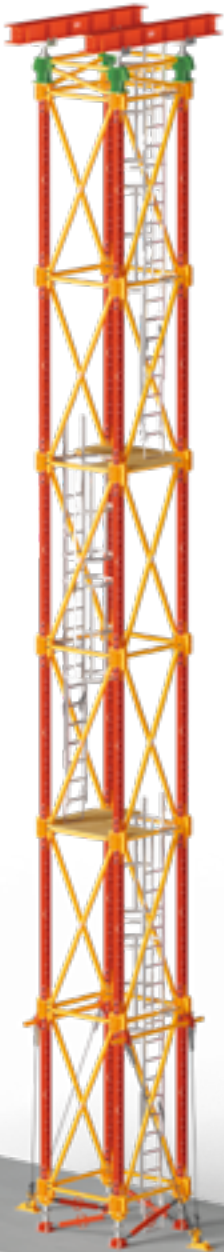
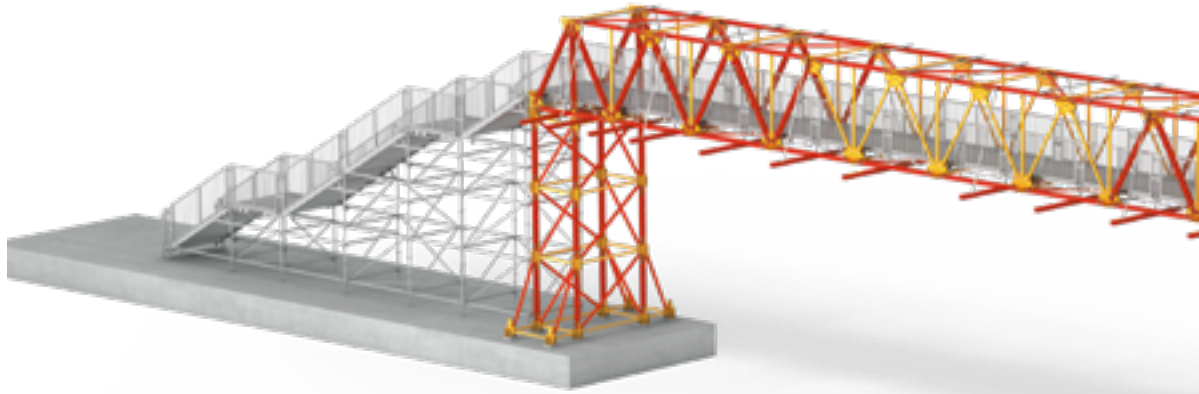


The fitting pins (1), including cotter pins (1), can be reused throughout the project without hesitation and are rentable in their entirety. Compared to conventional screw connections (2), corrosion does not occur when using fitting pins.



A fitting pin connection featuring a cotter pin ensures a secure connection. This allows the installed units to be checked easily, quickly and reliably by way of a simple visual inspection without any tools.

Numerous application options



Shoring towers with safe access solutions

The ALPHAKIT Tower can transfer high loads from the formwork, in-situ concrete bridges, precast concrete elements and steel structures. Vertical loads of up to 300 kN per standard are permissible. With the Hydraulic Unit HD, the Headspindle Spacer Block ATS can be raised and lowered even under full load. This means that height corrections brought about by settlement, for example, can be carried out very easily. The Hydraulic Unit HD consists of a lift cylinder and hand pump. You can read both the pressure [bar] and the force [kN] on the pressure gauge. You only need one Hydraulic Unit HD for each tower. In addition, the ladder provides you with safe access to the head spindles and also impresses with its quick assembly process. To do this, simply attach the ladder connector to the horizontal posts and secure it with a wedge.



Tower heights of up to 30.00 m

Shuttering and striking under load with the mobile Hydraulic Unit HD

Height adjustments of +/- 75 mm with the head spindle

Permissible vertical loads up to 300 kN per standard

Pedestrian bridge

The ALPHAKIT Pedestrian Bridge serves as temporary shoring to allow access by site personnel and passers-by. When using the ALPHAKIT as a pedestrian bridge, you can realise single-span widths of up to 28.75 m.

The system can be easily adapted in terms of length and extended with intermediate supports. What's more, the system can be easily combined with the components of the established PERI UP Scaffolding Kit to provide safe walkway decking and lateral protection.



Max. length of single span: 28.75 m

Standard width: 2.5 m

Standard height: 2.5 m (constructively)

Heavy-duty truss girders

The ALPHAKIT Truss Girder serves to transfer loads from in-situ concrete or prefabricated components in bridge and building construction. The heavy-duty truss girder can be supported on a mainbeam bracket in addition to the shoring tower. This provides you with an extremely economical temporary bridging solution for industrial and cultural buildings. Together with the horizontal chord bay between the top and bottom chords, the cross diagonals form a secure bracing system for the heavy-duty truss girder packages.



Spans of up to 27.75 m

Permissible bending moment of a truss girder frame of up to 800 kNm



Reference projects



Ponte de Lucefe | Portugal

Mota-Engil Engenharia e Construção S.A., Lisbon

Not far from Alandroal, the Lucefece Bridge spans a distance of 664 m at a height of 25 m. As part of the project to modernise the Évora railway line between Freixo and Alandroal, the section is designed not only to simplify logistical operations between Portuguese ports and the rest of Europe, but also to improve the passenger transport situation. The ALPHAKIT Shoring Construction Kit proved its worth in this construction project on account of its positive attributes. For instance, it could be adapted perfectly to the varying features of the viaduct, which ranges in height from 12 to 25 m. The system's straightforward handling process also resulted in fast assembly and erection times, thereby significantly reducing the workload. And let's not forget the other advantage of the lightweight system components: These could be pre-assembled without a crane, thereby minimising crane deployment times on the construction site.



“By using this innovative, modular shoring, it was possible to adhere to the concreting cycles specified in the construction site plan. It led to a reduction in the movement of materials, and allowed us to systemise the work processes. We achieved a higher level of labour productivity as a result, which enabled us to complete the works on time and to a high standard.”

Manuel Lopes, Site Manager
Mota-Engil Engenharia e Construção S.A., Portugal



Čortanovci Viaduct | Serbia

RZD International, Moscow, Karin Komerc MD, Veternik

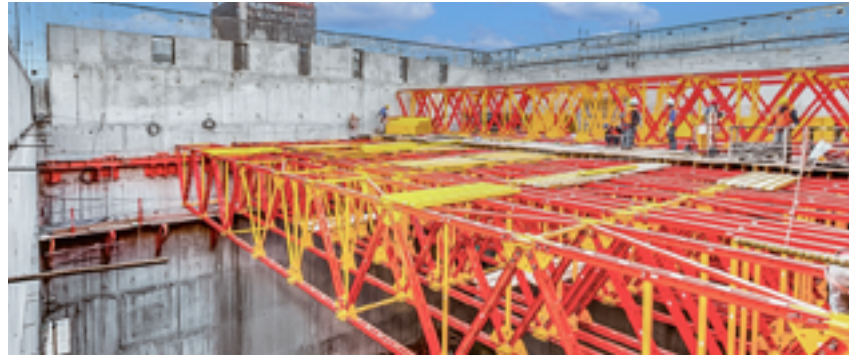
The Budapest-Belgrade high-speed line is part of the Budapest-Belgrade-Skopje-Athens international rail link. PERI assisted with the construction of sections B and C, each 642 metres long, between Stara Pazova and Novi Sad. To transfer the loads in section B, the decision was made to use the ALPHAKIT Shoring Construction Kit, which is particularly suitable for large support heights. The construction process for the 24.75-m-high towers was particularly efficient due to the small number of lightweight individual components. The pre-assembly process was carried out quickly and safely from the ground. The ability to position and move the units by crane thereafter meant that time was saved and construction progressed quickly. Moreover, additional working platforms from the PERI UP Scaffolding Kit were installed to provide a greater level of safety for the construction site personnel at great heights.



“Thanks to the close cooperation between the companies Karin Komerc and PERI, this magnificent railway bridge, which is unparalleled in our region, was completed within the deadlines set. We are particularly grateful for the assistance provided by the engineering team consisting of PERI planners and site managers, without whom we would not have been able to carry out the work on the viaduct so quickly and successfully.”

Boris Miloradov, Chief Engineer
RZD International, Belgrade, Serbia
Subcontractor: Karin Komerc MD, Veternik, Serbia

Benefits to the customer



- Low crane costs due to the fact that the lightweight and easy-to-handle individual components can be pre-assembled without a crane
- Easy-to-handle system due to the small number of core components with variable usage options and the use of fitting pins as fasteners
- Lower labour costs due to quick, safe and easy pre-assembly by hand at ground level
- A high level of safety with minimum inspection effort for the connections, using a maximum of two fitting pins and cotter pins per connection
- Compatible with PERI UP scaffolding components and PERI formwork systems