

BUILDING  
COMMON GROUND



# Stremaform®

System components +  
Upstands





BUILDING  
COMMON GROUND



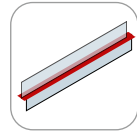
## Stremaform®

### System components + Upstands

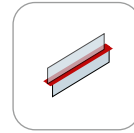
Stremaform® modular system . . . . .	4
Stremaform® design variants . . . . .	6
Stremaform® system components . . . . .	8
Stremaform® upstands . . . . .	14

## Stremaform® modular system

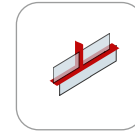
Stremaform® formwork elements for working joints in slabs and walls are planned, manufactured and delivered as a modular system. Standardised units are available for a wide range of applications and uses.



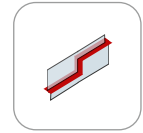
Standard 2400 mm



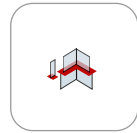
Standard 1200 mm



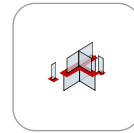
Wall transition unit



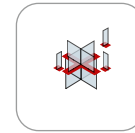
Height offset



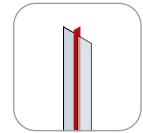
Corner unit



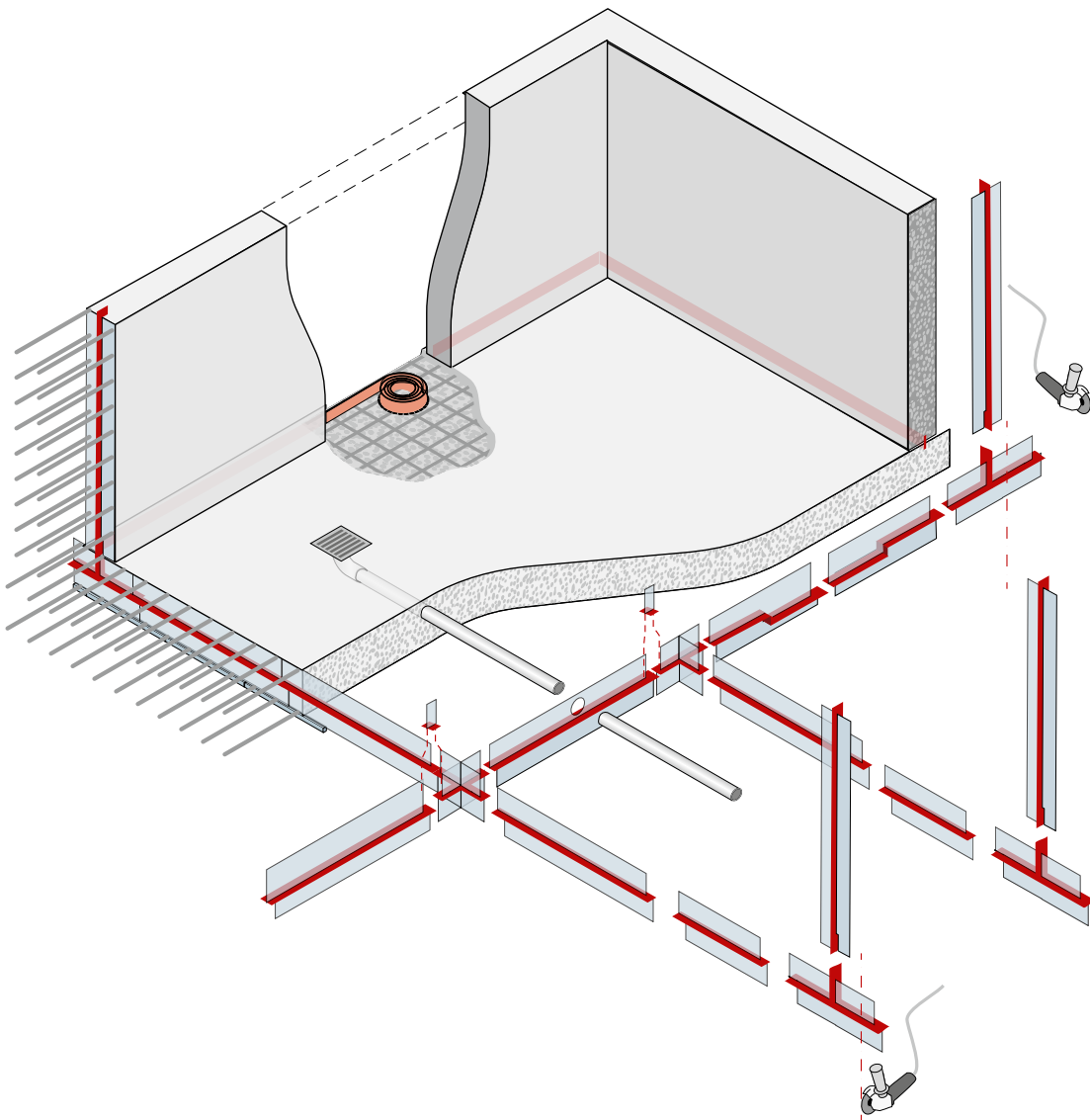
T unit



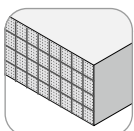
Cross unit



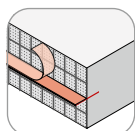
Wall unit



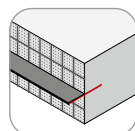
## Stremaform® waterproofing variants



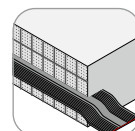
Without waterproofing



With coated metal waterstop



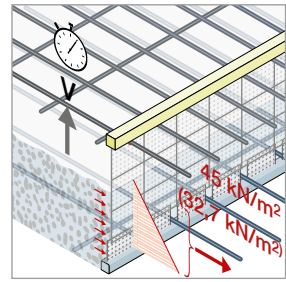
With metal waterstop



With carrying cage for rubber/PVC waterstop

### Stremaform® variants

Stremaform® formwork elements for working joints are structurally designed to withstand a maximum fresh concrete pressure of 45 kN/m<sup>2</sup> (32.7 kN/m<sup>2</sup> for installation dimensions > 1800 mm). They are produced in different variations and strengths depending on the pour height. Decisive for the design variant is the installation dimension, which describes the distance between lower and upper reinforcement.



### Stremaform® geometry

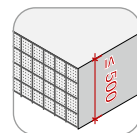
Standard 2400 mm	Standard 1200 mm Wall transition unit Height offset	Corner unit T unit Cross unit	Standard Wall unit

### Bracing depending on the installation dimension

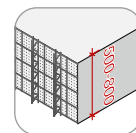
Stremaform® formwork elements for working joints with and without waterproofing systems are braced as follows:

#### Slab

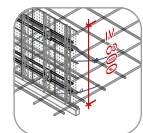
- Partially braced up to an installation dimension  $h \leq 500$  mm
- Braced from an installation dimension  $h > 500$  mm
- For installation dimensions  $h > 800$  mm we recommend our Stremaform® back anchoring system



Partially braced  
 $h \leq 500$  mm



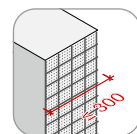
braced  
 $500 \text{ mm} < h \leq 800$  mm



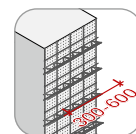
braced + back anchoring  
 $h > 800$  mm

#### Wall

- Partially braced up to an installation dimension  $b \leq 300$  mm
- Braced from an installation dimension  $b > 300$  mm
- For installation dimensions  $b > 600$  mm we recommend our Stremaform® back anchoring system



Partially braced  
 $b \leq 300$  mm



braced  
 $300 \text{ mm} < b \leq 600$  mm



braced + back anchoring  
 $b > 600$  mm

## Stremaform® design variants

### Stremaform® for working joints

Stremaform® is the most efficient self-supporting, stay-in-place formwork for working joints in concrete construction. Stremaform® is tailored and produced based on your requirements and delivered as prefabricated sections ready for installation. For larger applications, further-reinforced solutions for deep slabs and bases are available.



### Stremaform® for working joints with coated metal waterstop

Stremaform® can be prefabricated to incorporate Fradiflex® coated metal waterstop. On the construction site, the working joint is then formed and waterproofed in one operation.

This product combination is particularly suitable for sealing joints exposed to pressurised water in high-grade buildings. With its special coating, Fradiflex® metal waterstop bonds perfectly with the fresh concrete and reliably seals the working joint.



### Stremaform® for working joints with metal waterstop

For sealing of impermeable joints, Stremaform® is available with an integrated metal waterstop in various dimensions.

The integrated waterstop allows you to install the formwork and to waterproof it quickly in a single operation.



### Stremaform® for working joints with cage for rubber/PVC waterstop

Stremaform® can be produced to incorporate a carrying cage for a rubber/PVC waterstop. This cage is manufactured to correspond with the dimensions of the rubber water stop.



### Stremaform® standard surface

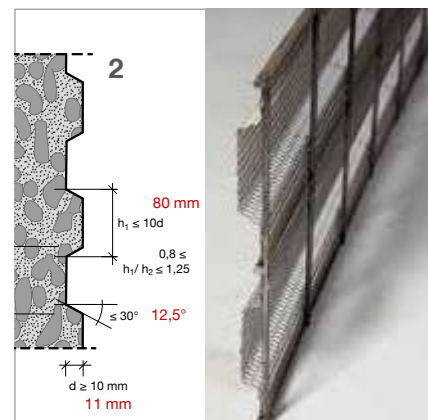
The surface finish of the standard version offers optimal bond for the secondary concrete and fulfils the category "rough" according to DIN EN 1992-1-1.

Taking external expert opinion into account, Stremaform® can also be used as an "indented" joint. The project-related application should be coordinated in advance with our technical department.



### Stremaform® indented surface

Stremaform's continuous and profiled surface in construction joints is a high-quality construction method that meets the highest classification – the indented joint, according to DIN EN 1992-1-1.



### Stremaform® for self-compacting concrete

All versions of Stremaform® are available with a fine version of the expanded metal mesh for use with self-compacting concrete. The project-related application should be checked in advance with the corresponding concrete mix in a test concrete pour. This is also available for use with more fluid concrete mixes.



### Stremaform® for controlled crack joints

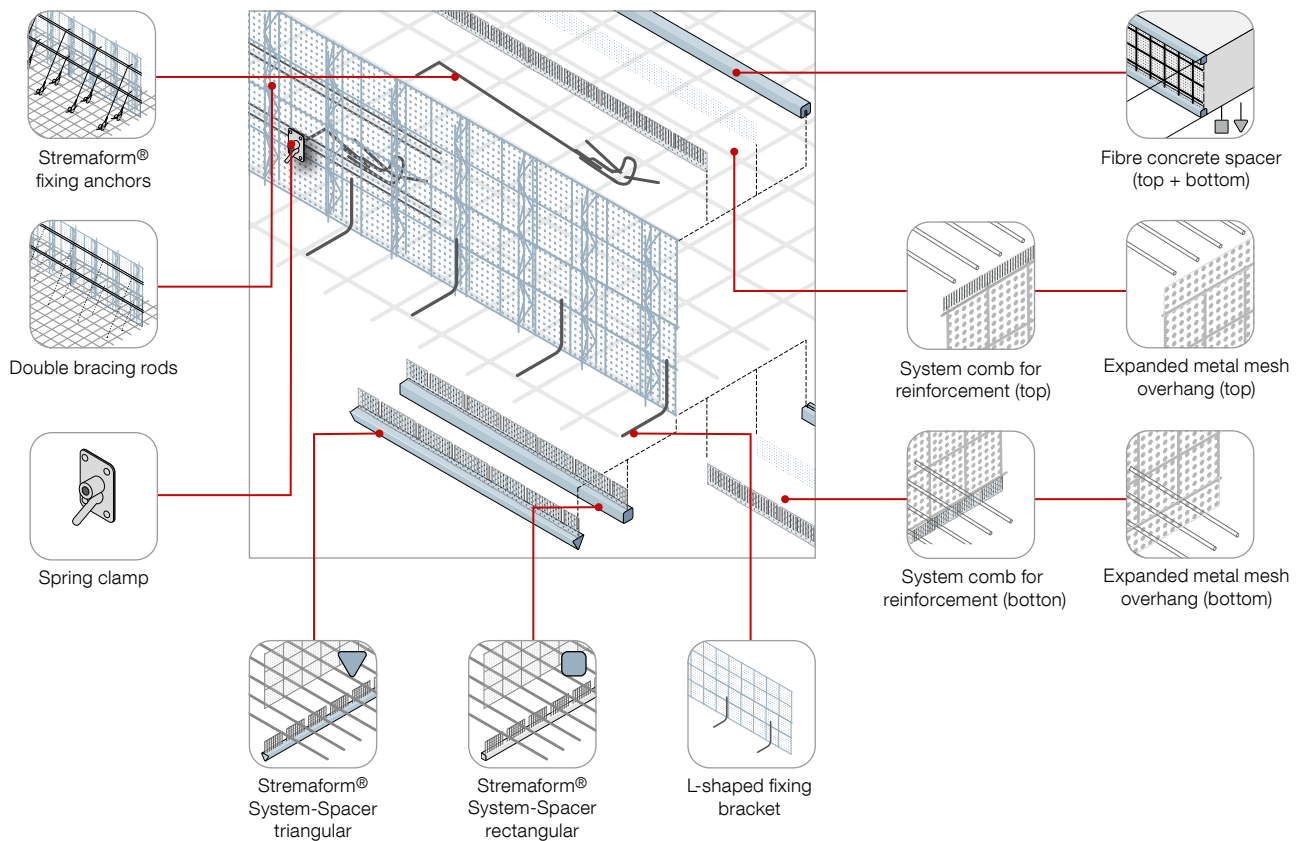
Stremaform® for controlled crack joints prevents a connection between concreted sections, over at least 1/3 of the structural element thickness, in order to produce a controlled crack. Variants for continuous concreting are also available.





## Stremaform® system components

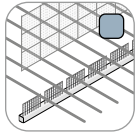
The accessories comprise solutions to optimise the embedment of the reinforcement around the Stremaform® units, as well as fixing options.



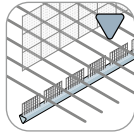


## Stremaform® System-Spacer

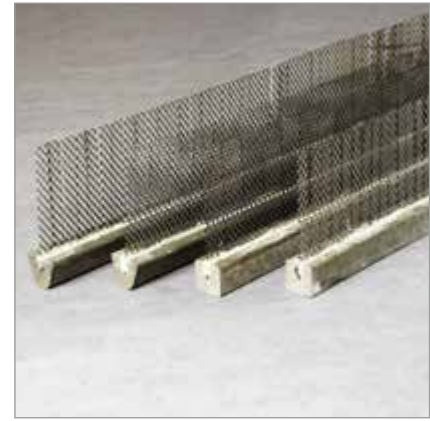
Stremaform® System-Spacer is a fibre concrete spacer and formwork section in one element. This option minimises time-consuming cleaning work. Two different comb grids and three standard comb heights offer full flexibility for the various requirements of on-site reinforcement diameters, spacings and layers. All Stremaform® System-Spacers are supplied in a length of 1200 mm and can be shortened on site if required.



Rectangular Spacer

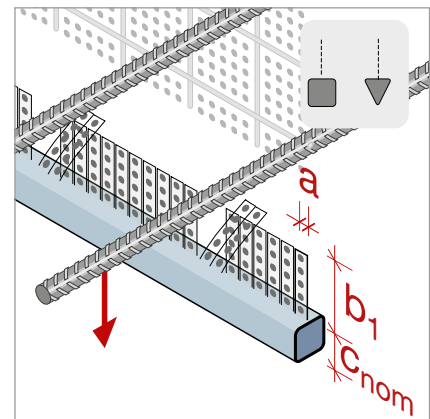
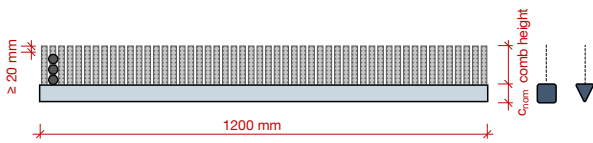


Triangular Spacer



## Stremaform® System-Spacer Grids of 17 or 30 mm

The different grids cover the various reinforcement diameters from Ø10 - Ø50 mm. The standard comb heights ( $b_1$ ) are selectable between 80, 120 and 160 mm. The fibre concrete spacer bars are suited to the required concrete covers ( $c_{nom}$ ). An overlap of at least 20 mm must be accommodated between the comb and the Stremaform® element.



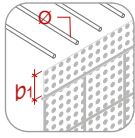
spacer type	length [mm]	grid (a) [mm]	diameter of reinforcement [mm]	concrete cover [mm]
rectangular	1200	17	Ø10, Ø12, Ø14, Ø16, Ø32	35
				40
				45
				50
				60
		30	Ø20, Ø25, Ø28, Ø40, Ø50	75
				35
				40
				45
				50
triangular	1200	17	Ø10, Ø12, Ø14, Ø16, Ø32	60
				50
				40
				35
				30
		30	Ø20, Ø25, Ø28, Ø40, Ø50	60
				50
				40
				35
				30



### Stremaform® expanded metal mesh (single-sided)

The edge formation with an expanded metal overhang on the top can be produced in three standard heights.

The expanded metal overhang is suitable for up to two layers of reinforcement. Inserting the top reinforcement creates a slight deformation, which keeps gaps between the reinforcement bars closed.



metal mesh overhang

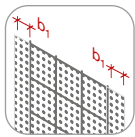
**standard height (b<sub>1</sub>):**

- 30 mm
- 50 mm
- 70 mm



### Stremaform® expanded metal mesh overhang (double-sided)

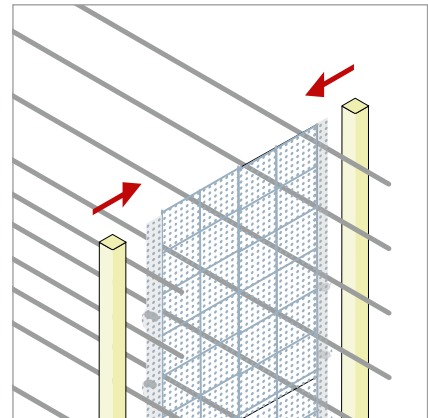
Similar to the upper expanded metal overhang, this overhang can also be supplied double-sided for walls. The gaps between the reinforcement bars positioned on site are sealed against concrete leakage.



metal mesh overhang

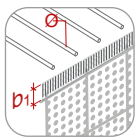
**standard height (b<sub>1</sub>):**

- 30 mm
- 50 mm
- 70 mm



### Stremaform® system comb (single-sided)

The 17 or 30 mm grids cover all reinforcements from Ø 10 - 32 mm. The comb strips are available in three standard heights. Installation of the reinforcement layers, at different reinforcement spacings, is easily carried out.



mounted comb

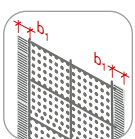
**standard height (b<sub>1</sub>):**

- 80 mm
- 120 mm
- 160 mm



### Stremaform® system comb (double-sided)

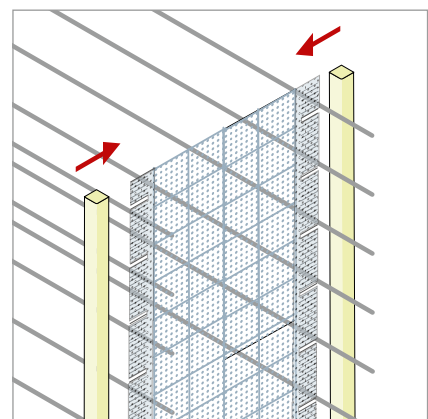
Similar to the upper comb, this can also be supplied double-sided for walls. The gaps between the reinforcement bars positioned on site are sealed against concrete leakage.



mounted comb

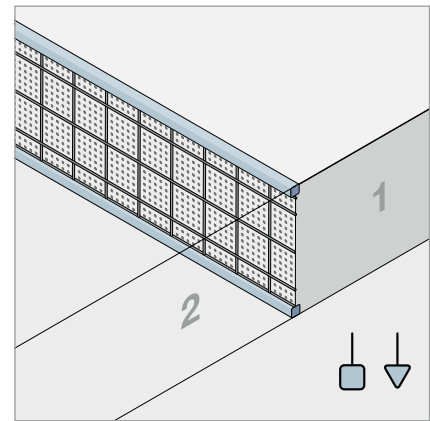
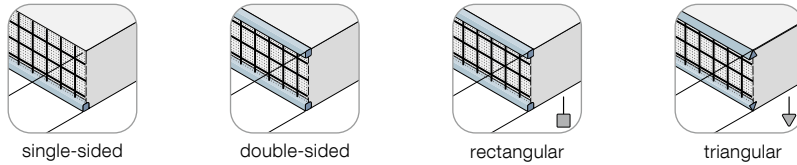
**standard height (b<sub>1</sub>):**



- 80 mm
- 120 mm
- 160 mm



### Pre-assembled fibre concrete spacer bar

The pre-assembled fibre concrete spacer bar can be supplied in various dimensions according to the required concrete cover. The edges are available in rectangular fibre concrete bars and can be changed to a triangular fibre concrete bar in the visible area. When using the pre-assembled fibre-reinforced concrete bar, the reinforcement is inserted through the expanded metal on site.

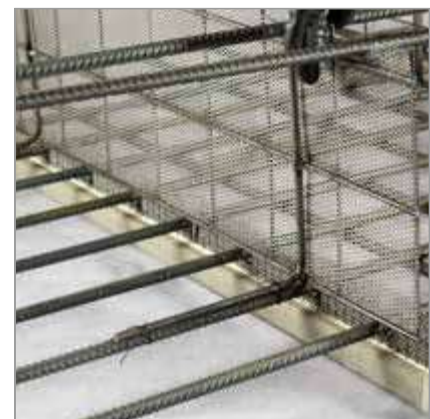
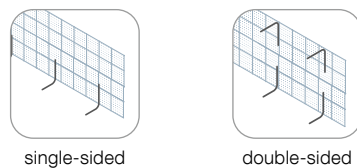


spacer type	concrete cover [mm]	spacer type	concrete cover [mm]
rectangular 	35	triangular 	
	40		30
	45		35
	50		40
	60		50
75	60		



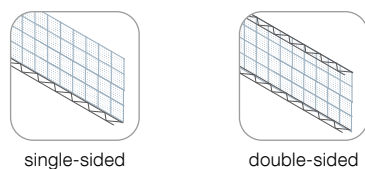
### Stremaform® fixing bracket

The fixing bracket is installed at a distance of 600 mm and offers linear and simple on-site positioning. The fixing bracket can be tied to longitudinal and transverse reinforcement and is also available double-sided.



### Stremaform® lattice girder

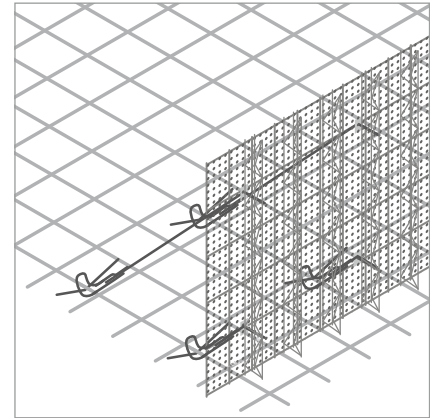
The lattice girder is installed on the edges of the formwork sections over the entire length and offers linear and simple on-site positioning. The lattice girder can be fixed to longitudinal and transverse reinforcement and is also available double-sided.



### Stremaform® back anchoring for slabs

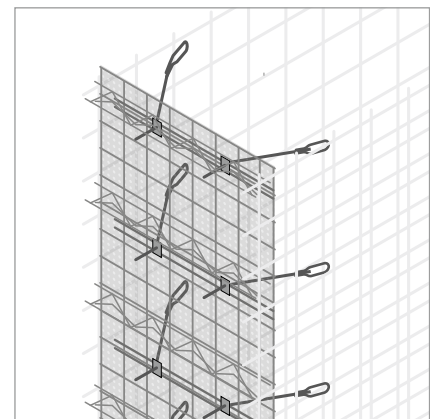
Weld-free fixing and back anchoring of the Stremaform® formwork sections. This fixing provides extra stability to prevent the sections moving or tilting during concreting. The construction process is accelerated and additional removal work is avoided. The second concreting section can be connected without any additional work.

In floor slabs and ceilings, we recommend our back anchoring for installation dimensions over 800 mm. These elements comprise double bar stiffening for the back anchoring.



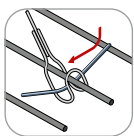
### Stremaform® back anchoring for walls

Weld-free fixing and back anchoring of the Stremaform® formwork sections for walls. In order to compensate for the higher pressure during concreting in walls, a back anchoring is necessary above an installation dimension of 600 mm.

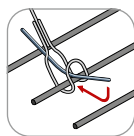


### Stremaform® back anchoring connection reinforcement

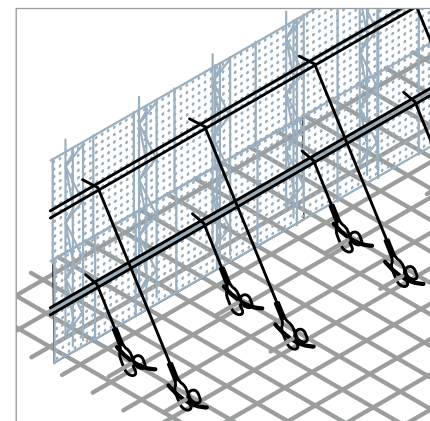
The loop can be installed in both directions of reinforcement and is therefore very flexible to use. The standard loop is suitable for reinforcement up to  $\varnothing$  35 mm. Alternatively, the Stremaform® loop for larger reinforcement of up to  $\varnothing$  50 mm can be supplied.



mounting on parallel reinforcement

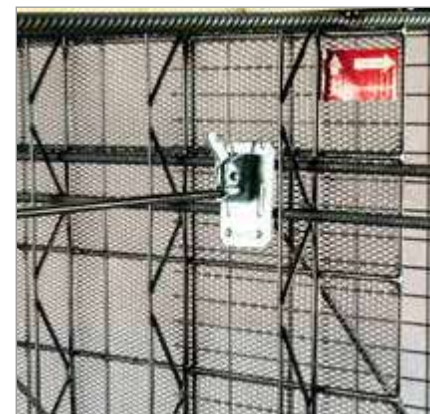


mounting on perpendicular reinforcement



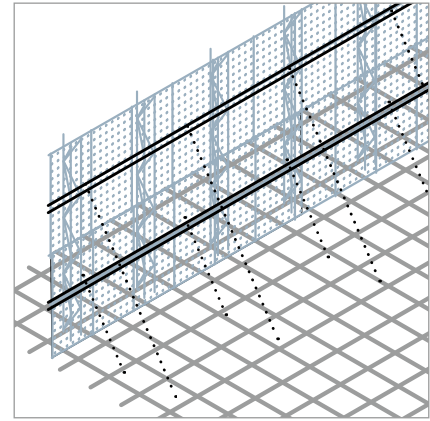
### Stremaform® spring clamp

The Stremaform® back anchoring is placed on the Stremaform® section, through the double bar stiffener, into a horizontal position. Now the Stremaform® spring clamp can be mounted and tensioned in the second concreting section. The spring clamps can be reused after concreting.



## Stremaform® back anchoring on site

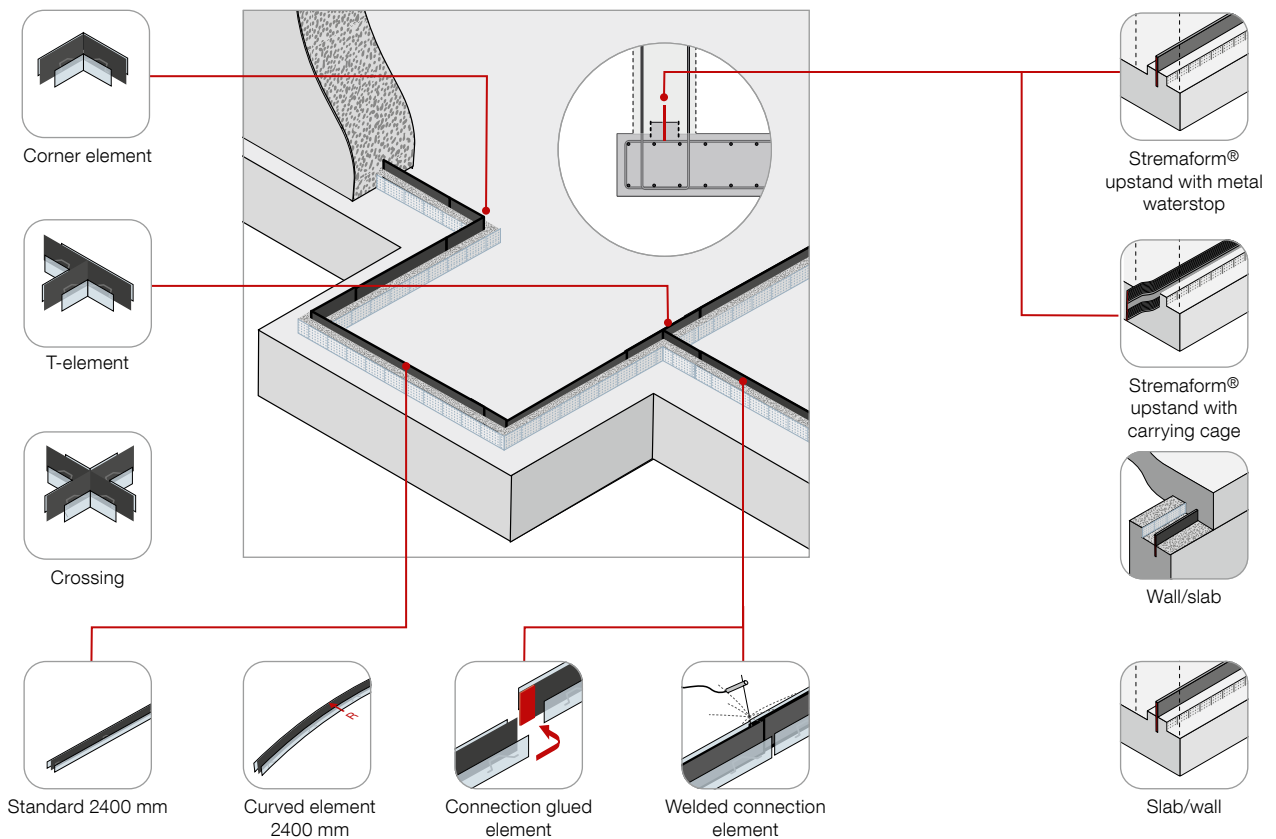
Stremaform® elements can also be supplied with double-bar stiffening if the construction site provides the back anchoring. The double rods, assembled in the factory, define the layers of the back anchoring levels. The diagonal braces, which are provided and welded in by the customer, should have a minimum  $\varnothing$  12 mm. The maximum distances of the diagonals in slabs are maximum 800 mm. For walls, the distances are maximum 600 mm.





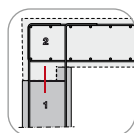
## Stremaform® upstands

The Stremaform® upstands offer an economical and simple solution for the construction joints between slabs and walls. The versatile application is enabled by an integrated waterstop. Thanks to the standardised elements and connecting parts, the joints courses can be flexibly designed and installed on site.

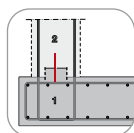


## Stremaform® upstands

The upstands are available in two types: The Stremaform® upstand for the construction joint between slab and wall is offered in standardised installation dimensions and can be selected in 10 mm steps. For the construction joints between wall and slab, the installation dimension depends on the installation option in the wall.

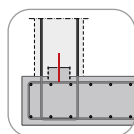


wall/slab

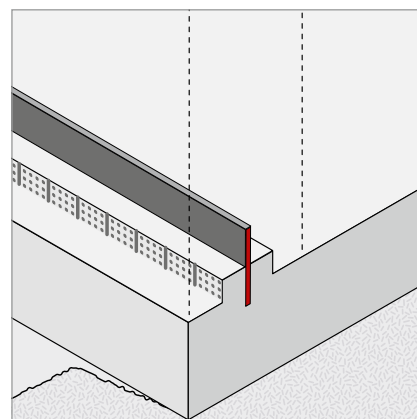
slab/  
wall

## Stremaform® upstand with metal waterstop (black)

Stremaform® upstands with welded-in metal waterstop are available with either 250 mm or 300 mm wide metal waterstops. To increase installation efficiency, the overlap of the metal waterstop can be provided with a coating at the splice. There is no longer a need to weld the individual units on site to form a connection. The size of the cage depends on the dimensions of the required waterstop. Prefabrication is carried out during the manufacturing process and adapted to the requirements of the construction site.

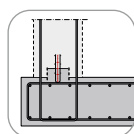


ground slab/wall

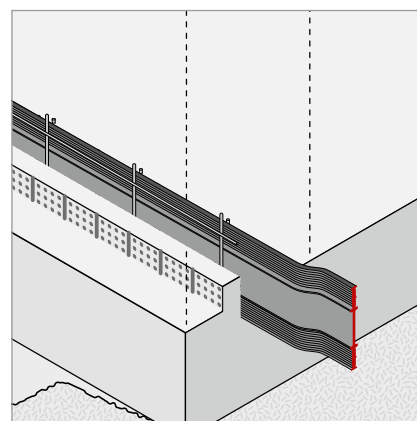


## Stremaform® upstand with waterstop cage

The Stremaform® upstand with waterstop cage enables the installation and secure positioning of the required waterstops. The size of the cage depends on the dimensions of the required waterstop. The prefabrication is carried out during the manufacturing process and adapted to the requirements of the construction site.



ground slab/wall



## Stremaform® upstand for on-site installation of sealing joints

Stremaform® upstand, for construction joints between the floor slab and wall, is available as standard in 250 mm or 300 mm waterproofing widths.





**MAX FRANK Group**

Headquarter:

Max Frank GmbH & Co. KG

Mitterweg 1

94339 Leiblfiging

Germany

[www.maxfrank.com](http://www.maxfrank.com)

