



# CVS Staircase Connectors

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# CVS 40 / 60 / 100 Staircase Products

The CVS 40 / 60 / 100 staircase products are used for connecting precast staircases to concrete shear walls. This is done by having a bearing that rests within the shear wall.

The former for the cast in part is re-usable. The former is secured by two screws and can be removed once the concrete has cured.

The inner bearing part of the connector is slid out into the pocket in the shear wall on the construction site.

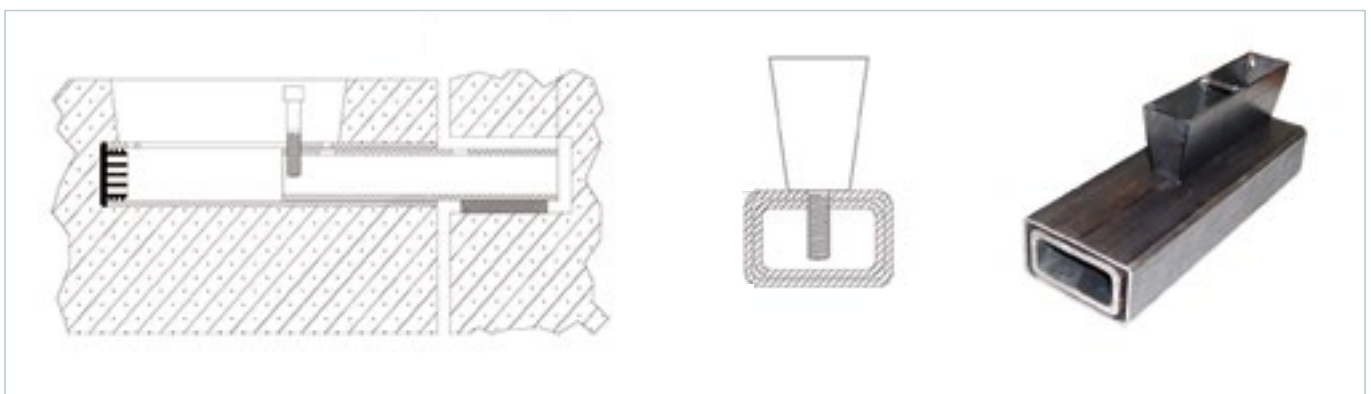
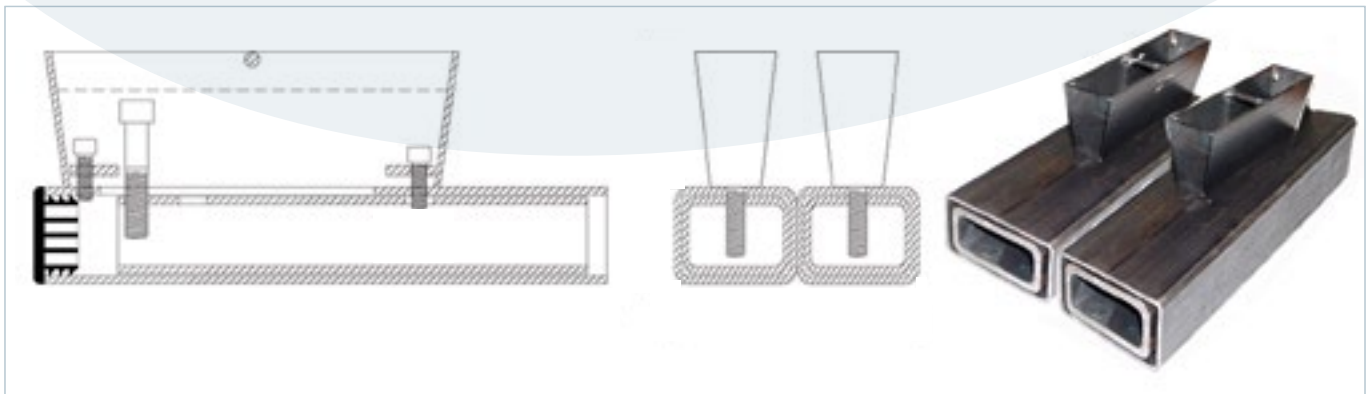
CVS bearers are produced under ISO 9001.



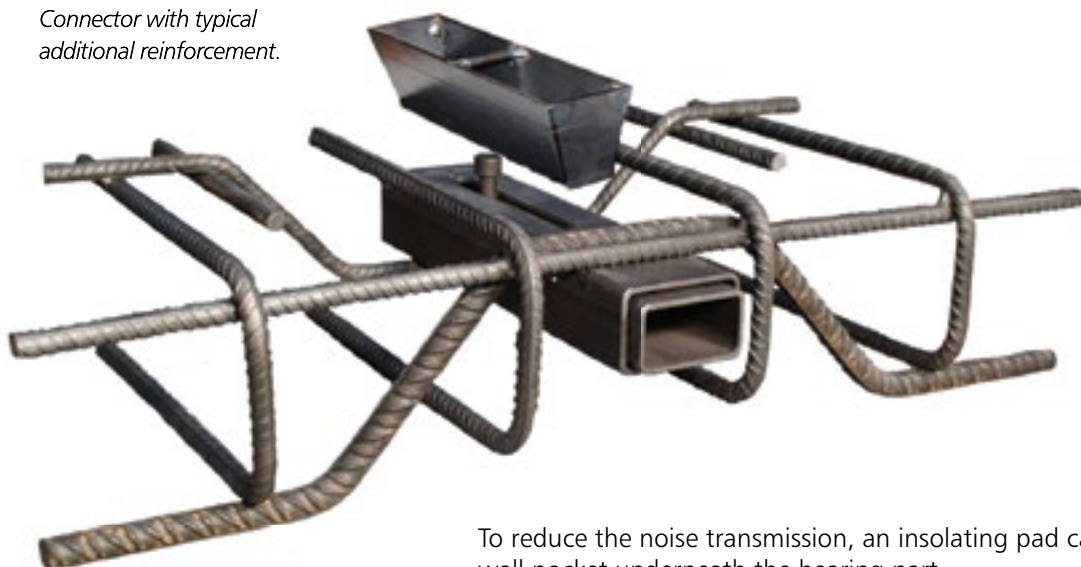
*CVS bearing in mold.*



*CVS inner part slide out of bearing.*



Connector with typical additional reinforcement.



To reduce the noise transmission, an insulating pad can be inserted into the wall pocket underneath the bearing part.

The staircase connectors, made of material S355 are available in four different load groups. The product designation CVS 40 / 60 / 100 / 200 indicates the ultimate capacity per connector in kN.

Additional reinforcement located at the rear of the cast in part is required to transfer loads from the connectors into precast unit (see above image and overleaf).

Calculations are available for the staircase connectors to provide proof for the steel components and the anchorage arrangement within the precast unit.

Connector load bearing capacities have also been verified by practical tests.

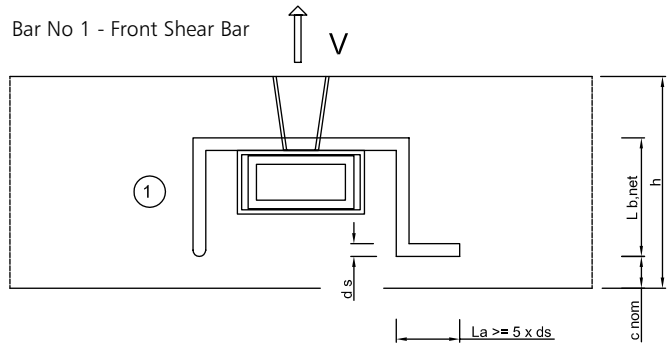
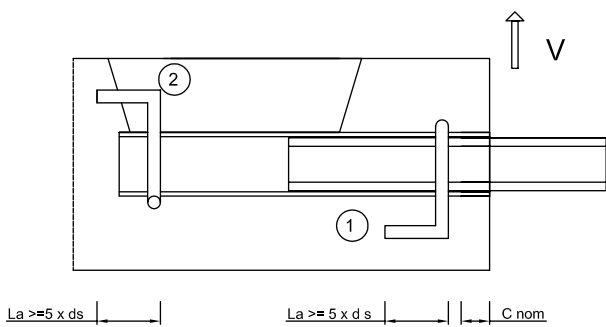
Available in black or galvanised finish.

## Technical Data

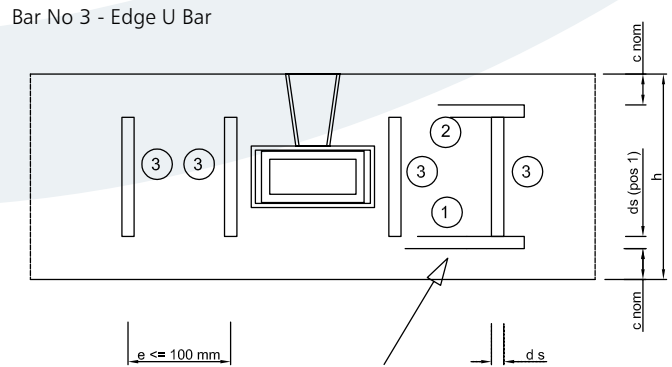
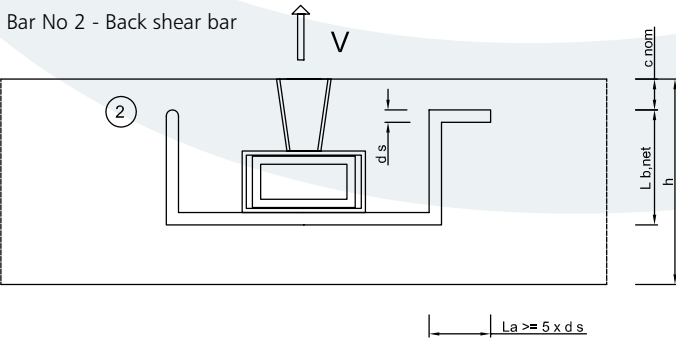
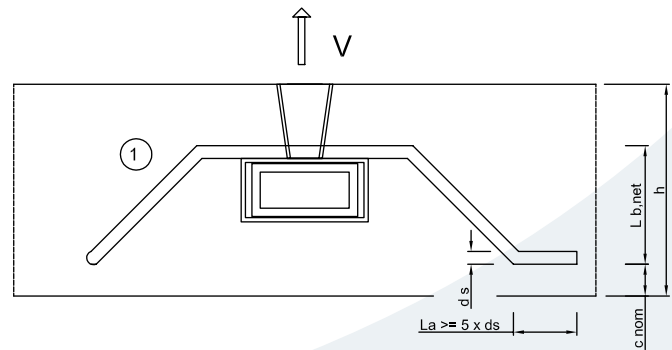
Part No		CFS-CVS-40						CFS-CVS-60				CFS-CVS-100					
Design Capacity		kN		40		175		200		175		200		200		250	
Landing Thickness		mm		150		175		200		175		200		200		250	
Concrete				C30/37		C35/45		C30/37		C35/45		C30/37		C35/45		C30/37	
Bar No 1 - Front Shear Bar	Bars	No	2	2	1	1	1	1	2	2	2	1	1	2	2	1	1
	Diameter, ds	mm	12	12	16	16	16	12	12	12	10	16	16	16	16	20	20
	Lb,net	mm	60	60	85	85	110	110	85	85	110	110	110	110	110	160	160
	La ≥ 5 x ds	mm	60	60	80	80	80	60	60	60	50	80	80	80	80	100	100
Bar No 2 - Back Shear Bar	Bars	No	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
	Diameter, ds	mm	16	12	12	12	12	12	16	16	16	16	16	12	12	12	12
	Lb,net	mm	100	100	100	100	100	100	100	100	100	100	100	110	110	110	110
	La ≥ 5 x ds	mm	80	60	60	60	60	60	80	80	80	80	80	60	60	60	60
Bar No 3 - Edge U Bar	Bars	No	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	Diameter, ds	mm	12	12	12	12	12	12	12	12	12	12	12	16	16	16	16
	Spacing, e	mm	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	Lb,net	mm	350	350	350	350	350	350	400	400	400	400	400	400	400	400	400

The maximum gap between the concrete stair and wall elements to achieve the full design capacity is 40mm. If this is increased to 50mm, the capacities reduce by 5kN.

# Reinforcement Arrangement



- Anchorage of shear bars may be bent either perpendicular or aligned to CVS.
- Shear bar may be vertical or at an angle as shown.
- Shear bars may be doubled up in some cases.



- length  $L_a$  after bending from pos. 1 and pos. 2  $\geq 5 \times d_s$ , increase until the next U bar Pos. 3

