



**Rollforming Services Tophat Purlins** are a versatile, lightweight, economical and an easy to use product for roof purlins, wall girts, floor joists, and many of other applications such as carports, fencing, racking and many more.

Ideally for spans from 3m to 7m, Tophat Purlins will provide an economical alternative to standard timber beams or Steel C-Purlins.

Tophat Purlins are very easy to work with, being fastened directly to their supports which results in a saving on cleats. The symmetrical section means no braces or nogs are needed to prevent twisting and the profile is easily lapped for optimal performance.

## DURABILITY

Tophat Purlins are manufactured from hot dipped galvanised steel with a coating weight of 275gram/sqm, in line with other common lightweight steel structural building products.

This gives good protection in most exposed internal environments, and for external use in moderate marine environments. Where used in a lined interior dwelling, a thermal break should be installed between the Tophat and the cladding to avoid thermal bridging. Where sections are exposed to salt spray but not rain washing, maintenance is required to remove any build up of salt deposits on the surface.

Run off from, or contact with, materials which are incompatible with zinc should be avoided.

## HANDLING AND STORAGE

Tophat Purlins must be kept dry during storage as water present between close stacked sections will cause premature corrosion. If they become wet they should be separated and stacked openly to allow for ventilation to dry the surface.

## LENGTHS

Tophat Purlins are available in long run lengths up to 12 metres, depending on the available transport and handling facilities. Stock lengths may be available from your local stockist.

## CUTTING

Cutting is preferably done by shear or hacksaw. When using abrasive disc blades care must be taken to ensure the swarf produced does not affect other materials and the burred edge should be cleaned off at the completion of cutting.

## TOPHAT SECTIONAL PROPERTIES

Tophat Section	Thickness	Area	Mass per unit Length	Second Moment Area (Full)		Centre of Gravity	Section Modulus (Full)		Radius of Gyration		Shear Centre	Torsion Constant	Warping Constant	Mono Symmetry Constant
				I <sub>x</sub> 10 <sup>6</sup> mm <sup>4</sup>	I <sub>y</sub> 10 <sup>6</sup> mm <sup>4</sup>		z <sub>x</sub> 10 <sup>3</sup> mm <sup>3</sup>	z <sub>y</sub> 10 <sup>3</sup> mm <sup>3</sup>	r <sub>x</sub> mm	r <sub>y</sub> mm				
60 Tophat 0.75 BMT	0.75	150	1.18	0.078	0.119	31.7	2.45	2.20	22.8	28.1	44.2	28.2	16.05	110
60 Tophat 0.95 BMT	0.95	190	1.50	0.098	0.151	31.7	3.09	2.78	22.8	28.1	44.2	57.3	20.33	110
100 Tophat 0.75 BMT	0.75	248	1.93	0.338	0.439	55.2	6.3	5.39	37.1	42.2	67.4	46.5	238.61	158
100 Tophat 0.95 BMT	0.95	314	2.45	0.428	0.556	55.2	7.75	6.83	37.0	42.2	67.4	94.5	302.24	158
120 Tophat 0.75 BMT	0.75	278	2.17	0.527	0.519	65.6	8.03	6.13	43.7	43.3	82.3	52.1	363.31	184
120 Tophat 0.95 BMT	0.95	352	2.75	0.667	0.657	65.6	10.16	7.76	43.6	43.3	82.3	105.9	460.20	184
150 Tophat 0.95 BMT	0.95	410	3.21	1.16	0.878	81.1	14.30	9.60	53.3	46.3	103.9	123.5	758.37	225
150 Tophat 1.15 BMT	1.15	497	3.88	1.40	1.06	81.1	17.30	11.62	53.2	46.3	103.9	219.1	918.02	225

## TYPICAL TOPHAT PURLIN SPANS (MM)

	Purlin Spacings (mm)	Region 1						Region 2					
		Urban		Rural		Secondary Use		Urban		Rural		Secondary Use	
		Simple	Lapped	Simple	Lapped	Simple	Lapped	Simple	Lapped	Simple	Lapped	Simple	Lapped
60 Tophat 0.75 BMT	1200	2200	2800	2000	2600	2600	3200	2100	2700	1900	2500	2500	3200
	1800	1800	2400	1700	2300	2100	2700	1800	2300	1700	2200	1900	2500
60 Tophat 0.95 BMT	1200	2300	3000	2200	2900	2700	3600	2300	3100	2100	2700	2700	3600
	1800	2000	2700	1900	2500	2400	3100	2000	2600	1800	2400	2300	2900
100 Tophat 0.75 BMT	1200	3600	4600	3200	4200	3600	5400	3400	4400	3000	4000	3400	4800
	1800	3200	4000	3000	3700	3800	4600	3000	3800	2800	3600	3600	4000
100 Tophat 0.95 BMT	1200	4000	5000	3700	4700	4300	5400	3800	4800	3600	4500	4000	5800
	1800	3500	4400	3200	4100	3600	5000	3400	4200	2900	4000	3400	4800
120 Tophat 0.75 BMT	1200	4300	5400	4000	5000	5100	6000	4200	5200	3900	4800	4900	5800
	1800	3400	4800	3000	4400	3400	5300	3200	4500	2800	4200	3200	4900
120 Tophat 0.95 BMT	1200	4800	6000	4400	5600	5100	6300	4600	5600	4200	5400	4800	6200
	1800	4200	5200	3800	4900	5000	5800	4000	5000	3700	4600	4400	5600
150 Tophat 0.95 BMT	1200	5600	7000	5000	6600	5600	8000	5200	6800	4800	6400	5200	7800
	1800	4600	6200	4100	5800	4600	6800	4200	6000	3900	5500	4200	6600
150 Tophat 1.15 BMT	1200	5100	7700	5700	7200	7000	8000	5800	7400	5200	6900	6200	8000
	1800	5000	6800	4800	6300	5000	7800	5000	6500	4600	5500	5000	6800

**REGION 1** Auckland, Central North Island, South Island (except Marlborough & Southland).

**REGION 2** Northland, Wellington, Marlborough, Southland.

**URBAN** Any Built up area with numerous houses/buildings 3 to 5 metres high (Terrain Category 3).

**RURAL** Areas with scattered obstructions, hedges, trees, buildings etc. (Terrain Category 2 1/2).

**SECONDARY USE** Buildings of low importance (secondary nature) where higher roof deflections are acceptable. In areas with scattered obstructions, hedges, trees, buildings etc. (Terrain Category 2 1/2).

**SNOW** These tables do not apply for elevations in excess of 300 metres or for Canterbury/Otago/Southland above 50 metres. In these areas "Snow Loads" should be considered by a qualified engineer.

### FASTENERS

Use 14 gauge tek screws typical.

Use 2 screws at simple ends and 4 screws at lapped supports typically, except:

- for fittings to cold rolled purlins with thickness less than 2.5mm BMT, use at simple ends use 2 screws, except use 4 screws for 150 Tophats.

- at lapped supports use 4 screws for 60 Tophats, 6 screws for 100 Tophats, 8 screws for 120 & 150 Tophats.

**OR** - Use strap detail.

### LAP

Minimum lap between fixing is 15% of Tophat span.

The Typical Spans are designed to give information for preliminary design and costings and are based on the factors noted. Full design Load Tables are available for specific design and Building Consent purposes.

Rollforming Services have unsurpassed knowledge and passion for producing roll formed steel profiles. Set up in 1996 as a contract roll forming company with the technical design and build backing of Howick Ltd, one of New Zealand's most innovative roll forming machine producers. We continue to provide fast, friendly service to all our customers.

## ROLLFORMING SERVICES ALSO SUPPLY

**Speedfloor:** Concrete flooring system

**Steel Joist, Truss, Framing and Battens:** For commercial and domestic use

**Custom Profiles:** For all steel fabrication uses including and not limited too HVAC, Truck bodies, Fencing, Roller/Sliding/Tilt/ Sectional doors, Packaging, Roading and Agriculture.