

ULTRAlntels (28 day concrete strength)

SECTION PROPERTIES

Non Composite Section Properties	Units	110 x 80	110 x 170
Mass of Section	kg/m	21	45
Gross Area	mm ²	8800	18700
EI	Nmm ²	1.897 X 10 ¹¹	18.772 X 10 ¹¹
Positive Moments			
Ultimate Moment capacity (ϕMu^{pos})	kNm	5.25	9.14
Cracking Moment (M_{cr}^{pos})	kNm	1.49	5.88
Reinforcement Shear component ($\phi Vuc.reo^{pos}$)	kN	6.20	12.82
Moment Shear component ($\phi Mo.max^{pos}$)	kNm	0.75	2.54
Web Shear capacity ($\phi Vuc.web^{pos}$)	kN	11.66	25.90
Negative Moments			
Ultimate Moment capacity (ϕMu^{neg})	kNm	5.25	9.14
Cracking Moment (M_{cr}^{neg})	kNm	1.49	5.88
Reinforcement Shear component ($\phi Vuc.reo^{neg}$)	kN	6.20	12.82
Moment Shear component ($\phi Mo.max^{neg}$)	kNm	0.75	2.54
Web Shear capacity ($\phi Vuc.web^{neg}$)	kN	11.66	25.90
Material Details			
<p>CONCRETE: 65MPa</p> <p>STEEL TENDONS:</p> <ul style="list-style-type: none"> • 7-wire ordinary strand, 9.5mm low-relaxation • Area = 54.7mm² • Min Breaking Load = 102kN • Min Tensile Strength (f_p) = 1850 Mpa • Yield Strength = 0.85 x f_p (stress relieved wire) • Modulus of Elasticity = 195 x 10³MPa 			

SHEAR NOTES:

Shear capacity varies along the length of the beam, and is dependent on applied loads. ϕVuc = Lesser of $\phi Vuc.flexure$ & $\phi Vuc.web$ / $\phi Vuc.flexure$ = $\phi Vuc.reo$ + ABS [$\phi Mo(V^*/M^*)$] / ϕMo Varies at the ends of the beams where the strand is developing and is a constant value $\phi Mo.max$ outside of this zone.

From 0 to 56mm from the end of the beam : ϕMo = Nil / From 56 to 558mm from the end of the beam : ϕMo = varies from Nil to $\phi Mo.max$ / Past 558mm from the end of the beam : ϕMo = $\phi Mo.max$

IMPORTANT NOTE:

Section properties in Western Australia may vary slightly, please contact Ultrafloor on 1800 858 723 for details.