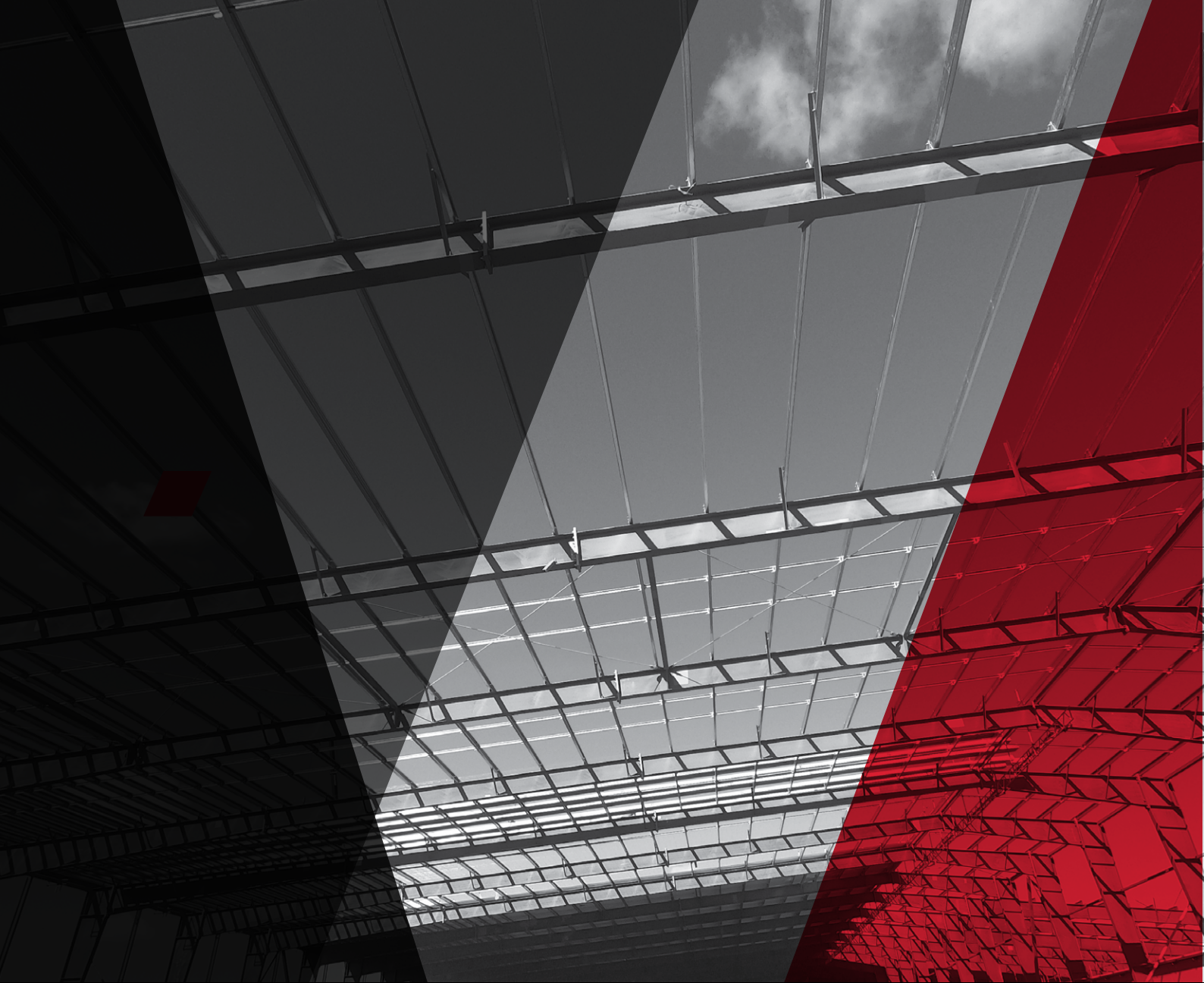




Dimond **Structural**[™]

Dimond Product Range

0800 DIMOND

dimondstructural.co.nz



Dimond Structural

Dimond Structural manufactures Steel Purlin and composite flooring products, Hibond and Flatdeck, for the construction industry. All our products are manufactured in New Zealand to the highest of standards. Decking systems are fully tested by independent laboratories in New Zealand and overseas to be compliant with local design requirements.

Collaborating with the best residential and commercial installers in New Zealand, Dimond Structural ensures all your project installation needs are met.

Dimond Structural is widely regarded as industry experts. With a dedicated technical team for Engineers and Specifiers and a full range of CAD details, we're here to help whether you're working on a new building or additions & alterations. Visit our websites downloads page for a full range of details and installation guidelines.

Visit dimondstructural.co.nz

Quality & Sustainability

As part of Fletcher Building, New Zealand's leading importer, distributor, and processor of steel, Dimond Structural is committed to reducing our environmental footprint while maintaining product excellence.

Our new Auckland-based Purlin mill exemplifies this commitment— by improving efficiency, quality, and accuracy, we've reduced waste and minimized environmental impact.

These actions align with Fletcher Building's broader sustainability goals, including our ambition to achieve a net Zero Carbon by FY50 as part of the Toitū carbon reduce™ certification.

Climate Change

Dimond Structural sees climate change to be a significant consideration as part of our business going forward. We will assess all our business risks through a process to quantify the significance of a changing climate for all business changes we make.

We're also mindful of our customers' evolving sustainability needs and welcome feedback on how we can better support their climate related goals. If you have specific requirements or concerns, please reach out to our team via contact details supplied at the end of this brochure and a local representative will be in touch.



For more details visit dimondstructural.co.nz

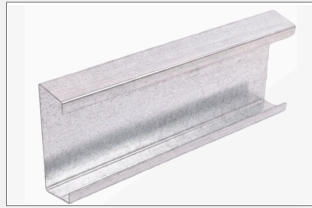
Dimond Structural

Dimond Purlins and Top Hats



DHS Purlins

The Dimond Structural DHS Purlin range is available in 20 sizes from DHS 150/12 to DHS 400/30 to suit commercial applications up to 18m spans. Speed of installation is assured as DHS Purlins and girts are supplied complete with brace channels ready for site assembly. DHS Purlins are manufactured in Auckland and Christchurch, except for 3.00mm BMT profiles, which are manufactured only in Auckland.



CEE Purlins

The Dimond Structural CEE Purlin range is available in 22 sizes from CEE 100/10 to CEE 400/30 to suit commercial applications up to 18m spans. Purlins are intended for use as structural support to profile metal roofing and wall cladding. CEE Purlins are manufactured in Auckland.



Resilient Channel

The Dimond Resilient Channel is available in 0.55mm metal thickness (BMT). Resilient Channel is intended for use as a batten in internal dry wall systems, screw fastened to framing to which wall linings are attached. Resilient Channels are manufactured in Auckland.



Dimond Top Hats

Dimond's range of Top hats are compact, lightweight and easy to install. They are ready for use in many smaller spanning applications up to 7m. Available in a full range of sizes from 60mm to 150mm depth, easily tek screwed to the supports without the need for purlin bracing and cleats. Top Hats are manufactured in Auckland.

Dimond Composite Flooring



Flatdeck®

Flatdeck® is a versatile, lightweight composite steel flooring system that makes full use of the combined structural properties of both steel and concrete. The result is a strong, stable and durable residential/commercial floor – a floor which provides thermal storage, soundproofing and fire resistance. Manufactured in Christchurch.



HiBond 55®

Hibond 55® is a composite steel flooring system that has been successfully used in a wide variety of commercial and residential applications for over thirty years. It is a proven performer in the three key areas of strength, reliability and economy. Hibond 55 is a versatile, lightweight system that delivers rapid and cost-effective installation saving on construction time. Manufactured in Christchurch.



HiBond 80®

Hibond 80® is the deepest flooring profile allowing longer un-propped spans, minimises beam layout. Designed in accordance with the procedures and limit states in AS/NZS 2327 based on detailed analysis by the Heavy Engineering Research Association (HERA) and comprehensive physical testing. Manufactured in Christchurch.

Why Dimond Purlins and Top Hats?

Ideal for Different Structures

Dimond Purlins and Top Hats suit all types of structures, making them ideal for almost any building project. Dimond's Steel purlin range can be pre-cut and pre-drilled before arriving at your site, perfect for quick installation and prefabricated steel building kits.

Non-Combustible

Unlike wood, steel components – including purlins – are non-combustible. Steel doesn't ignite, offering superior safety over wood. In a fire emergency, steel purlins (along with other steel building components) would not catch fire and instead help contain or slow down the blaze.

Lightweight

Dimond Steel Purlin range is lightweight and easy to handle. Our DHS Purlins, CEE Purlins and Top Hats innovative designs ensure strength without excess weight, reducing material costs for customers.

Longevity

Steel is incredibly durable, often lasting over 50 years with minimal maintenance. Dimond Structural's range of Purlins are no exception, needing little upkeep since they're usually not exposed to the elements. However, if your project involves exposed Steel Purlins, our team of technical experts can recommend the best protection methods to ensure they last.

Refer to technical manuals for further information.

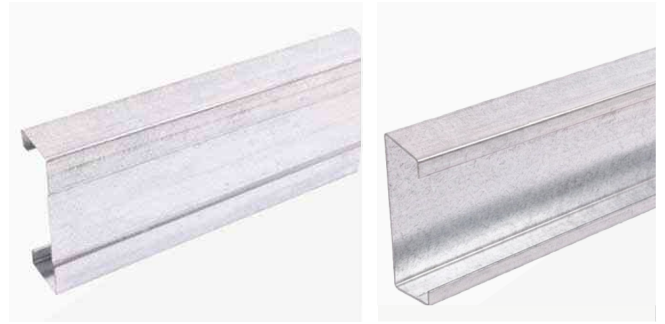
Disclaimer: It remains the responsibility of the designer to ensure that the appropriate version of any standards referenced in this document are adopted, based on the desired compliance pathway. Where a new (in draft or published) version of a standard is yet to be cited in a Verification Method, *Dimond Structural* recommends the more onerous design requirements of any conflicting clauses are adopted by a designer.

Dimond **Structural**[™]

**DHS and CEE
Purlins**

DHS and CEE Purlins

 Dimond purlins and girts are intended for use as roof purlins and wall girts in a system that provides bolted connections to primary structural framework and includes Fastbrace and Bolted Brace Channels subject to environmental limitations referenced in Dimond Structural literature for the appropriate grade of material selected.



The system that delivers on a range of key criteria

- The Dimond Hi-Span Purlin System (DHS Purlins) is a galvanised steel sheet that is roll-formed into a modified Cee shape with formed swages used in conjunction with Fastbrace and/or Bolted Brace Channel bracing as structural support to roofing and wall cladding.
- The system includes DHS Purlins, Fastbrace/Bolted Brace Channels and Components (refer Structural Systems Manual Section 2.3.7).
- DHS Purlins are available in 1.15mm, 1.25mm, 1.45mm, 1.75mm, 1.95mm, 2.40mm, and 3.00mm base metal thickness (BMT).
- DHS Purlins are manufactured from Steel Grade G450 and G500 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. Fastbrace and Bolted Brace Channels are manufactured from Steel Grade G250 (Brace Channel component 1.15mm BMT; End Cleat components 2.0mm BMT), in Z450 zinc coating.
- CEE Purlins are available in 0.95mm, 1.15mm, 1.45mm, 1.55mm, 1.85mm, 2.40mm, and 3.00mm base metal thickness (BMT).
- CEE Purlins are manufactured from Steel Grade G450 and G500 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. Fastbrace and Bolted Brace Channels are manufactured from Steel Grade G250 (Brace Channel component 1.15mm BMT; End Cleat components 2.0mm BMT), in Z450 zinc coating.

Design

Purlins are intended for use as structural support to profile metal roofing and wall cladding. Purlins provide for bolted connections to structural framework, suitable for use on spans and spacings within the limitations of the Structural Systems Manual, and typically used for commercial warehouse building applications where large spans are required.



DHS and CEE Purlins Building Compliance

Past history of use of the Purlin System, product testing and analysis of Purlins by the University of Sydney 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.

For more detail refer to the Dimond Structural Design Manual:
<https://www.dimondstructural.co.nz/structural-design-manual#purlins>

Dimond Structural[™]

Resilient Channel

Resilient Channel

 Resilient Channel is a galvanised steel sheet that is roll-formed into a rail shape profile with formed swages and holes, for use as a batten in internal dry wall systems. The resilient channels are manufactured in Auckland



The system that delivers on a range of key criteria

- Resilient Channel is intended for use as a component in internal dry wall systems, screw fastened to framing to which wall linings are attached.
- Resilient Channel is available in 0.55mm metal thickness (BMT).
- Resilient Channel is manufactured from Steel Grade G250 galvanised coil in Z275, i.e. 275g/m² total zinc coating weight.

Design

Resilient Channel is intended to be designed and specified by suitably qualified designers and acoustics practitioners experienced in the design of internal dry wall building systems to meet the performance criteria set out in the New Zealand Building Code. Installation of Resilient Channel is generally carried out by commercial builders and dry wall installers who are familiar with installation requirements and practices in New Zealand. Resilient Channel is not intended to be installed by handymen, homeowners etc. without appropriate experience.

Resilient Channel Section	Depth (mm)	Width (mm)	Thickness BMT (mm)	Mass (kg/m)
67 x 13 x 0.55	67	13	0.55	0.37



Resilient Channel Building Compliance

Past history of use of Resilient Channel and manufacture to appropriate standards indicate that provided the system design, installation, use and maintenance is in line with the guidelines of this statement, and provided the steel components remain dry and free from contamination, Resilient Channel can 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) (h), B1.3.4 (b). Roll-formed from feed coil manufactured to the requirements of AS/NZS 1365 and AS 1397. Refer Design and Installation Requirements 5.1-5.2.
- **B2 Durability:** Performance clause B2.3.1(a).
- **F2 Hazardous Building Materials:** Performance clause F2.3.1.

Refer to Product Information and Technical Statement for further information.

Dimond **Structural**[™]

Top Hats

Dimond Top Hats

- Top Hats 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.



The system that delivers on a range of key criteria

- Top Hats Purlins are available in 0.75mm, 0.95mm, 1.15mm and 1.55mm base metal thickness (BMT).
- Top Hats 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 Hats Support Straps are manufactured from Steel Grade G550 30mm x 0.75mm BMT galvanised strip, in Z275 zinc coating.

Design

The Top Hats 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. The system includes Dimond Top Hats Purlins and Top Hats Support Straps.



Top Hats Building Compliance

Past history of use of the Top Notch Purlin system and analysis of Top Hats 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.

For more detail refer to the Dimond Structural Design Manual:

<https://www.dimondstructural.co.nz/structural-design-manual#tophats>

Dimond Structural™

Flatdeck®

Flatdeck®

Flatdeck is a versatile composite steel flooring system that makes full use of the combined structural properties of both steel and concrete. The result is a strong and stable residential/commercial floor – lightweight and easy to install with a flat soffit appearance.



The floor system that delivers on a range of key criteria

- Easy to install with lightweight 300mm wide sheets, ideal for handling on remote or difficult access sites
- Flat soffit appearance, giving opportunities for use as an exposed ceiling, perfect for a modern industrial look
- Provides an ideal surface for laying carpets, parquet flooring, and other flooring coverings
- Can be used in a range of situations, including low rise commercial, residential multi-tenant buildings, houses and garages

Design

Flatdeck® is a 57mm deep tray flooring profile used where thinner slabs are required and/or where underside appearance is important. The Steel Sheets are manufactured in Christchurch, act as form work during construction and mechanically bond with the concrete to create an externally reinforced floor slab. The result is a strong and stable floor, which can be designed to provide thermal storage, acoustic performance and fire resistance.

Flatdeck® and accessories are manufactured from galvansied steel coil, produced to AS 1397

	Thickness (BMT) (mm)	Steel Grade (MPa)	Min. Zinc Weight g/m ²
Flatdeck® sheet	0.75 & 0.95	G550	Z 275
Edge form	1.15	G250	Z 275

Tolerances: Length -0mm, +10mm; sheet cover width -1mm, +5mm; maximum manufactured length of Flatdeck® sheet, 18m



Flatdeck® Building Compliance

Past history of use of Dimond Structural Flooring Systems indicate that provided the system design, product use and maintenance is in line with the guidelines of the Dimond Structural Design Manual, Dimond Structural Flooring Systems can reasonably be expected to meet the performance criteria in Clause B1 Structure and B2 Durability of the New Zealand Building Code for a period of not less than 50 years, provided the steel components remain dry and free from contamination.

For more detail refer to the Dimond Structural Design Manual:
<https://www.dimondstructural.co.nz/structural-design-manual#flooring>

Dimond Structural[™]

Hibond 55[®]

Hibond 55®

-  Hibond 55® offers a versatile and lightweight steel flooring system, delivering rapid and effective installation. Performing in the three key areas of strength, reliability and economy.



The floor system that delivers on a range of key criteria

- Quick and easy installation
- For thickness, uses less concrete than traditional flat slab concrete floors providing lightweight slab construction
- Can be used in a range of situations, including commercial, parking buildings, residential multi-tenant buildings, houses and garages

Design

Hibond 55® is a 55mm deep trapezoidal flooring profile used as a lightweight flooring solution. The steel sheets, act as form work during construction and mechanically bond with the concrete to create an externally reinforced floor slab. The result is a strong and stable floor, which can be designed to provide acoustic performance and fire resistance.

Hibond 55® and accessories are manufactured from galvansied steel coil, produced to AS 1397

	Base Material Thickness (BMT) (mm)	Steel Grade (MPa)	Min. Zinc Weight g/m²
Hibond 55® sheeting	0.75 & 0.95	G550	Z 275 & Z 450
End cap	0.55	G250	Z 275 & Z 450
Closure strip	0.55	G250	Z 275 & Z 450
Edge form	1.15	G250	Z 275 & Z 450

Tolerances: Length -0mm, +10mm; sheet cover width -1mm, +5mm; maximum manufactured length of Hibond 55® sheet, 18m



Hibond 55® building compliance

Past history of use of Dimond Structural Flooring Systems indicate that provided the system design, product use and maintenance is in line with the guidelines of the Dimond Structural Design Manual, Dimond Structural Flooring Systems can reasonably be expected to meet the performance criteria in Clause B1 Structure and B2 Durability of the New Zealand Building Code for a period of not less than 50 years, provided the steel components remain dry and free from contamination. Please refer to Dimond Durability Statement.

For more detail refer to the Dimond Structural Design Manual:
<https://www.dimondstructural.co.nz/structural-design-manual#flooring>

Dimond Structural[™]

Hibond 80[®]

Hibond 80®

 Hibond 80® offers a great solution where longer unpropped spans for composite flooring are required. With features such as four base metal thicknesses, intuitive design software, and the flexibility to use one of our recommended installers, Dimond Structural brings together what you need to go the distance.



The floor system that delivers on a range of key criteria

- Long spans with no propping
- Profile based on the Roman trefoil arch shape, giving robust stiffness and strength
- Tested capacity
- Tested fire resistance
- Supported by an intuitive design system

Design

Hibond 80® is the deepest of our flooring profiles allowing longer un-propped spans, minimising beam layout. The Steel Sheets are manufactured in Christchurch & profile has been designed in accordance with the procedures and limit states in AS/NZS 2327 based on comprehensive physical testing and detailed analysis by the Heavy Engineering Research Association (HERA).

Hibond 80® and accessories are manufactured from galvansied steel coil, produced to AS 1397

	Base Material Thickness (BMT) (mm)	Steel Grade (MPa)	Min. Zinc Weight g/m ²
Hibond 80® sheeting	0.75, 0.95, 1.05 & 1.15	G550	Z 275 & Z 450
End cap	0.55	G250	Z 275 & Z 450
Closure strip	0.55	G250	Z 275 & Z 450
Edge form	1.15	G250	Z 275 & Z 450

Tolerances: Length -0mm, +10mm; sheet cover width -1mm, +5mm; maximum manufactured length of Hibond 80® sheet, 15m



Hibond 80® has had extensive performance testing

- Imperial College of London structural tests to EN 1993-1-3 and EN 1994-1-1
- Exova Warrington fire resistance tests to EN 1365-2
- University of Auckland Formwork performance and welded shear stud capacities
- HERA – test result analysis and generation of design tables

For more detail refer to the Dimond Structural Design Manual:
<https://www.dimondstructural.co.nz/structural-design-manual#flooring>

For more details visit [dimondstructural.co.nz](https://www.dimondstructural.co.nz)

Dimond Structural

As part of Dimond Structural's policy of continuing product and system development the company reserves the right at any time and without notice, to discontinue or change the products, materials, design advice, features or specifications represented in this Manual without incurring any liability. The information in this Manual is issued for general application in New Zealand, and should not be treated as a substitute for detailed technical advice in relation to requirements for individual projects in New Zealand or overseas. To the extent permitted by law, Dimond Structural disclaim any liability for loss or damage incurred by the use of the information in this Manual unless it is covered by a specific warranty agreement.

Dimond Structural, a division of Fletcher Building Ltd.

V11.03.09.26 - **September 2026**

Contact

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