ULTRAlintels

(28 day concrete strength)

Section Properties

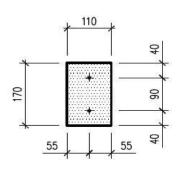| Non Composite Section Properties	Units	110 x 80	110 x 170
Mass of Section	kg/m	21	45
Gross Area	mm^2	8800	18700
EI	Nmm^2	1.897 X 10^{11}	18.772 X 10^{11}
Positive Moments			
Ultimate Moment capacity (ϕMu^{pos})	kNm	5.25	9.14
Cracking Moment (Mcr^{pos})	kNm	1.49	5.88
Reinforcement Shear component ($\phi Vuc.reo^{pos}$)	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 (Mcr^{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

CONCRETE: 65MPa

STEEL TENDONS:
- 7-wire ordinary strand, 9.5mm low-relaxation
- Area = 54.7mm^2
- Min Breaking Load = 102kN
- Min Tensile Strength (fp) = 1850 Mpa
- Yield Strength = 0.85 x fp (stress relieved wire)
- Modulus of Elasticity = 195 x 10^{3}MPa

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.