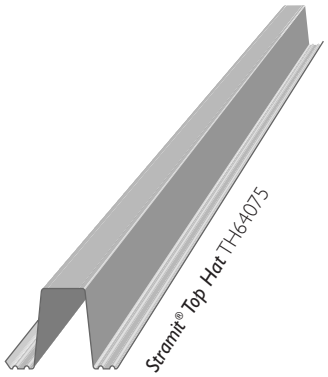
STRAMIT® TOP HATS & BATTENS

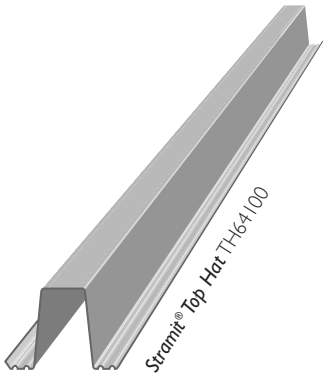
CAPACITY TABLES

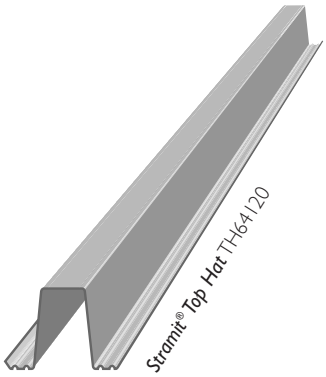
product technical manual

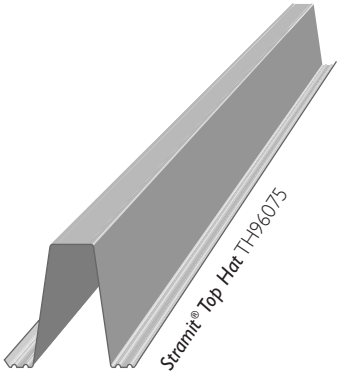
THB

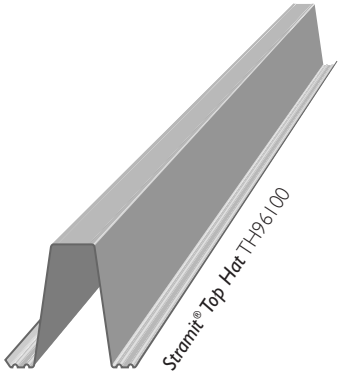
STRAMIT®
TOP HATS & BATTENS
CAPACITY TABLES

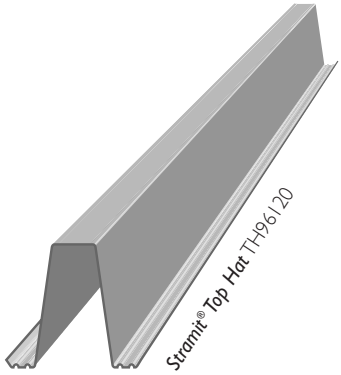


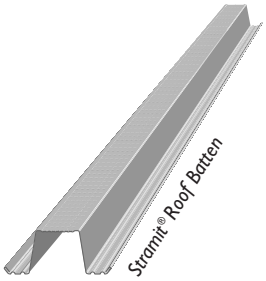


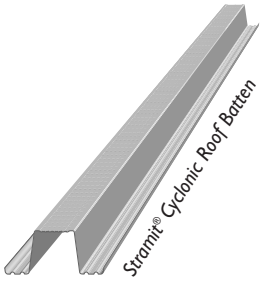


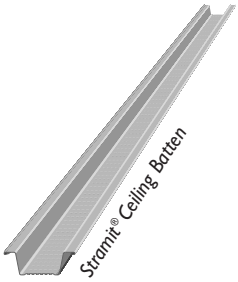


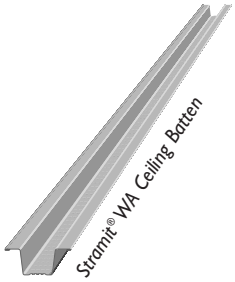












CONTENTS

INTRODUCTION

This ***Stramit® Top Hat and Battens*** product technical manual incorporates limit-state design capacities. Tables for ***Stramit® Top Hats*** have been prepared using software developed for Stramit by the University of Sydney. This software is based on the limit-state AS/NZS4600:1996* 'Cold-formed steel structures'.

Stramit Research and Development has carried out numerous in-house tests at Stramit Technology, Sydney on both roof and ceiling battens. In addition testing of top hats has been carried out at the University of Sydney using the University's vacuum test rig. These tests have been used in the derivation and substantiation of the enclosed design data.

Testing

Stramit® Top Hat and Battens generally show significant inelastic reserve under test. It can be difficult to define "failure" under such circumstances. A consequence is a yet to be resolved debate over the definition of serviceability and strength limit-states of small secondary structural members. As this may depend in part on the nature of usage and the integrity of the primary structural members data for ***Stramit® Top Hats*** has been provided in a way that enables the designer to choose.

Data for ***Stramit® Roof Battens*** and for ***Stramit® Ceiling Battens*** are each presented in a different manner. In each case the presentation reflects the specific usage of these products and the nature of the controlling factors that are quite different.

Customer Support

Stramit has a Technical Services Manager in each region to assist with all issues related to top hats and battens. This enables Stramit to provide advice that reflects local conditions and practices.

* All further references to AS/NZ4600:1996 are shown as simply AS4600.

SELECTION & SPECIFICATION

Features

- High tensile steel – for high strength and low weight
- Quality products – with Stramit's proven record for manufacture and supply
- Limit-state design data – for fully conforming designs
- Fully tested – for technical confidence
- Rolled safety edges on roof and ceiling battens – to enhance user confidence
- Knurled anti-slip surfaces on roof and ceiling battens – for easier fastening

Applications

The range of ***Stramit® Top Hats*** is ideal for small to medium sized sheds and similar structures. ***Stramit® Roof Battens*** have been developed specifically for domestic applications but may be used in small commercial structures as well, with ***Stramit® Cyclonic Roof Battens*** having enhanced performance to endure the repeated loadings that can be experienced in tropical cyclones. ***Stramit® Ceiling Battens*** are intended for use with plasterboard sheeting in both domestic and commercial situations.

Materials

Stramit® Top Hats & Battens are manufactured from high-tensile (G550/G500) steel with either AZ150 zinc-aluminium alloy or Z350 galvanised coating in full conformance with AS1397.

Specification

Maintaining the structural integrity of a building structure is important. Even an apparently small change in product material or dimensions can lead to a considerable reduction in performance. One of the best ways to ensure structural adequacy is to prepare and enforce an appropriate specification for structural components.

A suggested specification is:
"All top hats/roof battens/ceiling battens shall be Stramit sections or approved equivalent supported by submission of section properties and capacity calculations/data in accordance with AS4600, AS3623 and AS1562. All sections shall be produced from high-tensile G500/G550 steel with a galvanised/zinc-aluminium alloy coating conforming to AS1397. All sections must be installed in accordance with the manufacturers recommendations with particular reference to the number, size, grade and positioning of fasteners."

Adverse Conditions

Stramit® Top Hats and Battens will give excellent durability in most applications. In exposed conditions, unwashed areas subject to salt-laden air or other corrosive matter may need additional protection. ***Stramit® Top Hats and Battens*** are not recommended for use in enclosed areas within 450mm of moist soil.

Compatibility

Contact between galvanised steel and copper (e.g. pipework) must be avoided as premature corrosion will occur.

STRAMIT® TOP HATS & BATTENS – PRODUCT THICKNESS, GRADE AND MASS

product	thickness bmt	steel grade	mass
Stramit® Top Hat TH64075	0.75 mm	G550	1.26 kg/m
Stramit® Top Hat TH64100	1.00 mm	G550	1.67 kg/m
Stramit® Top Hat TH64120	1.20 mm	G500	2.00 kg/m
Stramit® Top Hat TH96075	0.75 mm	G550	1.65 kg/m
Stramit® Top Hat TH96100	1.00 mm	G550	2.18 kg/m
Stramit® Top Hat TH96120	1.20 mm	G500	2.60 kg/m
Stramit® Roof Batten 0.48	0.48 mm	G550	0.60 kg/m
Stramit® Roof Batten 0.55	0.55 mm	G550	0.77 kg/m
Stramit® Cyclonic Roof Batten	0.75 mm	G550	0.98 kg/m
Stramit® Ceiling Batten	0.42 mm	G550	0.37 kg/m
Stramit® WA Ceiling Batten	0.42 mm	G550	0.34 kg/m

DESIGN DATA

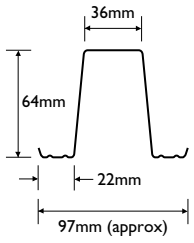
General

Stramit recommends that all designs conform to relevant Australian Standards such as AS1170 series (Loading Codes), AS4600 (Cold-formed steel structures) and AS3623 (Domestic metal framing).

Sizes

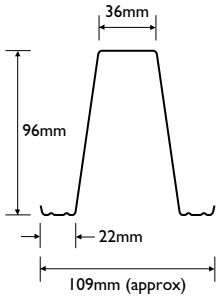
Stramit® Top Hat

TH64 series



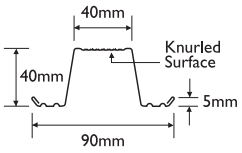
Stramit® Top Hat
TH64075, TH64100, TH64120

TH96 series

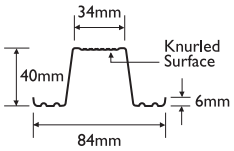


Stramit® Top Hat
TH96075, TH96100, TH96120

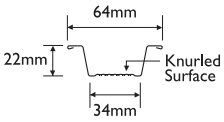
Stramit® Battens



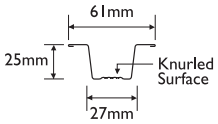
Stramit® Cyclonic Roof Batten



Stramit® Roof Batten



Stramit® Ceiling Batten



Stramit® WA Ceiling Batten

Section Properties

STRAMIT® TOP HATS & BATTENS – FULL SECTION PROPERTIES

Section	Area A_g mm²	I_x 10³mm⁴	I_y 10³mm⁴	Z_x^+ 10³mm³	Z_x^- 10³mm³	Z_y^+ 10³mm³	Z_y^- 10³mm³	r_x mm	r_y mm	J mm⁴	β_x mm	I_w 10⁶mm⁶
Stramit® Top Hat TH64075	157	90.4	83.7	2.62	3.06	1.97	1.97	24.0	23.1	29.4	109	25.0
Stramit® Top Hat TH64100	208	120	111	3.48	4.03	2.61	2.61	24.0	23.1	69.4	109	32.5
Stramit® Top Hat TH64120	253	147	166	4.22	4.93	3.51	3.51	24.1	25.6	122	110	41.1
Stramit® Top Hat TH96075	206	245	152	4.80	5.44	2.99	2.99	34.5	27.1	38.7	157	63.8
Stramit® Top Hat TH96100	274	325	202	6.39	7.17	3.98	3.98	34.4	27.1	91.4	158	82.8
Stramit® Top Hat TH96120	328	389	242	7.65	8.53	4.77	4.77	34.4	27.1	158	158	97.3
Stramit® Roof Batten 0.48	77.2	19.6	51.2	0.96	0.99	1.11	1.11	15.9	25.7	5.93	88.2	4.70
Stramit® Roof Batten 0.55	92.1	23.7	67.8	1.13	1.25	1.37	1.37	16.0	27.1	9.28	87.8	7.56
Stramit® Cyclonic Roof Batten	120	29.5	68.9	1.36	1.62	1.62	1.62	15.7	24.0	22.5	78.0	8.84
Stramit® Ceiling Batten	43.2	3.56	16.0	0.34	0.31	0.47	0.47	9.09	18.3	2.54	62.6	0.45
Stramit® WA Ceiling Batten	43.4	4.43	13.3	0.37	0.34	0.43	0.43	10.1	17.5	2.55	60.0	0.50

STRAMIT® TOP HATS & BATTENS – EFFECTIVE SECTION PROPERTIES

Section	Area $A_e(f_y)$ mm²	I_{ex}^+ 10³mm⁴	I_{ex}^- 10³mm⁴	I_{ey}^+ 10³mm⁴	I_{ey}^- 10³mm⁴	Z_x^+ 10³mm³	Z_x^- 10³mm³	Z_y^+ 10³mm³	Z_y^- 10³mm³
Stramit® Top Hat TH64075	91.0	87.0	82.6	74.0	74.0	2.59	2.30	1.62	1.62
Stramit® Top Hat TH64100	141	116	116	102	102	3.44	3.29	2.29	2.29
Stramit® Top Hat TH64120	188	143	145	156	156	4.18	4.16	3.20	3.20
Stramit® Top Hat TH96075	92.0	236	200	118	118	4.73	3.49	2.05	2.05
Stramit® Top Hat TH96100	144	315	315	165	165	6.30	6.10	2.93	2.93
Stramit® Top Hat TH96120	192	382	386	204	204	7.59	7.57	3.69	3.69
Stramit® Roof Batten 0.48	43.3	18.6	14.9	45.6	45.6	0.91	0.64	0.93	0.93
Stramit® Roof Batten 0.55	51.5	20.8	18.6	62.0	62.0	1.00	0.79	1.20	1.20
Stramit® Cyclonic Roof Batten	85.3	28.0	26.5	66.6	66.6	1.34	1.16	1.53	1.53
Stramit® Ceiling Batten	26.7	2.86	2.72	15.6	15.6	0.22	0.22	0.45	0.45
Stramit® WA Ceiling Batten	26.2	3.55	3.54	12.6	12.6	0.24	0.25	0.39	0.39

Loadings

All loadings used in deriving the design data are assumed to either act uniformly along the top central flange of the sections or, for connections to support members, evenly between each of the lower flanges (feet). Foot traffic loadings, where used, are based on AS1562.

Spacings

Member, fastener or roof sheeting capacity influences top hat spacing. It is often economical to reduce top hat spacing at the building edge and ends to account for the higher wind pressures encountered on these parts of the building. Additional runs may be required adjacent to roof penetrations or in areas of additional loading.

Roof batten spacings are influenced by support (truss) spacing, sheeting capacity or roof tile spacing.

Ceiling batten spacing is invariably chosen to suit plasterboard manufacturer's requirements.

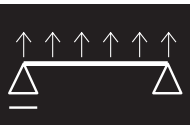
Performance

Stramit® Top Hats

Single Spans – comprise of a single section simply supported and attached to a support member at each end. They may form part of a series of spans in which sections have a short (non-structural) overlap at each support.

Table 1a

STRAMIT® TOP HATS – SINGLE SPANS
Outwards Design Capacity (kN/m) *



Member design capacity for section shown													2 x No12 fastener capacity ***					
Span	TH64075		TH64100		TH64120		TH96075		TH96100		TH96120		Support member thickness (mm) **					
(mm)	svblty*	strngth	svblty*	strngth	svblty*	strngth	svblty*	strngth	svblty*	strngth	svblty*	strngth	1.0	1.2	1.5	1.9	2.4	3.0
1500	3.79	4.64	5.55	6.22	7.30	7.44	5.18	8.90	7.70	11.92	9.81	14.34	3.39	3.84	4.43	5.61	7.09	8.86
1750	2.78	3.01	4.08	4.08	4.90	5.36	3.80	5.93	5.65	7.95	7.21	9.67	2.90	3.29	3.80	4.81	6.08	7.60
2000	1.93	2.13	2.69	3.12	3.19	4.11	2.91	4.05	4.33	5.47	5.52	6.76	2.54	2.88	3.32	4.21	5.32	6.65
2250	1.29	1.68	1.81	2.47	2.12	3.24	2.30	2.72	3.42	3.76	4.36	4.57	2.26	2.56	2.95	3.74	4.73	5.91
2500	0.91	1.36	1.24	2.00	1.47	2.63	1.86	1.89	2.62	2.77	3.16	3.53	2.03	2.30	2.66	3.37	4.25	5.32
2750	0.64	1.13	0.88	1.65	1.05	2.17	1.37	1.54	1.86	2.29	2.25	2.92	1.85	2.09	2.42	3.06	3.87	4.83
3000	0.47	0.95	0.65	1.39	0.77	1.83	1.00	1.29	1.35	1.92	1.65	2.45	1.69	1.92	2.21	2.81	3.54	4.43
3250	0.35	0.81	0.48	1.18	0.58	1.56	0.74	1.10	1.01	1.64	1.23	2.09	1.56	1.77	2.04	2.59	3.27	4.09
3500	0.26	0.70	0.37	1.02	0.45	1.34	0.56	0.95	0.77	1.41	0.94	1.80	1.45	1.65	1.90	2.41	3.04	3.80
3750	0.20	0.61	0.29	0.89	0.35	1.17	0.43	0.83	0.59	1.23	0.73	1.57	1.35	1.54	1.77	2.25	2.84	3.55
4000			0.23	0.78	0.28	1.03	0.34	0.73	0.47	1.08	0.58	1.38	1.27	1.44	1.66	2.10	2.66	3.32
4250					0.23	0.91	0.27	0.65	0.37	0.96	0.46	1.22	1.20	1.36	1.56	1.98	2.50	3.13
4500							0.22	0.58	0.30	0.86	0.38	1.09	1.13	1.28	1.48	1.87	2.36	2.95
4750									0.25	0.77	0.31	0.98	1.07	1.21	1.40	1.77	2.24	2.80
5000									0.21	0.69	0.26	0.88	1.02	1.15	1.33	1.68	2.13	2.66
5250											0.22	0.80	0.97	1.10	1.27	1.60	2.03	2.53
5500																		
5750																		
6000																		

Notes to Tables 1a - 5a

* For full conformance to AS4600 the serviceability limit (to first buckle) must be regarded as the strength limit-state design capacity.

** Support member is assumed to be high-tensile steel (1.0 = G550, 1.2 = G500, > 1.2 = G450).

*** Fastener capacities can be increased by 18% if 2 x No14 screws are used, increased by 30% if 4 x No12 screws are used, OR increased by 40% if 4 x No14 screws are used.

Outwards capacity may be limited by fastener capacity – check right-hand columns.

Outwards capacity will be limited by fastener capacity – determine from right-hand columns.

Laps/Ends

Lapped ***Stramit® Top Hat*** configurations require a minimum 10% lap length (i.e. 5% at each end). Section properties within the lap have been assumed to be twice that of a single section rather than the properties of a double thickness section.

End fastenings of top hats or battens are recommended to be at least 25 mm from the section end irrespective of whether this occurs at the structure end or at an internal support. The absolute minimum required by AS4600 is 1.5 d_f (where d_f is the nominal screw diameter). Remember to allow for this additional material over and above the span length/s when specifying, ordering or cutting sections.

Stramit® Top Hats TH96 and TH64 have one end partially crimped to facilitate lapping.

Top hat/batten overlaps (or non-structural laps) are recommended to be 100 mm in length. In these cases structural continuity must not be assumed.

Table 1b

STRAMIT® TOP HATS – SINGLE SPANS
Inwards Design Capacity (kN/m)#

Member design capacity for section shown																		
Span	TH64075			TH64100			TH64120			TH96075			TH96100			TH96120		
(mm)	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth
1500	4.22	3.44	3.44	5.92	5.68	5.68	7.41	7.62	7.64	10.11	3.16	3.16	15.92	5.32	5.32	19.54	7.36	7.36
1750	2.70	2.95	2.95	3.78	4.46	4.71	4.67	5.60	5.91	6.37	2.71	2.71	10.03	4.56	4.56	12.30	6.31	6.31
2000	1.83	2.38	2.51	2.56	3.41	3.60	3.13	4.28	4.52	4.27	2.37	2.37	6.74	3.99	3.99	8.27	5.52	5.52
2250	1.30	1.88	1.99	1.80	2.70	2.85	2.20	3.39	3.57	3.05	2.11	2.11	4.77	3.55	3.55	5.83	4.91	4.91
2500	0.96	1.52	1.61	1.31	2.18	2.31	1.60	2.74	2.89	2.31	1.90	1.90	3.51	3.19	3.19	4.25	4.41	4.41
2750	0.73	1.26	1.33	0.98	1.81	1.91	1.20	2.27	2.39	1.79	1.72	1.72	2.65	2.90	2.90	3.19	4.01	4.01
3000	0.56	1.06	1.12	0.76	1.52	1.60	0.93	1.90	2.01	1.43	1.58	1.58	2.05	2.66	2.66	2.46	3.46	3.65
3250	0.45	0.90	0.95	0.60	1.29	1.36	0.73	1.62	1.71	1.16	1.37	1.45	1.62	2.39	2.45	1.93	2.95	3.11
3500	0.36	0.78	0.82	0.48	1.11	1.18	0.58	1.40	1.48	0.95	1.18	1.25	1.29	2.07	2.18	1.55	2.54	2.68
3750	0.29	0.68	0.72	0.39	0.97	1.03	0.47	1.22	1.29	0.77	1.03	1.09	1.05	1.80	1.90	1.26	2.21	2.34
4000				0.32	0.85	0.90	0.39	1.07	1.13	0.64	0.90	0.95	0.87	1.58	1.67	1.04	1.95	2.05
4250							0.33	0.95	1.00	0.54	0.80	0.85	0.72	1.40	1.48	0.87	1.72	1.82
4500										0.45	0.71	0.75	0.61	1.25	1.32	0.73	1.54	1.62
4750													0.52	1.12	1.18	0.62	1.38	1.46
5000													0.44	1.01	1.07	0.53	1.25	1.32
5250																0.46	1.13	1.19
5500																		
5750																		
6000																		

Notes to Tables 1b - 5b

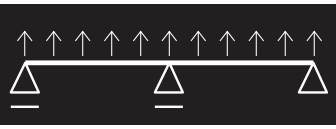
For full conformance to AS4600 the serviceability limit (to first buckle) must be regarded as the strength limit-state design capacity.

Spans shaded pink exceed the serviceability limit for a 1.1kN foot traffic load.

Double Spans – are simply supported and attached at each end
and in the middle (unlapped) or have a structural (10%) lap at that central support (lapped).

Table 2a

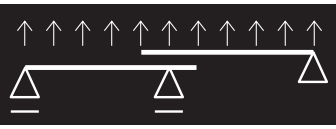
STRAMIT® TOP HATS – DOUBLE SPAN UNLAPPED
Outwards Design Capacity (kN/m)*



Member design capacity for section shown													2 x No12 fastener capacity***					
Span	TH64075		TH64100		TH64120		TH96075		TH96100		TH96120		Support member thickness (mm)**					
(mm)	svblty*	strngth	svblty*	strngth	svblty*	strngth	svblty*	strngth	svblty*	strngth	svblty*	strngth	1.0	1.2	1.5	1.9	2.4	3.0
1500	4.22	4.22	6.07	6.19	6.53	6.53	4.64	4.64	6.19	6.19	6.53	6.53	1.17	1.33	1.87	2.29	2.66	3.32
1750	3.11	3.15	4.46	4.63	5.60	5.60	3.98	3.98	5.31	5.31	5.60	5.60	1.01	1.14	1.60	1.97	2.28	2.85
2000	2.38	2.43	3.41	3.56	4.28	4.48	3.26	3.26	4.64	4.64	4.90	4.90	0.88	1.00	1.40	1.72	1.99	2.49
2250	1.86	1.94	2.68	2.82	3.33	3.55	2.65	2.65	4.13	4.13	4.35	4.35	0.78	0.89	1.24	1.53	1.77	2.22
2500	1.42	1.58	2.06	2.29	2.56	2.88	2.20	2.20	3.71	3.71	3.92	3.92	0.70	0.80	1.12	1.38	1.60	1.99
2750	1.11	1.31	1.61	1.89	1.99	2.38	1.83	1.85	3.13	3.36	3.56	3.56	0.64	0.73	1.02	1.25	1.45	1.81
3000	0.88	1.10	1.27	1.59	1.57	2.00	1.49	1.57	2.49	2.84	3.08	3.26	0.59	0.67	0.93	1.15	1.33	1.66
3250	0.70	0.94	1.02	1.36	1.25	1.71	1.22	1.35	2.00	2.44	2.47	3.01	0.54	0.62	0.86	1.06	1.23	1.53
3500	0.55	0.81	0.81	1.17	0.98	1.47	1.01	1.18	1.62	2.11	2.00	2.64	0.50	0.57	0.80	0.98	1.14	1.42
3750	0.43	0.71	0.65	1.02	0.78	1.28	0.84	1.03	1.30	1.85	1.61	2.30	0.47	0.53	0.75	0.92	1.06	1.33
4000	0.35	0.62	0.52	0.90	0.63	1.13	0.70	0.91	1.05	1.63	1.29	2.03	0.44	0.50	0.70	0.86	1.00	1.25
4250	0.29	0.55	0.42	0.80	0.51	1.00	0.59	0.81	0.85	1.45	1.04	1.80	0.41	0.47	0.66	0.81	0.94	1.17
4500			0.35	0.71	0.43	0.89	0.49	0.73	0.69	1.29	0.86	1.61	0.39	0.44	0.62	0.76	0.89	1.11
4750			0.29	0.64	0.36	0.80	0.40	0.66	0.57	1.16	0.71	1.44	0.37	0.42	0.59	0.72	0.84	1.05
5000			0.24	0.58	0.30	0.72	0.34	0.59	0.48	1.05	0.59	1.30	0.35	0.40	0.56	0.69	0.80	1.00
5250			0.20	0.52	0.26	0.66	0.28	0.54	0.40	0.96	0.50	1.18	0.34	0.38	0.53	0.66	0.76	0.95
5500					0.22	0.60			0.34	0.87	0.42	1.08	0.32	0.36	0.51	0.63	0.73	0.91
5750									0.29	0.80	0.36	0.99	0.31	0.35	0.49	0.60	0.69	0.87
6000									0.25	0.73	0.31	0.91	0.29	0.33	0.47	0.57	0.67	0.83

Table 3a

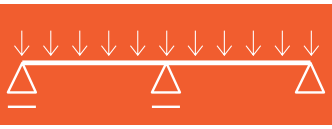
STRAMIT® TOP HATS – DOUBLE LAPPED
Outwards Design Capacity (kN/m)*



Member design capacity for section shown													2 x No12 fastener capacity***					
Span	TH64075		TH64100		TH64120		TH96075		TH96100		TH96120		Support member thickness (mm)**					
(mm)	svblty*	strngth	svblty*	strngth	svblty*	strngth	svblty*	strngth	svblty*	strngth	svblty*	strngth	1.0	1.2	1.5	1.9	2.4	3.0
1500	5.04	5.04	6.44	6.44	6.44	6.44	6.05	6.05	6.44	6.44	6.44	6.44	1.15	1.31	1.83	2.25	2.61	3.26
1750	3.77	3.77	5.40	5.52	5.52	5.52	4.74	4.74	5.52	5.52	5.52	5.52	0.99	1.12	1.57	1.93	2.23	2.79
2000	2.88	2.92	4.13	4.29	4.83	4.83	3.81	3.81	4.83	4.83	4.83	4.83	0.86	0.98	1.37	1.69	1.96	2.44
2250	2.19	2.33	3.15	3.40	3.92	4.29	3.11	3.11	4.29	4.29	4.29	4.29	0.77	0.87	1.22	1.50	1.74	2.17
2500	1.67	1.90	2.41	2.76	2.99	3.48	2.59	2.59	3.86	3.86	3.86	3.86	0.69	0.78	1.10	1.35	1.56	1.96
2750	1.29	1.57	1.87	2.29	2.31	2.88	2.17	2.19	3.51	3.51	3.51	3.51	0.63	0.71	1.00	1.23	1.42	1.78
3000	1.01	1.33	1.47	1.93	1.80	2.42	1.76	1.87	2.90	3.22	3.22	3.22	0.58	0.65	0.92	1.12	1.30	1.63
3250	0.79	1.13	1.16	1.64	1.40	2.06	1.44	1.61	2.32	2.92	2.85	2.97	0.53	0.60	0.85	1.04	1.20	1.50
3500	0.61	0.98	0.91	1.42	1.09	1.78	1.18	1.40	1.84	2.54	2.27	2.76	0.49	0.56	0.78	0.96	1.12	1.40
3750	0.49	0.86	0.72	1.24	0.87	1.55	0.97	1.23	1.46	2.22	1.79	2.58	0.46	0.52	0.73	0.90	1.04	1.30
4000	0.39	0.75	0.57	1.09	0.70	1.37	0.81	1.09	1.17	1.96	1.43	2.42	0.43	0.49	0.69	0.84	0.98	1.22
4250	0.32	0.67	0.46	0.96	0.57	1.21	0.66	0.97	0.94	1.74	1.16	2.17	0.41	0.46	0.65	0.79	0.92	1.15
4500	0.26	0.60	0.38	0.86	0.47	1.08	0.54	0.87	0.77	1.56	0.95	1.94	0.38	0.44	0.61	0.75	0.87	1.09
4750	0.22	0.54	0.32	0.77	0.39	0.97	0.45	0.79	0.63	1.40	0.78	1.74	0.36	0.41	0.58	0.71	0.82	1.03
5000			0.26	0.70	0.33	0.88	0.38	0.71	0.52	1.27	0.65	1.58	0.35	0.39	0.55	0.68	0.78	0.98
5250			0.22	0.63	0.28	0.79	0.32	0.65	0.44	1.15	0.55	1.43	0.33	0.37	0.52	0.64	0.75	0.93
5500					0.24	0.72	0.27	0.59	0.37	1.05	0.47	1.31	0.31	0.36	0.50	0.61	0.71	0.89
5750					0.21	0.66	0.23	0.54	0.32	0.96	0.40	1.20	0.30	0.34	0.48	0.59	0.68	0.85
6000									0.27	0.89	0.34	1.10	0.29	0.33	0.46	0.56	0.65	0.82

Table 2b

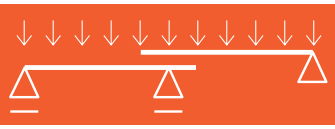
STRAMIT® TOP HATS – DOUBLE SPAN UNLAPPED
Inwards Design Capacity (kN/m)



Member design capacity for section shown																		
Span	TH64075			TH64100			TH64120			TH96075			TH96100			TH96120		
(mm)	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth
1500	10.5	3.13	3.13	14.1	4.62	4.62	17.2	5.84	5.84	28.3	3.67	3.67	38.2	5.65	5.65	46.1	7.38	7.38
1750	6.65	2.50	2.50	8.88	3.66	3.66	10.8	4.61	4.61	17.8	3.00	3.00	24.0	4.60	4.60	29.0	5.97	5.97
2000	4.46	2.05	2.05	5.95	2.98	2.98	7.29	3.74	3.74	11.9	2.51	2.51	16.1	3.83	3.83	19.4	4.95	4.95
2250	3.13	1.68	1.71	4.18	2.47	2.48	5.12	3.10	3.10	8.39	2.14	2.14	11.3	3.24	3.24	13.6	4.18	4.18
2500	2.28	1.36	1.45	3.05	2.00	2.09	3.73	2.62	2.62	6.12	1.85	1.85	8.26	2.77	2.79	9.97	3.53	3.58
2750	1.72	1.13	1.25	2.29	1.65	1.79	2.81	2.17	2.24	4.60	1.54	1.62	6.21	2.29	2.43	7.49	2.92	3.11
3000	1.32	0.95	1.09	1.77	1.39	1.56	2.17	1.83	1.93	3.54	1.29	1.43	4.78	1.92	2.13	5.77	2.45	2.72
3250	1.04	0.81	0.96	1.40	1.18	1.36	1.72	1.56	1.69	2.78	1.10	1.27	3.76	1.64	1.89	4.54	2.09	2.41
3500	0.84	0.70	0.85	1.12	1.02	1.20	1.38	1.34	1.48	2.23	0.95	1.14	3.01	1.41	1.69	3.63	1.80	2.15
3750	0.68	0.61	0.76	0.92	0.89	1.07	1.14	1.17	1.29	1.81	0.83	1.03	2.45	1.23	1.52	2.95	1.57	1.93
4000	0.56	0.53	0.68	0.76	0.78	0.94	0.94	1.03	1.11	1.49	0.73	0.94	2.02	1.08	1.38	2.43	1.38	1.74
4250	0.47	0.47	0.60	0.64	0.69	0.80	0.78	0.91	0.96	1.25	0.65	0.85	1.68	0.96	1.25	2.03	1.22	1.58
4500				0.54	0.62	0.69	0.66	0.81	0.83	1.06	0.58	0.78	1.42	0.86	1.14	1.72	1.09	1.44
4750				0.46	0.55	0.60	0.56	0.72	0.73	0.90	0.52	0.72	1.21	0.77	1.05	1.47	0.98	1.32
5000				0.39	0.50	0.52	0.48	0.63	0.66	0.78	0.47	0.66	1.04	0.69	0.97	1.27	0.88	1.21
5250				0.34	0.45	0.46	0.42	0.55	0.60	0.67	0.42	0.62	0.90	0.63	0.88	1.10	0.80	1.08
5500							0.36	0.49	0.54				0.79	0.57	0.78	0.96	0.73	0.96
5750													0.69	0.52	0.69	0.84	0.67	0.85
6000													0.61	0.48	0.61	0.74	0.61	0.76

Table 3b

STRAMIT® TOP HATS – DOUBLE LAPPED
Inwards Design Capacity (kN/m)



Member design capacity for section shown																		
Span	TH64075			TH64100			TH64120			TH96075			TH96100			TH96120		
(mm)	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth
1500	11.5	4.59	4.69	15.4	6.72	7.75	18.9	8.84	9.56	30.9	4.31	4.31	41.8	7.26	7.26	50.5	10.0	10.0
1750	7.28	3.37	4.02	9.72	4.94	5.83	11.9	6.49	7.07	19.5	3.70	3.70	26.3	6.22	6.22	31.8	8.61	8.61
2000	4.88	2.58	3.26	6.51	3.78	4.49	7.98	4.97	5.43	13.0	3.24	3.24	17.6	5.24	5.44	21.3	6.68	7.53
2250	3.43	2.04	2.60	4.57	2.99	3.56	5.61	3.93	4.30	9.18	2.79	2.88	12.4	4.14	4.84	14.9	5.28	6.69
2500	2.50	1.65	2.12	3.33	2.42	2.89	4.09	3.18	3.49	6.69	2.26	2.59	9.04	3.36	4.35	10.9	4.28	6.03
2750	1.88	1.37	1.76	2.50	2.00	2.39	3.07	2.63	2.89	5.03	1.86	2.35	6.79	2.77	3.96	8.20	3.53	5.10
3000	1.45	1.15	1.49	1.93	1.68	2.01	2.37	2.21	2.43	3.87	1.57	2.16	5.23	2.33	3.50	6.32	2.97	4.31
3250	1.14	0.98	1.27	1.52	1.43	1.72	1.86	1.88	2.07	3.05	1.34	1.99	4.12	1.99	3.01	4.97	2.53	3.69
3500	0.91	0.84	1.10	1.22	1.24	1.48	1.50	1.62	1.79	2.44	1.15	1.80	3.30	1.71	2.61	3.98	2.18	3.19
3750	0.74	0.73	0.96	0.99	1.08	1.28	1.22	1.41	1.52	1.98	1.00	1.60	2.68	1.49	2.29	3.23	1.90	2.78
4000	0.61	0.65	0.81	0.82	0.95	1.09	1.01	1.24	1.29	1.63	0.88	1.42	2.21	1.31	2.02	2.66	1.67	2.45
4250	0.51	0.57	0.69	0.69	0.84	0.93	0.85	1.10	1.11	1.36	0.78	1.27	1.84	1.16	1.79	2.22	1.48	2.16
4500	0.43	0.51	0.59	0.58	0.75	0.80	0.72	0.95	0.98	1.15	0.70	1.14	1.55	1.04	1.54	1.87	1.32	1.87
4750	0.37	0.46	0.51	0.50	0.67	0.69	0.61	0.83	0.88	0.98	0.63	1.00	1.32	0.93	1.34	1.59	1.18	1.63
5000				0.43	0.60	0.61	0.53	0.72	0.80	0.84	0.56	0.87	1.13	0.84	1.17	1.37	1.07	1.43
5250				0.37	0.52	0.55	0.46	0.62	0.72	0.73	0.51	0.76	0.98	0.76	1.02	1.19	0.97	1.26
5500							0.40	0.54	0.66	0.64	0.47	0.66	0.85	0.69	0.90	1.04	0.88	1.11
5750							0.35	0.46	0.60	0.56	0.43	0.58	0.75	0.63	0.79	0.91	0.81	0.98
6000										0.49	0.39	0.50	0.66	0.58	0.69	0.81	0.74	0.86

Triple Spans – are also simply supported and attached at each end and at two equally spaced intermediate supports (unlapped) or have a structural (10%) lap at those intermediate support (lapped).

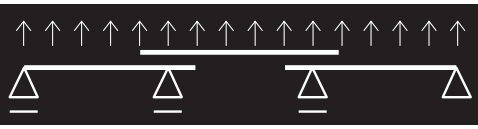
Table 4a

STRAMIT® TOP HATS – TRIPLE UNLAPPED
Outwards Design Capacity (kN/m) *

Member design capacity for section shown													2 x No12 fastener capacity ***					
Span	TH64075		TH64100		TH64120		TH96075		TH96100		TH96120		Support member thickness (mm) **					
(mm)	svblty*	strngth	svblty*	strngth	svblty*	strngth	svblty*	strngth	svblty*	strngth	svblty*	strngth	1.0	1.2	1.5	1.9	2.4	3.0
1500	5.16	5.16	7.03	7.03	7.42	7.42	5.28	5.28	7.03	7.03	7.42	7.42	1.33	1.52	2.12	2.61	3.02	3.78
1750	3.86	3.87	5.54	5.75	6.36	6.36	4.52	4.52	6.03	6.03	6.36	6.36	1.14	1.30	1.82	2.23	2.59	3.24
2000	2.75	3.00	3.96	4.42	4.91	5.56	3.85	3.85	5.28	5.28	5.56	5.56	1.00	1.14	1.59	1.96	2.27	2.83
2250	2.01	2.39	2.90	3.51	3.57	4.42	3.16	3.16	4.69	4.69	4.95	4.95	0.89	1.01	1.41	1.74	2.01	2.52
2500	1.50	1.95	2.17	2.85	2.64	3.59	2.64	2.64	4.22	4.22	4.45	4.45	0.80	0.91	1.27	1.56	1.81	2.27
2750	1.10	1.62	1.61	2.36	1.93	2.97	2.23	2.23	3.27	3.58	4.01	4.05	0.73	0.83	1.16	1.42	1.65	2.06
3000	0.82	1.37	1.20	1.99	1.43	2.50	1.90	1.91	2.47	3.01	3.01	3.71	0.67	0.76	1.06	1.30	1.51	1.89
3250	0.63	1.17	0.91	1.69	1.09	2.13	1.45	1.65	1.88	2.56	2.28	3.26	0.62	0.70	0.98	1.20	1.39	1.74
3500	0.49	1.01	0.70	1.46	0.84	1.84	1.10	1.44	1.44	2.21	1.76	2.81	0.57	0.65	0.91	1.12	1.30	1.62
3750	0.38	0.88	0.55	1.27	0.67	1.60	0.85	1.26	1.12	1.92	1.38	2.45	0.53	0.61	0.85	1.04	1.21	1.51
4000	0.31	0.78	0.44	1.12	0.53	1.41	0.67	1.12	0.89	1.69	1.09	2.16	0.50	0.57	0.80	0.98	1.13	1.42
4250	0.25	0.69	0.35	0.99	0.43	1.25	0.53	1.00	0.71	1.50	0.88	1.91	0.47	0.54	0.75	0.92	1.07	1.33
4500	0.20	0.62	0.29	0.89	0.36	1.11	0.43	0.90	0.58	1.34	0.72	1.70	0.44	0.51	0.71	0.87	1.01	1.26
4750			0.24	0.80	0.30	1.00	0.35	0.81	0.48	1.20	0.59	1.53	0.42	0.48	0.67	0.82	0.95	1.19
5000			0.20	0.72	0.25	0.90	0.29	0.73	0.39	1.08	0.49	1.38	0.40	0.46	0.64	0.78	0.91	1.13
5250					0.21	0.82	0.24	0.66	0.33	0.98	0.41	1.25	0.38	0.43	0.61	0.75	0.86	1.08
5500							0.20	0.60	0.28	0.89	0.35	1.14	0.36	0.41	0.58	0.71	0.82	1.03
5750									0.24	0.82	0.30	1.04	0.35	0.40	0.55	0.68	0.79	0.99
6000									0.20	0.75	0.26	0.96	0.33	0.38	0.53	0.65	0.76	0.94

Table 5a

STRAMIT® TOP HATS – TRIPLE LAPPED
Outwards Design Capacity (kN/m) *



Member design capacity for section shown													2 x No12 fastener capacity ***					
Span	TH64075		TH64100		TH64120		TH96075		TH96100		TH96120		Support member thickness (mm) **					
(mm)	svblty*	strngth	svblty*	strngth	svblty*	strngth	svblty*	strngth	svblty*	strngth	svblty*	strngth	1.0	1.2	1.5	1.9	2.4	3.0
1500	6.08	6.08	7.38	7.38	7.38	7.38	7.17	7.17	7.38	7.38	7.38	7.38	1.32	1.51	2.11	2.59	3.00	3.75
1750	4.47	4.47	6.33	6.33	6.33	6.33	5.73	5.73	6.33	6.33	6.33	6.33	1.14	1.29	1.81	2.22	2.57	3.21
2000	3.42	3.42	4.61	5.02	5.54	5.54	4.67	4.67	5.54	5.54	5.54	5.54	0.99	1.13	1.58	1.94	2.25	2.81
2250	2.58	2.70	3.35	3.96	4.07	4.92	3.69	3.69	4.92	4.92	4.92	4.92	0.88	1.00	1.40	1.73	2.00	2.50
2500	1.80	2.19	2.43	3.21	2.89	4.22	2.99	2.99	4.43	4.43	4.43	4.43	0.79	0.90	1.26	1.55	1.80	2.25
2750	1.30	1.81	1.76	2.65	2.09	3.49	2.47	2.47	3.63	3.68	4.03	4.03	0.72	0.82	1.15	1.41	1.64	2.05
3000	0.97	1.52	1.30	2.23	1.55	2.93	2.00	2.08	2.70	3.09	3.27	3.69	0.66	0.75	1.05	1.29	1.50	1.88
3250	0.72	1.30	0.98	1.90	1.17	2.50	1.53	1.77	2.03	2.63	2.47	3.36	0.61	0.69	0.97	1.19	1.39	1.73
3500	0.55	1.12	0.75	1.64	0.90	2.15	1.16	1.53	1.55	2.27	1.90	2.89	0.57	0.65	0.90	1.11	1.29	1.61
3750	0.42	0.97	0.59	1.43	0.71	1.88	0.90	1.33	1.21	1.98	1.48	2.52	0.53	0.60	0.84	1.04	1.20	1.50
4000	0.33	0.86	0.47	1.25	0.57	1.65	0.71	1.17	0.95	1.74	1.17	2.22	0.50	0.56	0.79	0.97	1.13	1.41
4250	0.27	0.76	0.38	1.11	0.46	1.46	0.56	1.04	0.76	1.54	0.94	1.96	0.47	0.53	0.74	0.91	1.06	1.32
4500	0.22	0.68	0.31	0.99	0.38	1.30	0.45	0.92	0.62	1.37	0.77	1.75	0.44	0.50	0.70	0.86	1.00	1.25
4750			0.25	0.89	0.32	1.17	0.37	0.83	0.51	1.23	0.63	1.57	0.42	0.48	0.67	0.82	0.95	1.18
5000			0.21	0.80	0.27	1.06	0.30	0.75	0.42	1.11	0.53	1.42	0.40	0.45	0.63	0.78	0.90	1.13
5250					0.23	0.96	0.25	0.68	0.35	1.01	0.44	1.29	0.38	0.43	0.60	0.74	0.86	1.07
5500							0.21	0.62	0.30	0.92	0.37	1.17	0.36	0.41	0.57	0.71	0.82	1.02
5750									0.25	0.84	0.32	1.07	0.35	0.39	0.55	0.68	0.78	0.98
6000									0.22	0.77	0.27	0.98	0.33	0.38	0.53	0.65	0.75	0.94

Table 4b

STRAMIT® TOP HATS – TRIPLE UNLAPPED
Inwards Design Capacity (kN/m)#

Member design capacity for section shown																		
Span	TH64075			TH64100			TH64120			TH96075			TH96100			TH96120		
(mm)	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth
1500	8.31	3.71	3.71	11.0	5.49	5.49	13.6	6.96	6.96	22.2	3.95	3.95	30.0	6.62	6.62	36.3	8.66	8.66
1750	5.24	2.97	2.97	6.99	4.37	4.37	8.57	5.52	5.52	14.0	3.39	3.39	18.9	5.40	5.40	22.8	7.03	7.03
2000	3.52	2.44	2.44	4.71	3.57	3.57	5.78	4.49	4.49	9.40	2.95	2.95	12.7	4.51	4.51	15.3	5.85	5.85
2250	2.48	2.05	2.05	3.33	2.98	2.98	4.11	3.73	3.73	6.60	2.52	2.52	8.92	3.83	3.83	10.7	4.95	4.95
2500	1.81	1.71	1.74	2.45	2.50	2.52	3.03	3.15	3.15	4.81	2.18	2.18	6.50	3.30	3.30	7.84	4.25	4.25
2750	1.37	1.41	1.50	1.86	2.07	2.16	2.27	2.70	2.70	3.65	1.91	1.91	4.89	2.86	2.88	5.91	3.65	3.70
3000	1.06	1.18	1.31	1.43	1.74	1.88	1.75	2.28	2.33	2.82	1.62	1.69	3.78	2.41	2.54	4.59	3.07	3.25
3250	0.84	1.01	1.15	1.13	1.48	1.57	1.38	1.89	1.94	2.22	1.38	1.51	2.99	2.05	2.26	3.65	2.61	2.88
3500	0.68	0.87	0.93	0.90	1.28	1.28	1.10	1.55	1.68	1.78	1.19	1.36	2.40	1.77	2.02	2.93	2.25	2.57
3750	0.55	0.75	0.76	0.73	1.05	1.11	0.90	1.27	1.46	1.45	1.04	1.23	1.97	1.54	1.82	2.38	1.96	2.31
4000	0.46	0.60	0.67	0.61	0.85	0.98	0.74	1.03	1.28	1.20	0.91	1.12	1.63	1.35	1.65	1.96	1.72	2.09
4250	0.38	0.49	0.59	0.50	0.71	0.86	0.62	0.85	1.14	1.00	0.81	1.01	1.37	1.20	1.41	1.64	1.53	1.75
4500	0.32	0.40	0.53	0.43	0.58	0.77	0.52	0.70	1.01	0.85	0.72	0.83	1.15	1.07	1.17	1.38	1.36	1.44
4750				0.36	0.49	0.69	0.44	0.59	0.91	0.72	0.65	0.69	0.98	0.96	0.98	1.17	1.20	1.22
5000				0.31	0.41	0.63	0.38	0.49	0.82	0.62	0.58	0.58	0.84	0.82	0.87	1.00	1.01	1.10
5250							0.33	0.42	0.75	0.54	0.49	0.53	0.73	0.69	0.79	0.87	0.85	1.00
5500										0.47	0.42	0.48	0.63	0.58	0.72	0.76	0.72	0.91
5750													0.55	0.50	0.66	0.66	0.62	0.83
6000													0.49	0.43	0.60	0.58	0.53	0.77

Table 5b

STRAMIT® TOP HATS – TRIPLE LAPPED
Inwards Design Capacity (kN/m)#

Member design capacity for section shown																		
Span	TH64075			TH64100			TH64120			TH96075			TH96100			TH96120		
(mm)	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth	L/90	svblty*	strngth
1500	8.69	4.36	4.36	11.6	7.20	7.20	14.2	9.68	9.68	23.2	4.01	4.01	31.4	6.74	6.74	37.9	9.32	9.32
1750	5.47	3.73	3.73	7.31	6.17	6.17	8.96	8.20	8.20	14.6	3.43	3.43	19.8	5.78	5.78	23.9	7.99	7.99
2000	3.67	3.26	3.26	4.90	4.78	4.78	6.01	6.28	6.28	9.83	3.00	3.00	13.2	5.05	5.05	16.0	6.99	6.99
2250	2.58	2.58	2.58	3.46	3.78	3.78	4.25	4.96	4.96	6.90	2.67	2.67	9.32	4.49	4.49	11.2	6.22	6.22
2500	1.89	2.09	2.09	2.54	3.06	3.06	3.13	4.02	4.02	5.03	2.40	2.40	6.80	4.04	4.04	8.20	5.40	5.40
2750	1.42	1.72	1.72	1.92	2.53	2.53	2.38	3.32	3.32	3.78	2.18	2.18	5.11	3.50	3.50	6.16	4.46	4.46
3000	1.10	1.45	1.45	1.50	2.12	2.12	1.83	2.71	2.79	2.94	1.98	1.98	3.94	2.94	2.94	4.76	3.75	3.75
3250	0.87	1.23	1.23	1.18	1.81	1.81	1.44	2.19	2.38	2.32	1.69	1.69	3.11	2.51	2.51	3.77	3.20	3.20
3500	0.70	1.04	1.06	0.94	1.45	1.56	1.15	1.76	2.05	1.86	1.45	1.45	2.50	2.16	2.16	3.04	2.76	2.76
3750	0.57	0.82	0.93	0.77	1.17	1.36	0.94	1.40	1.79	1.52	1.27	1.27	2.04	1.88	1.88	2.49	2.40	2.40
4000	0.48	0.66	0.82	0.63	0.95	1.19	0.77	1.13	1.57	1.25	1.11	1.11	1.69	1.66	1.66	2.05	2.11	2.11
4250	0.40	0.54	0.72	0.53	0.77	1.06	0.64	0.92	1.39	1.05	0.99	0.99	1.42	1.47	1.47	1.71	1.87	1.87
4500	0.34	0.45	0.64	0.44	0.63	0.94	0.54	0.76	1.24	0.88	0.88	0.88	1.20	1.30	1.31	1.44	1.59	1.67
4750				0.38	0.53	0.85	0.46	0.63	1.11	0.75	0.76	0.79	1.02	1.07	1.17	1.23	1.31	1.50
5000				0.32	0.44	0.76	0.40	0.53	1.01	0.65	0.64	0.71	0.88	0.89	1.06	1.05	1.10	1.35
5250							0.34	0.45	0.91	0.56	0.54	0.65	0.76	0.75	0.96	0.91	0.93	1.23
5500										0.49	0.46	0.59	0.66	0.63	0.88	0.79	0.79	1.12
5750													0.58	0.54	0.80	0.69	0.67	1.02
6000													0.51	0.46	0.74	0.61	0.58	0.94

Stramit® *Roof Battens*

Stramit® ***Roof Battens*** may be used with either metal sheeting or with concrete/terracotta tiles. The relevant performance can be obtained from the following sections.

TILES

Based on the foot traffic requirements of AS3623 the maximum span for ***Stramit***® 0.48 ***Roof Batten*** is 900mm and ***Stramit***® 0.55 ***Roof Batten*** is 1200mm.
This assumes a maximum batten spacing of 300mm and a maximum tile weight of 0.67 kPa.

DARWIN DEEMED-TO-COMPLY

Information on the use of the ***Stramit***® ***Cyclonic Roof Batten*** in the Darwin area can be found in the deemed to comply sheets in the Darwin Area Manual. These sheets can also be obtained from the local Stramit Building Products office. Each application must conform to the specific details outlined in Design Data Sheets.

METAL ROOFING

STRAMIT® 0.48 ROOF BATTENS MAXIMUM BATTEN SPACINGS (mm)#

AS4055 Load Category	Wind Pressure (kPa)*	Truss spacing (mm), fastening and truss material								***Stramit***® sheeting, thickness bmt (mm) & fastening per sheet per batten									
		2 x No12 screws into 1.5 G450, 2 x No10 screws into 1.9 G450, or 2 x No10 type 17's into timber				2 x No10 screws into 1.0 G550				***Monoclad***®		***Corrugated***				***Longspan***®				***Speed Deck Ultra***®	
										0.42	0.48	0.42		0.48		0.42		0.48		0.42	0.48
		450	600	900	1200	450	600	900	1200	4 screws		3 scr	5 scr	3 scr	5 scr	3 scr	5 scr	3 scr	5 scr	1 clip & 3 scr	
N1	1.35	2200	2200	2200	-	2200	2200	1770	-	1350	1700	900	900	1200	1200	1750	1750	2250	2250	1700	2300
N2	1.94	2200	2200	2000	-	2200	1900	1270	-	1350	1700	900	900	1200	1200	1750	1750	2250	2250	1700	2300
N3	2.96	2200	2060	1280	-	1630	1220	810	-	1350	1650	900	900	1200	1200	1350	1750	1350	2200	1350	1550
N4	4.43	1830	1370	860	-	1090	810	540	-	1100	1100	800	900	800	1200	-	1450	850	1450	850	1050
N5	6.53	1270	950	590	-	750	560	370	-	750	750	-	900	-	900	-	1000	-	1000	600	600
N6	8.84	930	700	430	-	550	410	270	-	-	-	-	700	-	700	-	750	-	750	-	-

STRAMIT® 0.55 ROOF BATTENS MAXIMUM BATTEN SPACINGS (mm)#

AS4055 Load Category	Wind Pressure (kPa)*	Truss spacing (mm), fastening and truss material								***Stramit***® sheeting, thickness bmt (mm) & fastening per sheet per batten									
		2 x No12 screws into 1.5 G450, 2 x No10 screws into 1.9 G450, or 2 x No10 type 17's into timber				2 x No10 screws into 1.0 G550				***Monoclad***®		***Corrugated***				***Longspan***®				***Speed Deck Ultra***®	
										0.42	0.48	0.42		0.48		0.42		0.48		0.42	0.48
		450	600	900	1200	450	600	900	1200	4 screws		3 scr	5 scr	3 scr	5 scr	3 scr	5 scr	3 scr	5 scr	1 clip & 3 scr	
N1	1.35	2200	2200	2200	1750	2200	2200	1780	1330	1350	1700	900	900	1200	1200	1750	1750	2250	2250	1700	2300
N2	1.94	2200	2200	2140	1250	2200	1900	1270	950	1350	1700	900	900	1200	1200	1750	1750	2250	2250	1700	2300
N3	2.96	2200	2060	1370	800	1630	1220	810	610	1350	1700	900	900	1200	1200	1500	1750	1500	2250	1500	1500
N4	4.43	1830	1380	920	530	1090	810	540	400	1250	1250	800	900	950	1200	-	1700	1000	1700	1000	1000
N5	6.53	1270	950	630	370	750	560	370	-	850	850	-	900	650	1050	-	1150	-	1150	700	700
N6	8.84	930	700	460	-	550	410	-	-	-	-	-	800	450	800	-	850	-	850	-	-

STRAMIT® 0.75 CYCLONIC ROOF BATTENS MAXIMUM BATTEN SPACINGS (mm)#

AS4055 Load Category	Strength Wind Pressure (kPa)*	Truss spacing (mm), fastening and truss material								***Stramit***® sheeting, thickness bmt (mm) & fastening per sheet per batten (min No 14 Type 17's or equivalent)									
		2 x No14 screws into 1.5 G450, or larger screws and/or thicker or higher strength steel, or 2 x No14 Type 17's into timber or equivalent				2 x No12 screws into 1.5 G450 or 2 x No14 screws into 1.0 G550 or 2 x No12 Type 17's into timber				***Monoclad***®		***Corrugated***			***Longspan***®			***CapacityPLUS***™	
										0.42	0.48	0.42	0.48	0.60	0.42	0.48		0.42	0.48
		450	600	900	1200	450	600	900	1200	4 assy		5 assy			5 assy			3 assy	
C1	3.71	1950	1460	970	730	1300	980	650	490	1300	1300	900	1200	900	1600	1750		750	900
C2	5.54	1300	980	650	490	870	650	430	320	850	850	900	1100	900	1150	1150		-	550
C3	8.17	880	660	440	330	590	440	-	-	-	550	650	700	650	800	800		-	-
C4	11.05	650	490	320	-	430	320	-	-	-	-	-	-	-	-	-		-	-

Note that at the truss spacings (batten spans) shown foot traffic loads to AS1562 have been accounted for. All batten spacings (sheeting spans) shown are for three or more equal spans. Cyclonic batten table based on connection testing to the BCA.

* Strength limit-state wind pressures in accordance with AS4055, allowing for local pressure areas.

The apparent anomaly that at higher pressures some profile spans are longer than for higher performing products is due to the limitation being solely related to the number of fastenings into the batten. Products with more closely spaced fasteners will have an increased capacity in these circumstances.

Batten spacing may be limited by truss selection – see left-hand columns.

Batten spacing will be limited by truss selection – see left-hand columns.

Batten spacing may be limited by sheeting selection – see right-hand columns.

Batten spacing will be limited by sheeting selection – see right-hand columns.

Stramit® Ceiling Battens

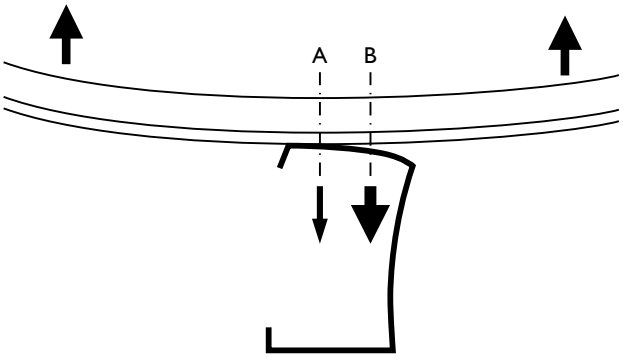
STRAMIT® CEILING BATTEN MAXIMUM BATTEN SPANS (mm)			
		batten centres (mm)	
material	layers	450	600
12mm plasterboard	1	1500	1400
12mm plasterboard	2	1250	1100

STRAMIT® WA CEILING BATTEN MAXIMUM BATTEN SPANS (mm)			
		batten centres (mm)	
material	layers	450	600
12mm plasterboard	1	1550	1400
12mm plasterboard	2	1250	1150

Spans are only suitable for fully internal applications and apply to three or more continuous spans.

Additional fasteners

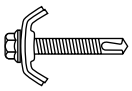
Two pairs of screws (or even a single pair positioned obliquely) fixed to a relatively flexible support member, such as a purlin flange, cannot be assumed to share load. For example in the diagram below the proportion of total load taken by screws at position A will be substantially less than at position B. In Tables 1a to 5a the capacity increase through using four screws rather than two is just 30%.



Fastener Sizes

For fixing sheeting to ***Stramit® Top Hats & Roof Battens***


– No.12 self-drilling and threading screws* (see relevant sheeting manual for length and other requirements) in non-cyclonic areas


– No.14 self-drilling and threading screws* with cyclone washer assemblies for through fixed sheeting in cyclonic areas

* Use Type 17 screws or proprietary batten screws for battens of 0.75mm thickness or less.

For fixing ***Stramit® Top Hats*** to supporting structure. (At least two fasteners are required at each connection – size to be as determined for design capacity)

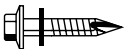

– No.12 x 20mm self-drilling and threading screws

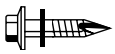

– No.14 x 22mm self-drilling and threading screws

For fixing ***Stramit® Roof Battens*** to truss or rafter. (At least two fasteners are required at each connection)


– No.10 x 16mm self-drilling and threading screws for G450 steel of at least 1.9mm thickness or for G550 steel of at least 1.0mm thickness


– No.12 x 20mm self-drilling and threading screws for G450 steel of at least 1.5mm thickness

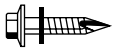

– No.10 x 35mm type 17 screws into softwood


– No.10 x 25mm type 17 screws into hardwood (F11 or better)

For fixing ***Stramit® Ceiling Battens*** to truss or rafter. (At least two fasteners are required at each connection)


– No.10 x 16mm self-drilling and threading screws for G450 steel of at least 1.9mm thickness or for G550 steel of at least 1.0mm thickness


– No.10 x 20mm type 17 screws into softwood in non-cyclonic areas


– No.12 x 25mm type 17 screws into softwood in cyclonic areas

For fixing plasterboard to ***Stramit® Ceiling Battens***


– No.6 x 25 bugle-head self-drilling screws

PROCUREMENT

Prices

Prices of ***Stramit® Top Hats***, ***Stramit® Roof Battens*** and ***Stramit® Ceiling Battens*** can be obtained from your nearest Stramit location or distributor of Stramit products.

Availability

Most Stramit locations offer the full range of ***Stramit® Top Hats & Battens*** in stock lengths and some offer a cut-to-length service for larger sections. Check with your nearest Stramit office for availability.

Orders

Stramit® Top Hats & Battens can be ordered directly, through distributors or from steel merchants.

Related Products

Purlins, girts and bridging – a comprehensive range of purlin sections and high-performance bridging.

Roof and wall sheeting – a wide choice of roof & wall sheeting, decking profiles and walling.

Delivery/Unloading

Delivery can normally be made within 48 hours, subject to the delivery location, quantity and material availability, or can be at a pre-arranged date and time. Please ensure that suitable arrangements have been made for truck unloading, as this is the responsibility of the receiver. Pack mass may be up to one tonne. Packs must never be placed onto unclad purlins except directly above portal frames.

INSTALLATION

Good Practice

Stramit recommends that good trade practice be followed when using these products, such as found in AISC/Australian Standards HB62 part 1 and HB39.

Walking

Stramit® Top Hats are not designed for walking on. Residual oil may be present on these components from manufacturing. The use of appropriate cradles or cherry pickers is recommended. As a minimum follow these rules:

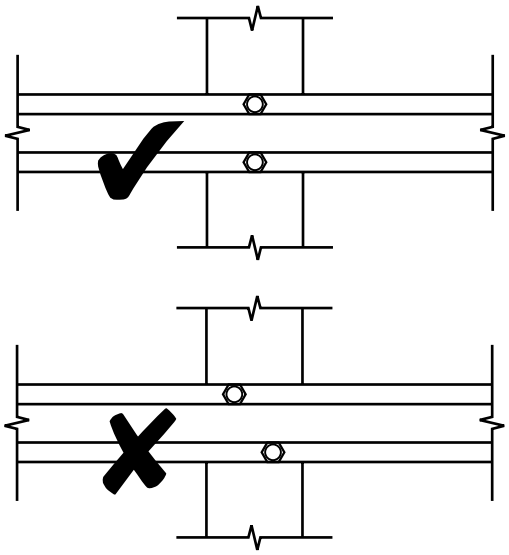
- Never walk on purlins without safety mesh in place
- Always use a safety harness if walking on girts

Stramit® Roof Battens have a lightly knurled upper surface that assists in maintaining a foothold. ***Stramit® Roof Battens*** are designed to withstand foot traffic load during installation and service.

Stramit® Ceiling Battens are not able to sustain foot traffic loads and must therefore not be walked on.

Fixing/Connections

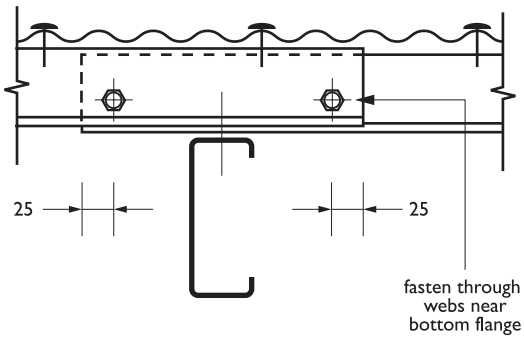
Always use the correct size and quantity of fasteners as specified by the design engineer. Pairs of screws at connections must be directly in line (parallel with the supporting member).



Laps

Structural laps for ***Stramit® Top Hats*** require a minimum 10% lap length (i.e. 5% at each end).

End fastenings of top hats or battens should be at least 25mm from the section end irrespective of whether this occurs at the structure end or at an internal support. Remember to allow for this additional material over and above the span length/s when specifying, ordering or cutting sections.



Top hat/batten overlaps (or non-structural laps) are recommended to be 100 mm in length. In these cases structural continuity must not be assumed.

When connecting overlapping top hats or roof battens place foot onto upper section to nest sections prior to and during fixing. Laps must be fastened through both webs near both ends of the lap as shown below.

Welding

Stramit does not recommend the welding of top hats or battens. The heat produced in welding will affect the material properties of the high-tensile cold-formed steel used by Stramit in all its top hats and battens. In many instances considerable stress concentrations are likely to arise, even with good quality welding. In addition, welding will locally remove the galvanized coating leading to a potential reduction in durability.

ADDITIONAL INFORMATION

Further Information

A complimentary manual ***Stramit® Purlins, Girts & Bridging*** – Detailing & Installation Guide is also available.

As well as our standard range of Technical Manuals, Installation Leaflets, Case Studies and other promotional literature Stramit has a series of Guides to aid design. These include:

- Concealed Fixed Decking
- Roof Slope Guide
- Foot Traffic Guide
- Roof System Selection Guide
- Bullnosing, Curving and Crimping
- Acoustic Panels
- Cyclonic Areas
- Spring Curving Guide

Please contact your nearest Stramit location for any of these guides, or other literature.

References

In preparing this document reference has been made to:

- Standards Australia Handbook – HB39 (Installation code for metal roof and wall cladding)
- AISC/Standards Australia Handbook – HB62.1 (Code of practice for safe erection of building steelwork)

Other Products

Stramit offers a wide range of building products, including:

- Formwork decking
- Roof and wall sheeting
- Purlins, girts and bridging
- Truss components
- Gutters and downpipes
- Fascias
- Custom flashings
- Insulating products
- Fasteners

Stramit®

Building Products

The Stramit web page can be found at:
www.stramit.com.au
Details of many ***Stramit***® products can also be seen on the RAIA site 'Product Selector' at:
www.selector.com.au

contact numbers for information		**prices**	**availability** products coating colours	**general** other	**technical** advice product data
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SUNSHINE COAST Unit 1, 5 Kerryl St, Kunda Park QLD 4556	**phone** **fax**	**(07) 5456 4083** (07) 5456 4862			
MURWILLUMBAH 6 Kay Street, Murwillumbah NSW 2484	**phone** **fax**	**(02) 6672 8542** (02) 6672 6798			
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PERTH 605-615 Bickley Road, Maddington WA 6109	**phone** **fax**	**(08) 9493 8800** (08) 9493 8899			
BUNBURY 25 Proffit Street, Bunbury WA 6230	**phone** **fax**	**(08) 9721 8046** (08) 9721 8017			

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