

e-straight - Load Transfer Capacity

The follow table shows the load transfer capacity in [kN/m] of the **e-straight** construction joint at ULS for plain concrete and a joint opening of 15 mm. The values are based on the following formula which is derived from laboratory testing results in accordance with EN 1990 (EC0).

$$V_{Rd,c} = 0,0525 / \gamma_c \cdot k^{3/2} \cdot f_{ck}^{1/2} \cdot 0,60 \cdot h / 1,4 \text{ [kN/m]}$$

with: $\gamma_c = 1,50$ [-]; $k = 1 + (200 / d)^{0,5} \leq 2,0$; $d = h - 60\text{mm}$



e-straight load transfer capacity in [kN/m] (kips/ft)			
Slab height h [mm] (inch)	unreinforced (plain) concrete		
	C25/30 (3600 PSI)	C30/37 (4350 PSI)	C35/45 (5000 PSI)
140 (5 1/2)	29,70 (2,03)	32,53 (2,23)	35,14 (2,41)
150 (6)	31,82 (2,18)	34,86 (2,39)	37,65 (2,58)
160 (6 3/8)	33,94 (2,33)	37,18 (2,55)	40,16 (2,75)
170 (6 3/4)	36,06 (2,47)	39,50 (2,71)	42,67 (2,92)
180 (7)	38,18 (2,62)	41,83 (2,87)	45,18 (3,10)
190 (7 1/2)	40,31 (2,76)	44,15 (3,03)	47,69 (3,27)
200 (8)	42,43 (2,91)	46,48 (3,18)	50,20 (3,44)

The table only provides the material capacity at ULS (safety: $\gamma = 1,5$). This table does not replace the necessary design check. The design check is available for each project upon request.

The e-straight construction joint is recommended for use in light and medium loaded floors and for floor thickness' between 140 and 200 mm (5.5" - 8") without forklift traffic with hard wheels other than pneumatic tires. For slab thickness' greater than 150 mm (6"), it's recommended to weld on jobsite an additional vertical steel plate to the bottom. For further information with regards to the installation, please consult the e-straight installation guide.

ATTENTION: The load transfer capacity of e-straight is reduced when compared to Cosinus Slide® but is still considerably greater than discontinued plate- or doweled joints. For calculations, validations and optimal use of the joints for your respective projects, please contact your local dealer or send a request to info@hcjoints.be.

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