Dimond Structural™

CLASS 1

Product Information and Technical Statement

Dimond Top Notch Purlin System

Supplier

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Place of Manufacture

Aotearoa New Zealand

Structural Systems Manual

https://www.dimondstructural.co.nz/structural-design-manual#purlins

Product Description

1.1 The Top Notch Purlin System (Top Notch Purlins) is a galvanised steel sheet that is roll-formed into a top hat shape profile with formed swages, for use as structural support to roofing and wall cladding.

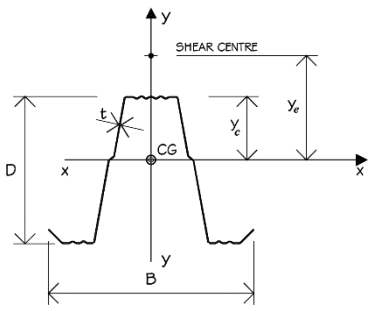
1.2 The system includes Dimond Top Notch Purlins and Top Notch Support Straps.

1.3 Top Notch Purlins are available in 0.75mm, 0.95mm and 1.15mm base metal thickness (BMT).

1.4 Top Notch Purlins are manufactured from Steel Grade G500 and G550 galvanised coil in Z275, i.e. 275g/m² total zinc coating weight. Z450 (450g/m² total zinc coating weight) requires a three-month lead time from date of order, subject to availability.
Top Notch Support Straps are manufactured from Steel Grade G550 30mm x 0.75mm BMT galvanised strip, in Z275 zinc coating.

1.5 Refer to table and diagram below for section sizes and shape:

Top Notch Section	Depth D (mm)	Width B (mm)	Thickness t (mm)	Mass (kg/m)	Centre of Gravity yc (mm)	Shear Centre ye (mm)
60 x 0.75	60	108	0.75	1.24	31.5	44.2
60 x 0.95	60	108	0.95	1.56	31.5	44.2
100 x 0.75	100	163	0.75	2.04	55.2	67.4
100 x 0.95	100	163	0.95	2.56	55.2	67.4
120 x 0.75	120	170	0.75	2.28	65.6	82.3
120 x 0.95	120	170	0.95	2.86	65.6	82.3
150 x 0.95	150	183	0.95	3.34	81.0	103.9
150 x 1.15	150	183	1.15	4.02	81.0	103.9



Scope of Use

2.1 Top Notch Purlins are intended for use as structural support to roofing and wall cladding. The systems provide for screw fastened connections to structural framework, suitable for use on spans and spacings within the limitations of the Structural Systems Manual, typically used for lightweight commercial building applications (e.g. farm sheds) where small spans are required.

2.2 Use of Top Notch Purlins must be within the limitations on environment and use given in the Structural Systems Manual Section 2.1.

Compliance With The New Zealand Building Code

3.1 Past history of use of the Top Notch Purlin system and analysis of Top Notch Purlins indicate that provided the system design, installation, use and maintenance is in line with the guidelines of the Structural Systems Manual and the standards referenced therein, and provided the steel components remain dry and free from contamination, Top Notch Purlins can reasonably be expected to meet or contribute to meeting the following performance criteria outlined in the New Zealand Building Code:

- **B1 Structure**: Performance clauses B1.3.1, B1.3.2, B1.3.3 (a) (b) (f) (g) (h), B1.3.4 (b) (d). AS/NZS 4600:1996 used as a basis for design tables in the Structural Systems Manual Section 2.4.4, refer to Design Instructions 5.1-5.4.
- **B2 Durability**: Performance clause B2.3.1(a). Refer to Durability & Maintenance Requirements 4.1-4.4.
- **F2 Hazardous Building Materials**: Performance clause F2.3.1.

3.2 Relevant Standards:

AS/NZS 1170	Structural Design Actions
AS/NZS 1365	Tolerances for Flat-rolled Steel Products
AS/NZS 4600:1996	Cold-formed Steel Structures
AS 1397	Continuous Hot-dip Metallic Coated Steel Sheet and Strip - Coatings of Zinc and Zinc Alloyed with Aluminium and Magnesium
SNZ TS 3404:2018	Durability Requirements for Steel Structures and Components

3.3 Where products used with Top Notch Purlins are manufactured by other suppliers, compliance to the New Zealand Building Code is required to be sought from that product's manufacturer.

Durability & Maintenance Requirements

4.1 The use of Top Notch Purlins is limited to dry and non-corrosive environments, unless further suitable protection of the surfaces is provided. It is the responsibility of the structural engineer to assess the durability requirements and specify accordingly.

4.2 Top Notch Purlins may require additional protection from suitable protective coatings applied in-situ if exposure to moisture, marine deposits, or chemicals is expected.

4.3 Top Notch Purlins require maintenance to ensure the surfaces remain in sound condition and moisture contamination is prevented. This requires surfaces to be kept clean and free from defects that could give rise to material degradation over time.

4.4 Refer to appropriate sections of the Structural Systems Manual:

Structural Systems Manual	Section Number
Environments and Limitations on Use	2.1.3
Durability	2.1.5
Maintenance	2.1.6

Design Instructions

5.1 Top Notch Purlins are intended to be designed by suitably qualified structural engineers experienced in the design of structural building systems, to provide PS1 certification.

5.2 It is critical to product performance that the materials selected, the loads applied, spans and spacings are designed within the appropriate loads in AS/NZS 1170, load-span performance in AS/NZS 4600 and limitations published in the Structural Systems Manual and the following standards referenced therein.

5.3 The information within the Structural Systems Manual is only applicable to Dimond Top Notch Purlins. It cannot be assumed to apply to similar products from other manufacturers.

5.4 Refer to appropriate sections of the Structural Systems Manual:

Structural Systems Manual	Section Number
Design Basis	2.4.1
Design Considerations	2.4.2
Section Properties	2.4.3
Load Span Tables	2.4.4

Installation and Construction Instructions

6.1 Installation of Top Notch Purlins is generally carried out by experienced steel fabricators, riggers and commercial shed builders who are familiar with installation of Top Notch Purlin Systems. Top Notch Purlins are not intended to be installed by builders, handymen, homeowners etc. without appropriate experience.

6.2 Before commencing a project using Top Notch Purlins, the installer and builder must refer to the appropriate sections of the Structural Systems Manual, ensuring relevant information (e.g. any limitations on use) is available to the end user. Failure to observe this information may result in a significant reduction in product performance. Dimond accepts no liability whatsoever for products that are used otherwise than in accordance with these recommendations.

6.3 Installation including safety considerations, handling and storage, general fixing and workmanship is to be carried out in accordance with the Structural Systems Manual Section 2.5.

6.4 Consideration of the expected loads during construction that are relevant to the specific design project must be given at the design stage to ensure construction can proceed in a safe manner, and contractors are aware of any constraints.

6.5 Refer to the appropriate sections of the Structural Systems Manual:

Structural Systems Manual	Section Number
Installation	2.5
Components	2.4.8
General Construction Details	2.4.9

Warnings & Bans

Not subject to a warning or ban under section 26 of the Building Act 2004.

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