

RASTO – RASTO XXL – TAKKO

The cost-effective and versatile formwork system



HÜNNEBECK 

Handy, versatile and strong



Good things come in threes. RASTO, RASTO XXL and TAKKO prove it. Because with this dynamic trio, you have a complete, crane-independent formwork system enabling you to shutter all small to medium-size structures – in the housing sector particularly – to perfection and extremely inexpensively at the same time.



All of the panels belonging to this system are so light and handy that they can be comfortably handled and fitted by a maximum of two people. And they come with many labor-saving features – something that Hünnebeck is famous for.

Strengths of the system

- Low weight
- No need for a crane
- Easy handling
- Strong joints
- Heavy-duty design
- High concrete pressures
- Many practical details.

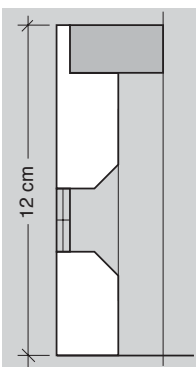
RASTO – RASTO XXL – TAKKO



Strong enough for lifting by crane

Every single panel of this system is designed for heavy-duty construction site conditions. They're made of hot-dip galvanized steel, with a 5 kg facing in the case of the 75 cm wide panel. A hard-wearing material which, in the unlikely event of damage, can also be repaired on the spot.

Thanks to its 12 cm thick frame and tough profiles and corner reinforcements, the design has sufficient inherent rigidity to cope with concrete pressures of 60 kN/m². The panel joint with the RASTO clamp is so firm that large-area multi-panel units can be moved by crane without additional stiffening.



The shutter surface is given optimum protection by the all-round steel frame and plastic plugs for the tie holes. The handling of panels weighing a maximum of 60 kg is made additionally easier by their symmetrical design and cross profiles with grip holes.



Panels



Tailor-made for civil engineering and building construction

The range of RASTO/TAKKO panels encompasses all the dimensions that have proven most useful in the shuttering of wall-high elements. The 75 cm wide and 270 cm high panel is the main element, and it can be combined in many ways with the other sizes, upright or on their sides. Lengths are always adapted in 5 cm increments.

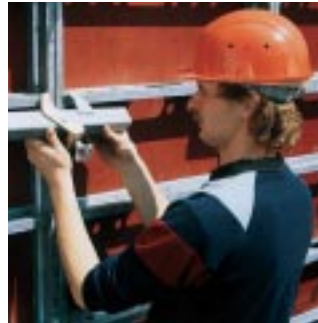
Heights can be extended whether the grid of joints is aligned or offset.

Combinations of RASTO 150 cm and TAKKO 120 cm panels are ideal for use in civil engineering or as an addition whenever large forms are too bulky.

Clamp joint

The adjustable aligning clamp for the 5 cm adjustment piece ...

... and as a connector for panels which are upright or on their side



Flush, rock-solid and quick

The RASTO clamp comes in a single piece and connects two elements in a single process – flush and with resistance to pressure and vibration. At the same time, it also aligns the panels. One of the most time-consuming jobs during shuttering has thus been simplified and accelerated. Another advantage is that the panels joined together in this way can be moved by crane in a single lift without additional stiffening.

The 55 cm long adjustable clamp has the same advantages as the RASTO clamp. It is used for spanning relatively wide extension elements (up to max. 15 cm) or for joining upright panels to panels on their sides.

Length adjustments

Corners



above left: The 5 cm adjustment piece with the adjustable clamp
 below left: Length adjustment with connection timber and the adjustable clamp
 above right: Tension-proof length adjustment through the MANTO-multi-purpose waler
 below right: Tension-resistant length adjustment with the centering tension bolt. It is also used as a simple means of joining panels and for junctions with hinged corners and stopends



Simple, quick and professional

Wall lengths can be shuttered with the RASTO/TAKKO panels in increments of 5 cm. These are joined by the standard 5 cm corner adjustment pieces to allow for wall thicknesses. Making up lengths with millimeter precision is easy with timber available on site. Pieces are joined either with the adjustable clamp—with its stepless adjustability, it permits additions up to a width of 15 cm—or with the centering rod. As the rail for extensions of over 15 cm, the MANTO rail is available. Squared timber available on site can also however be used.

Practical on the outside, movable on the inside

The corner clamp, also consisting of a single piece and as easy to use as the RASTO clamp, is designed to produce precise right angles and tension-resistant joints on the outside. Owing to its adjustability, it allows for 4 to 6 cm width variations on

corners. In this way it is possible by using different panel widths to cater for all conventional wall thicknesses. The inner corners are held at right angles by corner stiffeners. These are disengaged during stripping to create 2° of clearance so that the formwork can be simply and gently eased.



above: Outer corner clamps and two normal panels form the outer corner. They also facilitate length adjustments of 4 to 6 cm
 below: The inner corner has 2° of clearance for easing

Practical details



above left: The 90 cm wide walkway bracket used as a concreting scaffold. It can be connected to formwork which is upright or lying on its side.

below left: Adjusting brace for aligning the formwork. For panels mounted one on top of the other, tubular steel props are used as inclined supports.

above right: Adjacent panels are held with a single tie
below middle: Stopend with the MANTO-multi-purpose waler and centering tension bolts



middle right: Panel connections simplified with the centering tension bolt

below right: Conical walls with a pitch of up to roughly 5° on each side are now possible



Sensible and useful

Platform and walkway brackets are connected with permanently attached, self-locking connectors. The adjusting strut permits the precise adjustment of the panels. Each RASTO and TAKKO panel has four tie holes along its edge profile. A single tie holds the neighbouring panel as well. A particularly useful feature is

that the tie position and hole shape give the tie rod mobility in all directions. This means that there's enough play for height and width offsets and even for the shuttering of tapering walls with an angle of up to 5° on either side.

For the shuttering of foundations and similar jobs, the panels are laid on their sides. If the tie holder MR is used, the upper ties are located for practical purposes outside the concrete.

RASTO – RASTO XXL – TAKKO



Column formwork with RASTO-multi-purpose panels.
Columns can also be shuttered with standard panels and outer corner clamps



Interior tie pockets enable panels to be used on their sides without supplementary aids



Column formwork with standard panels and outer corner clamps

Oblique and acute angles are no problem with the movable hinged corners. On columns, the multi-purpose (MP) panels prove to be particularly beneficial. Their one or two continuous rows of tie holes permit rectangular and square shapes of 15 x 15 cm to 55 x 55 cm in 5 cm increments. Fastening is effected easily and quickly with the tie nut and the multi-purpose (MP) bolt and nut.

Circular formwork is also possible. A special form strip as the joining element, which can be bent up to 15° inward or outward, permits the pouring of polygonal circular containers from a diameter upward of 5 metres.

With this formwork system, you can cope with any ground plan.

Dimensions

TAKKO

Height: 120 cm
Width: 90, 75, 60, 45 and 30 cm

RASTO

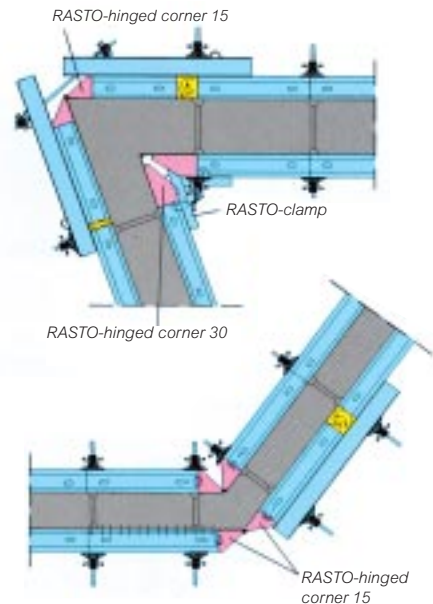
Standard panels
Height: 300 and 270 cm
Width: 90, 75, 60, 45 and 30 cm

Extension panels
Height: 150 cm
Width: 90, 75, 60, 45 and 30 cm

Multi-purpose (MP) panels
Height: 300, 270, 150 and 120 cm
Width: 70 cm

RASTO XXL

Height: 270 cm
Width: 240 cm





Hünnebeck GmbH

P. O. Box 10 44 61, D-40855 Ratingen, Germany
Phone +49 (0) 2102/937-1, Fax +49 (0) 2102/37651
info@huennebeck.com, www.huennebeck.com
Harsco Access Services Group