

Thinking
about
ideas.



HIGH-RIP®
processing instructions



Top quality concrete constructions

ONLY HIGH-RIP® MADE IN GERMANY AS PERMANENT FORMWORK GUARANTEES TOP QUALITY CONSTRUCTION JOINTS, WALL, CEILING AND FOUNDATION CLOSERS

HIGH-RIP® – economic benefits compared to standard formwork		
HIGH-RIP® permanent formwork	Temporary standard formwork	Time / cost saving
Halves the wet concrete pressure on the formwork – this results in greater spacing between reinforcements in the supporting structure, with less materials and labour required for the supporting structure	Double the wet concrete pressure – formwork constructions require more materials and are more labour-intensive	50 %
Processing-free construction joints – reduced preparation time for the next concrete section, no interruption to reinforcement work	Scabbling of smooth construction joints – more time and labour-intensive, interrupts reinforcement work	90 %
Minimisation of voids and pockets of aggregate – faster compaction of the wet concrete with less strain on workers (hand-arm vibrations)	More air bubbles when pouring wet concrete: requires time-consuming, labour-intensive compaction work	50 %
HIGH-RIP® sheets put in place before or after inserting the reinforcement – optimisation of work procedures and time	Formwork can only be constructed after reinforcement – delay to concrete work	30 %
Manageable, lightweight sheet sizes – saves manpower, quick handling, cutting and construction of formwork; very little waste material	Difficult handling – time, material and labour-intensive construction and dismantling of formwork constructions	50 %



- 1 The outer ribs of the HIGH-RIP® sheets are designed in such a way that, positioned closely one above the other, they ensure a solid bond along the entire length. Sheets joined in this way provide the formwork with maximum stability as early as the preparation stage.
- 2 The tangs of the open honeycomb structure are seamlessly integrated in the concrete when the concrete is first poured. This sheet is firmly embedded and can no longer be removed from the concrete.
- 3 The intermediate ribs guarantee optimum rigidity along the sheets so that it is even possible to securely span between supports.
- 4 Rapid drainage and air outlet is guaranteed by the open honeycomb structure. The formation of voids and concrete honeycombing is minimised. A particularly airtight, impermeable concrete layer forms directly behind the HIGH-RIP® formwork.



Independent tests provide proof of HIGH-RIP® benefits

Compared to closed formwork, HIGH-RIP® is unbeatable as permanent formwork for construction joints, wall, ceiling and floor dosers in terms of "wet concrete pressure on formwork". This is demonstrated impressively by the results from a range of tests by independent organisations and institutes, such as the British Cement Association (BCA) and Taywood Engineering Ltd. Research Laboratories (TWE). For a wall height of 2500 mm, the maximum wet concrete pressure on the HIGH-RIP® formwork is only half as much as that on timber shuttering, at 25 kN/m² instead of 50 kN/m². In a series of tests on wall constructions 5000 mm in height, the pressure from 3000 mm remained constant at a value of 38 kN/m². This is significantly below the value of 125 kN/m² predicted in Report 108 by the Construction Industry Research and Information Association (CIRIA).

Excellent concrete quality without voids and pockets of aggregate

The series of tests were carried out using highly fluid concrete mixtures, which guarantee high rates of rise along the HIGH-RIP® formwork. After compaction and leaving to harden, drilling samples were taken which showed that the concrete is of excellent quality, particularly near the formwork surface. No voids or pockets of aggregate were found. Shear and tensile strength tests also prove that processing-free construction joints have up to 18% greater load-bearing capacity compared to manually scabbled joints in conventional formwork.



Perfect floor and ceiling closers

- Closer for construction joints in thick and thin ground slabs and floating slabs
- Deep construction joints
- Industrial ground slabs
- Permanent wall, column and ceiling formwork
- Water-resistant and water-repellent structures
- Curved formwork
- Sloping formwork and top side of formwork
- Hollow structures / recesses for bolts

Flat and curved wall constructions

- Closer for vertical construction joints in thin and thick walls
- Deep construction joints
- Permanent wall and column formwork
- Water-resistant and water-repellent structures
- Hollow structures / recesses for bolts
- Curved formwork

Straight and shaped concrete construction joints

HIGH-RIP®, which is flexible in use, allows straight or shaped construction joints to be created quickly, with or without a water stop, ensuring the best possible bonding of the concrete layers.



Straight construction joint with HIGH-RIP®

HIGH-RIP® (1) is nailed to squared or shaped reinforcing timbers (2), without deforming or damaging the ribs. The closed ribs must face towards the first concrete section and be positioned at right angles to the reinforcing timbers. These timbers (2) are nailed to the formwork and held by wooden laths (3), which rest against the existing reinforcement.



Shaped construction joint with HIGH-RIP®

HIGH-RIP® requires the same concrete covering as concrete steel. To adhere to the prescribed covering, wooden laths (4) are fixed to the top and underside of the component as spacers and nailed to the reinforcing timbers (5). The required closer reinforcement (6) can be passed through the ribbed expanded metal. HIGH-RIP® is cut using metal shears or the RSM special cam shears. Where possible, avoid cutting into the expanded metal rib.



Construction joint with HIGH-RIP® and water Stop

For watertight components, HIGH-RIP® is cut using metal shears or the RSM special cam shears. The water stop (7) is positioned between two HIGH-RIP® strips. Recesses must also be present in the reinforcing timbers for the water stop.



HIGH-RIP® made in Germany – key benefits

Permanent formwork for construction joints, flat and shaped components in concrete construction

- More cost-effective than standard formwork. Materials, time and labour are saved when used in wall, ceiling and floor constructions, formwork on one or two sides, as well as water-retaining and water-repellent components.
- Halving of the wet concrete pressure on the formwork. Significant time and cost savings on the supporting structure.
- Processing-free construction joints. Perfect bond between the concrete sections, less strain on workers (hand-arm vibration).
- Greater load-bearing capacity of the construction joints in terms of shear and tensile forces.
- Open material structure. Optimum air outlet and drainage prevents the formation of voids and concrete honeycombing.
- Faster concreting speed and improved concrete quality compared with conventional formwork.

Controlled concrete pouring



Optimum pouring height and position

- When pouring concrete using adequate sized pipes and tubes, ensure that the drop height is correct at all times.
- Pour the concrete approx. 1.5 - 2 metres from the HIGH-RIP® formwork.
- Allow the concrete to flow naturally towards the HIGH-RIP® formwork by means of controlled pouring.

Avoidable errors

- Pouring the concrete from too great a height.
- Pouring the concrete directly next to the HIGH-RIP® formwork.
- Allowing the concrete to pile up directly next to the HIGH-RIP® formwork.



Simplified concrete compaction

Perfect compaction of wet concrete

Up to a distance of 450 mm, the concrete is compacted by means of continuous vibrations in the direction of the HIGH-RIP® closer.



- Directly next to the HIGH-RIP® formwork, the concrete is treated with vibrations lasting 5 seconds until it is compacted.
- The vibrations are applied until cement mortar bleeds through the mesh of the HIGH-RIP® formwork.
- The amount of compaction work required using vibration technology is significantly lower for easy-to-process concretes and fluid concrete mixtures compared to stiff mixtures.

Avoidable errors

- Applying constant vibrations or vibrations which are too strong directly next to the HIGH-RIP® closer.
- Causing the HIGH-RIP® formwork to vibrate.
- Causing the reinforcement to vibrate.
- Using external vibrators when using HIGH-RIP® formwork.

Straightforward cutting and alignment

Cutting

- Cut HIGH-RIP® using metal shears, a cutting disc or the RSM special cam shears. Avoid deforming the rib.
- Cut into the back of the ribs.
- Bend the material.
- Cut off the HIGH-RIP® sheets..



Alignment

When pouring concrete, the back of the expanded metal rib must always face the first concrete section. The open ribs on the opposite side guarantee a secure bond to the second concrete section.

Material-saving joint formation



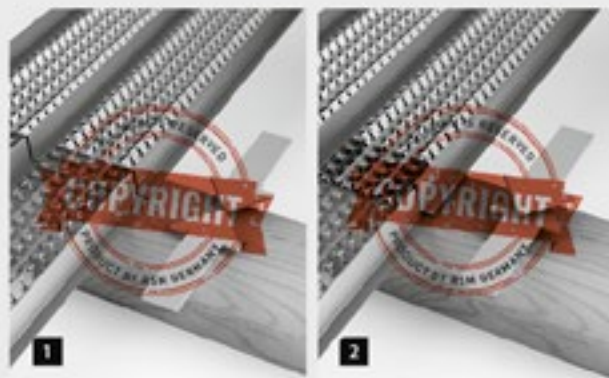
Joint formation at the side

- Join two HIGH-RIP® sheets together by nesting the outer ribs.
- Tie together the overlapping ribs every 15 to 20 centimetres using galvanised tying wire (\varnothing approx. 1.2 mm).

Joint formation at the end

Typical alignment of the ends of HIGH-RIP® sheets for wall closers and construction joints:

- Align the sheet ends to form a butt joint. Do not overlap. See figure 1.
- The ends can be slightly overlapped (25 mm to 50 mm). See figure 2.
- Fix the HIGH-RIP® sheets firmly in place to minimise any gaps. The sheets can be tied together or nailed to provide support.



RSM Services: competence and reliability

- Tailored building site service with 100 % adherence to deadlines
- Trusting working relationships with specialist companies

HIGH-RIP® made in Germany – Product overview			
	HIGH-RIP® 0,3	HIGH-RIP® 0,4	HIGH-RIP® 0,575
Material			
Cold rolled steel strip, galvanized	•	•	•
Area of use			
Inside	•	•	•
Outside	•	•	•
Closures	•	•	•
Delivery information			
Rib height mm	21	21	21
Material thickness mm	0,3	0,4	0,5
Sheet size (mm x mm) options for all thicknesses	445 x 2.000	445 x 2.000	445 x 2.000
Area (m ² /pallet)	89	89	89
Weight (kg/m ²)	2,5	3,6	4,5
Sheets per pallet	100	100	100

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**RSM Heitfeld Putz- und Bautechnik
Vertriebs- und Beratungs-GmbH**

Tecklenborn 49 · 44143 Dortmund

T +49 231 51 989-81 · F +49 231 51 989-89

info@rsm-heitfeld.de · www.rsm-heitfeld.de