



BUILDING
COMMON GROUND

Stabox[®]

Continuity strip



Stabox® Continuity strip

Rebend connection for absorption of shear forces

Stabox® reinforcement connections enable the force-locked connection of reinforced concrete components which are produced and concreted in a series of construction phases thanks to rational formwork systems.

Based on the coordinated geometry according to Eurocode and National Annex, Stabox® standard and special connections meet the maximum requirement of an indented joint design.

Continuity Strips are available with bar diameters of 8, 10 and 12 mm. The material input depends on the respective national requirements.

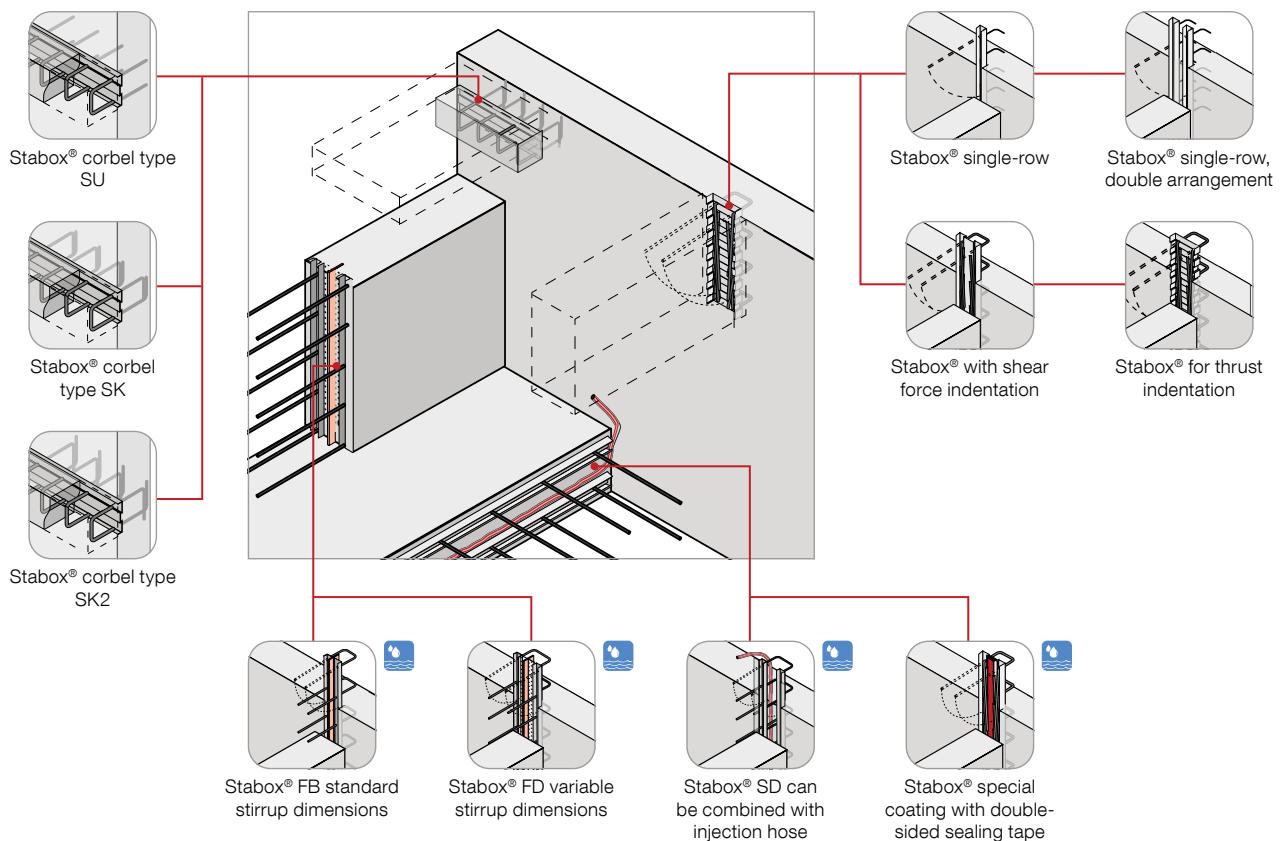
★ Advantages

Simplification of formwork on concrete working joints

No need to pierce the formwork

Customised individual Stabox® versions can be

produced at short notice

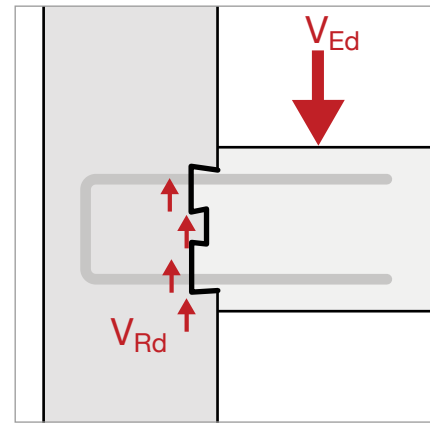


Load distribution through indented joint

The transverse forces V_{Rd} that can be absorbed by a concrete working joint essentially depend on three components.

1. Diameter and spacing of the connecting reinforcement
2. Bond characteristics: Steel grade, concrete strength (embedment depth and overlap length)
3. Geometrical use of the concrete load bearing capacity through load distribution – indented joints

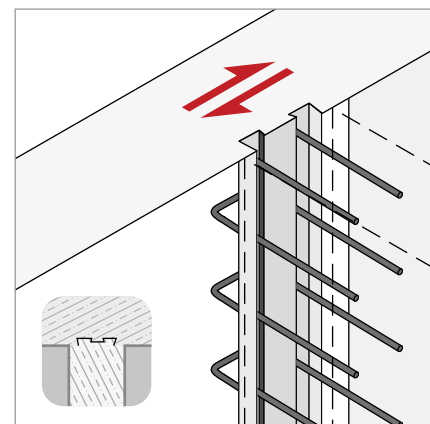
The geometrical requirements for the highest possible category “indented joint” are defined in Eurocode 2, DIN EN 1992-1-1 with NA(D) and the DBV data sheet “Rebending of reinforcing steel and requirements for reinforcement boxes”.



Indentation transverse to the box

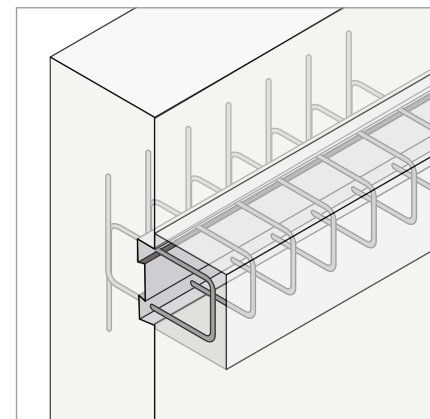
The **Stabox® S** continuity strip fulfils this highest requirement “indented” for all load cases with load V_{Ed} transverse to the box (LF: c, d, e, f).

A higher calculatory formulation for the values of roughness [c] and friction [μ] than the surface property “indented” is not possible for the calculation of the absorbable transverse force V_{Rd} .



Special shapes

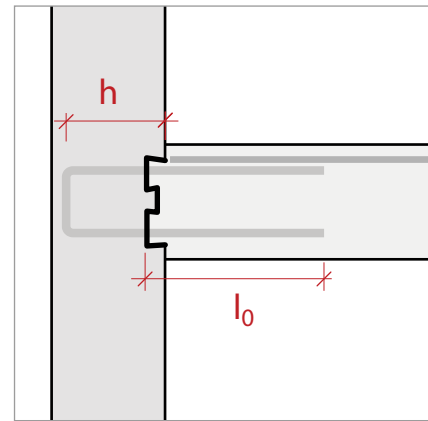
The shapes and dimensions specified in the planning as well as structurally necessary bending shapes of the reinforcement place particular demands on rebendable reinforcement connections. The FRANK Stabox® S and Stabox® T reinforcement boxes offer numerous possibilities for special dimensions and shapes. Formworking is thus significantly reduced in the most diverse applications through the use of the Stabox® reinforcement connections.



Overlap length

With the standard types of the Stabox® rebend connections, the stirrup dimensions such as stirrup height h and overlap length l_0 are manufactured in accordance with the Stabox® type static calculation and type test report.

The overlapping joints in the 2nd concrete pour are to be executed in such a way that a full joint of the reinforcement of the rebend connection is formed. To do this, the bars used as the reinforcement in the 2nd concrete pour must have at least the same diameter as those in the Stabox® rebend connection and are to be taken directly up to the concreting pour joint. The overlap length of the rebend connections in the 2nd concrete pour depends on the respective reinforcing steel diameter.



Type static calculation and type test report

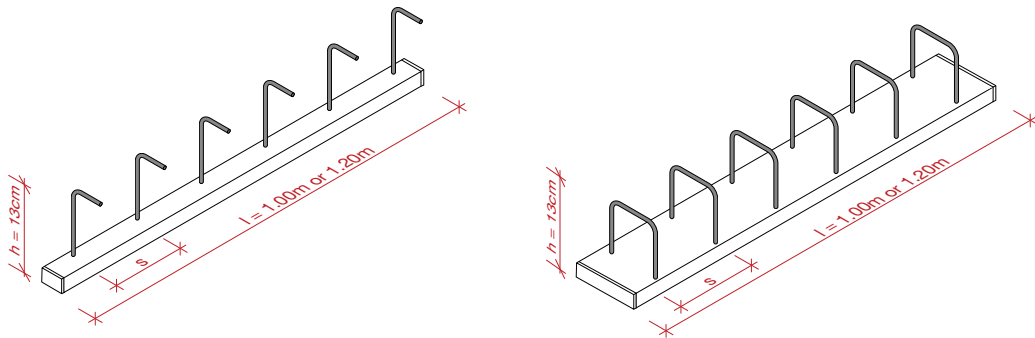
The Stabox® continuity strip defines the current state of the art.

The further processing of the reinforcing steel insert B500B in the factory according to DIN 488 with guaranteed rebending capability is checked by both in-house and external supervision and confirmed by the U mark.

The manufacture and dimensioning are based on the current standard DIN EN 1992-1-1 with NA(D), Eurocode 2, the additional regulations from the DBV data sheet "Rebending of reinforcing steels and requirements for reinforcement boxes" as well as the test report, the type static calculation and type test report of the LBV, August 2013.



Dimensions of the standard versions

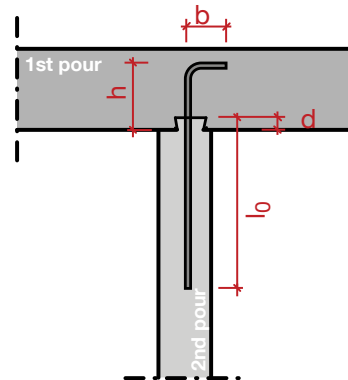
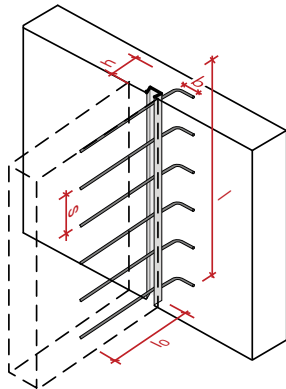


Standard dimensions

Steel Ø mm	Possible hook/stirrup shape	Possible hook/stirrup spacing s cm	Stirrup height h cm	Overlap length l_0 cm	Element length l m
12	L / B	10 / 15 / 20	13	42 / 48 / 48	1.0 / 1.2

With the standard types of the Stabox® rebend connections, the stirrup dimensions such as stirrup height h and overlap length l_0 are manufactured in accordance with the Stabox® type static calculation and type test report.

Stabox® type L single-row



Stabox®

Standard versions, single-shear

Article number	For wall thickness from cm	Type	Steel Ø mm	Hook length b^{**} cm	Steel cross-section A_s cm ² /m	Stirrup spacing cm
STA09L1210	13	9 L	12	10	11.31	10

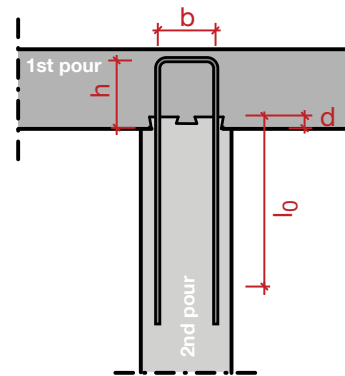
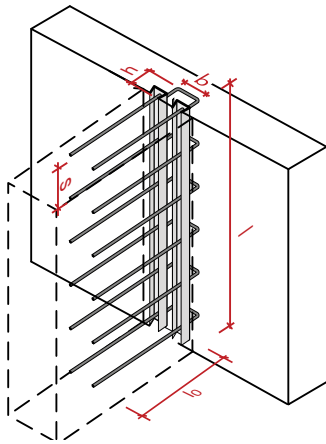
The element thickness "d" lies between 3 and 3.5 cm, depending on the steel Ø and spacing.

Due to manufacturing and installation conditions, the stirrup height may vary by 1 to 2 cm.

**bHook = 10 cm (Ø 12 ≥ 9.6 cm)

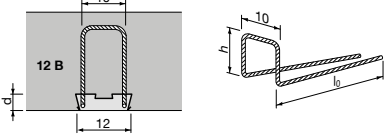
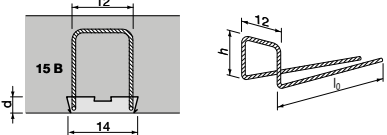
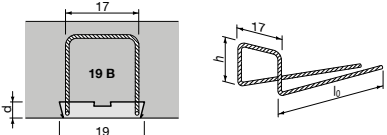
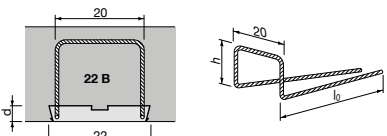
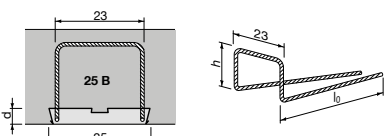
Custom lengths and spacings available upon request

Stabox® S Type B



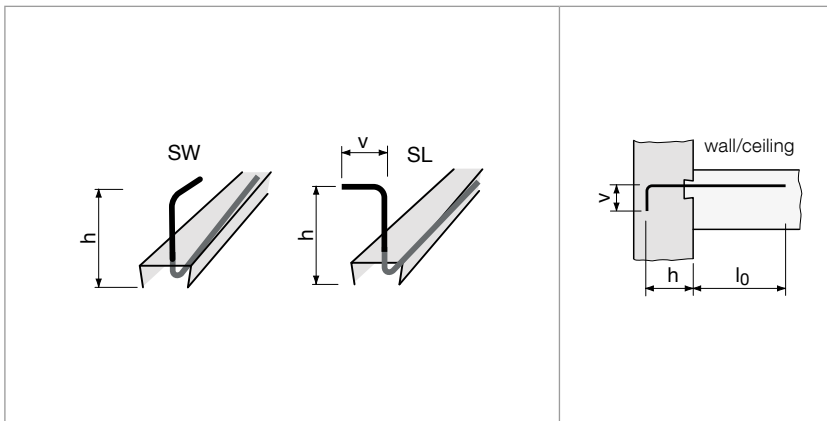
Stabox® S

Standard versions, double-shear, "indented" box profile for the calculation of the transverse force capacity V_{Rd}

	ARTICLE NO.	DESCRIPTION	TYPE	SLAB SIZE (MM)	L_0 (MM)	BOX WIDTH (MM)	STEEL CROSS-SECTION A_s cm ² /m
	STA12B1215	12 mm bar - 150 centers	12B	160 - 180	480	120	7.54
	STA12B1220	12 mm bar - 200 centers	12B	160 - 180	480	120	5.65
	STA15B1210	12 mm bar - 100 centers	15B	180 - 200	420	140	11.31
	STA15B1215	12 mm bar - 150 centers	15B	180 - 200	480	140	7.54
	STA15B1220	12 mm bar - 200 centers	15B	180 - 200	480	140	5.65
	STA19B1210	12 mm bar - 100 centers	19B	230 - 260	420	190	11.31
	STA19B1215	12 mm bar - 150 centers	19B	230 - 260	480	190	7.54
	STA19B1220	12 mm bar - 200 centers	19B	230 - 260	480	190	5.65
	STA22B1210	12 mm bar - 100 centers	22B	260 - 290	420	220	11.31
	STA22B1215	12 mm bar - 150 centers	22B	260 - 290	480	220	7.54
	STA22B1220	12 mm bar - 200 centers	22B	260 - 290	480	220	5.65
	STA25B1210	12 mm bar - 100 centers	25B	290	420	250	11.31
	STA25B1215	12 mm bar - 150 centers	25B	290	480	250	7.54
	STA25B1220	12 mm bar - 200 centers	25B	290	480	250	5.65

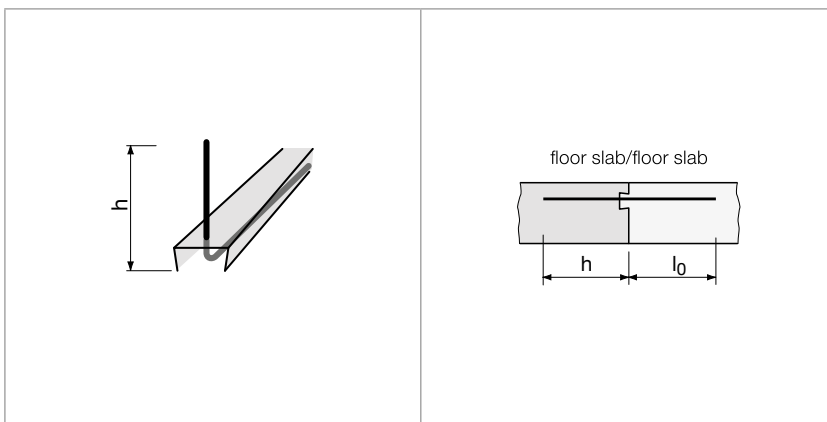
The element thickness "d" lies between 3 and 5 cm, depending on the steel \varnothing and spacing.
 Due to manufacturing and installation conditions, the stirrup height may vary by 1 to 2 cm.
 Boxes come taped and sealed in 1000mm or 1200mm lengths.
 Standard Embedment h is 130mm including box casing.
 Custom stirrup heights are available upon request.
 Custom lengths and spacings available upon request.

Stabox® custom manufacturing



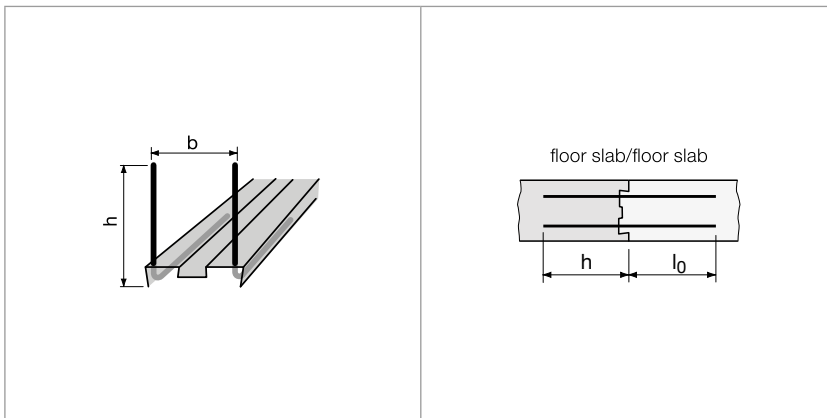
SW / SL

Single-row reinforcement box
e.g. wall/ceiling connection



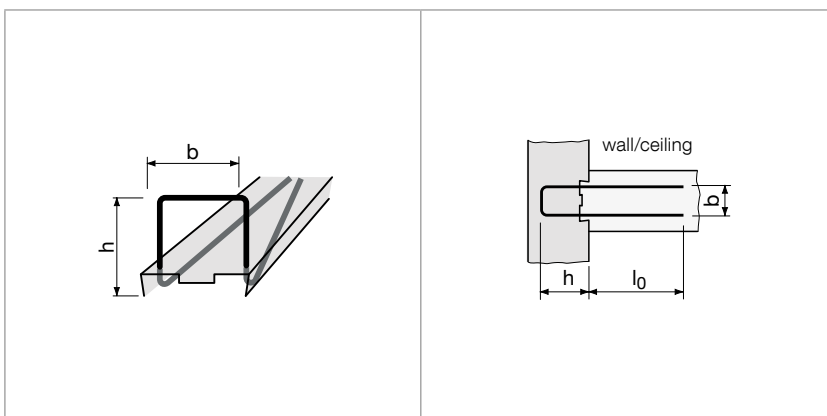
SG

Single-row reinforcement box e.g. for
the connection of floor slabs.



S2G

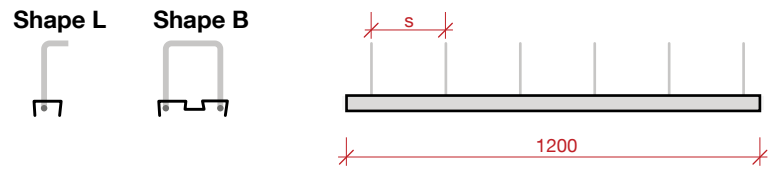
Double-section reinforcement con-
nection e.g. for the connection of floor
slabs with indentation transverse to the
box.



SB

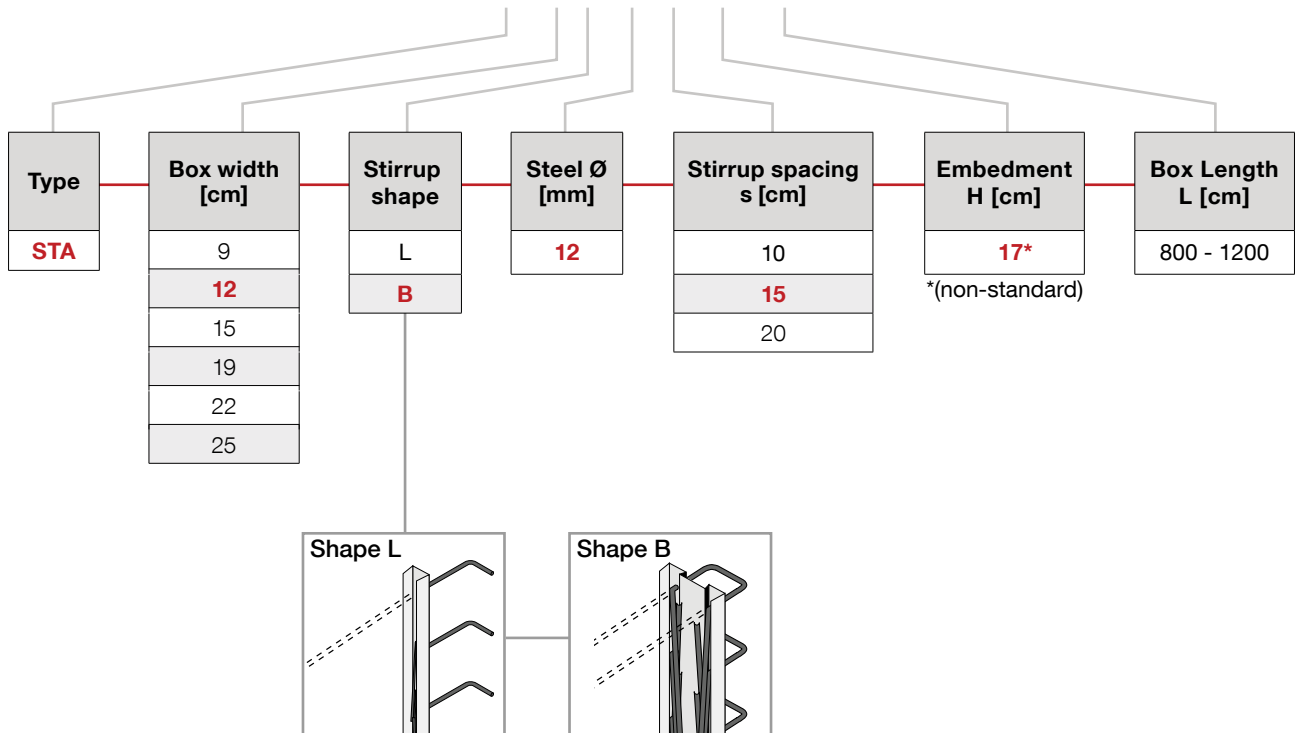
Double-section reinforcement connec-
tion with 'indented' box profile for the
absorbance of transverse forces.

Order code Stabox® S

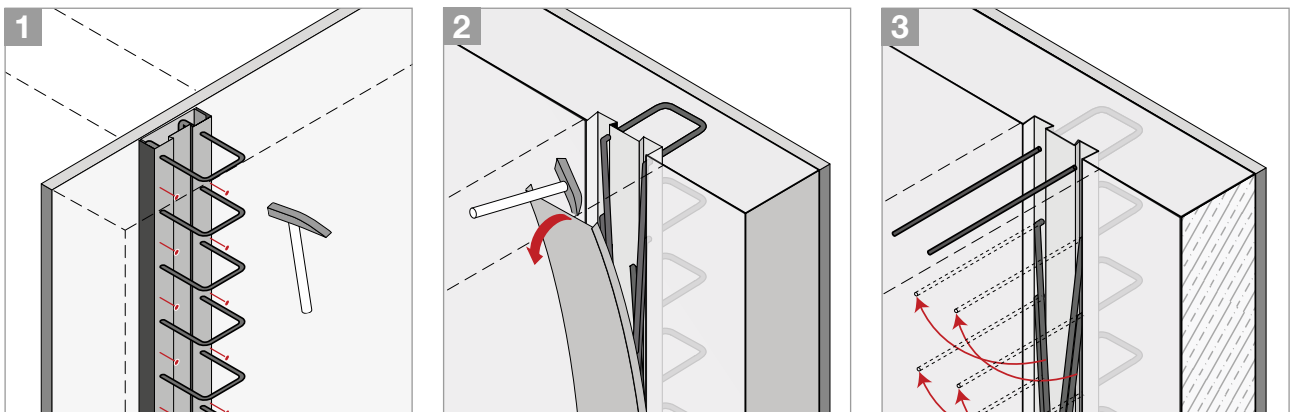


Example: Stabox® S

STA 12 B 12 15 H17 1000L



Application



Detailed application guidelines can be found at www.maxfrank.com.



MAX FRANK

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COMMON GROUND**

Max Frank Australia

1/42 Balaclava St
Woolloongabba
Queensland, 4102

Tel. 1300 853 235

info@maxfrank.com.au
www.maxfrank.com.au