RECOSTAL
BY DYWIDAG

RECOSTAL® Starter Packs

Key profiled continuity system

RECOSTAL® Starter Packs

Highest bearing capacity due to key profiled boxes
Highest joint category according to Eurocode 2

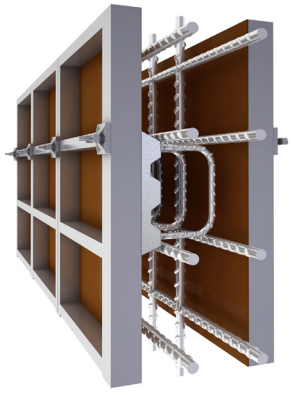
The main advantages of RECOSTAL® Starter Packs is the strong and robust box with high dimensional stability and a trapezoidal profile, which guarantees the highest bearing capacity according to Eurocode 2. Joint category “key profiled” according to DIN EN 1992-1-1/NA. RECOSTAL® Starter Packs meet the requirements of the DBV Bulletin.

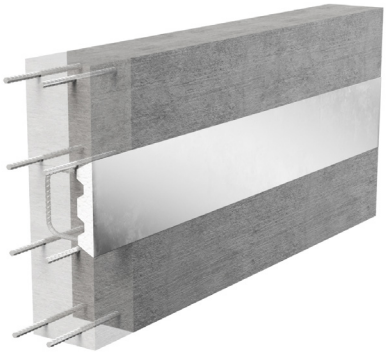
RECOSTAL® Starter Packs ensure time-saving installation of secure connections between steel reinforced concrete construction parts that are created with different pour sequences. Therefore, floor slabs, walls or staircases can be installed subsequently with rigid connections corresponding to the highest joint category “key profiled“.

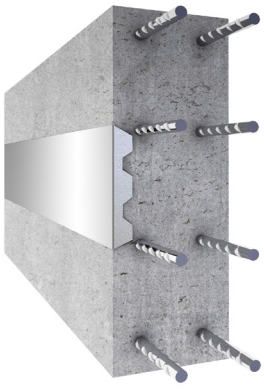
The large variety of shapes offers the perfect connection for many different design situations. The standard range includes starter packs with 8, 10 and 12 mm diameter and 1.25 m unit lengths. Unit lengths exceeding 1.25 m, special types for specific solutions and the combination with waterproofing systems as well as solutions for entire projects are possible on request.

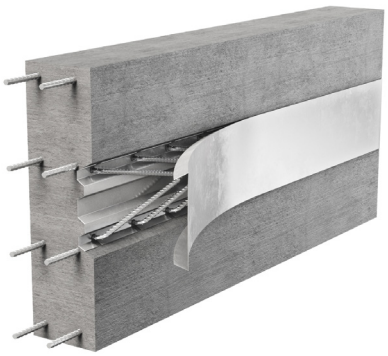
The benefits

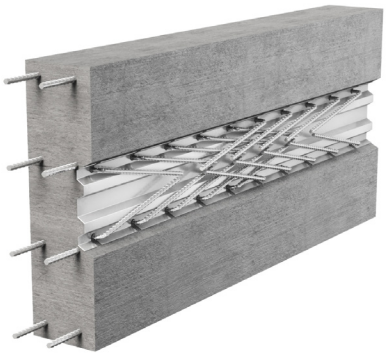
- Strong, robust galvanised sheet metal starter packs, dimensionally stable
- Cost and time effective installation, starter packs are simply nailed to the formwork
- Easy removal of the sheet metal covers due to their special design
- Trapezoidally profiled box for excellent bond
- Various possible combinations provide a solution for all common installation details

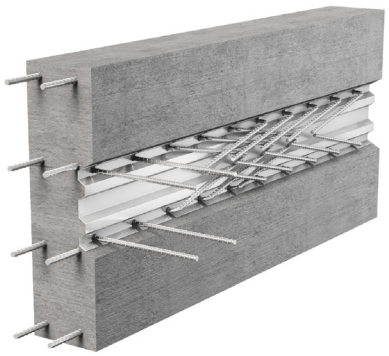










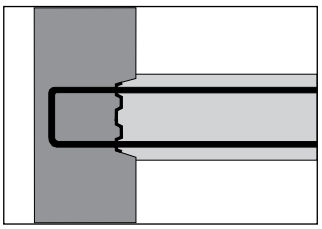


Structural design

RECOSTAL® Starter Packs type RSH and type RSV

Type RSH

Type RSV



Joint category“key profiled” according to DIN EN 1992-1-1/NA

DIN EN 1992-1-1/NA § 2.8.2: Planning Principles

The type of joint must be specified in the starter pack drawings

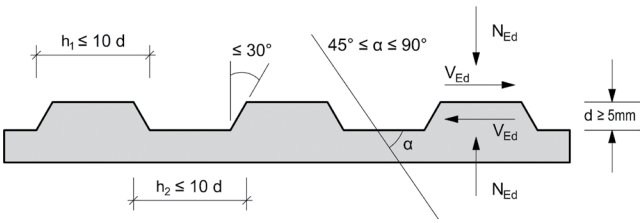
DIN EN 1992-1-1/NA § 6.2.5: Transfer of Shear Forces in Joints

EC 2 divides the type of joint surface into 4 categories. Trapezoidally profiled construction joints represent the highest category with regard to the transfer of shear forces.

Type of surface according to EC 2 § 6.2.5 (2)	Roughness coefficient c [1)]	Friction coefficient μ	Strength reduction coefficient [3)]
key profiled joint	0.5	0.9	0.7
rough joint	0.4 [2)]	0.7	0.5
smooth joint	0.2 [2)]	0.6	0.2
very smooth joint	0	0.5	0 [4)]

1) In case of dynamic or fatigue loading, concrete bond (adhesion) should not be taken into consideration (c = 0).
2) Where tension occurs perpendicular to the joint due to strain, c = 0.
3) For concrete classes ≥ C55/67 the stated values are to be multiplied by factor (1.1 - fck / 500) with fck in [N/mm²] .
4) The friction proportion in Expression 6.25 may be allowed up to the limit of μ · σN ≤ 0.1 fcd for very smooth joints.

Geometry of key profiled joints according to EC 2: recostal® Starter Packs meet the EC 2 requirements for the highest category “key profiled”.



Starter Pack Requirements according to DBV Bulletin

Starter packs without key profiled surfaces are to be classified as “rough”, “smooth” or “very smooth” by means of analysis. Starter packs that are not categorized should always be classified as joint category “very smooth”.

Concrete Cover for Starter Packs according to DBV Bulletin

For sheet steel starter packs that remain inside the construction, the concrete cover should be determined referring to the most unfavorable section according to DIN EN 1992-1-1, Paragraph 4.4 with Table 4.4DE. The allowance for deviations Δc_{dev} for the sheet steel of the box may be reduced by 5mm.

Reduced Bar Tension

According to DIN EN 1992-1-1, 8.3 (NA.5), the reinforcement surrounding sections of rebending, while exposed to predominantly static loading close to the limit of the bearing capacity, has to be determined with no more than 80 % of the otherwise permissible values of the calculated stress-strain curve of the reinforcing steel according to DIN EN 1992-1-1, Fig. 3.8. The design value of the anchorage length $l_{b,rqd}$ for this type of starter pack may, according to DIN EN 1992-1-1, 8.4.3 GL (8.3), also be determined with the reduced rated value of the bar tension $f_{yd,red} = 0.8\ f_{yk} / \gamma_s$.

Shear Force Longitudinal to the Construction Joint

[R1] Exp. 6.25: Design value of the shear capacity

Total bearing capacity = bearing contact area [concrete] + [friction] +[reinforcement] ≤ max. bearing capacity

$V_{Rdi} = c \cdot f_{ctd} + \mu \cdot \sigma_N + V_{Rdi,s} \leq V_{Rdi,max}$ [N/mm²]

Where

$f_{ctd} = \alpha_{ct} \cdot f_{ctk;0,05} / \gamma_c$ (with $\alpha_{ct} = 0.85$ and $\gamma_c = 1.5$ according to 3.1.6 (2)P);

$\sigma_N < 0.6\, f_{cd}$ (positive for stress and negative for tension);

$V_{Rdi,s} = \rho \cdot f_{yd,red}\, (1.2\mu \cdot \sin\alpha + \cos\alpha)$ where $\rho = A_s / A_i$ and

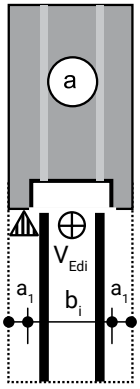
$f_{yd,red} = 400$ [N/mm²] / γ_s (0.8 f_{yk} at bending);

$V_{Rdi,max} = 0.5 \cdot v \cdot f_{cd}$ (no reduction to 0.3 $V_{Rd\,i,max}$)

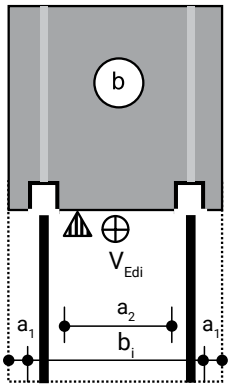
Table 1. Classification of joint surfaces according to [R1], 6.2.5

Type of surface according to EC 2 § 6.2.5 (2)	Roughness coefficient c [1]	Friction coefficient μ	Strength reduction coefficient V [3]
key profiled joint	0.5	0.9	0.7
rough joint	0.4 [2]	0.7	0.5
smooth joint	0.2 [2]	0.6	0.2
very smooth joint	0	0.5	0 [4]

1) In case of dynamic or fatigue loading, the concrete bond (adhesion) should not be taken into consideration (c = 0).
2) Where tension occurs perpendicular to the joint due to impact, c = 0.
3) For concrete classes ≥ C55/67, the stated values are to be multiplied by the factor (1.1 - f_{ck} / 500) with f_{ck} in [N/mm²].
4) The friction proportion in Expression 6.25 may be allowed for up to the limit of $\mu \cdot \sigma_N \leq 0.1\, f_{cd}$.



a1 < 50 mm



a_1 < 50 mm
a_2 ≥ 50 mm where surface finish is according to DIN EN 1992-1-1, 6.2.5

Like a_2 a_1 ≥ 50 mm may be taken into account for bi; however, in this case, only the slighter roughness of the starter pack box or the construction joint surface should be considered for bi. Alternatively, the individual width of the construction joint surface area or the starter pack box with their respective surface roughness for bi may be allowed for.

Shear Force Transverse to the Construction Joint

[R1] Exp. (6.2): Shear resistance without shear reinforcement, including reduction by applying roughness coefficient c

$V_{Rd,c} = (c / 0.5) \cdot [0.15 / \gamma_c \cdot k \cdot (100\rho_1 \cdot f_{ck})^{1/3} + 0.12\sigma_{cp}] \cdot b_w \cdot d$

where $k = 1 + \sqrt{(200/d\ [\text{mm}])} \leq 2.0$ and c according to Table 1

[R1] Exp. (6.8): Shear resistance with shear reinforcement

$V_{Rd,s} = (A_{sw} / s) \cdot f_{ywd} \cdot z \cdot \cot\theta$

where $z = 0.9\, d$ and/or $z \leq d - c_{v,i} - 30$ mm and $f_{ywd} = f_{yk} / \gamma_s$

Maximum acceptable shear with shear reinforcement (very smooth joint not permissible): [R1] Exp. (6.9) for 90° bar reinforcement, reduced to 30% in sections of rebending

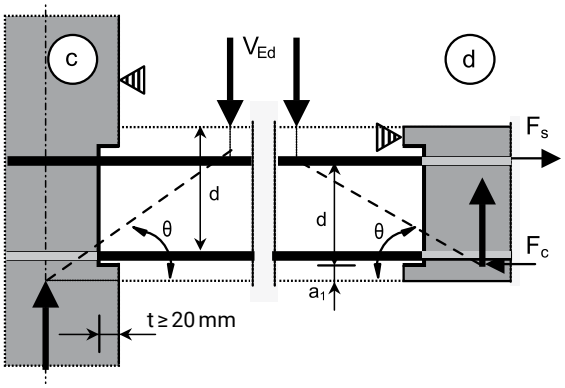
$V_{Ed} \leq 0.30 \cdot V_{Rd,max} = 0.30 \cdot b_w \cdot z \cdot v_1 \cdot f_{cd} / (\cot\theta + \tan\theta)$

with $v_1 = 0.75 \cdot (1.1 - f_{ck} / 500) \leq 0.75$

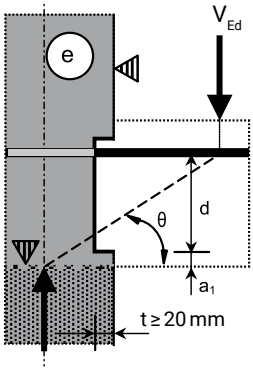
[R1] Exp. (6.7aDE): Reduction of the strut inclination, calculated with reduction to θ ≤ 45° in the area $l_e = 0.5\, l_e \cdot \cot\theta \cdot d$ on either side of the joint $1.0 \leq \cot\theta \leq [(1.2 + 1.4\sigma_{cd} / f_{cd})] / [(1 - V_{Rd,cc} / V_{ed})] < 3.0$

where [R1]] Exp. (6.7bDE): $V_{Rd,cc} = 0.48 \cdot c \cdot f_{ck}^{1/3} \cdot (1 - 1.2\sigma_{cd} / f_{cd}) \cdot b_w \cdot z$ with c according to Table; $\sigma_{cd} = N_{Ed} / Ac > 0$ as compressive strength!

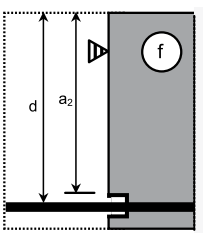
Please note: The longitudinal reinforcement to be considered in Exp. (6.2) is, according to the structural design, the one that is exposed to tensile loads (e.g. c, d or e). Fig. d and e show the effective depth d to be reduced by a1 due to the difficult concrete pour conditions of a1 < 50 mm in the stress area.



Wall to floor slab



Floor slab to floor slab



a_2 ≥ 50 mm where surface roughness according to DIN EN 1992-1-1, 6.2.5 (see Table 1)

Edge of concrete pour area,
[R1] DIN EN 1992-1-1 with DIN EN 1992-1-1/NA

RECOSTAL® Starter Pack RSH

RECOSTAL® Starter Pack RSH with trapezoidal profile for transverse stresses.

It meets the requirements of DIN EN 1992-1-1 for the highest surface category “key profiled“ in the case of transverse loads. RECOSTAL® Starter Packs type RSH meet the requirements of the DBV Bulletin “Rückbiegen von Betonstahl und Anforderungen an Verwahrkästen nach Eurocode 2”.

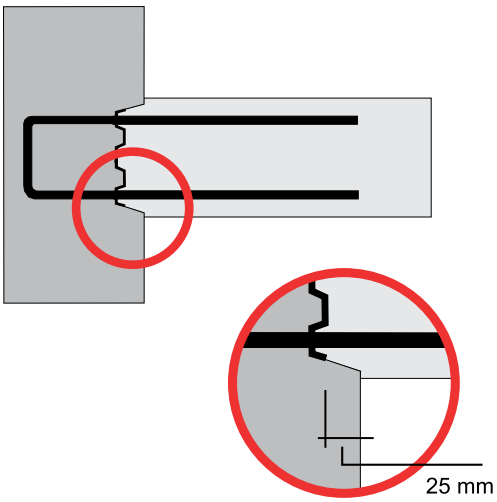
[“Rebending of reinforcement steel and requirements for continuity strips according to Eurocode2”] (issue January 2011) for the highest joint category “key profiled” in the case of transverse stresses. No national approval required!

Technical Data

- Trapezoidally profiled starter packs, joint category “key profiled“ according to DIN EN 1992-1-1, highest shear force bearing capacity
- Concrete reinforcement steel BSt 500 S or BSt 500 WR according to DIN 488, Ø = 8 mm – 14 mm (16 mm)
- Diameter of bending rolls dbr ≥ 6 Ds in the section of rebending
- 8 standard profiles, bar widths 10 cm – 22 cm, smaller or larger bar widths on request
- Standard unit length L= 1.25 m, fixed lengths up to 2.50 m on request

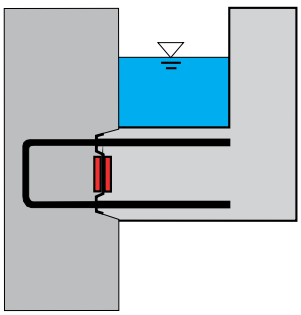
Increased Corrosion Protection

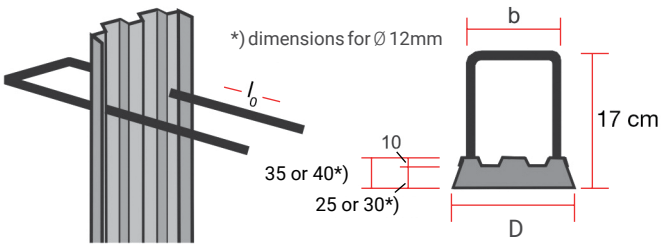
RECOSTAL® Starter Packs type RSH is installed with a planned 25 mm recess.

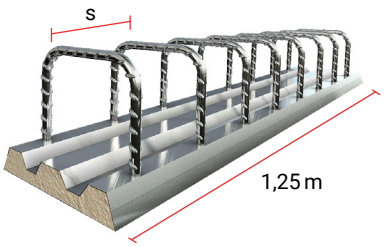


RSH active Construction Joint Sealing

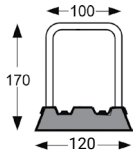
RECOSTAL® Starter Packs type RSH active is with active Waterproofing. It can be manufactured with an active bentonite coating on both sides for the application in construction joints exposed to water.







Reinforcement steel: BSt 500 S or BSt 500 WR

Standard	Type	Ø (mm)/s (cm)	Lap length l_0 (cm)	Bar height h (cm)	Bar width b (cm)	Box width D (cm)
	RSH 10	8/15	32	17	10	12
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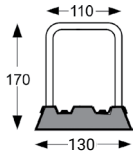
		10/20	39	17	10	12
		12/15	46	17	10	12
		12/20	46	17	10	12
	RSH 11	8/15	32	17	11	13
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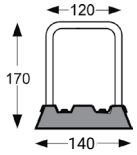
		10/15	39	17	11	13
		10/20	39	17	11	13
		12/15	46	17	11	13
		12/20	46	17	11	13
	RSH 12	8/15	32	17	12	14
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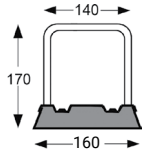
		12/20	46	17	12	14
	RSH 14	8/15	32	17	14	16
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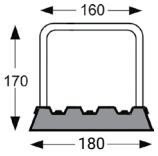	RSH 16	8/15	32	17	16	18
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		10/20	39	17	16	18
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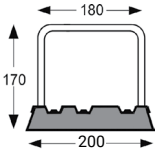
		12/20	46	17	16	18
	RSH 18	8/15	32	17	18	20
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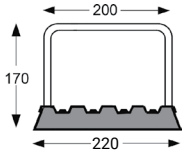	RSH 20	8/15	32	17	20	22
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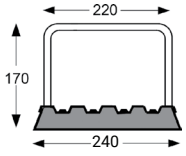
		12/20	46	17	20	22
	RSH 22	8/15	32	17	22	24
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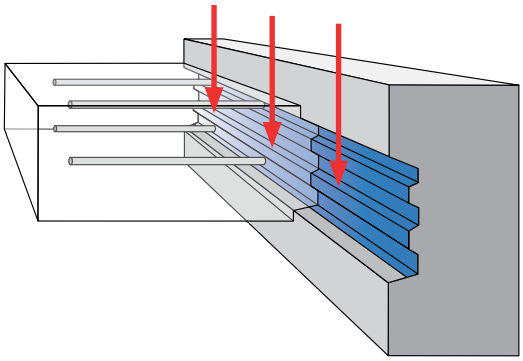
		10/15	39	17	22	24
		10/20	39	17	22	24
		12/15	46	17	22	24
		12/20	46	17	22	24

Other sizes on request

Standard Type RSH

RECOSTAL® Starter Packs type RSH with trapezoidal profile for transverse stresses.



Shear Force Transverse to the Construction Joint

Highest joint category “key profiled”

Determination according to:

- DIN EN 1992-1-1/NA
- DBV-Bulletin “Rückbiegen…nach Eurocode 2”
  [“Rebending… according to Eurocode 2“], January 2011

Determination Example - Acceptable Shear Force

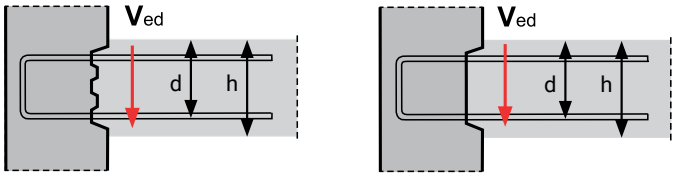
Acceptable shear force without shear reinforcement, including reduction by applying roughness coefficient c: $V_{Rd,c} = (c /0.5) \cdot [C_{Rd,c} \cdot k \cdot (100\rho_1 \cdot f_{ck})^{1/3} + k_1 \cdot \sigma_{cp}] \cdot b_w \cdot d$ (6.2.a)

Values	Definition
h = 20 cm	Height of the construction part
d = 17 cm	Effective depth
b_w = 1.0 m	1m width of section
C20/25	Tab. 3.1 > f_{ck} = 20 N/mm²
c = 0.5	6.2.5 (2) > key profiled metal base
$C_{Rd,c}$ = 0.15/γ_c = 0.10	(NA, 6.2.2(1)), Y_c = 1.5
k = 1 +√(200/170) = 2.08	k = 1 +√(200/d [mm]) ≤ 2.0
ρ1 = 7.54/(100 x 17) = 4.435 · 10^{-3}	(A sl/b_w · d) ≤ 0.02 determined with Ø 12/15 cm = 7.54 cm²/m, single
K1 = 0.12	NA, 6.2.2 (1)
σ_{cp} = 0	No compressive stress in the concrete from axial loading or prestressing

$V_{Rd,ct}$ = (0.5/0.5) · [0.10 · 2.0 · (100 · 4.435 · 10-3 · 20)$^{1/3}$ + 0] · 1.0 · 0.17 · 103
= 70.4 kN/m

Please note:
If anchorage and lap lengths are reduced, the bearing values have to be reduced accordingly.

08 Shear Force Bearing Capacity (kN/m)



Shear force bearing capacity (kN/m) of slab to steel reinforced concrete wall connections without shear reinforcement depending on the joint category and the steel cross section, if starter packs are used.

The values given in the table are subject to the application of the entire anchorage and lap lengths required according to EC 2.

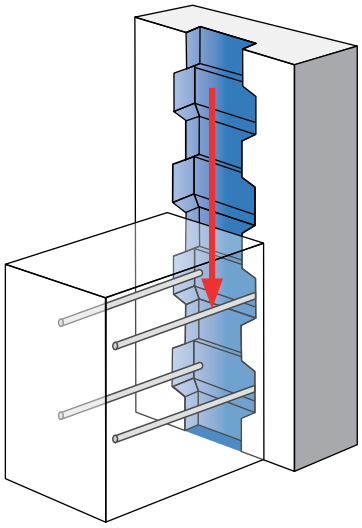
- Tabular values $V_{Rd,c}$ in kN/m
- All values have been determined for $\sigma_{cp} = 0$

Effective depth d (cm)	Type	Ø Bar diameter/ centers	Joint category key profiled $V_{Rd,c,kp}$			Joint category smooth $V_{Rd,c,smooth}$		
			C 20/25	C 25/30	C 30/37	C 20/25	C 25/30	C 30/37
11	RSH 10	Ø 8/15	40.18	43.28	45.99	16.07	17.31	18.40
		Ø 10/15	46.64	50.24	53.39	18.66	20.10	21.36
		Ø 12/15	52.65	56.72	60.27	21.06	22.69	24.11
12	RSH 11	Ø 8/15	42.58	45.86	48.74	17.03	18.35	19.50
		Ø 10/15	49.42	53.24	56.57	19.77	21.29	22.63
		Ø 12/15	55.79	60.11	63.87	22.32	24.04	25.55
13	RSH 12	Ø 8/15	44.91	48.38	51.41	17.96	19.35	20.56
		Ø 10/15	52.13	56.16	59.68	20.85	22.46	23.87
		Ø 12/15	58.86	63.40	67.37	23.54	25.36	26.95
15	RSH 14	Ø 8/15	49.41	53.22	56.56	19.76	21.29	22.62
		Ø 10/15	57.35	61.78	65.65	22.94	24.71	26.26
		Ø 12/15	64.75	69.75	74.12	25.90	27.90	29.65
17	RSH 16	Ø 8/15	53.71	57.85	61.50	21.48	23.14	24.60
		Ø 10/15	62.34	67.16	71.36	24.94	26.86	28.55
		Ø 12/15	70.38	75.82	80.57	28.15	30.33	32.23
19	RSH 18	Ø 8/15	57.84	62.31	66.21	23.14	24.92	26.48
		Ø 10/15	67.14	72.33	76.86	26.86	28.93	30.74
		Ø 12/15	75.80	81.65	86.77	30.32	32.66	34.71
21	RSH 20	Ø 8/15	61.09	65.8	69.93	24.43	26.32	27.97
		Ø 10/15	70.91	76.38	81.17	28.36	30.55	32.47
		Ø 12/15	80.05	86.23	91.64	32.02	34.49	36.66
23	RSH 22	Ø 8/15	63.48	68.38	72.67	25.39	27.35	29.07
		Ø 10/15	73.69	79.38	84.35	29.47	31.75	33.74
		Ø 12/15	83.19	89.61	95.23	33.28	35.85	38.09

Please note:
If anchorage and lap lengths are reduced, the bearing values have to be reduced accordingly.

Standard Type RSV

RECOSTAL® Starter Packs type RSV with trapezoidal profile for longitudinal stresses.



Shear Force Longitudinal to the Construction Joint

Highest joint category “key profiled”

Determination Example - Shear Capacity

Total bearing capacity =
bearing contact area [concrete] + [friction] + [reinforcement] ≤ max. bearing capacity

Example: concrete C 20/25

Values	Definition
b = 17 cm	Shear force area
$\sigma_N = 0$	Nominal compressive stress vertical to the joint N_{Ed} = design value of the applied axial force or prestressing which can act together with the shear force.
c = 0.5	c according to DIN EN 1992-1-1, 6.2.5(2) (key profiled)
μ = 0.9	μ according to DIN EN 1992-1-1, 6.2.5(2) (key profiled)
$f_{ctd} = \alpha_{ct} \cdot f_{ctk;0.05} / \gamma_c$ $= 0.85 \cdot 1.5/1.5$ $= 0.85$	Design value of the axial tensile strength of concrete with $f_{ctk;0.05} = 1.5$ N/mm² according to DIN EN 1992-1-1, Table 3.1 and $\gamma_c = 1.5$ for concrete according to DIN EN 1992-1-1, Table 2.1
	$\alpha_{ct} = 0.85$ according to DIN EN 1992-1-1 / NA 3.1.6 (2)P
Asl = Ø10/15 double = 5.24 x 2 = 10.48 cm²/m	Cross section of the reinforcement transverse to the joint, double
$f_{yd,red} = 0.8 \cdot 500/1.15$ $= 348$ N/mm²	Design value of the reinforcement steel yield strength with $f_{yk} = 500$ N/mm² according to DIN EN 1992-1-1 / NA 3.2.2(3P) $\gamma_c = 1.15$; reduced steel tension 80 % f_{yd} according to DIN EN 1992-1-1 / NA 8.3 (5)P
α = 90°	Angle of the reinforcement transverse to the joint
v = 0.7	v according to DIN EN 1992-1-1 / NA 6.2.2(6)
$f_{cd} = \alpha_{cc} \cdot f_{ck} / \gamma_c$ $= 0.85 \cdot 20/1.5$ $= 11.33$ N/mm²	Design value of the characteristic cylinder strength with $f_{ck} = 20$ N/mm² according to DIN EN 1992-1-1, Tab.3.1 and α_{cc} = 0.85 according to DIN EN 1992-1-1, NA 3.1.6(1)P and $\gamma_c = 1.5$ according to DIN EN 1992-1-1 Tab.2.1N

Bearing Contact Area Concrete

$V_{Rdi,c} = (c \cdot f_{ctd}) = (0.5 \cdot 0.85)$
$= 0.425$ N/mm²

Bearing Contact Area Friction

$V_{Rd,\mu} = (\mu \cdot \sigma_N) = (0.9 \times 0)$
$= 0$

Bearing Contact Area - Reinforcement

$V_{Rd,sy} = \rho \cdot f_{yd} \cdot (1.2\mu \cdot \sin\alpha + \cos\alpha) = 10.48/(17 \cdot 100) \cdot 348$
$\cdot (1.2 \cdot 0.9 \cdot \sin 90° + \cos 90°)$
$= 2.32$ N/mm²

Factor 1.2 according to DIN EN 1992-1-1, NA 6.2.5

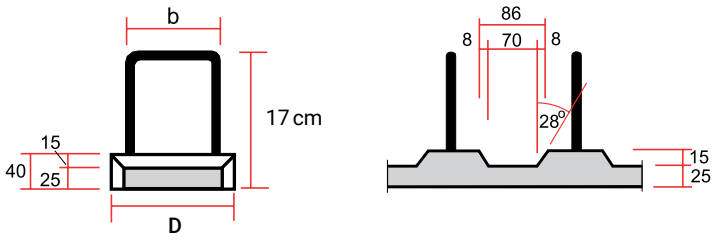
Total Bearing Capacity

$V_{Rdi} = V_{Rdi,c} + V_{Rd,sy} < V_{Rdi,max}$
$> V_{Ed}$

The values stated apply to full length anchorage and lap lengths; if the lengths are reduced, the bearing values have to be reduced accordingly.

$V_{Rdi,max} = 0.5 \cdot v \cdot f_{cd}$
$= 0.5 \cdot 0.7 \cdot 11.33 = 3.97$ N/mm²
$\hat{=} 3.97 \cdot 10^3 \cdot 0.17 = 674.9$ kN/m

$V_{Rdi} = (0.425 + 2.32) \cdot 10^3 \cdot 0.17$
$= 466.65$ kN/m = applicable
$< V_{Rdi,max} = 674.9$ kN/m



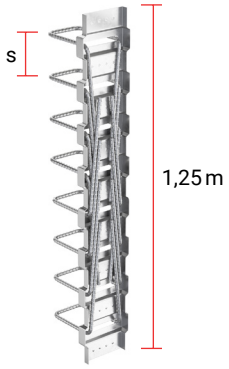
Standard	Type	Ø (mm)/s (cm)	Lap length l_0 (cm)	Bar height h (cm)	Bar width b (cm)	Effective depth d (cm)
	RSV 8	8/15	32	17	8	11
		10/15	39	17	8	11
	RSV 11	8/15	32	17	11	14
		10/15	39	17	11	14
		12/15	46	17	11	14
	RSV 14	8/15	32	17	14	17
		10/15	39	17	14	17
		12/15	46	17	14	17
	RSV 18	8/15	32	17	18	21
		10/15	39	17	18	21
		12/15	46	17	18	21

Table of the Bearing Capacity Applicable for the Shear Force Stress Longitudinal to the Starter Pack

The values given in the table are subject to the anchorage and lap lengths required according to DIN EN 1992-1-1.

- Tabular values in kN/m
- All values have been determined for $\sigma_{Nd} = 0$

Determination according to:

- DIN EN 1992-1-1 § 6.2.5 (6.25)
- DBV Bulletin “Rückbiegen von ...“ [Rebending...] (Issue 2011)
- Type of surface “key profiled”

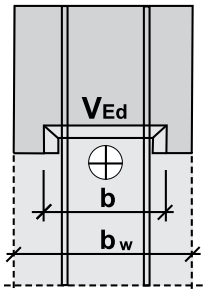
Taken as:

$\sigma_N = 0$; $45° \leq \alpha \leq 90°$

Applicable:

max. $V_{ed} < V_{Rd,i} < V_{Rd,i}$ max

e. G. RSV 8 - 8/15 cm, max. V_{ed} = 298.56 kN/m = applicable

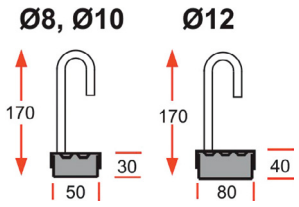


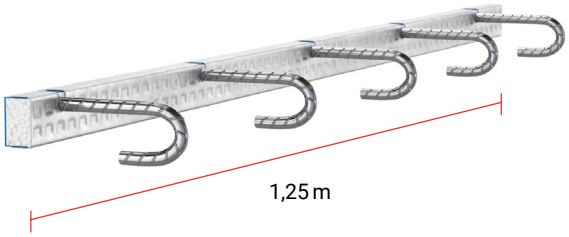
Shear force area b (mm)	Type	Ø (mm)/ s (cm)	Joint category key profiled (kp)					
			C 20/25		C 25/30		C 30/37	
			$V_{Rd,i}$	$V_{Rd,i\ max}$	$V_{Rd,i}$	$V_{Rd,i\ max}$	$V_{Rd,i}$	$V_{Rd,i\ max}$
110	RSV 8	8/15	298.56	436.21	307.91	545.55	314.13	654.5
		10/15	440.63	436.21	449.98	545.55	456.20	654.5
140	RSV 11	8/15	311.31	555.17	323.21	694.33	331.12	833.00
		10/15	453.38	555.17	465.28	694.33	473.19	833.00
		12/15	626.27	555.17	638.17	694.33	646.08	833.00
170	RSV 14	8/15	324.06	674.90	338.51	843.12	348.12	1011.50
		10/15	466.65	674.90	480.58	843.12	490.19	1011.50
		12/15	639.02	674.90	653.47	843.12	663.07	1011.50
210	RSV 18	8/15	341.06	832.76	358.91	1041.50	370.78	1249.50
		10/15	483.13	832.76	500.98	1041.50	512.85	1249.50
		12/15	656.02	832.76	673.87	1041.50	685.73	1249.50

Please note:
If anchorage and lap lengths are reduced, the bearing values have to be reduced accordingly.

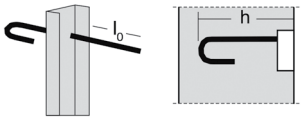
Standard Type V

RECOSTAL® Single Bar Starter Packs type VHQ

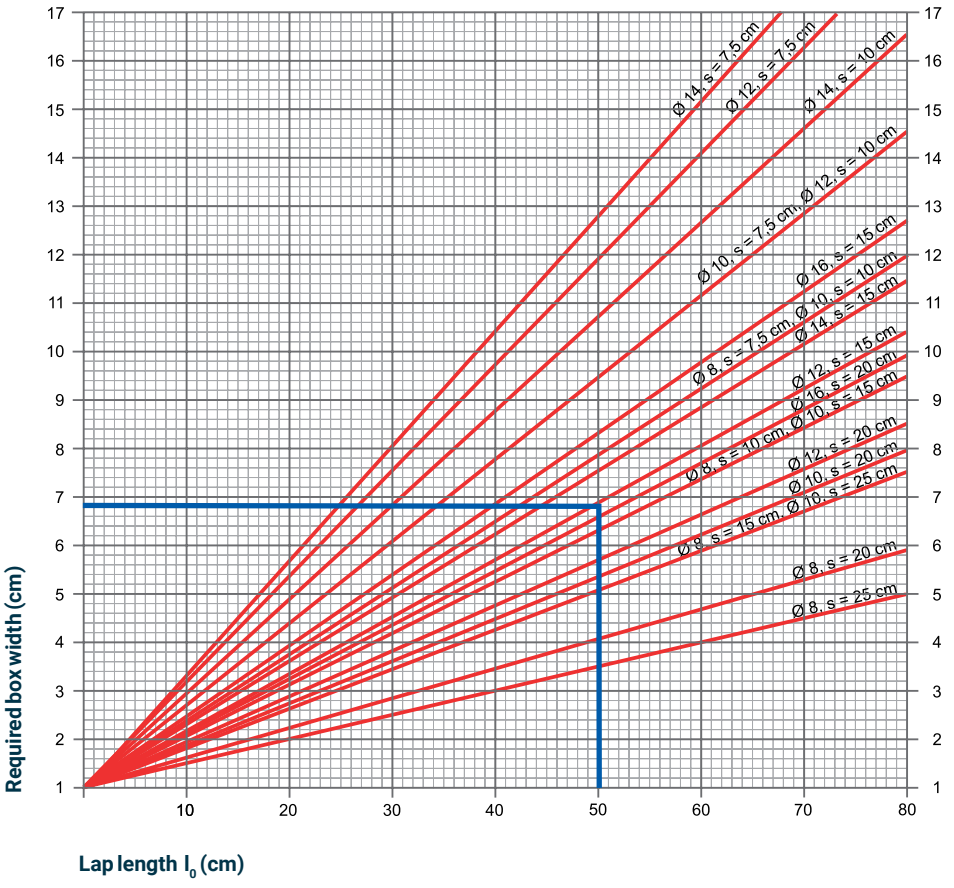




Reinforcement steel: BSt 500 S or BSt 500 WR

Standard	Type	Ø (mm)/s (cm)	Lap length l_0 (cm)	Centers-s (cm)
	VHQ	8/15	32	15
		8/20	32	20
		8/25	32	25
		10/15	39	15
		10/20	39	20
		10/25	39	25
		12/15	46	15
		12/20	46	20
		12/25	46	25

Graph for the Determination of the Production-Related required Box Widths and Max. Producible l_0-Lengths



Notes:

b: Production-related required box width for single bars. In case of double bar starter packs, the respective value has to be doubled.

Example:

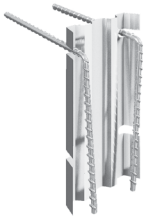
Type SB (double bar starter pack)
Ø 12, s = 15 cm, l_0 = 50 cm
▶ required box width: 2 x 6.8 = 14 cm

RECOSTAL® Starter Packs Special Types are made to specification and are available in many different shapes

Special solutions and solutions for special projects on request.

Special Types

RSH SG



RSH SKG

RSH SKB

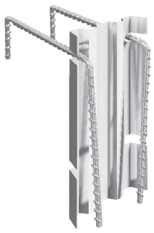
RSH S2G

RSH SKG-v

RSH SRG

RSH SKB-v

RSH S2v



RSH S2G-v

RSH SB

RSH SWQ

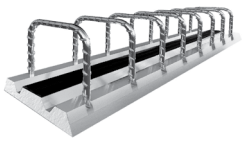
RSH SHQ

RSH SWv

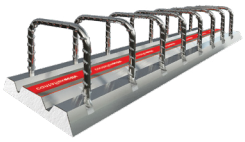
RSH S2H

RSH SK2H

RSH SKR



RSH bitum



RSH activ

020-UWB-2840/W

BY 5 B-EC 2 nro 76

The calculations and values given apply to Germany in accordance with the national annex.
Values for other approvals can be found in the respective national brochure.

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