

Engineering Tables for screw connections to wood/steel truss or structure

- Ex light gauge steel cold rolled sections as purlins
- 40 Tophat as supplied by Rollforming Services
- Span purlin continuous over minimum two supports
- Max cantilever overhang for soffit take 40% max supported span.
- Profiled metal roofings with wind loads
- Table of max span vs spacings as noted or 0.25 LL whichever worst case
- Pressure Factor Combinations $kCp_{max} = +$ or $- 2.0$

40mm battens for roof and wall cladding

DS40x0.55mm G550 Z275 Galv Tophat

For connections to min 0.55 ga steel, connect with min 1-10 gauge screw for up to 0.5kN/m, 2 per 1.0kN/m, 3 per 1.5kN/m, and 4 per 2.0kN/m	300 Spacings				600 Spacings			900 Spacings			
	Max Span	Max UDL	Fixing to Truss/Rafter		Max Span	Max UDL		Max Span	Max UDL	Fixing to Truss/Rafter	
	(m)	(kN/m)	Timber	Steel	(m)	(kN/m)	Steel	(m)	(kN/m)	Timber	Steel
Medium wind 37m/s 0.821KpA	1.2	0.44	Type A	Type A	1.2	0.44	Type B	1.1	0.66	Type A	Type B
High wind 44m/s 1.160KpA	1.2	0.63	Type A	Type A	1.2	0.63	Type B	1	0.95	Type A	Type B
Very high wind 50m/s 1.500KpA	1.2	0.81	Type A	Type B	1.1	0.81	Type B	0.9	1.22	Type A	Type B
Extra high wind 55m/s 1.815KpA	1.2	0.98	Type A	Type B	1	0.98	Type B	0.8	1.47	Type B	Type C
Snow, Regions (N2,N3,N4,N5)<150m	1.2	0.98	Type A	Type B	1	0.98	Type B	0.8	0.66	Type B	Type B
Snow, Regions N2>200m	1.2	0.98	Type A	Type B	1	0.98	Type B	0.8	0.66	Type B	Type B
Snow, Alpine Regions>900m	1.2	0.98	Type A	Type B	1	0.98	Type B	0.8	0.95	Type B	Type B

DS40x0.75mm G550 Z275 Galv Tophat

For connections to wood substrate, refer NZS3604:2011 for wind loadings. For connections to min 0.75 ga steel, connect with min 1-10 gauge screw for up to 0.50 kN/m, 2 per 1.0kN/m, 3 per 1.5kN/m, and 4 per 2.0kN/m	300 Spacings			600 Spacings			900 Spacings			1200 Spacings		
	Max Span	Fixing to Truss/Rafter		Max Span	Fixing to Truss/Rafter		Max Span	Fixing to Truss/Rafter		Max Span	Fixing to Truss/Rafter	
	(m)	Timber	Steel	(m)	Timber	Steel	(m)	Timber	Steel	(m)	Timber	Steel
Medium wind 37m/s 0.821KpA	1.2	Type A	Type A	1.2	Type A	Type B	1.2	Type B	Type B	1.2	Type B	Type C
High wind 44m/s 1.160KpA	1.2	Type A	Type A	1.2	Type A	Type B	1.2	Type B	Type C	1.1	Type B	Type C
Very high wind 50m/s 1.500KpA	1.2	Type A	Type B	1.2	Type B	Type C	1.1	Type B	Type C	1.0	Type B	Type C
Extra high wind 55m/s 1.815KpA	1.2	Type A	Type B	1.1	Type B	Type C	1.0	Type B	Type C	0.9	Type C	Type C
Snow, Regions (N2,N3,N4,N5)<150m	1.2	Type A	Type B	1.1	Type B	Type C	1.0	Type B	Type C	0.9	Type C	Type C
Snow, Regions N2>200m	1.2	Type A	Type B	1.1	Type B	Type C	1.0	Type B	Type C	0.9	Type C	Type C
Snow, Alpine Regions>900m	1.2	Type A	Type B	1.1	Type B	Type C	0.9	Type B	Type C	0.9	Type C	Type C

DS40x0.95mm G550 Z275 Galv Tophat

For connections to wood substrate, refer NZS3604:2011 for wind loadings. For connections to min 0.75 ga steel, connect with min 1-10 gauge screw for up to 0.50 kN/m, 2 per 1.0kN/m, 3 per 1.5kN/m, and 4 per 2.0kN/m	300 Spacings			600 Spacings			900 Spacings			1200 Spacings		
	Max Span	Fixing to Truss/Rafter		Max Span	Fixing to Truss/Rafter		Max Span	Fixing to Truss/Rafter		Max Span	Fixing to Truss/Rafter	
	(m)	Timber	Steel	(m)	Timber	Steel	(m)	Timber	Steel	(m)	Timber	Steel
Medium wind 37m/s 0.821KpA	1.2	Type A	Type A	1.2	Type A	Type B	1.2	Type B	Type B	1.2	Type B	Type C
High wind 44m/s 1.160KpA	1.2	Type A	Type A	1.2	Type A	Type B	1.2	Type B	Type C	1.2	Type B	Type C
Very high wind 50m/s 1.500KpA	1.2	Type A	Type B	1.2	Type B	Type C	1.2	Type B	Type C	1.1	Type B	Type C
Extra high wind 55m/s 1.815KpA	1.2	Type A	Type B	1.2	Type B	Type C	1.1	Type B	Type C	1.0	Type C	Type C
Snow, Regions (N2,N3,N4,N5)<150m	1.2	Type A	Type B	1.2	Type B	Type C	1.1	Type B	Type C	1.0	Type C	Type C
Snow, Regions N2>200m	1.2	Type A	Type B	1.2	Type B	Type C	1.1	Type B	Type C	1.0	Type C	Type C
Snow, Alpine Regions>900m	1.2	Type A	Type B	1.2	Type B	Type C	1.1	Type B	Type C	1.0	Type C	Type C

Fasteners

For fasteners use a Type A, B, C as noted, minimum number of fasteners required to fix batten to the rafter or truss/batten location.

Type A - 1 x Screw - Type Buildex 12 - 11 x 40 Hex Head BattenZips® Climaseal® 3, or equivalent from other suppliers

Type B - 2 x Screw - Type Buildex 12 - 11 x 40 Hex Head BattenZips® Climaseal® 3, or equivalent from other suppliers

Type C - 3 x Screw - Type Buildex 12 - 11 x 40 Hex Head BattenZips® Climaseal® 3, or equivalent from other suppliers

Design notes

These tables are based on section properties for Tophat sections outlined in the data provided by Rollforming Services. 55 gauge Tophats are not recommended to be used for greater than 900mm spacings.

These tables and associated documents demonstrate compliance with the provisions of the NASH Standards for low rise steel framing.

Battens are specifically designed to meet the loadings as stated in NZ Building Code NZS3604:2011.

For wind loadings the pressure factor combinations comply with a local pressure

factor $kCp = \pm 2.0$. For snow loadings the maximum span may be reduced to comply with maximum span for extra high wind loading if this loading controls.

Certification

The tables are based on the provisions of the Engineers PS1 for work to meet the NZ Building Code for design. The E2 requirement stated on the PS1 for fifty-year life is based on their use within the building envelop for non-exposed environment. The product is finished to meet the requirements of durability as per the attached durability statement.