

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)
210 (8 1/4)	44,55 (3.05)	48,80 (3.34)	52,71 (3.61)
220 (8 3/4)	46,67 (3.20)	51,12 (3.50)	55,22 (3.78)

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 220 mm (5.5" – 8 3/4") without forklift traffic with hard wheels other than pneumatic tires. Higher joints for floor thicknesses above 220 mm (8 3/4") are available on request and function of the corresponding design check. 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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