

WALL FORMWORK SYSTEMS



KRAMOS-AL

KRAMOS -AL® — a universal aluminum large-sized panel formwork. By means of this system you can shutter walls, pylons and columns of any shape.

With its relatively low weight (only **30-40 kg/m²**) the formwork carries a permissible fresh concrete pressure of **80 kN/m²**. The number of use of the formwork panels is **400 cycles**.

The system is simple in use and consists of a small range of basic elements:

- Panels **0,6 – 3,3** m high and **0,25-1,2** m wide (the largest panel – **1,2 x 3,3m**);
- Wedge coupler and adjustable clamp to connect panels with fillers;
- Screws and nutstotightenelements, push-pull props, fillers, wall thickness compensators, alignment bars , shaft spacers, etc.



TEMBO® — a versatile steel large-sized panel formwork, an innovation development of "KRAMOS" in joint collaboration with the German company "PPS International". Unlike the presented wall and column formwork systems this formwork is characterized by a high geometrical accuracy, as well as elevated operating properties (a permissible fresh concrete pressure **100 kH/m²**). The number of use of the panels is **800** cycles.

The panel design is based on a high-quality Austrian steel profile **140x70x3** mm , which provides perfect rigidity of the formwork and element durability, as well as minor element deflections upon concreting, that allow to meet stringent demands to the surface quality of concrete walls. The formwork ensures all the above mentioned factors with ties placed at 2 levels along the panel height, resulting in time reduction for installation works on the construction site.



SIMBA® — a universal steel large-sized panel formwork. By means of this formwork you can also form walls , pylons and columns of any shape . The system is characterized by elevated durability and safety (permissible fresh concrete pressure – **80 kH/m²**). The number of use of the formwork is **500** cycles. It is simple in use. The formwork is produced from steel profiles manufactured in Russia and is more cost-effective as compared to the foreign analogs.

This formwork system is very simple in use and consists of a perfect set of basic elements, such as:

- Panels **0,6-3,3m** high and **0,3 – 2,4m** wide (the largest panel – **2,4x3,3 m**);
- Accessories unified with the system KRAMOS-AL®;
- Corner panel – a simple solution for shaft formwork.



PUNDA® VARIO — a ^{RAL 6018} versatile girder wall formwork. This system is applied in the construction of residential and industrial buildings, bridge abutments and retaining walls. It is a flexible and cost-effective solution for walls and other structures of any shape.

Permissible concrete pressure is **60 kN/m²**, depending on formwork assembly plan. The element structure is rather simple, that allows to assemble practically any panels on the job site.

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Basic elements:

- Girderformworkpanels **0,6-4,5 m** high and **0,6-2,4 m** wide (the largest panel **2,4 x 4,5 m**);
- A simple continuous adjustment of elements by means of couplers and wedges (a cost-effective connection via connecting pins **Ø20mm** is also possible);
- Simplepanelextensionupto **18 m** high by means of extensionsplices;
- Screws and nuts and for element connection (the use of ties and threaded nuts **dw15** or **dw20** depending on loads is possible);
- Push-pull props, etc.

APEHA®

ARENA® — a versatile girder formwork system for circular walls with radii not larger than **2,5m**. Any radius can be formed through rotation of special spindles. A cost-effective solution for wall formwork used in construction of silos, cooling towers and circular walls. This formwork is compatible with the systems **SIMBA®**, **TEMBO®**, **KRAMOS-AL®**

A permissible concrete pressure is **60kN/m²**.

Basic elements:

- circular formwork panels **1,2 – 3,6 m** high and **1,2-2,4 m** wide (the largest element – panel **2,4 x 3,6 m**);
- a simple element connection by means of standard couplers of **SIMBA®** or **TEMBO®** systems and special universal clamps for connecting panels and fillers;
- screws and nuts for element connection;
- push-pull props, etc.



COLUMN FORMWORK SYSTEMS



KRAMOS-AL® K, SIMBA® K, TEMBO® K – are column formwork systems based on universal panels, that are compatible with the abovementioned wall formwork systems.



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PUNDA® VARIO K – a column formwork system. The system allows to create universal solutions for forming columns, pylons and bridge abutments with different cross-section areas. A standard set of elements of girder wall formwork system ensures implementation of various architectural tasks in forming columns and support structures.

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CIRCULAR COLUMN FORMWORK SYSTEMS



SIMBA® KR, TEMBO® KR – circular column formwork systems based on circular column elements. It is compatible with wall formwork systems, that allows to combine them with wall formwork panels SIMBA or TEMBO to produce pylons and support structures..



SLAB FORMWORK SYSTEMS



СТЭП®

STEP® — a versatile slab formwork system on telescopic props. This system represents a flexible and cost-effective solution for any slab geometry.

The allowable slab thickness is **600 mm**. The element structure is very simple, that ensures assembly of any slab formwork at the height of up to **5 m**.

Basic elements:

- Telescopic props with load bearing capacity of 2 or 3 t and 1, 5 to 4,5 m high;
- Slab table heads ;
- H-beams H20;
- Forkheads, tripods, etc.

KRAMOLAM

Aluminum formwork panels **KRAMOS-AL®** — a universal slab formwork on aluminum panels. A convenient decision to assemble slab tables, towers, scaffolding.

Allowable slab thickness – **1000mm**. The simplicity of element structure allows to assemble any slab formwork at the height up to **15 m** with the load bearing capacity of one support **4,5t**.

Basic elements:

- Aluminum panels with props **0,6-2,4 m** high and **1,2-1,8 m** wide (with **0,3 m** increment) and a convenient panelextension by means of extensionsplices;
- H-beam H20;
- Forkheads, cross braces, jacks, etc.



CLIMBING SYSTEMS



KRAMOLAM

KRAMOS® PP — a system of climbing platforms for multi-storeyed buildings (are used together with main formwork systems).

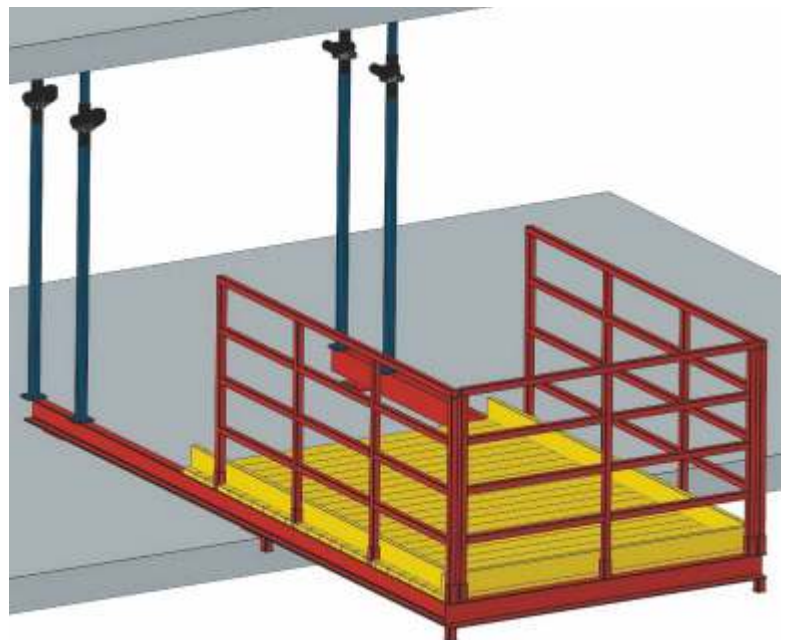
The system consists of special brackets with 2 brackets assembled in load-carrying platforms to be lifted by crane. The system is compatible with all wall formwork systems.



NETTING PROTECTION

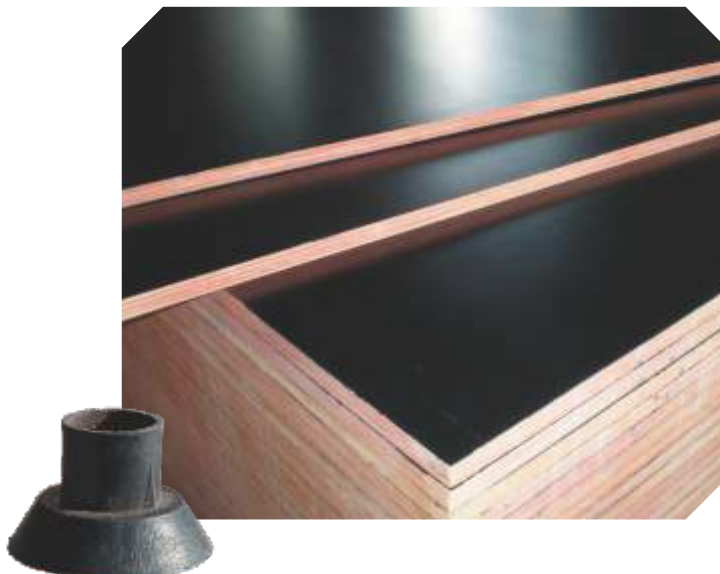
Designated to prevent against falling of people and large objects from the height of **6-10 m**.

The application of protective and catching nets, as additional safety means in construction of concrete and brick buildings of various designation starting from the third storey and higher, is strongly recommended to construction companies in accordance with the Russian norms.



CANTILEVERED PLATFORM

The cantilevered platform with load bearing capacity of up to **1200 kg** is designated for accepting different building materials to be used on the floor level under construction.



ACCESSORIES

Plywood,
Oils for protection of a surface of plywood,
PVC accessories.



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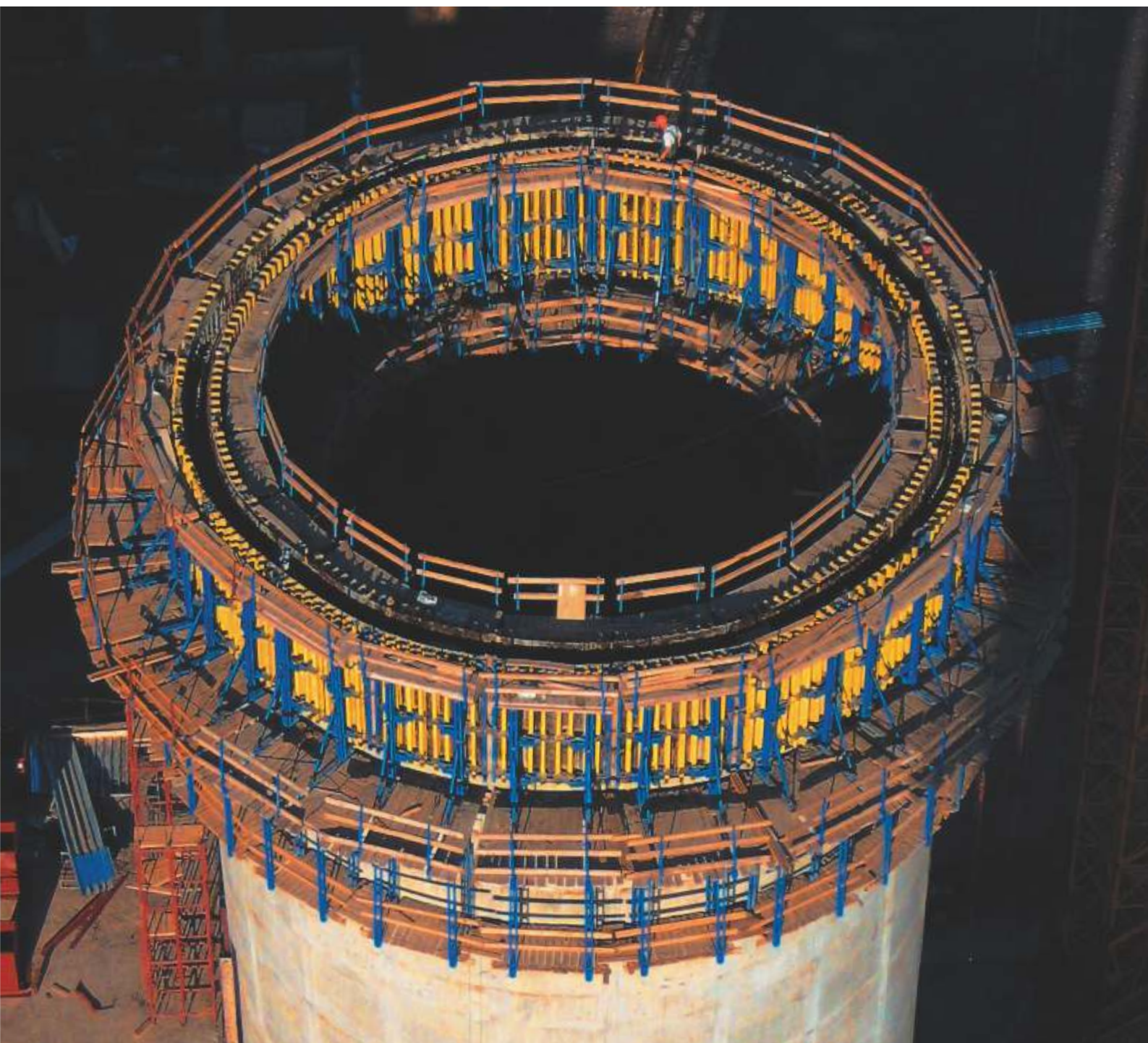
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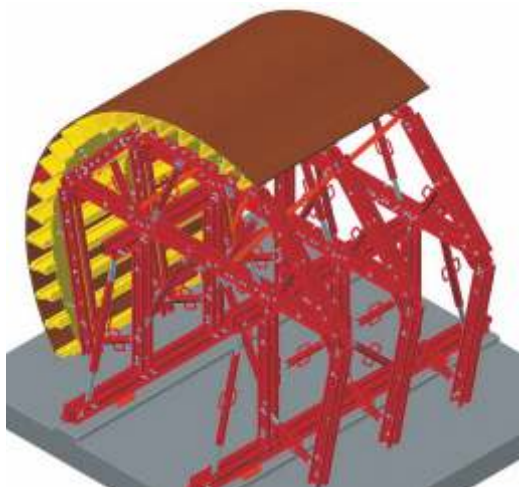
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FORMWORK SYSTEMS

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ПУНДА® KIT

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PUNDA® KIT — An engineering universal system based on the waler PUNDA®.

The system includes: tunnel, bridge, support and brace frame structures, scaffolds, wind protection panels, etc.

PUNDA®KIT—rational solutions for individual projects.

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Basic elements:

- Waler PUNDA 0,6-3,6 m long (with 0,3 m increment) manufactured from channel profile №12;
- Special connectors with connecting pins and cotter pins;
- Spindles, turnbuckles, jacks and other accessories.



МАКСИ® ФОРМ

МАКСИ® FORM — a special forming system, special steel formworks based on steel profiles SIMBA® and TEMBO®, including specific circular formwork panels, haunch forming elements, column cap formwork.

The system is based on standard elements of the abovementioned formwork systems. Forming structures with standard formwork profiles are individually applied.

This system serves as a rational solution for individual projects regarding time reduction on installation works.

