

Determination of load/deflection for structural profiles

Limiting deflection to span/200 = 0.5%

E modulus is taken at

23000
17000

This is the limit for walkway deflection and sufficiently low stress that we can ignore shear
Equations used are for simply supported beam

Supported at the end and UDL

UDL equation from Green Book p27, fig 24 no 4 on lhs
Pin Point equation, Green book, p27, fig 24, no 3

UNIFORMLY DISTRIBUTED LOAD

Profile	Moment of Inertia	span m	1	1.25	1.5	2.5	3.0	3.5	4.0	4.5	5.0	6.0	9.0
Unistrut GRP 41.5x41.5x3.5	130,435	load N	851	545	378	136	95	70	53	42	34	24	11
		load kg	86.8	55.6	38.6	13.9	9.6	7.1	5.4	4.3	3.5	2.4	1.1

POINT LOAD AT CENTRE OF SPAN

Profile	Moment of Inertia	span m			2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
Unistrut GRP 41.5x41.5x3.5	130,435	load N	532	341	237	85	59	43	33	26	21	15	7
		load kg	54.2	34.7	24.1	8.7	6.0	4.4	3.4	2.7	2.2	1.5	0.7