Roof Repair & Replacement Scoping Guide: M-253

For the 2019/20 Financial Year Only

Effective from 1 October 2019
Version – 6

Kāinga Ora
Homes and Communities

Roof Repair & Replacement Scoping Guide M-253

Contents

Document Control		
Document Name	Roof Repair and Replacement Scoping Guide – for Kāinga Ora properties for 2019-20 financial year	
Kāinga Ora Business Unit	People and Homes – Maintenance and Upgrade	
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Peer Reviewer/s and Sections	Natasha James	Manager, Information and Documents - Maintenance
Final Approved By	Stacey Marsh	Quality Homes Advisory team Manager
	Monique Fouwler	National Portfolio Manager
	Angela Pearce	National Maintenance and Upgrade Manager
Amendments	Updated for Kāinga Ora. Minor formatting changes.	

For existing Kāinga Ora – Homes and Communities properties

Note:

Changes since last edition shown in orange.

All previous Scoping Guides, Specifications and drawings are superseded. Contains colour illustrations - colour printing is recommended.

1. Introduction

Kāinga Ora – Homes and Communities' role is to provide safe, healthy, fit-for-purpose and sustainable housing for people in need, for the duration of their need.

2. Purpose

This Kāinga Ora Roof Repair & Replacement Scoping Guide (M-253) is specifically designed to provide guidance for Contractors in compiling a site specific scope of works for the properties requiring either roofing repairs or a new roof and associated maintenance works as listed.

The Scoping Guide provides for a range of component items and actions and their associated rates. The Contractor must select the appropriate items and actions from this range that are required in the circumstances (specific to the property and programme), to complete a scope that will be submitted to Kāinga Ora for approval.

3. General guidance

This section provides general guidance notes for the Contractor to ensure the property will achieve the appropriate outcome.

3.1 Health and Safety

At all times while the worker is involved in scoping activities, they must operate and comply with a work management system that meets all applicable legislative requirements, manages the work and related risks that exist, or will be created as part of scoping works. The Persons Conducting Business or Undertaking (PCBUs) Kāinga Ora and the Performance Based Maintenance Contractors (PBMC) have an overlapping duty to eliminate or minimise risks to workers and other persons. In meeting health and safety duties the PCBUs will, as far as reasonably practicable, consult, cooperate and coordinate their activities.

Hazard assessment, surveys or investigations attributed to the works being scoped, should identify as part of this process, those activities that have the potential to cause injury or illness to workers, tenants or others, so that controls can be identified as part of the work package.

Please note – Any Health and Safety issue requiring immediate response should be removed from this scope and treated as a separate urgent (URG) works order. These are to be advised to the Kāinga Ora Customer Services Centre on Ph. 0800 888 455 for Monday to Friday 8am-5pm or 0800 801 601 for outside those hours.

3.2 Cost-effective solutions

Where there is an option to either repair or replace a component or item, the Contractor must identify where full replacement of the item is more cost-effective than repairing it, and propose replacement as part of the scope. These proposed replacements shall be agreed with the Kāinga Ora representative and included in the approved scope before replacement is undertaken. If the proposed solution may also affect scopes for other work programmes, details should be forwarded to Kāinga Ora for consideration.

3.3 Supporting documentation

This Scoping Guide should be read in conjunction with other Kāinga Ora PBMC Reference Material. Current versions of the following documents will provide valuable information and context to assist the Contractor in completing and submitting appropriate and accurate scopes.

All Scopers, Contractors, Tradesmen and associated parties are to have copies and/or immediate access to all this information on site and are to be working strictly in accordance with those instructions.

Reference Material	Purpose
Kāinga Ora Amenity Condition Manual (ACM-200)	Provides guidance on what Kāinga Ora determines is an acceptable or unacceptable condition for specific componentry of a property.
Kāinga Ora Supplier Code of Conduct (M-360)	Provides Kāinga Ora expectations with regard to behaviour and conduct while on site.
Kāinga Ora Asbestos Management & Control Policy (HS-213)	Provides Kāinga Ora expectations with regard to the safe management and control of asbestos which is a hazardous material.
Kāinga Ora Lead-based Paint Management & Control Policy (HS-214)	Provides Kāinga Ora expectations with regard to the safe management and control of lead based paint which is a hazardous material.
Kāinga Ora Maintenance & Programmed Work Specification (M-215)	Provides a detailed description on a trade basis, of how the relevant work must be undertaken.

Kāinga Ora Method of Measurement (M-216) (included in the Kāinga Ora Schedule of Rates).	Provides instruction on how specific property features are to be measured. The Method of Measurement is particularly relevant to scoping as it defines how to measure the quantity of specific material and/or quantum of work
Kāinga Ora Schedule of Rates (M-218).	Provides a description of a particular maintenance activity and cost.
Kāinga Ora Building Materials Procurement Schedule (M-217)	Provides a full list of the materials, products and their costs that Kāinga Ora procures under a national supplier agreement and which must be used when undertaking the relevant work.
Kāinga Ora Insulation Inspection & Scoping Guide (M-242)	Provides guidance for Contractors in undertaking the inspection and scoping of ceiling, wall and underfloor insulation to support the requirements of the *Residential Tenancies Act*.
Customer and Contractor Agreement Form (M- 323)	This form confirms the process for achieving tenant agreement for the Contractor to work on the property and to use certain facilities.

3.4 Kāinga Ora contact details

Any questions regarding roof repairs are to be addressed to the Regional Maintenance team directly and for any questions regarding roof replacements refer to the Planned Programmes team on:

Email: planned.programmes@kaingaora.govt.nz.

3.5 Kāinga Ora Internal process

Many teams in Kāinga Ora are involved in the Planned Programmes process, the primary roles involved are:

3.5.1 **Asset / Portfolio Managers** – Confirm property inclusion in the programme. Advise Planned Programmes team if the building currently has any historical significance status and where properties share roof lines with a privately owned dwelling.

3.5.2 **Regional Maintenance / Planned Programme teams** – These teams receive the scoped work order from the Contractor and reviews it to see that the Contractor has achieved the aims of this Scoping Guide, before authorising. They check appropriate use of schedule of rates, etc. They also review all variation requests from Contractors during the course of the work. This team also monitors the programme process against agreed targets.

4. Scoping for roof repair and replacement

3.6 Scoping outcome

Outcome

This Roof Repair and Replacement Programme is designed to provide a cost effective programme for the complete replacement of roofing and associated maintenance works to selected Kāinga Ora properties.

This Roof Repair & Replacement Scoping Guide (M-253) defines how Kāinga Ora staff, PBMC Contractors and the Kāinga Ora nominated National Roofing subcontractor will achieve the desired outcome for selected Kāinga Ora properties.

3.7 Scoping table

No.	Roof Scoping Table	
4.2.1	**Roof Report** For significant repairs and new roofs the PBMC Contractor shall engage the nominated national roofing sub-contractor to inspect any property considered to have a leaking roof for the following Kāinga Ora routine maintenance works or planned programmes: a) Void, Exterior Paint and Rheumatic Fever Prevention. b) New Roofing Programme. All properties requiring significant repairs or where a new roof proposed shall have a roof report prepared by the nominated national roofing sub-contractor. This report shall – • Confirm the scope of works recommended • Provide a detailed breakdown of relevant job codes and costs to undertake the work Identify situations where - • The dwelling is composed of a single roof line that is shared with private neighbour's i.e. duplex, twin unit etc. • Where a Building Consent (B.C) is required, and make specific reference to this requirement being included in the report. This roofing report will be reviewed by Kāinga Ora staff and form the basis of an approved works order to undertake the works.	**Job Code/s** RMS050 **ACM** 38.1, 43 - 44 **MPWS** 4422 4311-4323
4.2.2	**New Roof** The PBMC Contractor shall engage the nominated national roofing sub- contractor to supply and install the new roof in accordance with the specification included in the *National Supply Agreement Process for Strengthening the Roof Structure When Replacing the Roof Cladding (M-238)* (please refer to the Appendix) and the *Kāinga Ora Maintenance & Programmed Work Specification (M-215) and Kāinga Ora Asbestos Management & Control Policy (HS-213).* **Asbestos Roofing/Associated Roofing Materials** Where an asbestos roof is to be replaced the PBMC Contractor shall test ceiling insulation for asbestos contamination. **Before work can commence** results are to be emailed to Kāinga Ora representative. • Negative – work can commence • Positive – Provide quote for decontamination work. Roof replacement to remain on hold until clearance certificate is issued. **Shared Roof Lines with Private Owners** • In situations where an entire roof replacement (Kāinga Ora roof) is to be undertaken which will not impact on the private owners roof the contractor shall liaise with the private owner as required to notify them of work being undertaken to the adjoining roof.	**Job Code/s** RCC600-660 **ACM** 43 - 44

	• Where there will be significant changes to the original roof (such as the removal or addition of flashing or chimney, or a change in roofing materials) which will impact on the private neighbour's roof, the Contractor shall notify the Kāinga Ora representative. Kāinga Ora will liaise with the private owner/s before any work commences. **Please note** – all works are to be undertaken by the nominated national roofing sub-contractor in accordance with those contract terms and documentation.	**MPWS** 4422 4311 - 4323
4.2.3	**New Roof Purlins and Strengthening** The nominated national roofing sub-contractor will supply and fit new roofing purlins if required to existing rafters and roof strengthening in accordance with the *Kāinga Ora Maintenance & Programmed Work Specification (M-215)* and *National Supply Agreement Process for Strengthening the Roof Structure When Replacing the Roof Cladding (M-238)* (please refer to the Appendix) .	**Job Code/s** RMS450 – 470 & 510 - 600 **ACM** 38.1 **MPWS** 3820
4.2.4	**Scaffold and Edge Protection** Provide appropriate scaffolding, edge protection or alternate safety items as per the *Kāinga Ora Maintenance & Programmed Work Specification (M- 215)* and current Health and Safety requirements.	**Job Code/s** RMS060 - 080 **ACM** **MPWS**
4.2.5	**Non-compliant Building Consent Issues** Any roofing material, fixing, structural framing issues framing issues not in compliance with current *New Zealand Standard NZS 3604 – Timber Framed Buildings* shall be identified during new roofing and raised as a variation cost to the PBMC for these works.	**Job Codes/s** RAA100 - 200 **ACM** 38.1 **MPWS** 3820

3.8 Associated maintenance works scope table

The nominated works as listed below are considered appropriate to be undertaken at the time of new roofing. These works items shall be reviewed and scoped for inclusion in a separate work order - the Associated Maintenance Works Order - if required (no others items shall be scoped). Where possible the associated maintenance works should be identified in the roof report.

Where it was not possible to identify the work item(s) in the report (for instance, where the items were discovered during the course of roofing works) these should be included as a variation to the scope of the Associated Maintenance Works Order.

All relevant works as identified by in the table below shall be included for repair or replacement if required.

No.	Associated Maintenance Works Scoping Table	
4.3.1	**Deficient Roof Framing** Any structurally unsound roof rafter framing timbers are to be strengthened or replaced. **Please note** – any sagging roofing that may affect the finished appearance shall be identified within the roof report.	**Job Code/s** 450 - 470 **ACM** 38.1 **MPWS** 3820
4.3.2	**Damages Fascia's** All broken, rotten or damaged fascia or barge boards shall be replaced.	**Job Code/s** CTX300 - 330 **ACM** 42.4 **MPWS** 4224, 6711
4.3.3	**Redundant Materials in Ceiling** Remove any redundant bricks or stored building materials found in the ceiling space. This includes removal of any redundant water tanks within ceilings, including redundant concrete header tanks. **Please note** – This will be done as a variation once the roofing has been removed.	**Job Code/s** RAA100 – 200 KCH050 **ACM** **MPWS** 3820
4.3.4	**Skillion Ceiling Insulation** Any new roofing proposed over a skillion ceiling shall have its current insulation reviewed by the Kāinga Ora nominated insulation contractor and a report shall be produced. Their report and any detailed scope will recommend any new works required. All those works to be undertaken by Kāinga Ora nominated insulation contractor (supply and install) to their specifications. This will be co-ordinated by the roofing contractor to be undertaken at the same time as the roofing works.	**Job Code/s** CIN151 - 152 **ACM** **MPWS** 4710
4.3.5	**Incomplete Perimeter Ceiling Insulation** Following removal of old roofing, the nominated national roofing sub-contractor shall check all perimeter ceiling areas to the edge of the building envelope to ensure ceilings	**Job Code/s** CIN151 - 152

No.	Associated Maintenance Works Scoping Table	
	have minimum 100mm thick insulation. **Please note** – low pitched roofs are often unable to be insulated via the ceiling space. Complete any deficient perimeter insulation by Variation to installing procured polyester insulation in accordance with *New Zealand Standard NZS 4246 – Installing Insulation*. **Please note** – any new insulation required will be done as a variation once the roofing has been removed.	**ACM** **MPWS** 4710
4.3.6	**No Ceiling Insulation** If upon removal of the old roofing, the nominated national roofing sub-contractor discovers there is no existing ceiling insulation, or that the current insulation is not acceptable (refer to the *Kāinga Ora Insulation Inspection & Scoping Guide (M-242)*) they will advise the PBMC Contractor who will in turn advise their Regional Maintenance Manager who will arrange a separate works order to be undertaken for the new insulation separately, within the Planned Programmes Team.	Work to be carried out by nominated PBMC Insulation Contractor **ACM** **MPWS** 4710
4.3.7	**Internal Spouting Wash** **When existing spouting is in good condition** – clean out and wash inside of the external spouting and valley gutters if required, to ensure they are free flowing and discharge to stormwater outlets. **Please Note -** Two codes are available for cleaning spouting • PSP100 this code should be used when all the spouting requires cleaning on a stand-alone house • PSP110 is measured by the lineal meter and should be used on smaller structures or whenever the property is a duplex or twin unit.	**Job Code/s** PSP100 - 110 **ACM** 74.1 **MPWS**
4.3.8	**Spouting / Downpipe Repairs** Sections of damaged downpipes and spouting shall be replaced, as required. **Please note** – If spouting is damaged by less than 20% of the run, the damaged sections can be replaced. Where repairs are required, codes are available to carry out joint repairs and downpipe reattachments. A new code has been added to the SOR, for re-aligning guttering where needed **PSP170**.	**Job Code/s** PSP & PDP Codes **ACM** 74.1 **MPWS** 7411
4.3.9	**Spouting Replacement** When existing spouting is in poor condition – Remove existing spouting (gutters and downpipes) to full extent of each run of new roof area and replace with new procured spouting. **Please note** – poor condition means that if any run of spouting (i.e. one side of a house) is failing by 20% or greater, then the whole spouting to that side of the house should be replaced. Failure of the spouting is considered when the metal is rusted through and/or the poly vinyl chloride (PVC) brittle or cracked. Under 20% a localised repair should be carried out.	**Job Code/s** PSP150 - 300 **ACM** 74.1 **MPWS** 7411

No.	Associated Maintenance Works Scoping Table	
4.3.10	**Aerial's** Remove all existing aerials located on the roof. Retain just one working digital aerial (and tenant's sky dish if present) and relocate to wall claddings (fix base at 3.0m above ground level for easy access). Ensure that penetrations through the claddings are appropriately flashed as per the *Kāinga Ora Maintenance & Programmed Work Specification (M-215)*. Check that internal cable connections function.	**Job Code/s** CAA100 **ACM** **MPWS** 4221 – 4282 & 7701

Please note – all associated maintenance works shall be undertaken strictly in accordance with the Kāinga Ora Maintenance & Programmed Work Specification (M-215) and the New Zealand Building Code.

4.4 Nominated contractor / supplier details

The following nominated national roofing sub-contractor is to be used to undertake the complete scoping, supply, installation and certification of these nominated roofing materials, fittings and installation items:

Kāinga Ora Nominated Sub-contractor / Supplier		
Insulation	**Roofing**	
Smart Energy Solutions 9(2)(a)	**Edwards & Hardy** 9(2)(a)	9(2)(a)

Records

Retain all records within Kāinga Ora's records system - refer 'Records retention and disposal' (R-105).

5. Version control

Details of previous versions are stored in Kāinga Ora's document management system (Objective). Refer to header and footer information for reference document elements or for any queries contact Atamai@kaingaora.govt.nz.

Appendix

The following supplier's product information and installation instructions are appended for reference –

- *National Supply Agreement Process for Strengthening the Roof Structure When Replacing the Roof Cladding (M-238)*
- *Steel and Tube Roofing Solutions Product Guide – dated January 2014*

Please note – All scoping to be undertaken in accordance with these documents.

Process for the Strengthening the Roof Structure when Replacing the Roof Cladding:

1. Where a re-roof of a Concrete or Clay roof (heavy weight roof) is replaced with a Profiled Metal Roof (light weight roof)

The Ministry of Building, Innovation and Employment (MBIE) released a document re:

Building work that does not require a building consent
Third edition 2014, ISBN 978-0-478-41705-0 (Online) Published March 2014.

An example where this exemption could apply:

"Replacing an old clay tile roof with a profiled metal roof (e.g. longrun roofing or pressed metal tiles) in the same position. Since the scope of work involves replacing a heavy weight roof with light weight, such issues as how to deal with higher uplift forces must be considered. The owner may elect to use NZS3604:2011 to show compliance with the Building Code. As the scope of work is not considered to be complete or substantial replacement of a component or assembly that contributes to the building's structural behaviour, the building work falls within the scope of this exemption".

In order to comply with the above requirement, when replacing a heavy weight with a light weight long run metal roof, we believe the following will meet the standards to allow for the higher "wind uplift":

Strip the roof and carefully lower removed material to the ground. Remove only as much area as can be completed within the working day and weather window. Remove all old underlay, underlay support and deteriorated roofing batons.

- Fix new purlins (70 x 45 min H1.2) on flat at a maximum of 900mm centres for internal spacings and 600mm centres for end spacings (i.e. top and bottom at ridge and gutter).
- **For rafters (or trusses) at max. spacing of 600mm crs:** fix purlins with **one** 10g x 80mm self-drilling screw (such as a Lumberlok 'Blue Screw') per purlin/rafter intersection.
- **For rafters (or trusses) at max. spacing of 900mm crs:** fix purlins with **two** 10g x 80mm self-drilling screws per purlin/rafter intersection.

The purlin fixing method above will also apply when replacing a light weight metal tile roof with a light weight long run roof also requiring new purlins.

Above will comply with MiTek's alternative solution Fixing Type C & D respectively as per the table below:

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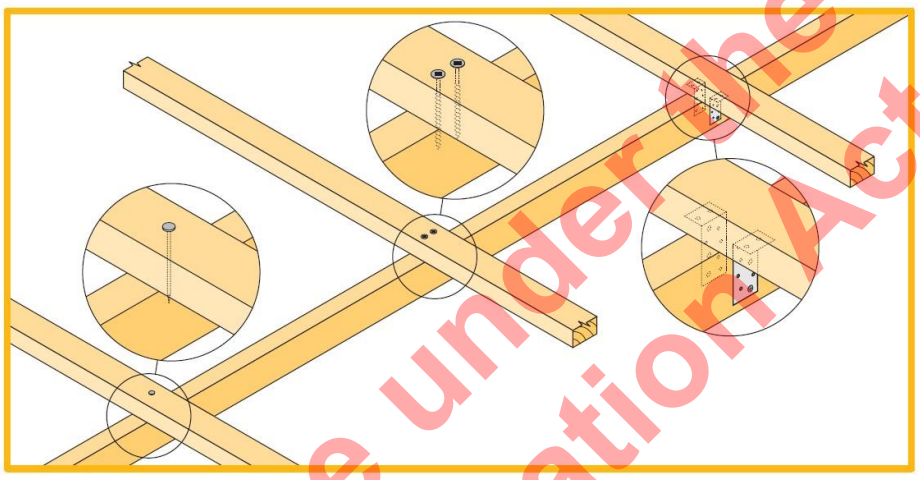
07/2011

PURLIN & BATTEN FIXING CHART

ALTERNATIVE SOLUTION TO NZS 3604:2011 TABLES 10.10 & 10.12

NOTE:

* All purlin and batten sizes are as per NZS 3604:2011.
* All fixings assume that the purlin and battens are installed on their flat over the top of the rafter or truss.
* The minimum fixing requirements apply to all purlin locations within the roof area.
* The LUMBERLOK BLUE SCREW where specified requires a minimum of 30mm penetration into rafter or truss i.e. it is suitable for rough sawn timber up to 50mm thick at 18% moisture content.



SELECTION CHART FIXING OPTIONS

(minimum fixing requirements)

ROOF WEIGHT	MAX. PURL N SPAN (mm)	MAX. PURL N CRS. (mm)	WIND ZONE L	M	H	VH	EH
HEAVY ROOF Tile Battens	900	370	A	A	A	A	A
LIGHT ROOF Tile Battens	900	370	A	A	B	C	C
	1200	370	A	B	C	C	C
LIGHT ROOF Purlins	900	900	C	C	C	C	D
	1200	900	C	C	C	D	D
	1200	1200	C	C	D	E	E

Wind Zone: As per NZS 3604:2011	L = Low Wind M = Medium Wind H = High Wind VH = Very High Wind EH = Extra High Wind

MiTek®

LUMBERLOK™

STANDARD FIXING OPTONS

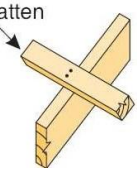
FIXING TYPE A 0.55kN — Purlin / Batte

1 NAIL

Note· Two nails maybe preferred to prevent batten rolling over wi h high roof pitches

FIXING TYPE B 0.8kN — Purlin / Batten

2 NA ILS



FIXING TYPE 2.4kN — Purlin / Batten

1 BLUE SCREW

FIXING TYPE D 3.45kN — Purlin / B tten

2 BLUE SCREWS
OR
2 SKEW NAILS plus 2 WIRE DOGS
(for purlin on edge)

FIXING TYPE E 5.5kN — Purlin / Batten

2 NAILS plus 1 CT200
OR
1 PAIR of CPC40

CPC40,

CPC40

FIXING DEFINITIONS

NAIL = Either 90mm x 3.15 dia. power-driven nail or 100mm x 3.75 dia. hand-driven nail

BLUE SCREW = 80mm x 10 gauge LUMBERLOK BLUE SCREW

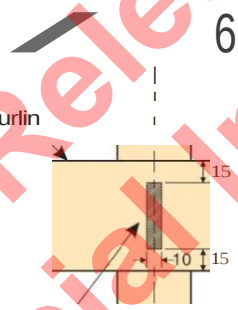
WIRE DOG = LUMBERLOK WIRE DOG either LH or RH

CT200 = LUMBERLOK Ceiling Tie CT200 bend over purlin, 4 x LUMBERLOK Product Nails 30mm x 3.15 dia. each end

CPC40 = LUMBERLOK CPC40 with 2 x Type 17-14g x 35mm Hex Head Screws per flange

f'" NG TOLERAN"'ES

LUMBERLOK BLUE SCREW



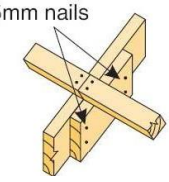
NOTE:
Locate fixings within the shaded area. Care to be taken to avoid over tightening of screws.

PURLIN / BATTEN SPLICE FIXING OPTIONS

FIXING TYPE A & 8 OVER PURLIN SPLICE — 1 nail in each

NOTE:
Skew nail when fixing to 35mm rafter or truss

FIXING TYPE C,D or E OVER PURLIN SPLICE — 90 x 35mm block fixed to chord or rafter with 4 x 75mm nails



- TYPE C
  1 SCREW
  to each purlin
- TYPE D & E
  1 NAIL plus 1 SCREW to each purlin

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Rafters (or Trusses) to top plate connection strengthening:

In our opinion when a heavy weight roof is replaced with a light weight roof: it would be reasonable to assume that with the following new fastenings installed, in addition to the existing fixings, it would provide a suitable uplift capacity:

- **Existing Rafter / trusses at max 600mm crs:** Install **one** Lumberlok® CPC40 cleat with two Type 17-14g x 35mm hex head screws (or longer as needed to penetrate through the timber top plate packer when present) per cleat into the top plate and two Type 17-14g x 35mm hex head screws (or four Product Nails 30mm x 3.15mm diameter per CPC40 cleat into the truss or rafter). Fixed in this manner the Lumberlok® CPC40 cleats can, coupled with the existing fixings, reasonably be expected to resist a 4.5kN uplift load and thereby comply with NZS 3604:2011 table 10.14 fixing type E.
- **Existing Rafter / trusses at max 900mm crs:** Install **two** Lumberlok® CPC40 cleats with two Type 17-14g x 35mm hex head screws (or longer as needed to penetrate through the timber top plate packer) per cleat into the top plate and two Type 17-14g x 35mm hex head screws (or four Product Nails 30mm x 3.15mm diameter per CPC40 cleat into the truss or rafter). Fixed in this manner the Lumberlok® CPC40 cleats, coupled with the existing fixings can reasonably be expected to resist a 7kN uplift thereby complying with NZS 3604:2011 table 10.14 fixing type F.

Table 10.14 – Fixing types of roof trusses at supports for all wind zones (see 10.2.2.6)

Truss spacing (mm)	Fixing type														
	Light roofs										Heavy roofs				
	900					1200					900				
Wind zone	L	M	H	VH	EH	L	M	H	VH	EH	L	M	H	VH	EH
Loaded dimension of support (m)															
3.0	E	E	E	E	F	E	E	E	F	F	E	E	E	E	E
3.5	E	E	E	F	F	E	E	E	F	SED	E	E	E	E	E
4.0	E	E	E	F	F	E	E	F	SED	SED	E	E	E	E	F
4.5	E	E	E	F	SED	E	E	F	SED	SED	E	E	E	E	F
5.0	E	E	E	F	SED	E	E	F	SED	SED	E	E	E	E	F
5.5	E	E	F	F	SED	E	E	F	SED	SED	E	E	E	F	F
6.0	E	E	F	SED	SED	E	E	SED	SED	SED	E	E	E	F	SED

Fixing type	Fixing to resist uplift	Alternative fixing capacity (kN)
E	2 / 90 x 3.15 skew nails + 2 wire dogs	4.7
F	2 / 90 x 3.15 skew nails + strap fixing (see figure 10.6)	7.0

Rafters to Ridge Beam Connection Strengthening:

- **Top of rafter flush with ridge board/beam:** Install one Lumberlok Sheet Brace Strap SBS3100 (300mm long) with six 30 x 3.15mm nails into each rafter (refer figure 10.5 (B) NZS 3604: 2011 below):

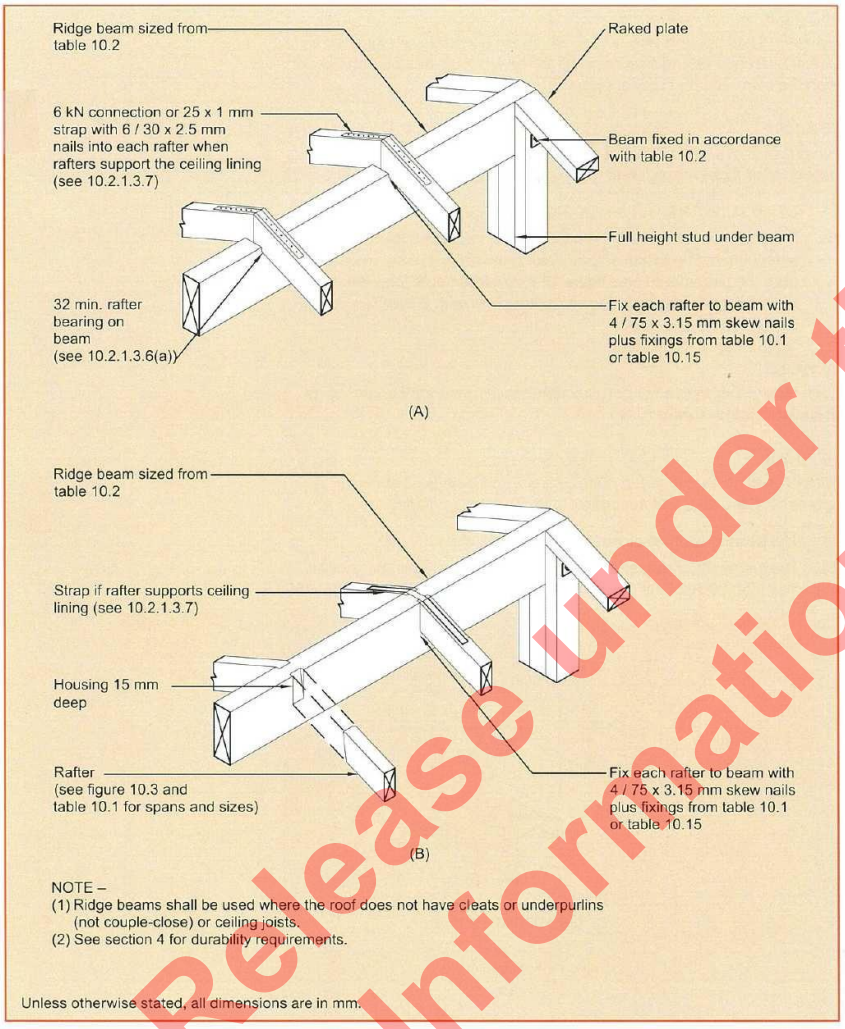


Figure 10.5 – Rafter to ridge beam connections (see 10.2.1.3.6)

10.2.1.3.7
Rafters shall be fixed as follows:
(a) To *top plates*: See figure 10.6;
(b) To corresponding *rafters*: As shown in figures 10.5 or 10.7.

- **Top of rafter below top of ridge board/beam:** Install one Lumberlok FJS (Floor Joist Stiffener) under ridge board fixed to every third pair of rafters (maximum 1800mm crs) with 2 x Type 17 – 14g x 35mm screws each end.

Jack Rafters to Hip Rafter Connection Strengthening:

- Install one Lumberlok Multigrip per jack rafter with 4 x Type 17 – 12g x 35mm screws (2 to jack rafter and 2 to hip rafter). Fold out Multigrip as required (maximum 1800mm crs).

2. Replacing a 'Like for Like' Light Weight Roof (e.g. 'off –profiled metal roof on') Maintaining Existing Purlins:

Existing Purlins at Maximum 900mm spacings and 900mm spans:
Leave in place existing purlin to rafter/truss fixings and install **one** 10g x 80mm self-drilling screw (such as a Lumberlok 'blue screw') per purlin/rafter intersection. Assuming existing fixing is either one or two 90mm nails, the additional screw installed will be sufficient to provide uplift for purlins at max. span of 900mm and max. spacing of 900mm centres for wind zone up to EH (Extra High).

Existing Purlins at Maximum 900mm spacings and 1200mm spans:
Leave in place existing purlin to rafter/truss fixings and install **one** 10g x 80mm self-drilling Lumberlok blue screw per purlin/rafter intersection for wind zones up to H (High).

For VH (Very High) and EH (Extra High) wind zones fix purlins with **two** 10g x 80mm self-drilling Lumberlok blue screws.

Existing Rafters or Trusses fixing to top plate
If existing rafters or trusses have no fixings to top plate then for H, VH and EH wind zones refer to NZS 3604:2011 Table 10.14.
For Type E fixing, use 1 x CPC40
For Type F fixing, use 2 x CPC40

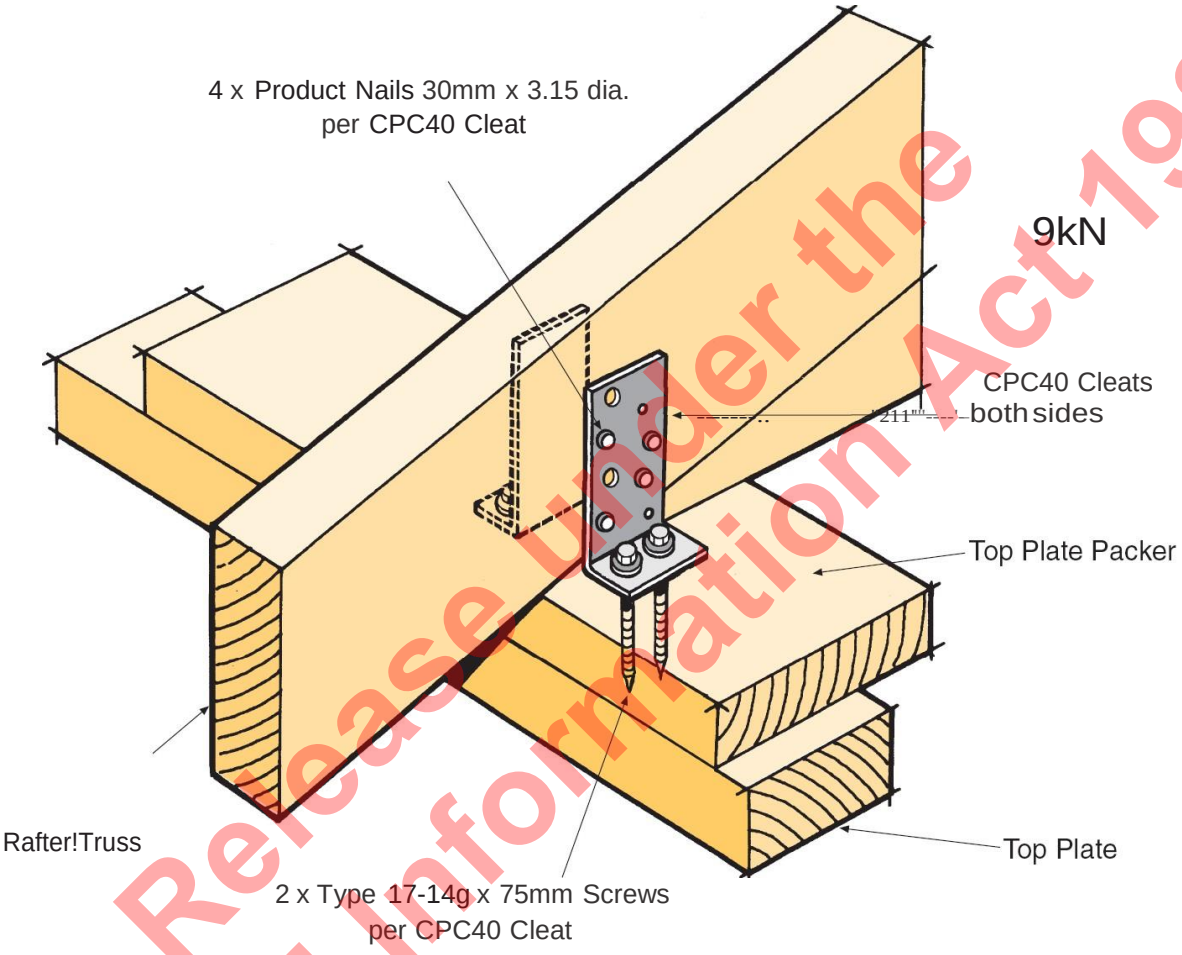
(Note: For unusual situations or SED – Specific Engineering Design, refer MiTek NZ Ltd for advice, email: design@miteknz.co.nz)

Wf1BERLOK®

07/2011

9kN TRUSS TO TOP PLATE FIXING

* Complies with Table 10.15 NZS 3604:2011
* Top mounted fixing allows additional face fixing if required



Code:	9KNTTP
Material:	CPC40 1.55mm G300 Z275 Galvanised Steel
Pack Includes:	2 x CPC40 Cleats
	8 x Product Nails 30mm x 3.15 dia. Galvanised
	4 x Type 17-14g x 75mm Hex Head Galvanised Screws

Available from leading Builders Supply Merchants throughout New Zealand

MiTek®

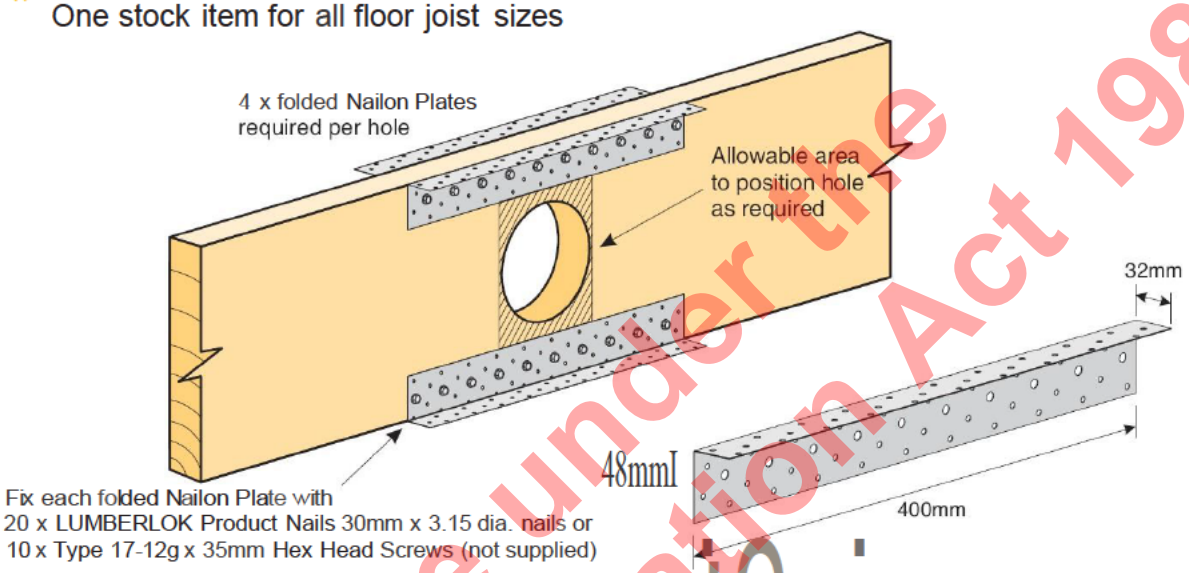
Wf1BERLOK®

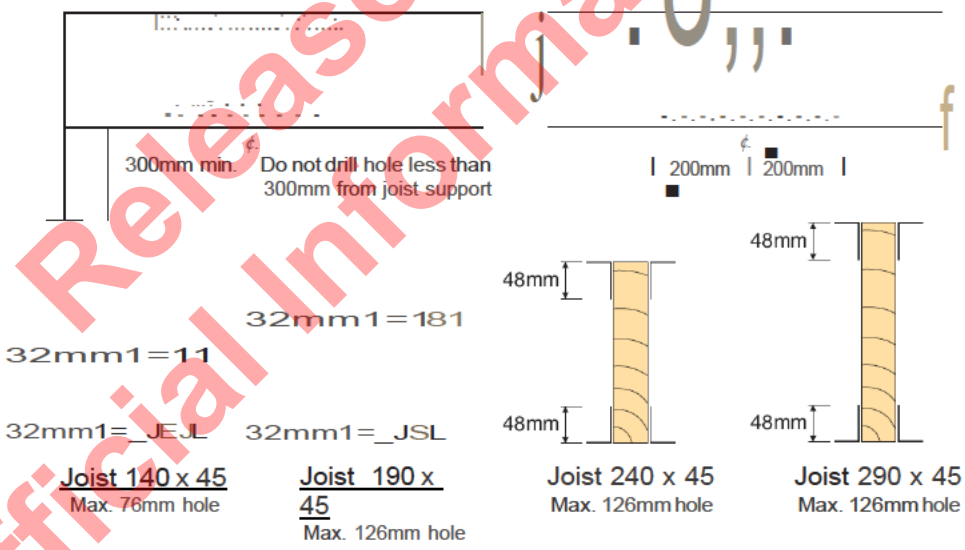
01/2012

FLOOR JOIST STIFFENER

- Suitable for running pipes/ducting through joists
- Maintains timber joist strength and stiffness
- Allows flexibility of hole location within specific areas
- Able to be retro fitted after pipes/ducting are installed
- One stock item for all floor joist sizes

NOT TO BE USED IN EXTERIOR SITUATIONS





Code: FJS
Material: 1.55mm G300 Z275 Galvanised Steel
Packed: 8 x Folded Nailon Plate per Carton

MiTek New Zealand Limited
AUCKLAND
POBoxsa-014, Botany 2163
CHRISTCHURCH
carton 8440
Fax 03 3400314
www.mitek.co.nz

GANG-NAIL® LUMBERLOK® BOWMAC®

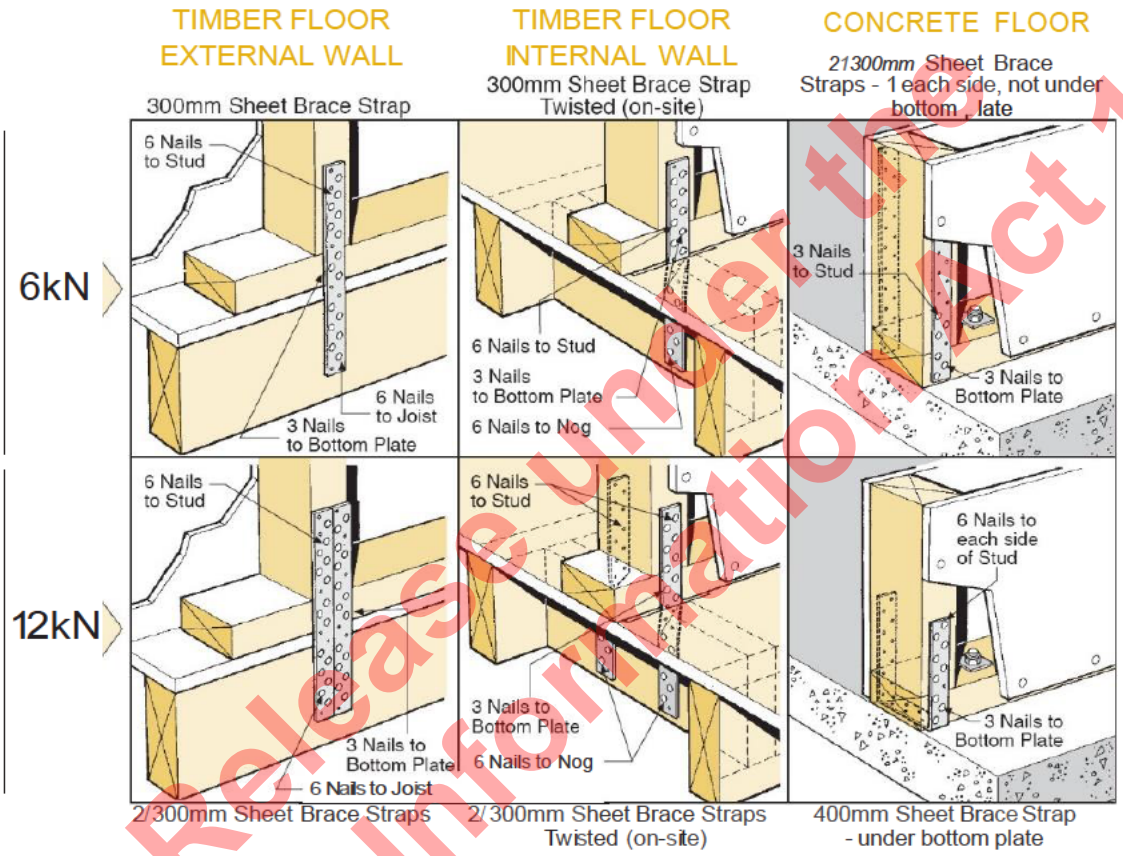
07/2011

WMBERLOK®

SHEET BRACE STRAPS

* Complies with Section 8 NZS 3604:2011
* 6 kN and 12 kN fixings
  200, 300, 400 and 600mm lengths
* Quick and easy to apply

USE STAINLESS STEEL OPTION IN EXTERIOR SITUATIONS



LUMBERLOK Sheet Brace Straps are available in 200, 300, 400 and 600mm lengths.
In addition to a bracing wall hold down, this product can be used for a multitude of 6 kN fixing situations, as detailed in NZS 3604:2011.
0.91mm x 25mm G300 Z275 Galvanised Steel.
Nail using LUMBERLOK Product Nails 30mm x 3.15 diameter.
Also available in 0.9mm x 25mm Stainless Steel 304-2B.

Available from leading Builders Supply Merchants throughout New Zealand

MTek New Zealand Limited

AUCKLAND
PO Box 58-014, Botany 2163
Phone 09-274 7109
Fax: 00-24 1100

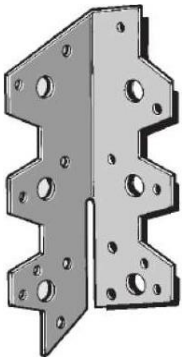
CHRISTCHURCH
PO Box 8387, Riccarton 8440
Phone 03-348 8691
Fax: 00-345 0314

www.mtek.co.nz

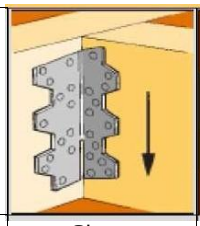
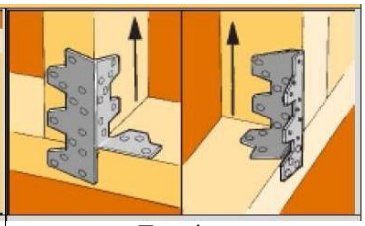
GANG-NAIL® LUMBERLOK BOWMAC®

MULTIGRIP

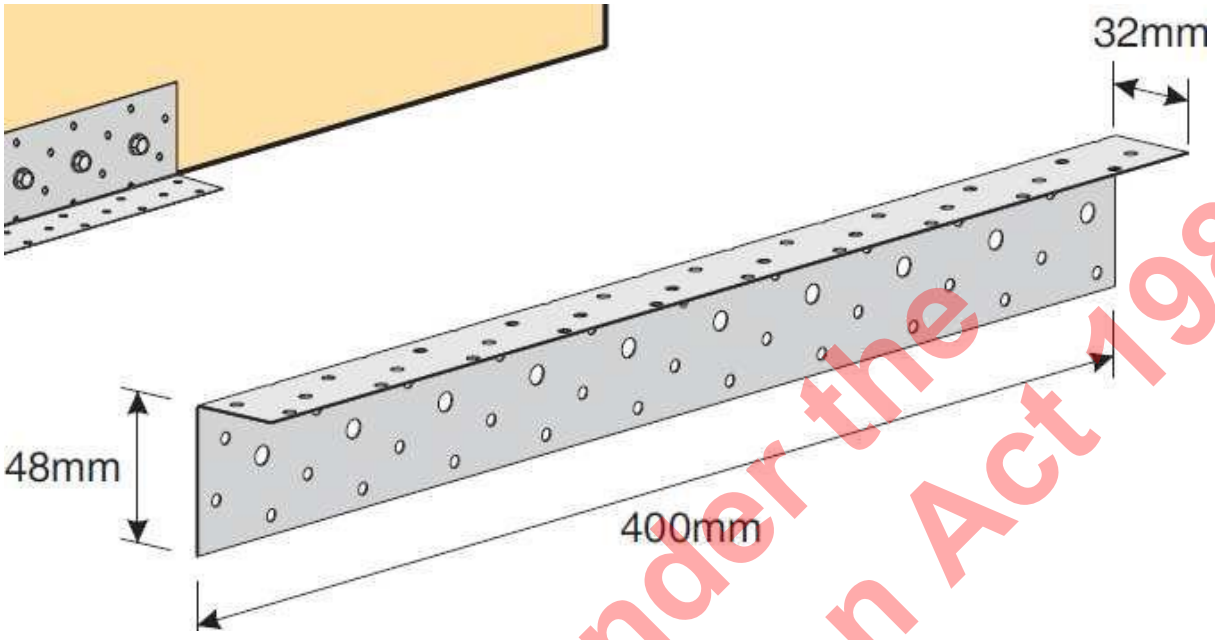
0.91mm G300 Z275 GALVANISED STEEL or
0.9mm STAINLESS STEEL 304-28

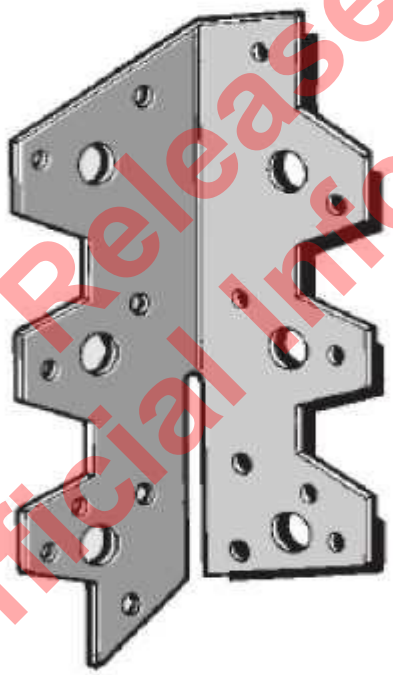


Multi Grip

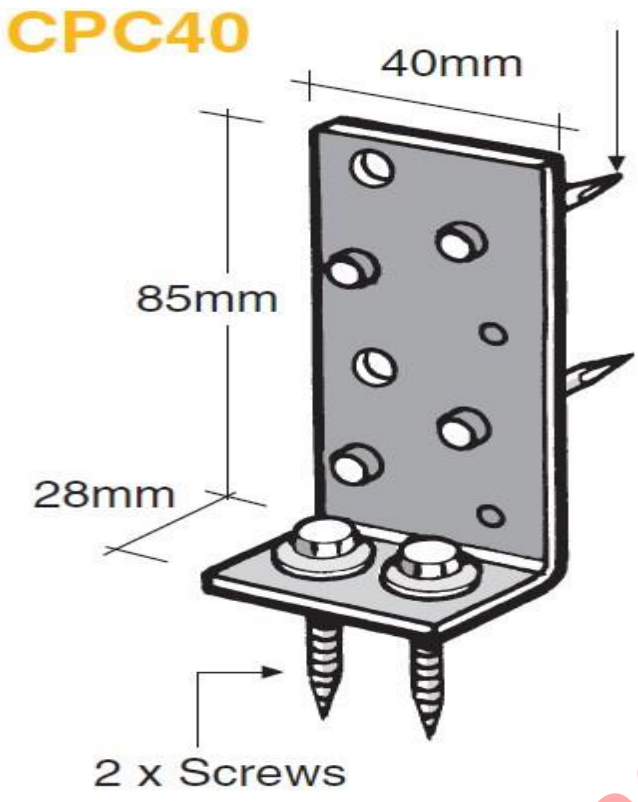
Characteristic Load		
		
	Shear	Tension
Nails (All holes with 30mm x 3.15 nails)	11.9 kN / pair	4.0 kN
Screws (3 / Type 7 3Smm x 14g per flange)	10.9 kN / pair	

FLOOR JOIST STIFFENER

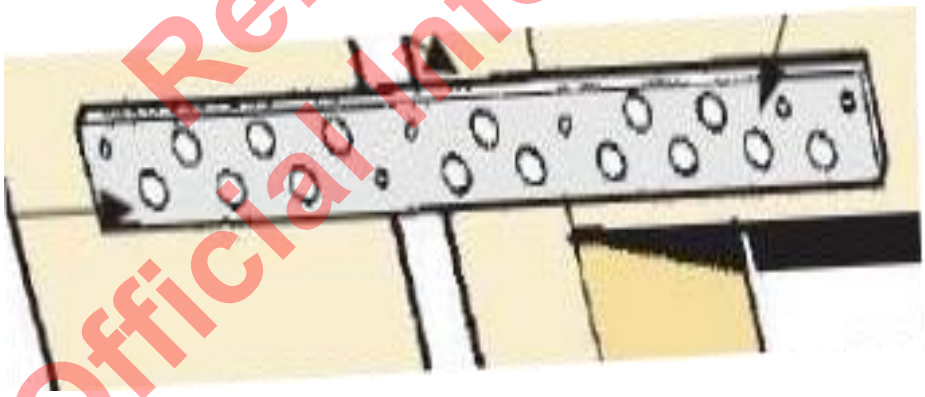




Multi Grip



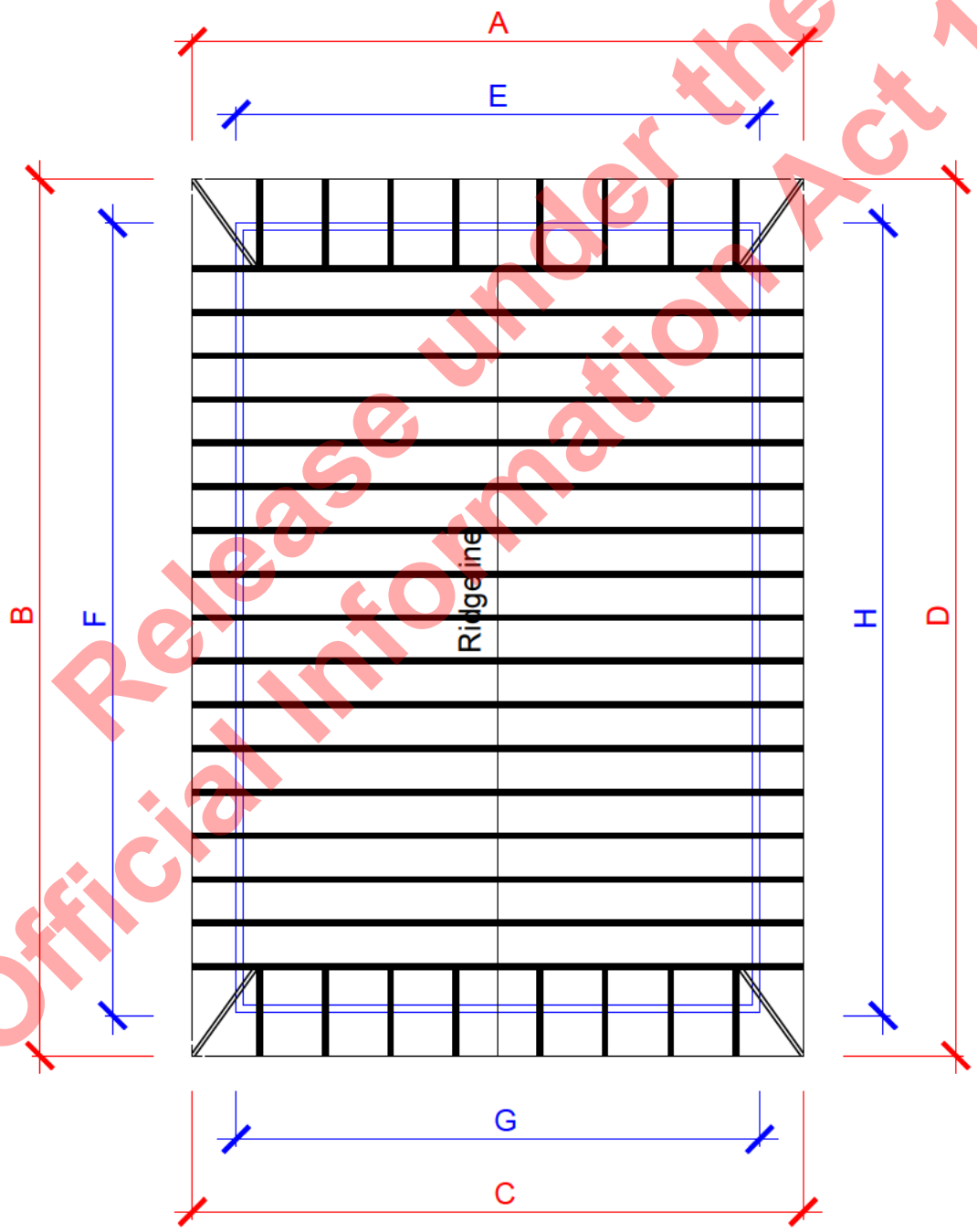
SHEET BRACE STRAPS



EDGEPROTECTIONCHARGE:
Measurelengthsofgutters,A+B+C+D=linealmetres

STRENGTHENINGTHEROOFSTRUCTURECHARGE:
Measurelengthsoftopplate,E+F+G+H=linealmetres

ROOFINGCHARGE:
Measuretheareaovertopplates,ExF=squaremetres.
Measuretheroofpitchindegrees.



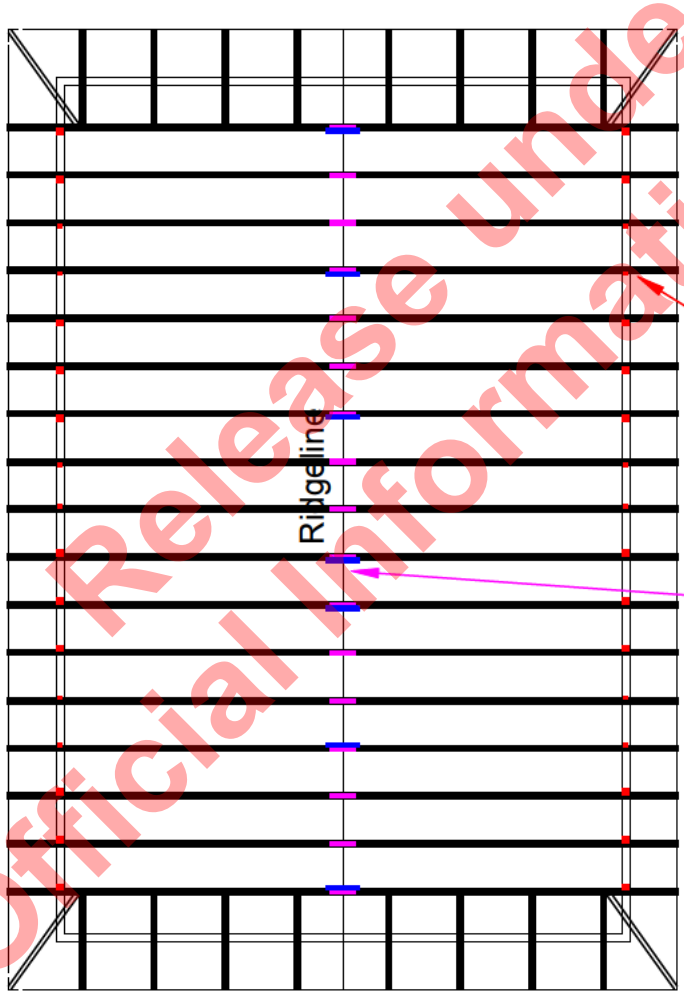
EDWARDS&HARDY

STRENGTHENINGTHEROOFSTRUCTURE

CONCRETEROOFINGOFF,STEELROOFINGON
GableRoofPlan-Raftersmax.600mmcrs

FixingBracketScrews:Type17-14gx35mmHexHeadElectro.Galvanised

NewPurlins70x45at900mmcrs,OneLumberlokBlueScrew10gx80mm



OneLumberlokCPC40ateach raftertrusstotopplate,4screws

Topofrafterflushwithridgeboard, OneLumberlokSBS400Rateach raftertruss,6screws,oriftopof rafterisbelowtopofridgeboard, useOneLumberlokFJSat 1800mmmax.crs.4screws

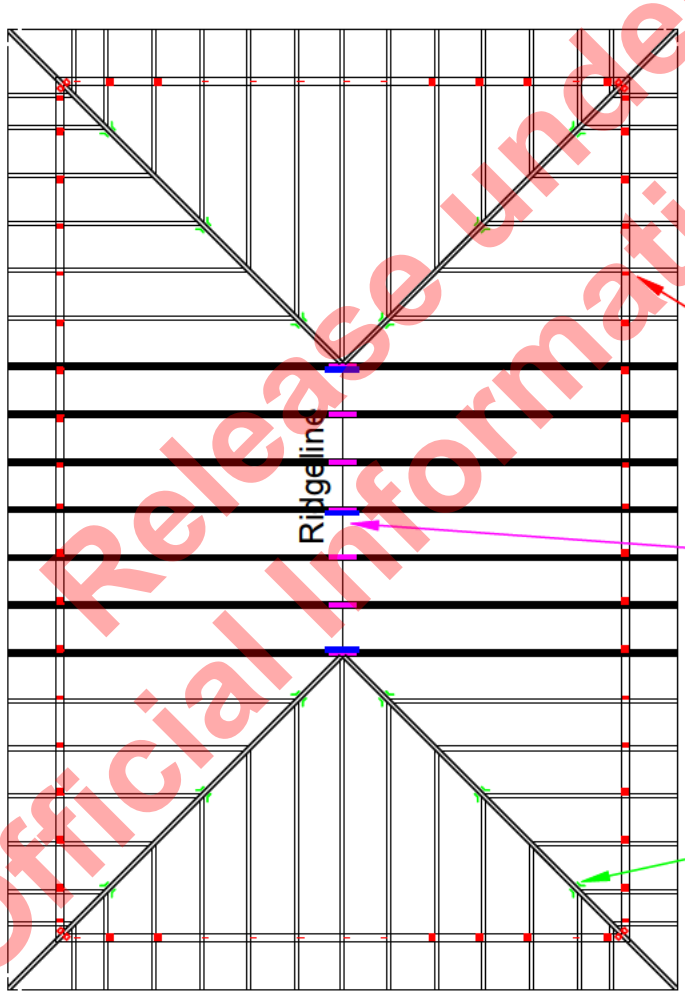
EDWARDS&HARDY

STRENGTHENINGTHEROOFSTRUCTURE

CONCRETEROOFINGOFF,STEELROOFINGON
HipRoofPlan-Raftersmax.600mmcrs

FixingBracketScrews:Type17-14gx35mmHexHeadElectro.Galvanised

NewPurlins70x45at900mmcrs,OneLumberlokBlueScrew10gx80mm



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LumberlokMultigripatjackrafter tohiprafter,1800mmmax.crs.4 screws

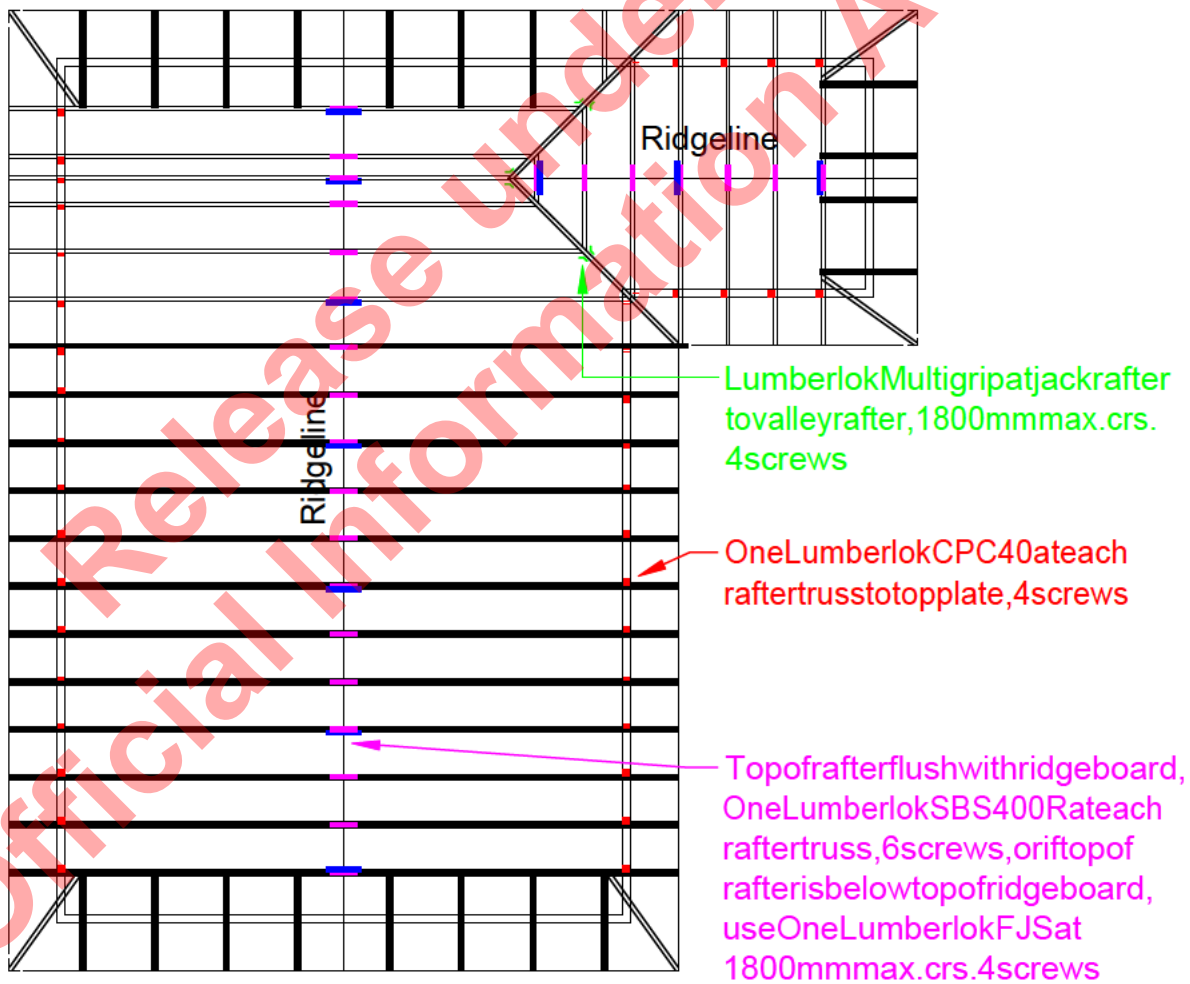
EDWARDS&HARDY

STRENGTHENINGTHEROOFSTRUCTURE

CONCRETEROOFINGOFF,STEELROOFINGON
GableRoofLShapePlan-Raftersmax.600mmcrs

FixingBracketScrews:Type17-14gx35mmHexHeadElectro.Galvanised

NewPurlins70x45at900mmcrs,OneLumberlokBlueScrew10gx80mm



EDWARDS&HARDY

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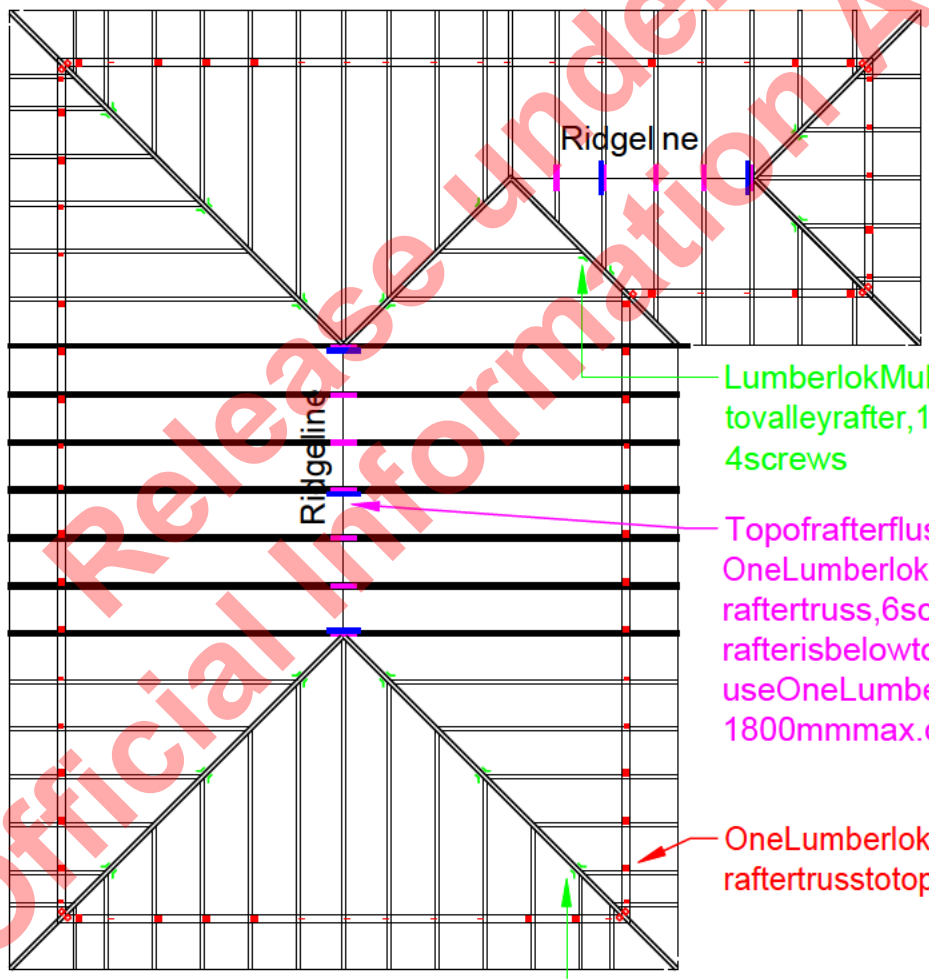

LumberlokMultigripatjackrafter tovalleyrafter,1800mmmax.crs. 4screws

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LumberlokMultigripatjackrafter tohiprafter,1800mmmax.crs.4 screws

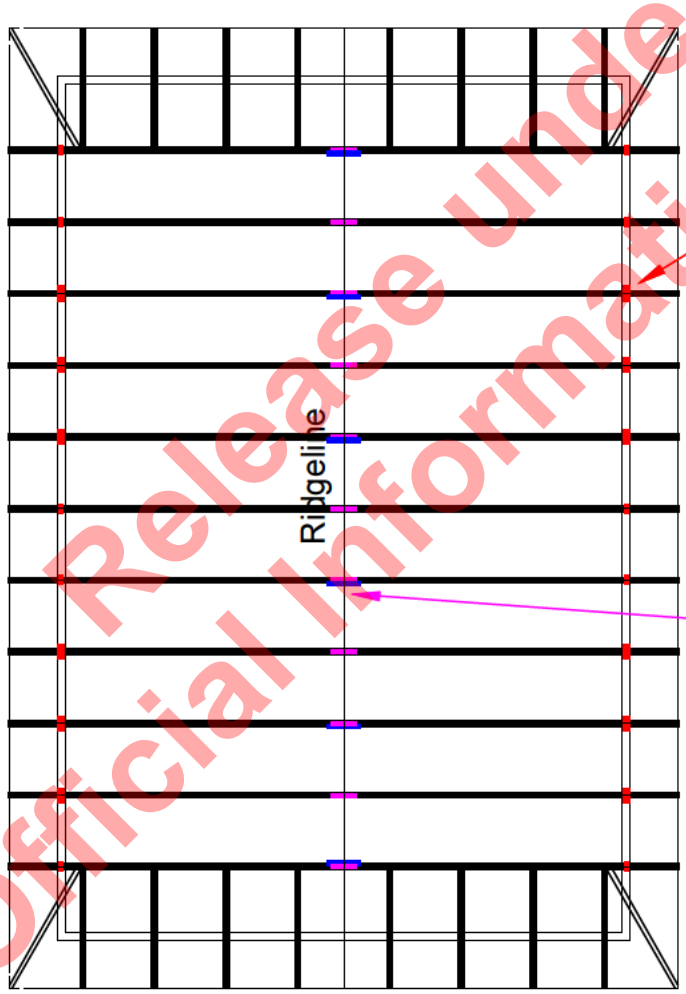
EDWARDS&HARDY

STRENGTHENINGTHEROOFSTRUCTURE

STEELROOFINGOFF,STEELROOFINGON
GableRoofPlan-Raftersfrom650mmtomax.900mmcrs

FixingBracketScrews:Type17-14gx35mmHexHeadElectro.Galvanised

ExistingPurlins:OneLumberlokBlueScrew10gx80mm
NewPurlins70x45at900mmcrs:TwoLumberlokBlueScrews10gx80mm



EDWARDS&HARDY

STRENGTHENINGTHEROOFSTRUCTURE

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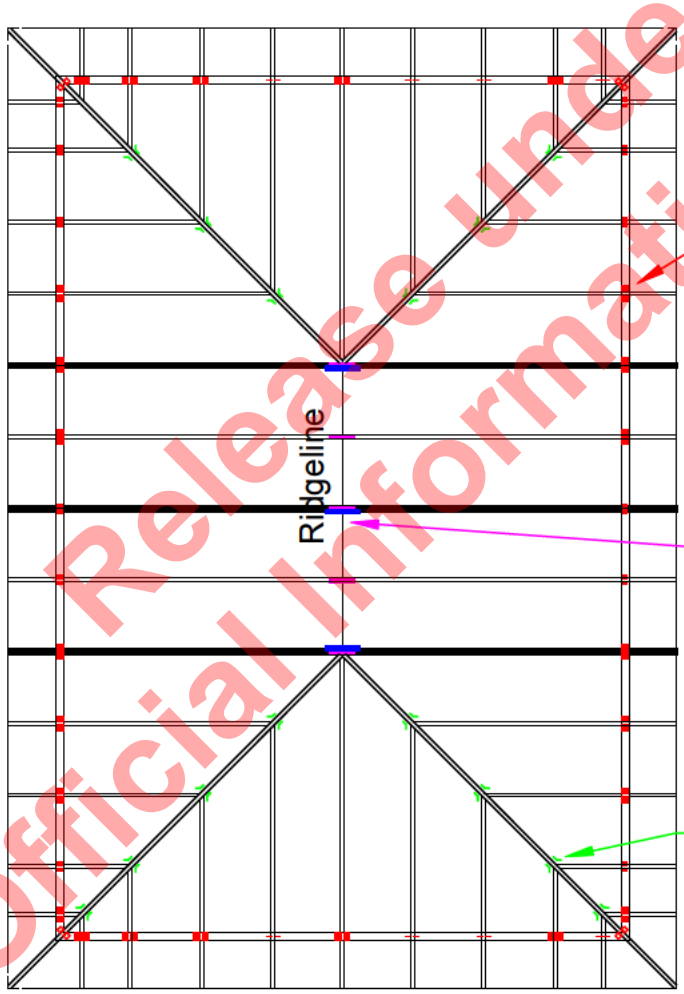

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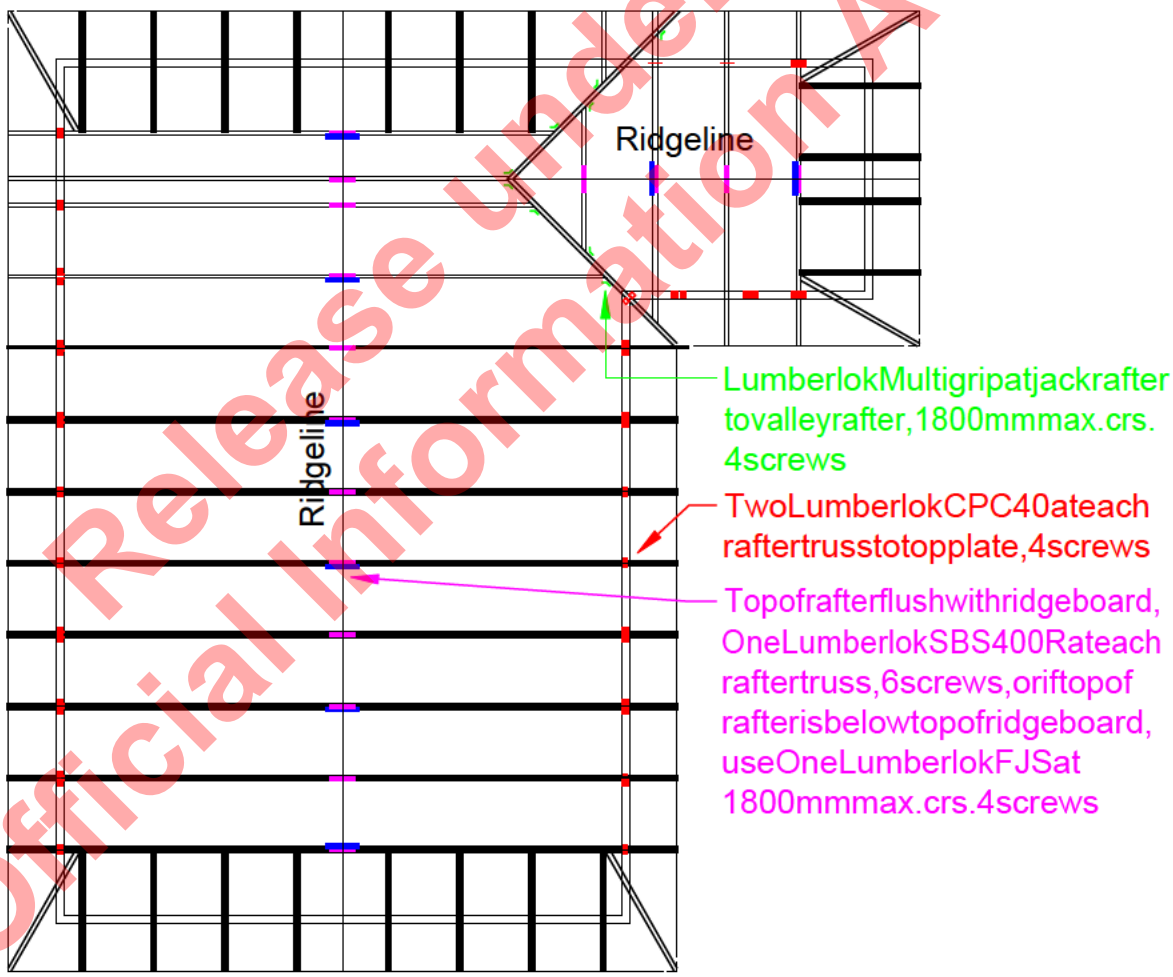

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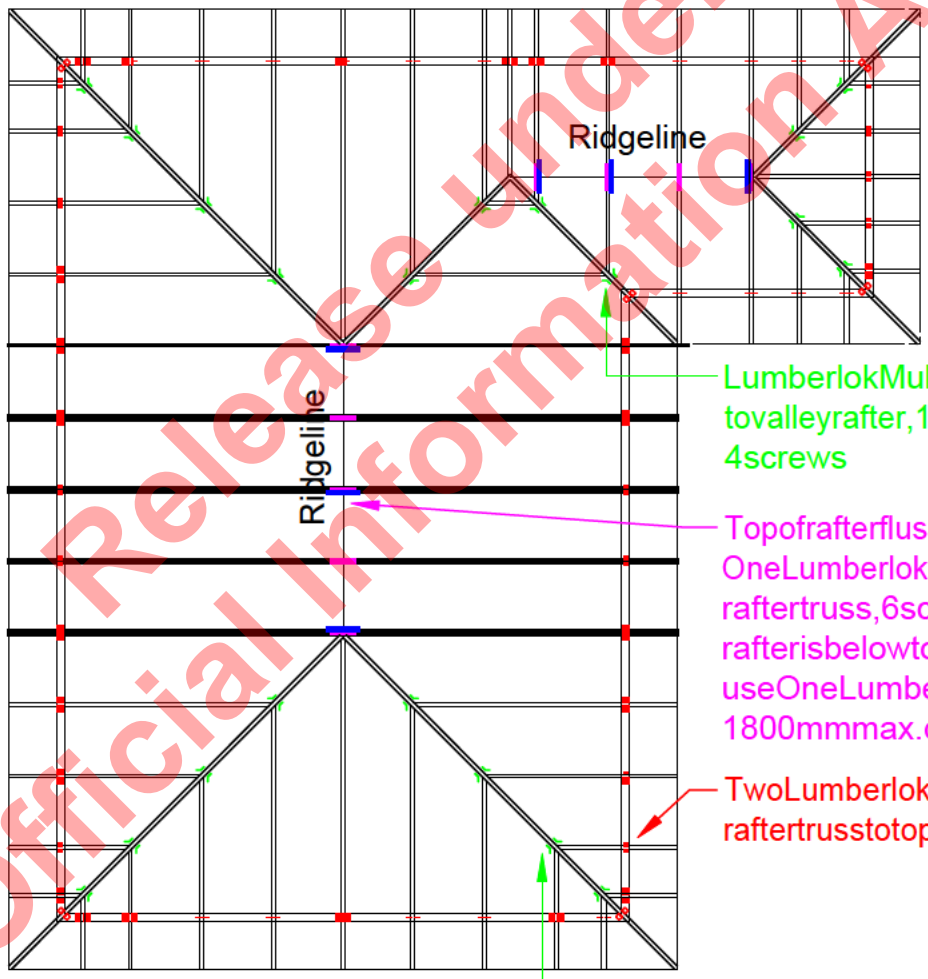

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TwoLumberlokCPC40ateach raftertrusstotopplate,4screws

LumberlokMultigripatjackrafter tohiprafter,1800mmmax.crs.4 screws

slt

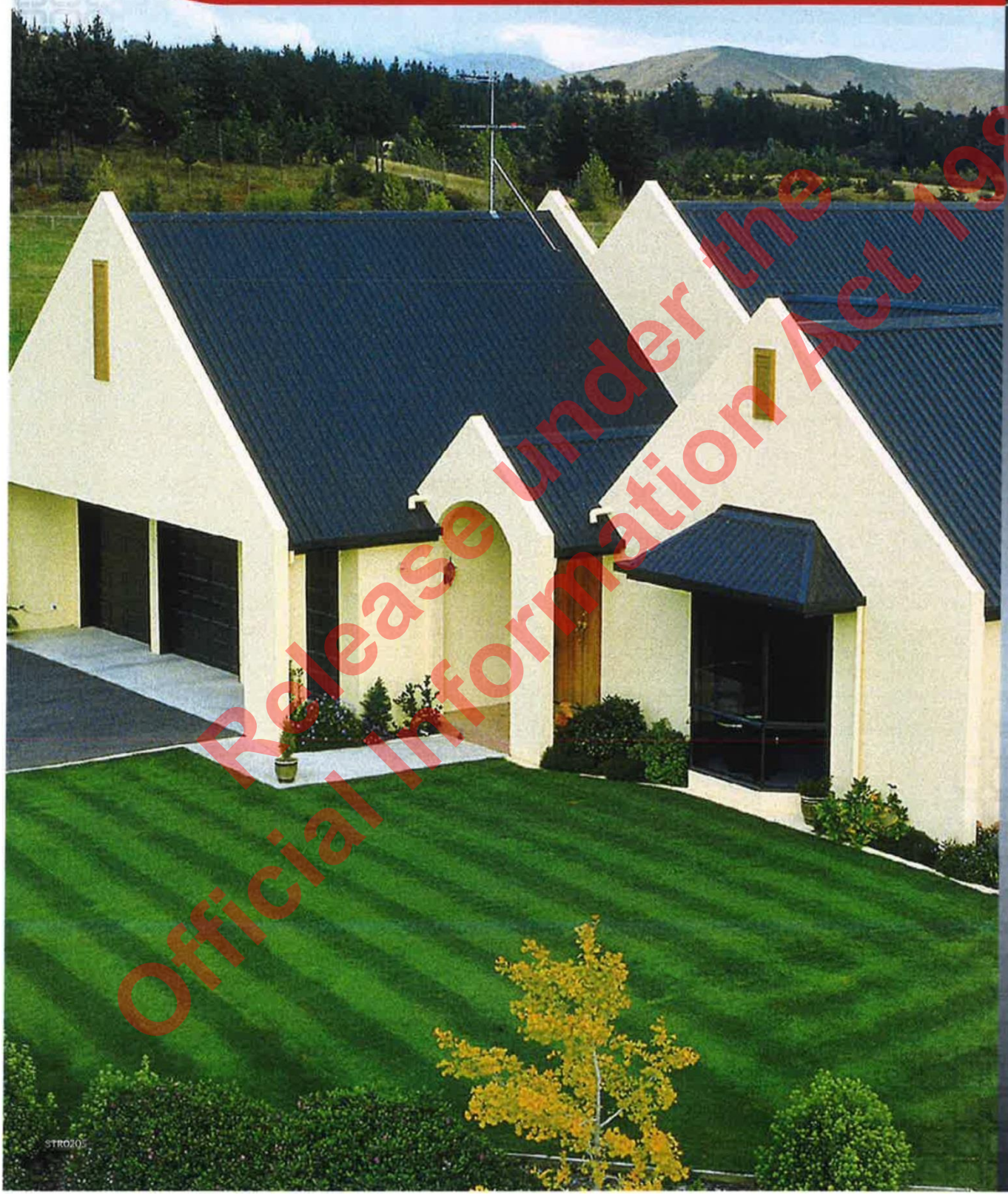
steel&tube

STRONGER N EVERYWAY

PRODUCT GUIDE

ROOFING SOLUTIONS

ROOFING, CLADDING AND RAINWATER SYSTEMS



ROOFING SOLUTIONS

PRODUCT GUIDE › ROOFING SOLUTIONS

JAN 2014

ABOUT STEEL & TUBE

Steel & Tube is the leading supplier of steel products and services in New Zealand. Proudly supporting local businesses for over 60 years, we are New Zealand owned and among the New Zealand Stock Exchange's top 50 companies.

Our network of service and distribution centres provides specialist knowledge and solutions to service all sectors of the economy. From infrastructure development to commercial and residential construction, the rural sector, manufacturing and engineering, whatever your project, we have the steel solution to meet your needs.

The wide range of products includes: a variety of steel merchandise, specialist stainless steel products, piping systems, reinforcing and fasteners, along with roofing, cladding and rainwater systems. Our processing services such as plate cutting, profiling, coil slitting and sheeting, mean that we can customise to your project requirements.

ROOFING SERVICES

Steel & Tube manufacture and market long run roofing materials, rainwater goods and accessories, with manufacturing sites around the country.

Our high-strength galvanised cold-formed steel purlins also provide a complete system suitable for supporting a wide range of roofing and cladding materials.

We offer a comprehensive range of services to accompany and support our product portfolio, these include product specialists and technical experts who are trained to assist with technical inquires, design specifications and product selection, and are available to all our customers through our local branch network.

QUALITY

All our services adhere to the strictest quality controls and our facilities are Telarc ISO 9001 certified and our practices comply with international and local manufacturing standards.

CHOOSING THE RIGHT PRODUCT

New Zealand has a wide range of environmental conditions, from harsh West Coast beaches to moderate inland locations to industrial and geothermal sites like no other on earth.

Prior to selecting a product from this guide discuss your particular site requirements with a Steel & Tube

CONTENTS

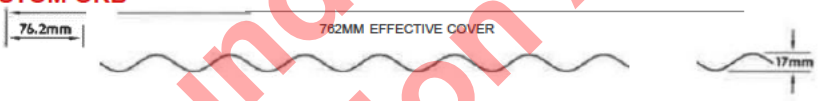
SUPPLIER DETAILS

ROOFING

CORRUGATED

Corrugated roofing offers the timeless elegance and matchless adaptability of the traditional corrugate profile, together with unrivalled technical advice, quality control and after-sales service.

CUSTOM ORB



CUSTOMORB

0 RECOMMENDED

TRAPEZOIDAL

Trapezoidal, or rib, profiles have sloping-sided ribs and are fastened through the profile. They are available in a number of configurations to suit a vast range of performance and appearance criteria.

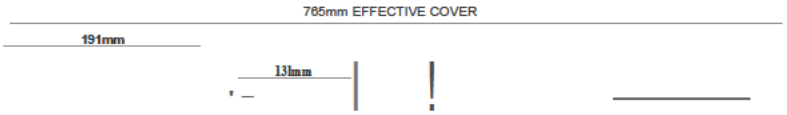
They can be categorised by common application into Residential/Commercial and Commercial/Industrial groups.

RESIDENTIAL AND COMMERCIAL PROFILES

Steel & Tube offer four trapezoidal r b products with r b heights varying between 20mm and 30mm. These are typically utilised in domestic roofing, or for commercial roofing and cladding applications where spanning ability is not a prime requirement.

Because both Plumbdek and Trimform profiles feature a strong rib design coupled with wide economical cover, they are equally at home in residential applications or at work in commercial situations.

PLUMBDEK

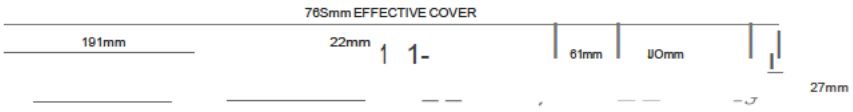


0 RECOMMENDED

Note: All profile dimensions are nominal.

TRIMFORM

TRIMFORM

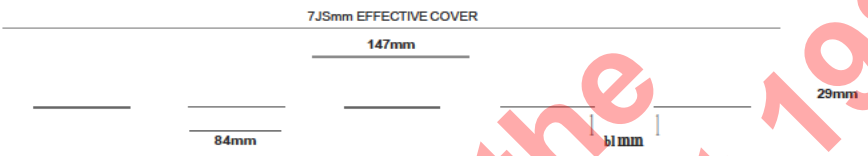


RECOMMENDED

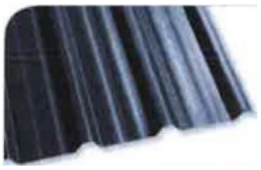
TRIMLINE

TRIMLINE

Trimline has six bold r bs making it an exceptionally attractive and high performing roofing and cladding profile.



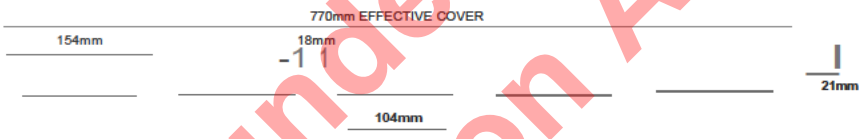
RECOMMENDED



SIX RIB

SIX RIB

Six Rib has a more subtle rib and wider pan, for an attractive, economical solution to most domestic roofing applications .



RECOMMENDED

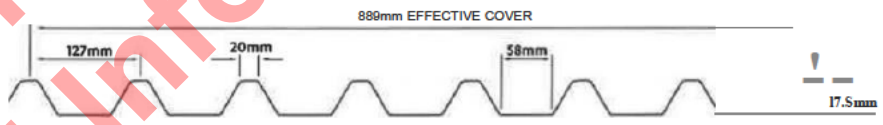
COMMERCIAL/INDUSTRIAL PROFILES

Where larger spans or greater robustness is required, the higher-ribbed trapezoid a ls make their mark.

ST? and ST900 have medium height ribs of 38mm, giving a bolder look for residential applications and enhanced strength for commercial and industrial work.

ST7

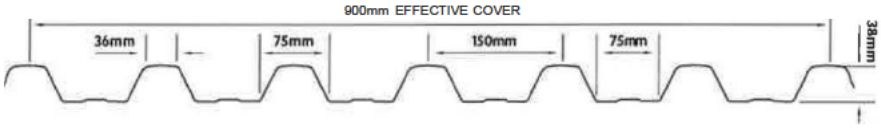
ST7



RECOMMENDED

ST900

ST900



RECOMMENDED

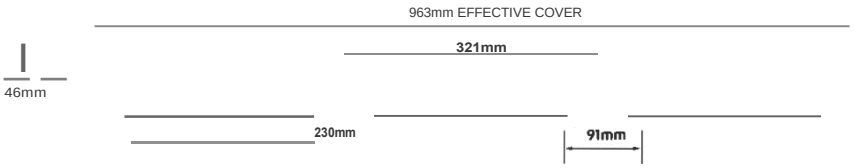
Note: All profile dimensions are nominal

ST963

0 RECOMMENDED

ST963

ST963 is a profiled metal roofing and cladding profile manufactured by Steel & Tube, having four trapezoidal ribs of 46mm in height. Unique design enhancements stiffen the rib shape to provide industry-leading resistance to both wind uplift and point load distortion.

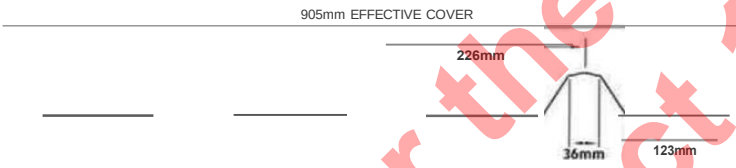


MULTISPAN

0 RECOMMENDED

MULTISPAN

Multispan has a S3mm high rib, giving it exceptional strength which in turn offers construction economies through purlin/roofing design optimisation. The underlap is fully supported making it a favourite with installers, and the patented crested rib ensures a snug fit around the fastener head.



TROUGH SECTION

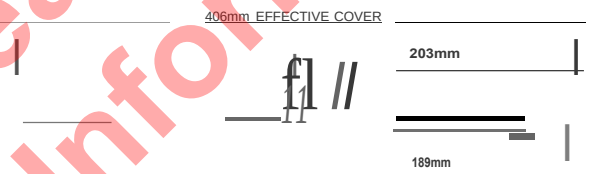
Steel & Tube's roofing products trough section profiles are designed to meet a variety of needs from low pitch and long lengths to steep pitches where the clean lines are enhanced by the secret fixings.

Paneldek, with its unique hinge locking action, is a favourite with designers and installers while **Kliplok** and **Hi Rib** deliver exceptional performance capabilities because they are both manufactured from High Tensile Steel.

PANELDEK

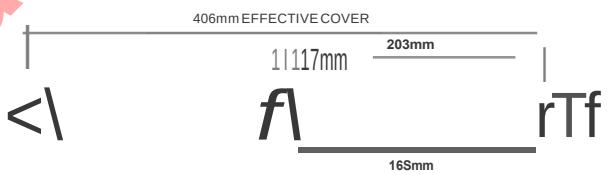
0 RECOMMENDED

PANELDEK



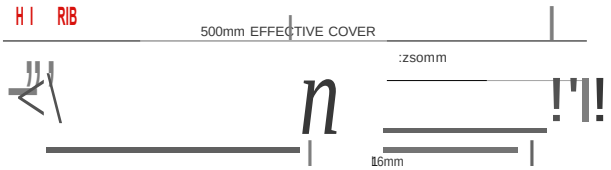
0 RECOMMENDED

KLIPLOK



HI RIB

0 RECOMMENDED



Note: All profrle dimensions are nominal.

EURG·I:: NE

Euroline is an elegant descendant of eighteenth century standing seam roofing which, because of Steel & Tube's modern rollforming technology, is now available in continuous lengths.

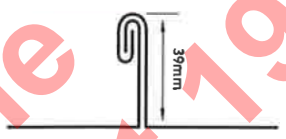
Euroline is obtainable in three profiles: Battenlok, Seamlok and Doublelok. Each profile is available in nominal widths of 300mm, 400mm and SOOmm. Custom pan widths or tapered pans are also available.

For wall cladding, Seamlok is the recommended profile.

DOUBLELOI<

0 RECOMMENDED

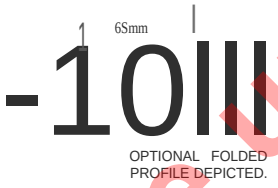
DOUBLELOK



BATTEN LO (

0 RECOMMENDED

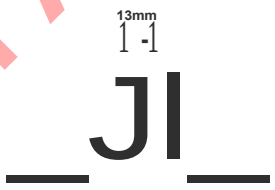
BATTEN LOK



SEAMLOI<

0 RECOMMENDED

SEAMLOK



CURVED

Steel & Tube is equipped to precurve corrugate and four trapezoidal profiles in residential or commercial designs where radii exceed the limits for drape or spring curving. Guidelines on Spring Curving are available from your nearest Steel & Tube roofing branch.

CUSTOM ORB

0 RECOMMENDED

CUSTOM ORB

Custom Orb may be roll curved to the fashionable barrel roll or to the tighter, more traditional bullnosing; both requiring a special grade of material which may need to be ordered in advance.

0 RECOMMENDED

CRIMP CURVED

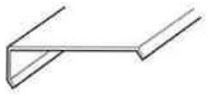
Crimp curved Trimline, Plumbdek, Six Rib, ST900, ST7 and Multispan will meet most modern industrial or residential design expectations.

Convex curved (bullnosed) sheets are available in all six trapezoidal profiles with concave curving available in most profiles.

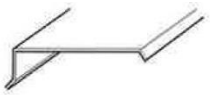
Note: All profile dimensions are nominal.

COMMON FLASHINGS

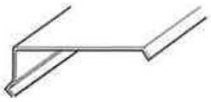
KICK IN BARGE



KICK OUT BARGE



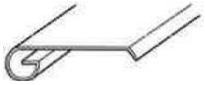
BIRDS BEAK BARGE



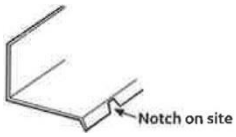
SQUARE BARGE

SOFT EDGE BARGE

BARGE ROLL



NOTCHED APRON



SOFT EDGE APRON

ABUTMENT OR SIDE FLASHING

STANDARD VALLEY

For corrugate barges, your supplying branch will have dimensions standard for their area .For other profiles dimensions should be specified by the installer. Internal angles on soft edge or notched barge or apron also need to be specified.

*200mm wide cover ridge is also available.

WALL CLADDING

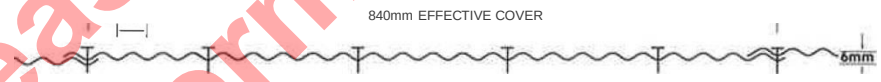
Steel & Tube's roofing products cladding profiles are specifically designed for installations where wide, economical cover is a necessity.All can be laid horizontally or vertically.

MINI ORB

0 RECOMMENDED

MINI ORB

Mini Orb is defined by its close sinusoidal curves. Originally developed for interior design applications, Mini Orb is finding increasing utility as exterior cladding and for external decorative features .

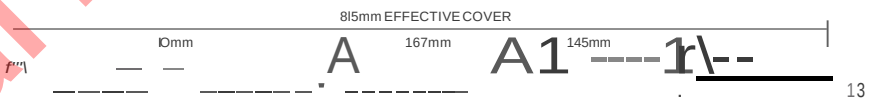


TRIMKLAD

0 RECOMMENDED

TRIMKLAD

Trimklad has an unobtrusive rib and a very wide swaged pan for any installation where a neat appearance and lower labour costs are an essential design criteria.

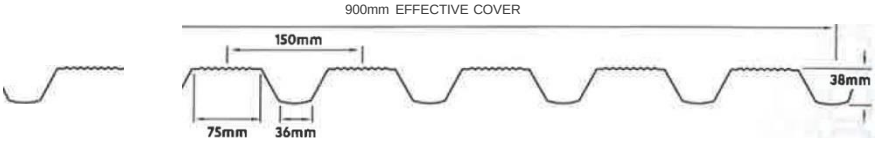


STC900

0 RECOMMENDED

STC900

STC900 is specially designed for pan-out wall cladding or canopies where the normal underside of the profile is exposed to view. Fine flutes in the face highlight the surface and accentuate the negative detail, while modifications to the side lap detail means that weatherproofness and good looks are maintained on both sides of the profile.



Note: All profile dimensions are nominal.

RAI NWATE R SYSTEMS

TRADITI ONAL

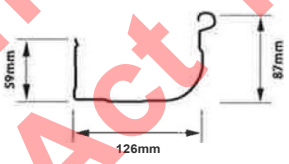
MULTILINE QUAD

0 RECOMMENDED

Multiline Quad captures the colonial look with its gentle radiused front and strong swaging, blending traditional design with the styles of today.

Multiline Quad is fitted using fully concealed brackets.

CROSS SECTIONAL AREA
6850mm'



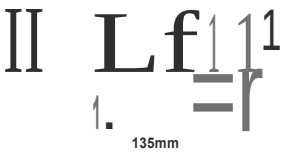
CUSTOMLINE

0 RECOMMENDED

Customline is a larger, longrun version of the classic quarter round, and is deeper than other designs, for greater water carrying capacity and enhanced aesthetic appeal.

Customline can be fitted with fully concealed brackets to enhance the clean smooth lines or with external brackets, for a timeless classic look.

CROSS SECTIONAL AREA
7163mm^2



CONTEMPORARY

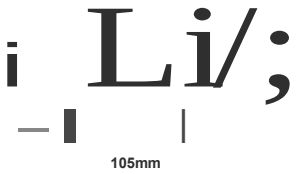
HIGHLINE

0 RECOMMENDED

Highline is one of the most attractive domestic spoutings available, and has a high, sloping face to better cover the end view of domestic roofing systems.

Highline is fixed using fully concealed brackets to maintain its clean line.

CROSS SECTIONAL AREA
6600mm'



PLUMBLINE

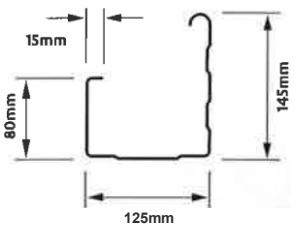
0 RECOMMENDED

Plumbline provides a large capacity domestic spouting which is also at home on smaller commercial work.

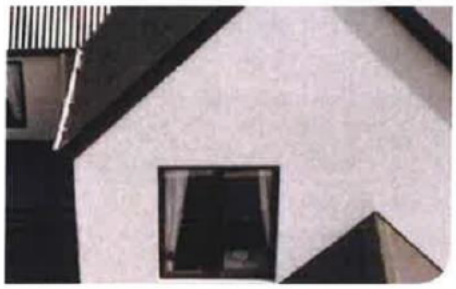
Plumbline has a strong profile with a double swaged face and swaged base.

Plumbline is fixed using concealed clips for emphasis of its bold lines.

CROSS SECTIONAL AREA
lOOOOmm'



Note: All profr/e dimensions are nominal.



FASCIA SYSTEMS

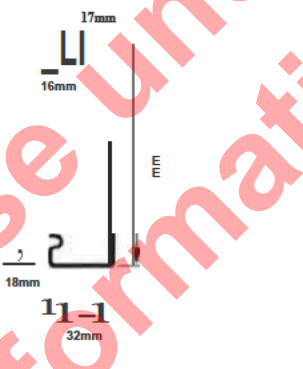
MULTILINE FASCIA

An attractive and economical advance over timber fascias, Multiline Fascia can be fitted with a range of spoutings for contemporary or traditional appearances.

Multiline Fascia uses a uniquely designed rafter bracket to prevent denting and damage in metal fascias due to differential movement of trusses and rafters.

Steel & Tube's fascia systems are available exclusively through qualified installers.

MULTI LINE FASCIA 150 — RECOMMENDED



MULTI LINE FASCIA 185 — RECOMMENDED

COMMERCIAL GUTTERS

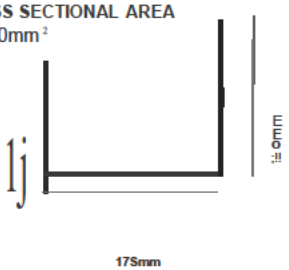
The most commonly specified commercial gutters are 175mm and 300mm however as each are specifically folded the dimensions can be varied greatly to suit any application provided appropriate fixing brackets are sourced.

Standard pressed internal brackets are available for the 175 gutter, however for extra strength specially fabricated steel external brackets are recommended (colour matched if required).

Steel & Tube provide details regarding industrial gutter bracket design and placement, as part of the *Steel & Tube Roofing & Cladding Solutions* available from our website www.steelandtube.co.nz.

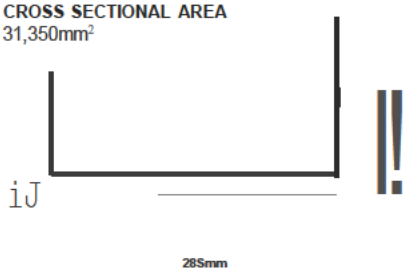
175 GUTTER — RECOMMENDED

CROSS SECTIONAL AREA
21,000mm²



300 GUTTER — RECOMMENDED

CROSS SECTIONAL AREA
31,350mm²



Note: All profile dimensions are nominal.

TECHNICAL DETAILS

MATERIALS

All our products are available in a wide range of materials and finishes. The following are some of the options:

Metallic Coated: Galvanised Steel, Zinc/Aluminium coated steel.

Pre-Painted Steel: Colorsteel Endura, Colorsteel Maxx, Colorcote ZR8, Colorcote ZRX, Colorcote ZM8 and Colorcote ZMX.

Pre-Painted Aluminium: Colorcote ARX and Colorcote AR8.

Other: Aluminium plain or mill finished, stainless steel, pure copper or solid zinc, all subject to profile choice and material availability.

MINIMUM PITCH

To comply with E2/AS1 the recommended minimum pitch for roofing is:

CUSTOM ORB	SIX RIB	ALL OTHER ROOFING PROFILES
8°	4°	3°

STORAGE

Products are despatched from the factory in top condition, however the material can be damaged before installation by incorrect storage practices. Premature deterioration due to incorrect storage may be avoided if these simple guidelines are followed:

On arrival, ensure sheets are dry. If wet, open the pack and separate the sheets to allow them to dry. Store packs of the product off the ground in a sheltered position providing some fall to allow water to run off. Protect packs with a loose fitting waterproof cover, allowing air to circulate.

Contact with wet cement should be avoided at all times.

INSTALLATION

The installation of metal roofing products is a specialised field requiring knowledge and experience of numerous issues with regard to trade practice and material compatibility.

Poor handling prior to or during installation can cause damage which may affect the appearance and ultimate performance of the product. Don't handle sheets roughly or carelessly or drag or slide sheets over each other or rough surfaces, as damage to the coating may occur. Equipment used to handle the sheets should be clean and free of dirt and grit.

Soft soled shoes should be worn whenever walking on the product to prevent damage to the coating; traffic up the roof should be in the pans of the profile and across the roof should be on the purlin line.

Prior to installation ensure that the tops of the purlins or girts are all in the same plane; if packing or easing is necessary ensure this is not to the detriment of the connection between the fastener and the structure.

Sheets should be lapped away from the line of sight wherever possible to enhance aesthetic appeal and all sheets should be stop ended at the top, and lipped at the bottom on pitches below 8°.

Ensure that the anti-capilliary edge is fitted as the external overlap and is visible from the top side.

The use of touch-up paints is not recommended; if a pre-painted sheet is excessively damaged by scratching it should be replaced. Accessories should be colour matched prior to installation.

Regularly clean up the area by sweeping swarf, offcuts, rivet shanks and loose fasteners with a soft-bristled broom. Collect and remove all debris daily as unsightly staining from swarf and other unprotected steel items can occur overnight.

The strippable film applied to some prepainted products must be removed within two weeks of installation, or earlier if storage is in direct sunlight.

Recommended references are the *New Zealand Steel Installer's Guide and NZMRM Profiled Metal Roofing Code of Practice.*

DESIGN FOR DURABILITY

Steel & Tube roofing and cladding solutions are available on our website providing design and installation details for residential and commercial applications. Contact your local branch or the Technical Helpline on 0800 333 247 for specific advice.

With correct product selection, installation and maintenance, your Steel & Tube roof will remain attractive and weatherproof for many years. Unfavourable design practices will detrimentally affect the performance of your roof and should be avoided. If any of the following situations are evident in your design you should contact your Steel & Tube representative for advice.

Areas of roofing, cladding and rainwater systems unwashed by rainfall will accumulate atmospheric debris which can become corrosive when damp. These areas will require maintenance depending on the product used and the environment. Refer to the Maintenance section of this publication.

Do not discharge water runoff from inert materials such as Zincalume steel, pre-painted roofing, tiles or clear sheeting onto unpainted galvanised roofing and gutters, as the corrosive salts formed in this situation are unstable and can lead to premature corrosion.

Where two different metals are in contact one metal will tend to sacrifice itself to protect the other. A similar effect can occur with water flowing over dissimilar metals. In particular, avoid runoff from copper or brass onto Zincalume steel roofing, and avoid contact with, or runoff from unpainted lead onto Zincalume steel.

Fasteners should be compatible with the roofing material chosen and have durability not less than the material being fastened. Stainless steel or aluminium fasteners should be used with pre-painted aluminium roofs.

Wall cladding should terminate at least SOmm above ground level. Lower edges of sheets must be kept clear of vegetation and debris.

WARRANTIES & ENVIRONMENTS

WARRANTY *PLUS*

Steel & Tube offer exclusively to our clients, the unparalleled peace of mind afforded by Warranty Pfus.

Warranty Pfus is the most comprehensive warranty available in the industry today. Warranty Pfus covers an extended range of criteria, is supported back to back by our suppliers, includes site-specific maintenance requirements and is transferable to subsequent owners.

Warranty Pfus for pre-painted products in residential roofing applications is available for up to 30 years against perforation as a result of corrosion, and up to 18 years against flaking, peeling and excessive fade of the coating, depending on the environment and coating system.

Warranty Pfus guarantees that your roof will be a suitable surface for the collection of rain water for drinking.

Non-residential warranties are for a maximum of 15 years duration.

Refer to your nearest Steel & Tube representative or *New Zealand Steel's Specifiers & Builders Guide* for information on warranty periods.

ENVIRONMENTS

The following guide is an indication of product recommendations for residential roofing, rainwater systems and walling. Wall cladding and rainwater systems are often less effectively rain washed than roofing, so selecting a suitably durable material is important.

Your nearest Steel & Tube representative will be happy to give you specialist advice for your area.

Marine environmental category is better expressed by way of defining characteristics rather than distance from water, typical zones are given for additional guidance only.

CHOOSING THE RIGHT PRODUCT

CATEGORY	CHARACTERISED BY	TYPICAL ZONES	SUGGESTED MATERIAL ROOF	SUGGESTED MATERIAL RAIN
VERY SEVERE MARINE	• Heavy salt deposits • Almost constant smell of salt spray in air	Within SO metres from breaking surf on East Coast, and 100 metres from breaking surf on West Coast	Colorcote, ARX	Colorcote, ARX
		Within 50-100 metres from breaking surf on East Coast, 100-200 metres from breaking surf on West Coast	Colorsteel, Maxx	Colorcote, ARX
SEVERE MARINE	• Light salt deposits • Frequent smell of salt in the air	Commencing from Very Severe zone up to 500 metres or more inland from breaking surf; or in the immediate vicinity of calm salt water such as harbour foreshores	Colorsteel, Maxx or Colorsteel, Endura	Colorsteel, Maxx
MODERATE MARINE	• Little or no salt deposits • Occasional smell of salt in the air	500 metres to lkm from breaking surf; or in the immediate vicinity of calm salt water such as estuaries	Colorsteel, Endura or Zincalume	Colorsteel, Endura
MODERATE INLAND	• No obvious marine influences	More than 1000 metres from salt water	Colorsteel, Endura or Zincalume	Colorsteel, Endura or Zincalume

Note: Industrial and Geothermal areas are subject to Individual assessment. The above terms are subject to correct design, storage, installation and maintenance provisions. Marine environments may be extended inland by prevailing winds and local conditions.

MAINTENANCE

Few products are absolutely maintenance-free and all Steel & Tube profiles are subject to the cumulative effects of weather, dust and other airborne deposits, some of which are extremely aggressive. WARRANTIES & ENVIRONMENTS on Page 9 will assist in identifying the category into which the site fits. In order to ensure the maximum service life from the chosen coating system, the property owner should note the following maintenance advice:

Soft soled shoes should be worn whenever walking on roofing to prevent damage to the coating; walk only in the pans of the profile, and on the purlin line whenever poss ble.

Normal rainwashing will remove most accumulated atmospheric debris, but manual washing is required for areas which do not receive adequate rainwashing. These areas, such as wall cladding under eaves, or sheltered areas where overlapping of roof areas occurs due to the design, are known as unwashed areas.

Other high risk areas that require manual washing include around flues and extractor vents, under television aerials and trees and sites prone to mould, lichen, bird droppings or debris.

Spoutings and gutters must be regularly inspected to remove debris, which may cause ponding.

Surfaces may be washed with water and a soft-bristled brush, or tor larger areas waterblasting at pressures up to 20 MPa may be more appropriate.

The following table shows maintenance requirements for roofing products relative to the environment in which the building is located.

THESE RECOMMENDATIONS ARE DEPENDANT ON SELECTION OF THE APPROPRIATE ROOFING MATERIAL FOR THE PREVAILING ENVIRONMENT.

MATERIAL	ENVIRONMENT				
PRE-PAINTED STEEL	Very severe	Rainwashing Only	Wash every 3 months	Wash monthly	Wash monthly
	Severe	Rainwashing Only	Wash every 6 months	Wash every 3 months	Wash every 3 months
	Moderate	Rainwashing Only	Wash every 12 months	Wash every 6 months	Wash every 3 months
ZINCALUME	Moderate	Rainwashing Only	Wash every 6 months	Wash every 3 months	Wash every 3 months

OVERPAINTING

Galvanised or Zincalume products can be overpainted immediately or after weathering. Use primer and top coat from a reputable paint manufacturer suitable for galvanised steel.

Do not use calcium plumbate primers if rain water is to be collected for drinking purposes.

Pre-painted roofing is best left weathered for at least twelve months prior to overpainting, unless special steps are taken to improve adhesion.

As with all paint systems preparation is the key. For more information on overpainting Steel & Tube's roofing pre-painted materials, refer to he *New Zealand* Steel *Specifiers* and *Builders Guide.*

DRINKING WATER

Pre-painted and metallic coated products are suitable for the collection of drinking water.

On new installations the first 2Smm of rainfall should be discarded to avoid contamination from any manufacturing or installation residue.

Some post-painted systems are unsuitable for the collection of drinking water, check with the paint supplier for compatability.

Note:

Trademarks ap pl y to the following *products presented in this publication:*
Customline, Custom Orb, Colorcote, *ARX, Colorsteel, Endura, M axx, EuroLine, M ultiline, M ultispan, Paneldek, Plumbdek, Plumbline, ST900, STC900,* ST7, *Trim/ad, Trimline, Trimform, Zincalume.*

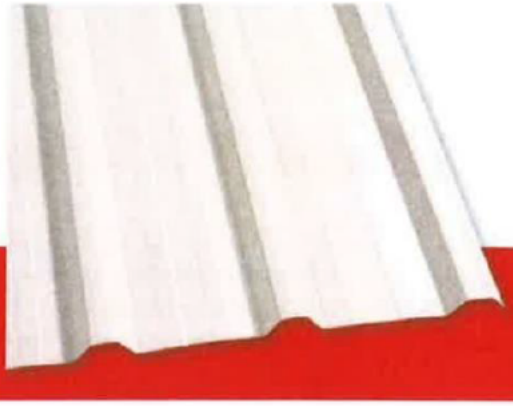
steel&tube
STRONGER IN EVERYWAY

STR020

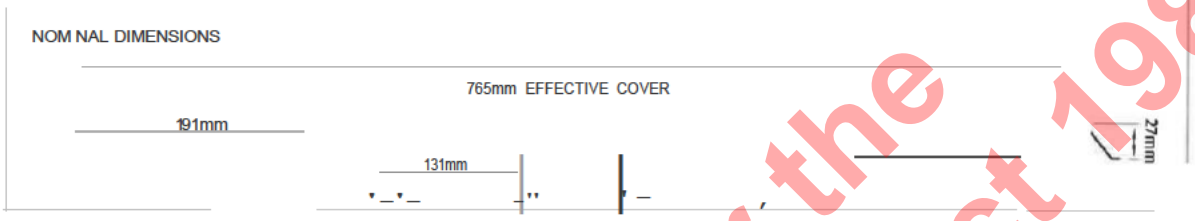
st steel&tube
STRONGER IN EVERYWAY

PRODUCT TECHNICAL STATEMENT

PLUMBDEK



> Pronled M etal Roofi ng and Cladding



INTRODUCTION

Plumbdek is a low r b, five-ribbed trapezoidal product offering great looks, economy and exceptional performance.

APPLICATIONS

Residential Roofing and Cladding

Industrial/Commercial Roofing and Cladding

- Curving

FEATURES

Plumbdek is the most material-effective product in its class, yet its performance under load equals that of other low rib trapezoidal profiles.

OPTIONS

Plumbdek can be crimp curved to radii of 400mm and greater. Clear sheeting is available in profiled G.R.P. (fibreglass) to match.

MATERIALS

Available in metallic coated and pre-painted steel in .40mm and .55mm B.M.T. (base metal thickness), aluminium plain and prepainted in .70mm and .90mm, and other non-ferrous metals.

FASTENERS

Typically: Steelfix 12g x 55mm, Timberfix 12g x 65mm, Class 4 minimum, of material compatible with that being fastened and durability no less than the sheet material. Category 5 or non-ferrous fasteners are recommended for severe or very severe marine environments.

DURABILITY

All material selections must be compatible with prevailing environmental conditions and adjacent materials, see *Roofing Solutions Product Guide* or *Specifiers* Guide for details. Areas not exposed to rain washing will require programmed maintenance.

WARRANTY PLUS

Steel & Tube **Warranty P/us** is the most comprehens ive warranty available in the industry. **Warranty P/us** covers an extended range of performance criteria, is supported back-to back by our supplie rs, includes site-specific maintenance requirements and is transferable to subsequent owners.

STR0270

PERFORMANCE DATA

MASS (KG/M2)

4.07 — 5.52

MAXIMUM SPAN

Maximum spans for normal and heavy traffic in millimetres based on point load limits, distributed loads in kPa calculated in accordance with AS/NZS 1170:2003 at maximum spans, using 4 fasteners per sheet per support. Loads for alternative fastener frequencies available on request.

	Material Thickness	Internal Span			End Span		
		Span	Strength Load	Serviceability Load	Span	Strength Load	Serviceability Load
Controlled Traffic*	.55mm		4.37	1.82	1300		
	.40mm		4.41	1.75	1900	4.77	1.91
Heavy Traffic**	.40mm	1100	7.16	3.08	800	8.1	3.94
	55mm	1800	6.08	3.31	1400	6.75	3.28

*Supports 7.1kN load to PAN at mid-span. **Supports 1.1kN load to RIB at mid-span.

To minimise the possibility of roof traffic damage, Steel & Tube recommends Heavy Traffic maximum spans be used.

FASTENERS PER SHEET PER PURLIN

Material Thickness	Purlin Spacing			
.40mm	1200	2	3	4
.55mm	1200	2	2	2

Fastener requirements for wind zones according to NZS 3604:2011 (calculated on periphery area pressures), using standard fasteners without load spreading washers. (Typically fasten through every rib to top and bottom purlins.)

For SED conditions and applications designed to AS/NZS 1170 contact Steel & Tube: 0800 333 247.

MINIMUM PITCH

In accordance with Acceptable Solution E2, the minimum pitch for Plumbdek for roofing dwellings is 3°.
Roof runs in excess of 40 metres should be checked for water runoff capacity.

FOOT TRAFFIC

Foot traffic up the roof must take place in the pan of the profile, or over purlin lines. Traffic across the roof must take place along purlin lines.

SPECIFICATIONS

Recommended specifications are available in the branded sections of MasterSpec *BASIC* or MasterSpec *STANDARD*, or from your local Steel & Tube branch or visit our website.

DESIGN DETAILS

Design details covering many applications are available on our website in CAD and PDF under each product section. Visit www.steelandtube.co.nz.

IMPORTANT PUBLICATIONS

For your installation to perform to its potential, it is essential that it is designed, installed and maintained in accordance with good trade practice. Please refer to:

Steel & Tube: Roofing Solutions Product Guide

New Zealand Steel: Installation Guide

New Zealand Steel: Builders and Specifiers Guide

BRANZ: Good Profiled Metal Roofing Practice

MRM: New Zealand Metal Roofing and Wall Cladding Code of Practice

E2/AS1

INSTALLERS

A list of local installers for your area and contract type is available from your local Steel & Tube branch or visit www.steelandtube.co.nz.

Note:
Trademarks apply to the following products presented in this publication:
Plumbdek, MasterSpec BASIC and Master5pec STANDARD

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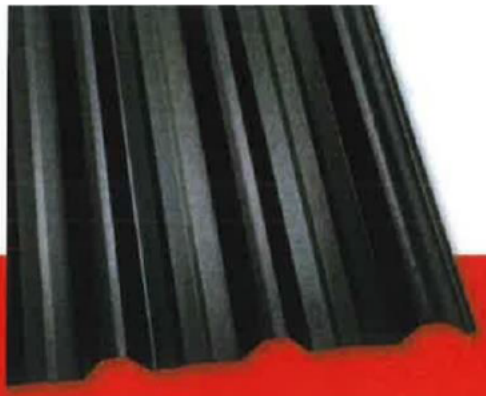
PRODUCT TECHNICAL STATEMENT

TRIMLINE



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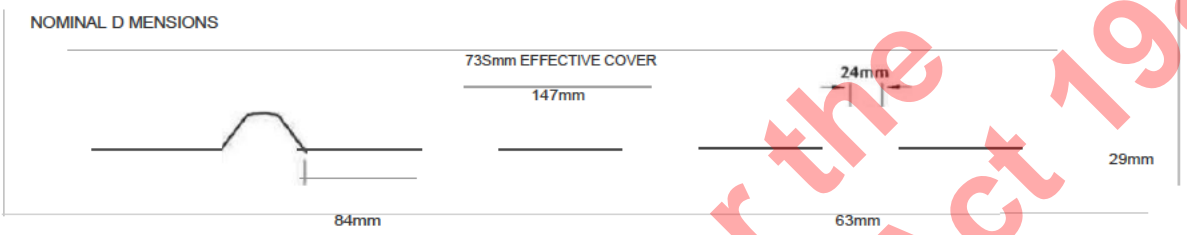

DESCRIPTION

Trimline is a premium low rib, six-ribbed trapezoidal profile, offering great looks and exceptional performance.

APPLICATIONS

Residential Roofing & Cladding

Industrial/Commercial Roofing & Cladding

- Curving

FEATURES

Trimline has an extra rib compared to most other products in its class, giving it unequalled good looks and greater rigidity.

OPTIONS

Trimline in .SS G300 material can be crimp curved to minimum radii of 400mm. Depending on grade and purlin spacings, it can be sprung curved down to convex radii of 28 metres. Clear sheeting is available in G.R.P. (fibreglass).

MATERIALS

Available in metallic coated and pre-painted steel in .40mm and .SSmm B.M.T. (base metal thickness) aluminium plain and prepainted in .70mm and .90mm, and other non-ferrous metals.

FASTENERS

Typically: Steelfix 12g x SSmm, Timberfix 12g x 6Smm, Class 4 minimum of material compat ble with that being fastened and durability no less than the sheet material. Category S or non-ferrous fasteners are recommended for severe or very severe marine environments

DURABILITY

All material selections must be compatible with prevailing environmental conditions and adjacent materials, see *Roofing Solutions Product Guide* or *Specifiers Guide* for details. Areas not exposed to rain washing will require programmed maintenance.

WARRANTY PLUS

Steel & Tube **WarrantyP/us** is the most comprehensive warranty available in the industry. **WarrantyP/us** covers an extended range of performance criteria, is supported back-to-back by our suppliers, includes site-specific maintenance requirements and is transferable to subsequent owners.

PERFORMANCE DATA

MASS (KG/M²)

.40mm B.M.T.	4.07	.55mm B.M.T.	5.52

MAXIMUM SPAN

Maximum spans for normal and heavy traffic in millimetres based on Point Load limits, Distributed Loads in kPa calculated in accordance with AS/NZS 1170:2003 at maximum spans, using 4 fasteners per sheet per support. Loads for alternative fastener frequencies available on request.

Traffic*	Material Thickness	Span	Strength Load	Serviceability Load	Span	Strength Load	Serviceability Load
	.40mm	2300	5.35	2.12	1700	6.21	3.96
Heavy Traffic**	.40mm	1100	7.07	6.00	800	8.01	5.70
	.55mm	1800	8.19	4.27	1400	7.43	5.65

*Supports 1.1kN to PAN at mid-span. **Supports 1.1kN to RIB at mid-span.

To minimise the possibility of roof traffic damage, Steel & Tube recommends Heavy Traffic maximum spans be used.

FASTENERS PER SHEET PER PURLIN

Material Thickness	Purlin Spacing					
.40mm	900	2	2	3	3	3
.55mm		2	2	2	2	3
.40mm	1200	2	3	3	4	5
.55mm		2	2	2	3	3

Fastener requirements for Wind Zones according to NZS3604:2011 (calculated on periphery area pressures), using standard fasteners without load spreading washers (typically fastened through every rib to top and bottom purlin).

For SEO conditions and applications designed to AS/NZS 1170 refer to Steel & Tube: 0800 333 247.

MINIMUM PITCH

In accordance with Acceptable Solution E2, the minimum pitch for **Trimline** for roofing dwellings is 3°. Roof runs in excess of 35 metres should be checked for water runoff capacity.

FOOT TRAFFIC

Foot traffic up the roof must take place in the pan of the profile, or over purlin lines. Traffic across the roof must take place along purlin lines.

SPECIFICATIONS

Recommended specifications are available in the branded sections of MasterSpec *BASIC* or MasterSpec *STANDARD*, or from your local Steel & Tube branch or visit our website.

DESIGN DETAILS

Design details covering many applications are available on our website in CAD and PDF under each product section. Visit www.steelandtube.co.nz.

IMPORTANT PUBLICATIONS

For your installation to perform to its potential, it is essential that it is designed, installed and maintained in accordance with good trade practice. Please refer to:

Steel & Tube: Roofing Solutions Product Guide

New Zealand Steel: Installation Guide

New Zealand Steel: Builders and Specifiers Guide

BRANZ: Good Profiled Metal Roofing Practice

MRM: New Zealand Metal Roofing and Wall Cladding Code of Practice

E2/AS1

INSTALLERS

A list of local installers for your area and contract type is available from your local Steel & Tube branch or visit www.steelandtube.co.nz.

Note:

Trademarks apply to the following products presented in this publication: Trimline, Master5pec BASIC and Master5pec STANDARD.

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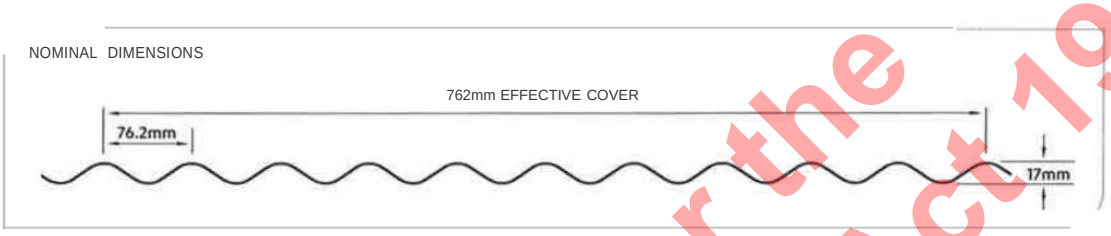
PRODUCT TECHNICAL STATEMENT

CUSTOM ORB

Pronled Metal Roofing and Cladding

NOMINAL DIMENSIONS



DESCRIPTION

Custom Orb is a premium quality corrugated profile manufactured under licence to BHP.

APPLIC ATIONS

Residential Roofing & Cladding

Industrial/Commercial Roofing & Cladding

Curving

Specialty Cladding

Ceilings and linings

FEATURES

Corrugated steel is a timeless classic. **Custom Orb** is manufactured to controlled tolerances, allowing it to be used with confidence in a great variety of applications.

Custom Orb can be roll curved (bullnosed) to 400mm radius, or spring curved to radii greater than 9 metres depending on grade, thickness and material used (see *Spring Curved Custom Orb Design Guide* for details).
It is also popular in perforated patterns for decorative or sound control situations. Matching translucent sheeting is available in G.R.P. (fibreglass) and Polycarbonate.

MATERIALS

Available in metallic coated and pre-painted steel in .40mm and .SSmm B.M.T. (base metal thickness), aluminium plain and prepainted in .70mm and .90mm, and other non-ferrous metals.

FASTENERS

Typically: Steelfix 12g x 45mm, Timberfix 12g x SSmm, Class 4 minimum, of material compatible with that being fastened and durability *no* less than the sheet material. Class 5 or non-ferrous fasteners are recommended for severe or very severe marine environments.

DURABILITY

All material selections must be compat ble with prevailing environmental conditions and adjacent materials, see Roofing *Solutions Product Guide* or *Specifiers Guide* for details. Areas not exposed to rain washing will require programmed maintenance.

WARRANTY PLUS

Steel & Tube **Warranty P/us** is the most comprehensive warrant y ava ilable in the industry. **Warranty P/us** covers an extended range of performance criteria, is supported back-to back by our suppliers, includes site-specific maintenance requirements and is transferable to subsequent owners.

JAN 2014

STR0269

PERFORMANCE DATA

MASS (KG/M²)

40mm B.M.T	4 08	SSmm B M T	5 54

MAXIMUM SPANS

	Maximum Spans (mm)	
	Roof	Walls
0 40		
0 55	1600	2400

FASTENING REQUIREMENTS

Base Metal Thickness (mm	Fixings per sheet per support	
0 40	3	N/R
	4	N/R
	5	N/R
0.55	4	
	5	

•Suitable for Controlled Traffic *Suitable for Heavy* Traffic *N/R Not Recommended*

				SED
Design Wind Speed (m/s)	<44m/s	SO	<SS m/s	<60m/s
Load ULS (kPa)	2 32	3.00	3.63	4.32

Notes:

- *End spans should be* not more *than 2/3 of maximum* internal *spans*.
- Sheet *ends should be fastened through every second* crest
- *To* correlate *Wind Zone* figures to *kPa a* local pressure factor *of 2 has been applied to the* entire *roof. Specific design is required* for *roofs designed in accordance* with *NZS7170 where a local pressure* factor *of 3* occurs *over areas* greater *than one sheet width* or *end purlin spacing*.
- *The above tables* are *governed by serviceability load* factors *applicable to* normal *buildings* (importance *level 2)* for *all geographic areas*.

MINIMUM PITCH

In accordance with Acceptable Solution E2, the minimum pitch for Custom Orb for roofing dwellings is 8°.
Roof runs in excess of 12 metres should be checked for water runoff capacity.

FOOT TRAFFIC

Foot traffic up the roof must take place with load spread equally across two crests, or over purlin lines. Traffic across the roof must take place along purlin lines.

SPECIFICATIONS

Recommended specifications are available in the branded sections of MasterSpec *BASIC* or MasterSpec *STANDARD*, or from your local Steel & Tube branch or visit www.steeland tube.co.nz.

DESIGN DETAILS

Design details covering many applications are available on our website in CAD and PDF under each product section. Visit www.steelandtube.co.nz.

IMPORTANT PUBLICATIONS

For your installation to perform to its potential, it is essential that it is designed, installed and maintained in accordance with good trade practice. Please refer to:

Steel & Tube: Roofing Solutions Product Guide

Steel & Tube Roofing Products: Spring Curved Custom Orb Design Guide

New Zealand Steel: Installation Guide

New Zealand Steel: Builders and Specifiers Guide

BRANZ: Good Profiled Metal Roofing Practice

MRM: New Zealand Metal Roofing and Wall Cladding Code of Practice

E2/AS1

I NSTALLERS

A list of local installers for your area and contract type is available from your local Steel & Tube branch or visit www.steelandtube.co.nz.

Note:

Trademarks apply to the following products presented in this publication:
MasterSpec BASIC and MasterSpec STANDARD.

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PRODUCT TECHNICAL STATEMENT

TRIMLINE

Profiled Metal Roofing and Cladding

NOMINAL DIMENSIONS

DESCRIPTION

Trimline is a premium low rib, six-ribbed trapezoidal profile, offering great looks and exceptional performance.

APPLICATIONS

- Residential Roofing & Cladding
- Industrial/Commercial Roofing & Cladding

Curving

FEATURES

Trimline has an extra rib compared to most other products in its class, giving it unequalled good looks and greater rigidity.

OPTIONS

Trimline in .SS G300 material can be crimp curved to minimum radii of 400mm. Depending on grade and purlin spacings, it can be sprung curved down to convex radii of 28 metres. Clear sheeting is available in G.R.P. (fibreglass).

MATERIALS

Available in metallic coated and pre-painted steel in .40mm and .SSmm B.M.T. (base metal thickness) aluminium plain and prepainted in .70mm and .90mm, and other non-ferrous metals.

FASTENERS

Typically: Steelfix 12g x SSmm, Timberfix 12g x 6Smm, Class 4 minimum of material compatible with that being fastened and durability no less than the sheet material. Category S or non-ferrous fasteners are recommended for severe or very severe marine environments

DURABILITY

All material selections must be compatible with prevailing environmental conditions and adjacent materials, see *Roofing Solutions Product Guide* or *Specifiers Guide* for details. Areas not exposed to rain washing will require programmed maintenance.

WARRANTY PLUS

Steel & Tube **Warranty P/us** is the most comprehensive warranty available in the industry. **Warranty P/us** covers an extended range of performance criteria, is supported back-to-back by our suppliers, includes site-specific maintenance requirements and is transferable to subsequent owners.

STR0273

PERFORMANCE DATA

MASS (KG/M2)

.40mm B M T	4.07	55mm B M T	5 52

MAXIMUM SPAN

Maximum spans for normal and heavy traffic in millimetres based on Point Load limits, Distributed Loads in kPa calculated in accordance with AS/NZS 1170:2003 at maximum spans, using 4 fasteners per sheet per support. Loads for alternative fastener frequencies available on request.

			rength Load	Serviceability Load	Span	Strength Load	Servicea bility Load
Controlled					1450	4.95	3.31
		2300	5 35	2.12	1700	6 21	3 96
Heavy Traffic..	.40mm	1100	707	6.00	800	8 01	5.70
	55m m	1800	8.19	4.27	1400	7.43	5 65

•*Supports 1,lkN to PAN at mid-span.* ••*Supports 1.lkN to RIB at mid-span.*

To minimise the possibility of roof traffic damage, Steel & Tube recommends Heavy Traffic maximum spans be used.

FASTENERS PER SHEET PER PURLI N

	Purlin	Low	Medium	High	Very High 50 m/s	Extra High
.40mm 55m m	900	2	2	3	3	
.40mm 55m m	1200					

Fastener requirements for Wind Zones according to NZS3604:2011(calculated on periphery area pressures), using standard fasteners without load spreading washers (typically fastened through every rib to top and bottom purlin).

For SEO conditions and applications designed to AS/NZS 1170refer to Steel & Tube: 0800 333 247.

MINIMUM PITCH

In accordance with Acceptable Solution E2, the minimum pitch for Trimline for roofing dwellings is 3". Roof runs in excess of 35 metres should be checked for water runoff capacity.

FOOT TRAFFIC

Foot traffic up the roof must take place in the pan of the profile, or over purlin lines. Traffic across the roof must take place along purlin lines.

SPECIFICATIONS

Recommended specifications are available in the branded sections of MasterSpec *BASIC* or MasterSpec *STANDARD*, or from your local Steel & Tube branch or visit our website.

DESIGN DETAILS

Design details covering many applications are available on our website in CAD and PDF under each product section. Visit www.steelandtube.co.nz.

IMPORTANT PUBLICATIONS

For your installation to perform to its potential, it is essential that it is designed, installed and maintained in accordance with good trade practice. Please refer to:

Steel & Tube: Roofing Solutions Product Guide

New Zealand Steel: Installation Guide

New Zealand Steel: Builders and Specifiers Guide

BRANZ: Good Profiled Metal Roofing Practice

MRM: New Zealand Metal Roofing and Wall Cladding Code of Practice

E2/AS1

INSTALLERS

A list of local installers for your area and contract type is available from your local Steel & Tube branch or visit www.steelandtube.co.nz.

Note:

Trademarks apply to the following products presented in this publication :

Trimline, MasterSpec BASIC and MasterSpec STANDARD.

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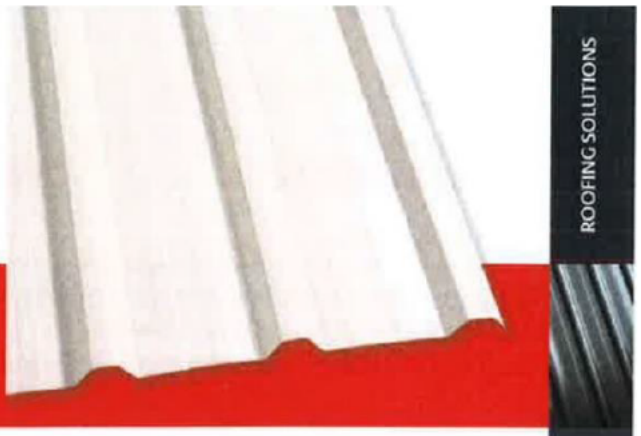
PRODUCT TECHNICAL STATEMENT

PLUMBDEK



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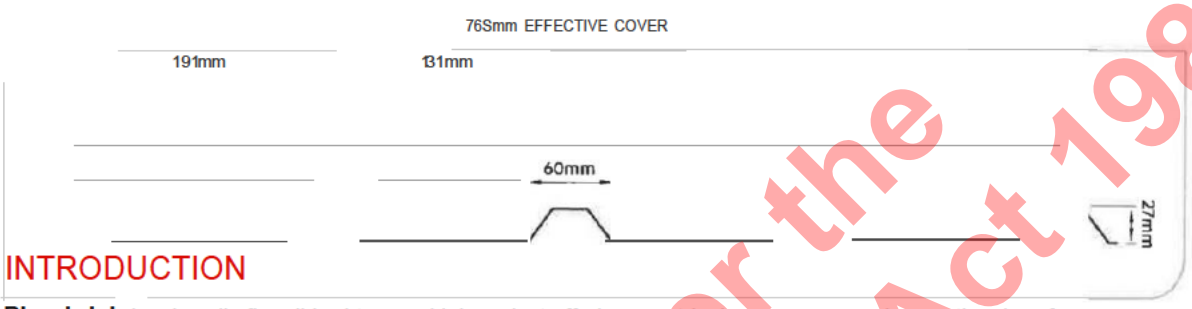
NOMINAL DIMENSIONS



INTRODUCTION

Plumbdek is a low rib, five-ribbed trapezoidal product offering great looks, economy and exceptional performance.

APPLICATIONS

- Residential Roofing and Cladding
- Industrial/Commercial Roofing and Cladding
- Curving

FEATURES

Plumbdek is the most material-effective product in its class, yet its performance under load equals that of other low rib trapezoidal profiles.

OPTIONS

Plumbdek can be crimp curved to radii of 400mm and greater. Clear sheeting is available in profiled G.R.P. (fibreglass) to match.

MATERIALS

Available in metallic coated and pre-painted steel in .40mm and .55mm B.M.T. (base metal thickness), aluminium plain and prepainted in .70mm and .90mm, and other non-ferrous metals.

FASTENERS

Typically: Steelfix 12g x 55mm, Timberfix 12g x 65mm, Class 4 minimum, of material compatible with that being fastened and durability no less than the sheet material. Category 5 or non-ferrous fasteners are recommended for severe or very severe marine environments.

DURABILITY

All material selections must be compatible with prevailing environmental conditions and adjacent materials, see *Roofing Solutions Product Guide* or *Specifiers Guide* for details. Areas not exposed to rain washing will require programmed maintenance.

WARRANTY PLUS

Steel & Tube **WarrantyP/us** is the most comprehensive warranty available in the industry. **WarrantyP/us** covers an extended range of performance criteria, is supported back-to back by our suppliers, includes site-specific maintenance requirements and is transferable to subsequent owners.

STR0270

PERFORMANCE DATA

MASS (KG/M2)

.40mm B.M.T.	4.07	.55mm B.M.T.

5s2 –1

MAXIMUM SPAN

Maximum spans for normal and heavy traffic in millimetres based on point load limits, distributed loads in kPa calculated in accordance with AS/NZS 1170:2003 at maximum spans, using 4 fasteners per sheet per support. Loads for alternative fastener frequencies available on request.

	Material Thickness	Internal Span			End Span		
		Span	Strength Load	Serviceability Load	Span	Strength Load	Serviceability Load
Controlled Traffic*	.40mm	1600	4.37	1.82	1300	5.58	2.37
	55mm	2400	4 41	1 75	1900	4.77	1.91
Heavy Traffic**	.40mm	1100	7 16	3.08	800	8 15	3.94
	55m m	1800	6.08	3 31	1400	6 75	3.28

• Supports 1.lkN load to PAN at mid-span. **Supports 1.lkN load to RIB at mid-span.*

To minimise the possibility of roof traffic damage, Steel & Tube recommends Heavy Traffic maximum spans be used.

FASTENERS PER SHEET PER PURLIN

Material Thickness	Purlin Spacing	Low/Medium	High	ry igh	
.40mm	900	2	2	3	4
	1200	2	3	4	4
55mm	900	2	2	2	2
	1200	2	2	2	2

Fastener requirements for wind zones according to NZS 3604:2011 (calculated on periphery area pressures), using standard fasteners without load spreading washers. (Typically fasten through every rib to top and bottom purlins.)

For SED conditions and applications designed to AS/NZS 1170 contact Steel & Tube: 0800 333 247.

MINIMUM PITCH

In accordance with Acceptable Solution E2, the minimum pitch for **Plumbdek** for roofing dwellings is 3°.
Roof runs in excess of 40 metres should be checked for water runoff capacity.

FOOT TRAFFIC

Foot traffic up the roof must take place in the pan of the profile, or over purlin lines. Traffic across the roof must take place along purlin lines.

SPECI FICAT I ONS

Recommended specifications are available in the branded sections of MasterSpec *BASIC* or MasterSpec *STANDARD*, or from your local Steel & Tube branch or visit our website.

DESIGN DETAILS

Design details covering many applications are available on our website in CAD and PDF under each product section. Visit www.steelandtube.co.nz.

IMPORTANT PUBLICATI ONS

For your installation to perform to its potential, it is essential that it is designed, installed and maintained in accordance with good trade practice. Please refer to:

Steel & Tube: Roofing Solutions Product Guide

New Zealand Steel: Installation Guide

New Zealand Steel: Builders and Specifiers Guide

BRANZ: Good Profiled Metal Roofing Practice

MRM: New Zealand Metal Roofing and Wall Cladding Code of Practice

E2/AS1

I NSTALLERS

A list of local installers for your area and contract type is available from your local Steel & Tube branch or visit www.steelandtube.co.nz.

Note:
Trademarks apply to the following products presented in this publication:
Plumbdek, MasterSpec BASIC and MasterSpec STANDARD.

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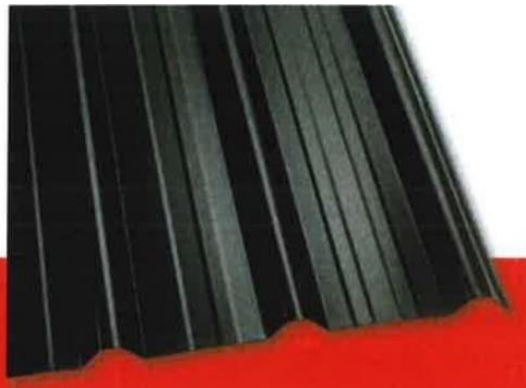
PRODUCT TECHNICAL STATEMENT

TRIMFORM



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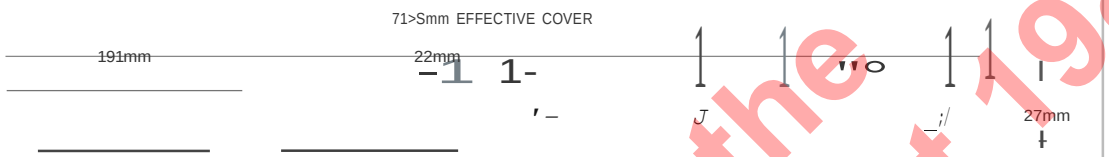

DESCRIPTION

Trimform is a low rib, five-ribbed trapezoidal product offering great looks, economy and exceptional performance.

APPLICATIONS

Residential Roofing and Cladding

Industrial/Commercial Roofing and Cladding

FEATURES

Trimform is the most material-effective product in its class, yet its performance under load equals that of other low rib trapezoidal profiles.

OPTIONS

Clear sheeting is available in profiled G.R.P. (fibreglass) to match.

MATERIALS

Available in metallic coated and pre-painted steel in .40mm and .SSmm B.M.T. (base metal thickness), aluminium plain and prepainted in .70mm and .90mm, and other non-ferrous metals.

FASTENERS

Typically: Steelfix 12g x SSmm, Timberfix 12g x 65mm, Class 4 minimum of material compat ble with that being fastened and durability no less than the sheet material. Category 5 or non-ferrous fasteners are recommended for severe or very severe marine environments.

DURABILITY

Material selections must be compat ble with prevailing environmental conditions and adjacent materials, see *Roofing Solutions Produ ct Guide* or *Specifiers Guide* for details. Areas not exposed to rain washing will require programmed maintenance.

WARRANTY PLUS

Steel & Tube **Warranty P/us** is the most comprehensive warranty available in the industry. **Warranty P/us** covers an extended range of performance criteria, is supported back-to bac k by our suppliers, includes site-specific maintenance requirements and is transferable to subsequent owners.

STR0271

PERFORMANCE DATA

MASS (KG/M²)

.40mm B.M.T	4.07	.55mm B.M.T	5.52

MAXIMUM SPAN

Maximum spans for normal and heavy traffic in millimetres based on Point Load limits, Distributed Loads in kPa calculated in accordance with AS/NZS 1170 2003 at maximum spans, using 4 fasteners per sheet per support. Loads for alternative fastener frequencies available on request.

	Material Thickness	Internal Span			End Span		
		Span	Strength Load	Serviceability Load	Span	Strength Load	Serviceability Load
Controlled Traffic*	.40mm	1600	4.37	1.82	1300	5.58	2.37
	.55mm	2400	4.41	1.75	1900	4.77	1.91
Heavy Traffic**	.40mm	1100	7 16	3.08	800	8.15	3 94
	.55mm	1800	6.08	3.31	1400	6 75	3 28

'Supports *1.lkN* to *PAN* at *mid-span*. "Supports *1.lkN* to *RIB* at *mid-span*.

To minimise the possibility of roof traffic damage, Steel & Tube recommends Heavy Traffic maximum spans be used.

FASTENERS PER SHEET PER PURLIN

Material Thickness	Purlin Spacing				
.40mm	900	2	2	3	4
	1200	2	3	4	4
.55mm	900	2	2	2	2
	1200	2	2	2	2

Fastener requirements for wind zones according to NZS 3604:2011 (calculated on periphery area pressures), using standard fasteners without load spreading washers. (Typically fasten through every rib to top and bottom purlins.)

For SEO conditions and applications designed to AS/NZS 1170 contact Steel & Tube: 0800 333 247.

MINIMUM PITCH

In accordance with Acceptable Solution E2, the minimum pitch for **Trimform** for roofing dwellings is 3°. Roof runs in excess of 40 metres should be checked for water runoff capacity.

FOOT TRAFFIC

Foot traffic up the roof must take place in the pan of the profile, or over purlin lines. Traffic across the roof must take place along purlin lines.

SPECI FICAT I ONS

Recommended specifications are available in the branded sections of MasterSpec from your local Steel & Tube branch or on our website.

DESIGN DETAILS

Design details covering many applications are available on our website in CAD and PDF under each product section. Visit www.steelandtube.co.nz.

IMPORTA NT PUBLICATI ONS

For your installation to perform to its potential, it is essential that it is designed, installed and maintained in accordance with good trade practice. Please refer to:

Steel & Tube: Roofing Solutions Product Guide

New Zealand Steel: Installation Guide

New Zealand Steel: Builders and Specifiers Guide

BRANZ: Good Profiled Metal Roofing Practice

MRM: New Zealand Metal Roofing and Wall Cladding Code of Practice

E2/AS1

I NSTALLERS

A list of local installers for your area and contract type is available from your local Steel & Tube branch or visit www.steelandtube.co.nz.

Note:

Trademarks apply to the following products presented in this publication Trimform, MasterSpec.

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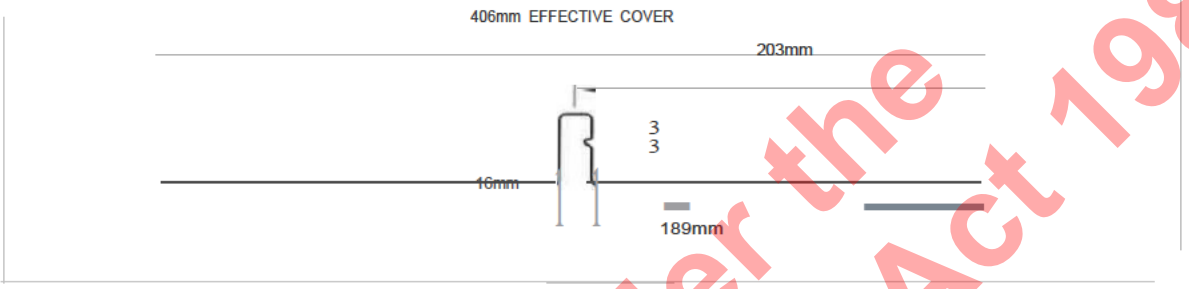
PRODUCT TECHNICAL STATEMENT
PANELDEK

Profiled Metal Roofing and Cladding

NOMINAL DIMENSIONS



DESCRIPTION

Paneldek is a clip fastened trough section or decking profile.

APPLICATIONS

Residential Roofing and Cladding

Industrial/Commercial Roofing and Cladding

- Canopies

FEATURES

Paneldek is a traditional trough section roofing profile. It features a unique hinge locking action that gives great stability to the side lap while protecting the outside edge from visual exposure and the weather.

OPTIONS

Clear sheeting is available in profiled G.R.P. (fibreglass) to match.

MATERIALS

Available in metallic coated and pre-painted steel in .55mm B.M.T. (base metal thickness) aluminium plain and prepainted in .70mm, and other non-ferrous metals.

FASTENERS

Paneldek is fastened with a galvanised steel bracket, attached to each support member with two 10g x 45mm wafer head Timberfix screws, or two 10g x 25mm wafer head Steelfix screws to steel.

DURABILITY

All material selections must be compatible with prevailing environmental conditions and adjacent materials, see *Roofing Solutions Product Guide* or *Specifiers Guide* for details. Areas not exposed to rain washing will require programmed maintenance.

WARRANTY PLUS

Steel & Tube Warranty P/us is the most comprehensive warranty available in the industry. Warranty P/us covers an extended range of performance criteria, is supported back-to back by our suppliers, includes site-specific maintenance requirements and is transferable to subsequent owners.

STR0296
JAN 2014

PERFORMANCE DATA

MASS (KG/M²)

SSmm B M T	6.50

Controlled Traffic			Heavy Traffic			
Gauge	Internal Span	Load	Gauge	Internal Span	End Span	Load

Loads are Ultimate *Limit* State *loads in Kilopascals.*

MINIMUM PITCH

In accordance with Acceptable Solution E2, the minimum pitch for Paneldek for roofing dwellings is 3°. Roof runs in excess of 60 metres should be checked for water runoff capacity.

SPECIFICATIONS

Recommended specifications are available in the branded sections of MasterSpec *BASIC* or MasterSpec *STANDARD,* or from your local Steel & Tube branch or visit our website.

DESIGN DETAILS

Design details covering many applications are available on our website in CAD and PDF under each product section. Visit www.steelandtube.co.nz.

IMPORTANT PUBLICATIONS

For your installation to perform to its potential, it is essential that it is designed, installed and maintained in accordance with good trade practice. Please refer to:

Steel & Tube: Roofing Solutions Product Guide

New Zealand Steel: Installation Guide

New Zealand Steel: Builders and Specifiers Guide

BRANZ: Good Profiled Metal Roofing Practice

MRM: New Zealand Metal Roofing and Wall Cladding Code of Practice

E2/AS1

INSTALLERS

A list of local installers for your area and contract type is available from your local Steel & Tube branch or visit www.steelandtube.co. nz.

Note:

Trademarks apply to the following products presented in this publication: Paneldek, MasterSpec BASIC and MasterSpec STANDARD.

Gas Conversion Scoping Guide: M-259

For the 2019/20 Financial Year Only

Effective from 1 October 2019
Version – 5

Kāinga Ora
Homes and Communities

Gas Conversion Scoping Guide M-259

Contents

Document Control		
Document Name	Gas Conversion Scoping Guide – for Kāinga Ora properties for the 2019-20 financial year	
Kāinga Ora Business Unit	People and Homes – Maintenance and Upgrade	
Version No.	5	Status: Current
Issue Date	1 October 2019	
Peer Reviewer/s & Position	Natasha James	Manager, Information and Documents - Maintenance
Final Approved By	Stacey Marsh	Quality Homes Advisory team Manager
	Monique Fouwler	National Portfolio Manager
	Angela Pearce	National Maintenance and Upgrade Manager
Amendments	Updated for Kāinga Ora. Minor formatting changes.	

For existing Kāinga Ora – Homes and Communities properties

Note:

Changes since last edition shown in orange.

All previous Scoping Guides, Specifications and drawings are superseded. Contains colour illustrations - colour printing is recommended.

1. Introduction

Kāinga Ora – Homes and Communities' role is to provide warm, dry, and safe fit-for-purpose housing for people in need, for the duration of their need.

2. Purpose

This *Kāinga Ora Gas Conversion Scoping Guide (M-259)* is specifically designed to provide guidance for Contractors in compiling a site specific scope of works for the conversion of existing gas appliances and fittings to their electric equivalent properties.

The scoping guide provides for a range of component items and actions and their associated job codes. The Contractor must select the appropriate items and actions from this range that are required in the circumstances (specific to the property and programme), to complete a scope that will be submitted to Kāinga Ora for approval. Where relevant, the scoping guide may also indicate component items and actions that are not to be included in a scope.

Please note: this scoping guide excludes any works from the gas meter to the street. Kāinga Ora will be undertaking a separate programme to deal with the capping off the gas supply at the street.

3. General guidance

This section provides general guidance notes for the Contractor to ensure the property will achieve the appropriate outcome.

3.1 Health and Safety

At all times while the worker is involved in scoping activities, they must operate and comply with a work management system that meets all applicable legislative requirements, manages the work and related risks that exist, or will be created as part of scoping works. The Persons Conducting Business or Undertaking (PCBUs) Kāinga Ora and the Performance Based Maintenance Contractors (PBMC) have an overlapping duty to eliminate or minimise risks to workers and other persons. In meeting health and safety duties the PCBUs will, as far as reasonably practicable, consult, cooperate and coordinate their activities.

Hazard assessment, surveys or investigations attributed to the works being scoped, should identify as part of this process, those activities that have the potential to cause injury or illness to workers, tenants or others, so that controls can be identified as part of the work package.

Please note: any Health and Safety issue requiring immediate response should be removed from this scope and treated as a separate urgent (URG) works order. These are to be advised to

the Kāinga Ora Customer Services Centre on Ph. 0800 888 455 for Monday to Friday 8am-5pm or 0800 801 601 for outside those hours.

PBMC's are to ensure that tenants have alternative temporary arrangements at all times. If a temporary solution is not able to be provided please immediately advise planned.progrmames@kaingaora.govt.nz.

The following legislation should be followed when dealing with gas and its disconnection:

- *New Zealand Standard 5258:2003 Gas distribution networks – Part 3.8 Decommissioning*. This document defines the overall responsibilities of managing gas networks.
- *Gas (Safety and Measurement) Regulations 2010 – General Safety Requirements Part 2, r11.*
- *AS/NZS 5601:2013 Gas Installations.*

3.2 Cost-effective solutions

Where there is an option to either repair or replace a component or item, the Contractor must identify the circumstances where full replacement of a component or item is more cost effective than a repair and propose replacement as an alternative to repair as part of the initial scope.

These proposals shall be agreed with the Kāinga Ora representative and included as part of the approved scope before work is undertaken. If the proposed solution is likely to be incorporated in a large proportion of programme scopes, then a blanket approval and instruction may be sought from the Kāinga Ora representative to include in all relevant programme scopes.

3.3 Supporting documentation

This *Kāinga Ora Gas Conversion Scoping Guide (M-259)* is meant to work in conjunction with other Kāinga Ora PBMC Contract Reference Material. Current versions of the following Reference Material Documents will provide valuable information and context to assist the Contractor in completing and submitting appropriate and accurate programme scopes. All Contractors' Scopers should have access to copies of current versions of all the above Reference Materials when undertaking scoping on site.

Reference Material	Purpose
Kāinga Ora Amenity Condition Manual (ACM-200)	Provides guidance on what Kāinga Ora determines is an acceptable or unacceptable condition for specific componentry of a property.

Kāinga Ora Supplier Code of Conduct	Provides Kāinga Ora expectations with regard to behaviour and conduct while on site and the safe management and control of asbestos and lead based
Kāinga Ora Asbestos Management & Control Policy (HS- 213)	Provides Kāinga Ora expectations with regard to the safe management and control of asbestos which is a hazardous materials.
Kāinga Ora Lead-based Paint Management & Control Policy (HS-214)	Provides Kāinga Ora expectations with regard to the safe management and control of lead based paint which is a hazardous materials.
Kāinga Ora Maintenance & Programmed Work Specification (M-215)	Provides a detailed description on a trade basis, of how the relevant work must be undertaken.
Kāinga Ora Method of Measurement (M-216) (included in the Kāinga Ora Schedule of Rates)	Provides instruction on how specific property features are to be measured. The Method of Measurement is particularly relevant to scoping as it defines how to measure the quantity of specific material and/or quantum of work required under a specific Work Order.
Kāinga Ora Schedule of Rates (M-218)	Provides a description of a particular maintenance activity and cost.
Kāinga Ora Building Materials Procurement Schedule (M-217)	Provides a full list of the materials, products and their costs that Kāinga Ora procures under a national supplier agreement and which must be used when undertaking the relevant work.
Electrolux Product Images July 2019 (M-230)	Provides images of electrical stoves and supplementary information regarding these products.
Plumbing World Product Images July 2019 (M-235)	Provides images of plumbing products and supplementary information regarding these products.
Ideal Product Images July 2019 (M-236)	Provides images of electrical products and supplementary information regarding these products.
Kāinga Ora Tenant and Contractor Agreement Form (M– 323)	This form confirms the process for achieving tenant agreement for the Contractor to work on the property and to use certain facilities.

3.4 Kāinga Ora contact details

Any questions regarding any maintenance gas conversions are to be addressed to the Regional Maintenance team directly. For any questions when the work is undertaken under Planned Programme works they are to be referred by email to the Planned Programmes team on: planned.programmes@kaingaora.govt.nz.

3.5 Kāinga Ora internal process

Many teams in Kāinga Ora are involved in the Planned Programmes process, the primary roles involved are:

- **Asset Managers** – confirm property suitability and inclusion in the programme.
- **Regional Maintenance or Planned Programmes teams** – these teams receive the scoped work order from the Contractor and review it to see that the Contractor has achieved the aims of this Scoping Guide, before authorising. They check appropriate use of schedule of rates, etc. They also review all variation requests from Contractors during the course of the work. This team also monitors the programme process against agreed targets.

4. Scoping for gas conversions

4.1 Scoping outcome

Outcome

This *Kāinga Ora Gas Conversion Scoping Guide (M-259)* defines how Kāinga Ora staff and Contractors will achieve the desired outcome in terms of replacing existing gas appliances and fittings with their electric equivalents to the nominated properties.

This Scoping Guide shall be used for the removal of **all** existing gas appliances and fittings, the making good of existing linings and associated carpentry works, the supply and installation of the new electric equivalent appliances and fittings to all nominated Kāinga Ora programmes e.g. Void, Gas Inspections and all other planned work programmes.

This means that when a property is selected for the programme (including when that property has been selected due to a health and safety issue from the gas inspection programme), **all of** the gas appliances and fittings within the property are to be replaced with electric equivalents within this scope. This means all gas appliances will be replaced within a property even if there is only one appliance in poor condition.

Existing gas appliances and fittings to be removed from the property are the property of the Contractor and shall be disposed of in accordance with the terms of the contract.

When property is void, the PBMC is to liaise with the gas company and arrange the decommission and removal of the gas meter at the property.

Please note: this **gas** conversions programme is designed for stand alone and duplex style housing units. It is not suitable for complex buildings (i.e. Kāinga Ora properties of two or more stories and/or ten or more units). In these instances replacement of a gas appliance may require an alternate solution and advice must be sought from the Kāinga Ora representative to determine the appropriate scope to be undertaken.

4.2 Scoping outline

No.	Conversion of Gas Appliances to Electric Equivalent	
1.1	**Electrical Inspection**	
1.2	**1.1** Electrician to verify existing distribution board is compliant and suitable to accept new circuits suitable for gas to electric conversion. Includes: a) Check to see if existing electrical board has suitable capacity and space to fit extra circuit breakers and residual current devices (RCD) etc. Refer to item 3.1 within this table for adaptation job codes. b) Check to see if existing electrical mains cable is 60MBZ i.e. 16mm² thickness of the cable to property is required. **Please note:** if the existing electrical mains cable is not 16mm² thick the property may not be suitable for replacement with electric appliances. Scoper should advise the nominated Kāinga Ora Planned Programs Project Manager planned.programmes@kaingaora.govt.nz	**Job Code/s** EDB050 MWPS 7701
2.1	**Disconnection of Gas Appliances** This scoping guide excludes any works from the gas meter to the street. Kāinga Ora will be undertaking a separate programme to deal with the capping off the gas supply at the street.	
2.2	**Isolate Pipes** Isolate pipes from gas meter and cap supply to house. **Please note:** Gas meter is to remain in place.	**Job Code/s** SAA100 **MWPS** 8211 & 7221
2.3	**Gas Retailer** Identify gas retailer from meter and advise gas retailer that the gas has been disconnected from the property.	**Job Code/s** No Charge **MWPS**
2.4	**Disconnection** Disconnect all gas appliances and fittings and remove visible pipe work	**Job Code/s** SAA100, SHC050, SHT600 **MWPS** 7211 & 7221
2.5	**Redundant External Flues** Remove any external roofing flues and patch any roof penetration.	**Job Code/s** RCT170 & RCC170

No.	Conversion of Gas Appliances to Electric Equivalent	
		MWPS 4311 – 4337 & 4422
2.6	**Redundant Internal Flues** Remove any internal gas flues and make good as required.	**Job Code/s** **RAA100 & CAA200** **MWPS** 3820, 4311 – 4337 & 4422
2.7	**Repair Wall & Ceiling Linings** Patch and make good any internal flue penetration in ceiling, including cupboard ceilings. Make good any internal flue penetration. Including framing and existing wall or ceiling linings to match existing. Patch paint as required.	**Job Code/s** Relevant Carpentry/ Paint codes **MWPS** 3820, 4311 – 4337 & 4422
2.8	**Removal & Disposal** Remove all gas appliance and fittings and dispose of in accordance with PBMC Contract Terms and Conditions.	**Job Code/s** No Charge **MWPS**
3.1	**Installation of New Electric Appliances** (Includes separate wiring circuit for each appliance and any upgrade of existing board as required)	
3.2	**Distribution Board & RCD's** Provide additional RCD's or upgrade existing board as required to accommodate new electrical loads.	**Job Code/s** EDB200-540 **MWPS** 7701
3.3	**Electric Hot Water Cylinder** **Please Note** - Select new procurement hot water cylinder (HWC) to suit number of bedrooms, i.e. < 1 & 2 bed = 135litre, > 3 bed = 180litre.	
3.4	**New Wiring** Run new hot water circuit from distribution board to the cupboard where the electrical cylinder will be installed. Provide flush box & Mounting block if needed. Fit new separate switch, flex and connections for HWC and connect cylinder. ***Wall linings should have been made good under previous steps, if further repairs are required refer 2.6*	**Job Code/s** ECW220, EMS220, EMS230, EHW350 **MWPS** 7120 & 7701

No.	Conversion of Gas Appliances to Electric Equivalent	
3.5	**Supply & Fit New Electric Hot Water Cylinder** ✓ Including safe tray and overflow waste to outside ✓ Make good existing pipework and connections ✓ S&F the required valves ✓ Install seismic restraints to the HWC. **Please note** – The new electric HWC should be installed in the same location as the gas HWC. If this cannot be achieved for any reason please contact the Asset Manager.	**Job Code/s** PHW100 - 810 **MWPS** 7120, 7701 & 3820
3.6	**HWC Temperature** Set and test HWC thermostat and test temperature at shower and nearest tap as per Job Code ✓ Ensure HWC temperature is set to 60° ✓ Delivery temperature at the shower must be set at 45° All other outlet temperatures must be between 45° - 50°.	**Job Code/s** EHW150 **MWPS** 7120
3.7	**Electric Range**	
3.7.1	**Supply & Fit New Stove** S&F new Kāinga Ora procurement electric stove, including anti-tip device.	**Job Code/s** ERG850 & ERG940-960 **MWPS** 3820 & 7701
3.7.2	**New Wiring** Run new wiring circuit from distribution board to kitchen for range. Provide and fit the following; ✓ A wall isolator switch adjacent to the appliance. ✓ Plug & lead ✓ Range plugged socket ✓ Flush Box & Mounting block if needed.	**Job Code/s** ECW230, EPR210, ERG800, EMS220-230 **MWPS** 7701 & 7120
3.7.3	**Repair Wall & Ceiling Linings** Make good any compromised wall or ceiling linings which has occurred as a result of the work carried out. Patch paint as required.	**Job Code/s** Relevant Carpentry/Paint Codes **MWPS** 3820, 4311 – 4337 & 4422

No.	Conversion of Gas Appliances to Electric Equivalent	
3.7.4	**Temporary Cooking Facilities** Provide temporary cooking facilities, if required to provide continuous cooking amenity. **Please note** – if a temporary cooker is provided to a tenant, a receipt must be provided upon delivery and return.	**Job Code/s** ERG860 **MWPS**
3.8	**Electric Panel Heater or Heat Pump**	
3.8.1	**Supply & Fit New Heater** When an electric panel heater is the appropriate solution, supply and fit a new Kāinga Ora procurement heater.	**Job Code/s** EHT360 **MWPS** 3820 & 7701
3.8.2	**New Wiring** Run new wiring circuit from distribution board to final location position. Provide a fixed wire outlet	**Job Code/s** ECW300 **MWPS** 7701
3.8.3	**Repair Wall & Ceiling Linings** Make good any compromised wall or ceiling linings which has occurred as a result of the work carried out. Patch paint as required.	**Job Code/s** Relevant Carpentry/ Paint Codes **MPWS** 3820, 4311-4337 & 4422
3.8.4	**Heat Pumps** Where heat pump is the acceptable solution, email the Kāinga Ora Planned Programmes Project Manager to advise planned.programmes@kaingaora.govt.nz **Please note** – to ensure continuous heat source, supply and fit one Kāinga Ora procured electric panel heater as noted above.	
4.1	**Certification and Compliance (Electrical and Gas)**	
4.2	**Electrical Safety Certificate** Supply Electrical Safety Certificate for work carried out.	**Job Code/s** EMS065 **MWPS** 7701
4.3	**Electrical Certificate of Compliance & Safety Certificate** Supply Electrical Safety & Compliance Certificate and Record of Inspection	**Job Code/s** EMS080

No.	Conversion of Gas Appliances to Electric Equivalent	
	by Electrical Inspector for distribution board upgrades.	**MWPS** 7701
4.4	**Gas Safety Certificate** These completed forms shall be held in the PBMC Contractors records ready for access by Kāinga Ora when required.	**Job Code/s** SMS056 **MWPS** 7701
5.1	**Health and Safety**	
5.2	Any Health & Safety additional requirements required to undertake works excludes tools of the trade. For further clarification refer to the Method of Measurement (M-216 v11), 1.12 Use of AHS100).	**Job Code/s** AHS100 **MWPS**

Please note: contractors are to raise any issues or concerns regarding the application of these Scoping Guidelines to any property, with the Kāinga Ora representative for clarification.

4.3 Replacement electric product selections

When replacement of gas fitting is required by either the appliance being found defective under the Gas Inspections programme or the property being listed within the property lists for this Gas Conversions programme. The PBMC Contractor shall utilise the 2018-19 *Kāinga Ora Building Materials Procurement Schedule (M-217)* and the appended nominated procured suppliers' product image sheets and make the appropriate replacement sections as follows –

1. Gas hobs and oven replacement – supply only the Kāinga Ora procurement Westinghouse Electric Freestanding range.
2. Gas water heater replacement – supply only Plumbing World vitreous enamel electric hot water. Plumber to test system to determine appropriate pressure HWC to be installed.
3. Electric panel heater replacement – refer to the *Kāinga Ora Heating Scoping Guide (M-245)* to select appropriate procured electric heaters in accordance with Section 5 – Acceptable Heating Solutions Guide of that document.
   Please note: all electric heaters are to be securely fixed to wall framing and hard wired on separate circuit.
4. Remove all existing gas appliances – remove all gas stoves, space heaters and water heaters after the new appliances are installed. Make good any carpentry or associated works as required.

4.4 Associated scoping notes

Contractors Letters to Affected Tenants

The PBMC Contractor shall send an advisory letter to each affected Kāinga Ora tenant a minimum 14 days prior to scoping for this gas to electric conversion works and to seek their approval prior to undertake those works.

The letter shall be on the PMBC Contractor's company letterhead and signed by the Contractors Contracts manager. Any arrangement for access is by consent between the Tenant and Contractor.

The letter shall be on the format as shown in the appended *Gas Conversion – Letter Template to Tenant Regarding Works* (refer to the Appendix for a copy), advising the tenant the PBMC Contractor will be undertaking the gas to electric conversions to that property. The PBMC Contractor shall keep a record of the date these letters were sent to tenants.

The agreement from the tenant shall be on the *Kāinga Ora Tenant and Contractor Agreement Form (M–323)*.

5. Records

Retain all records within Kāinga Ora's records system - refer 'Records retention and disposal' (R-105).

6. Version control

Details of previous versions are stored in Kāinga Ora's document management system (Objective). Refer to header and footer information for reference document elements or for any queries contact OurSpace@kaingaora.govt.nz.

Appendix

Nominated Suppliers Procured Products

Refer to the current 2019-20 *Kāinga Ora Building Materials Procurement Schedule (M-217)* and the appended nominated procured suppliers' product image sheets for all Kāinga Ora procured products to be utilised, as noted below:

- *Electrolux Product Images October 2019 (M-230)* – for new electrical ranges
- *Plumbing World Product Images October 2019 (M-235)* – for new electrical hot water cylinders and other plumbing fittings
- *Ideal Product Images October 2019 (M-236)* – for new electrical space heaters and fittings

Letter to customer regarding gas conversion works

The advisory letter template to the tenants notifying them of the proposed gas conversion works is appended to this document.

- *Gas Conversion – Contractor letter template to customer regarding work starting soon*

Gas Conversion Contractor letter template to customer regarding work starting soon

@date

«@Customer Name»
«Street_Number» «Street»
«Suburb»
«TownCity» «Postcode»

Dear «Customer_Name»

Work starting soon – conversion from gas to electricity
As you know, your home has been selected by Kāinga Ora – Homes and Communities for their gas conversion programme this year.

Your home has been selected because at the last gas inspection, we identified that one or more of the gas appliances in your home, are expected to fail at some point during the next year. We want to go ahead with replacement now, to minimise any inconvenience to you.

We're going to be doing this work for Kāinga Ora and would like to start on:

@Time on @Day, @Date, @month, @Year
Eg. 9.30am on Monday 24 June 2019

If the day and time above doesn't suit, please phone the number below as soon as you can to arrange a new time.

As we will need access, we'll need you to be at home to be able to do this work. If you have a dog, please ensure the dog is tied up or otherwise contained when we visit.

Questions or need help? You can call us: For any other queries relating to this work, please phone @number. If you need to contact Kāinga Ora, please phone the Customer Support Centre on 0800 801 601. Calls to this number are free even if from a mobile phone.

Yours sincerely

@Name of Contractor rep

@Contractor Name

Healthy Homes Scoping Guide: M-602

For the 2019/20 Financial Year Only

Effective from 2 December 2019
Version – 1

Kāinga Ora
Homes and Communities

Healthy Homes Scoping Guide M-602

Contents

Document Control		
Document Name	Healthy Homes Scoping Guide - for Kāinga Ora properties for the 2019-2020 financial year	
Kāinga Ora Business Group	People and Homes – Maintenance and Upgrade	
Version No.	1	
Status	Current	
Authors	Natasha James	Manager, Information and Documents - Maintenance
	Matt Walker	Senior Technical Writer
Issue Date	4 November 2019	
Peer Reviewer/s and Sections Reviewed	Graeme Bush	PBMC Technical Advisor
	Stacey Marsh	Manager: Quality Homes Advisory Team
	Julie Bukutu	Strategic Business Lead Manager
	Nikki Buckett	Healthy Homes and Sustainability Principal Advisor
Final Approved By	Stacey Marsh	Manager: Quality Homes Advisory Team
	Monique Fouwler	National Portfolio Manager
	Angela Pearce	National Maintenance and Upgrade Manager

For existing Kāinga Ora – Homes and Communities properties

Note:

Changes since last edition shown in orange.

All previous Scoping Guides, Specifications and drawings are superseded.

Contains colour illustrations - colour printing is recommended.

1. Introduction

Kāinga Ora - Homes and Communities' role is to provide safe, healthy, fit-for-purpose and sustainable housing for people in need, for the duration of their need.

Heating interventions will be extending to the whole of house and are currently being finalised. In the meantime, where there is existing heating in bedrooms and other areas of the home identified, note on the scope and refer to the Healthy Homes Programme team.

2. Purpose

This guide is specifically designed to provide guidance for contractors in compiling a site-specific scope of works for achieving the *Healthy Home Programme* interventions detailed herein.

This guide encompasses a range of component items and actions, and their associated rates.

To complete a scope that will be submitted to Kāinga Ora for approval, the Contractor must select the property- and programme-specific items and actions from this range.

Where relevant, this guide may also indicate component items and actions that will not be included in a scope.

3. General guidance

This section provides general guidance notes for the Contractor to ensure the property will achieve the required outcomes.

3.1 Health and safety

While the worker is involved in scoping activities, they must, at all times, operate and comply with a work management system that:

- Meets all applicable legislative requirements.
- Manages the work and related risks that exist, or will be created as part of scoping works.

The Persons Conducting Business or Undertaking (PCBUs) (Kāinga Ora) and the Performance-based Maintenance Contractors (PBMCs) have an overlapping duty to eliminate or minimise risks to workers and other people.

In meeting health and safety duties PCBUs will, as far as reasonably practical, consult, co-operate, and co-ordinate their activities.

Hazard assessment, surveys, or investigations attributed to the works being scoped should, as part of this process, identify those activities that have the potential to cause injury or illness to workers, customers, or others, so that controls can be identified as part of the work package.

Please note

Any health and/or safety issue requiring immediate response should be removed from this scope and treated as a separate urgent (URG) works order.

Kāinga Ora should be advised of all such orders using the contact numbers presented below.

Monday-Friday 8am-5pm: call 0800 888 455
All other times: call 0800 801 601

3.2 Cost-effective solutions

Where there is an option to either repair or replace a component or item, the Contractor must identify where full replacement of the item is more cost-effective than repairing it, and propose replacement as part of the scope.

Proposed replacements shall be agreed with a representative from Kāinga Ora and included in the approved scope **before** the replacement is undertaken.

If the proposed solution may also affect scopes for other work programmes, the Contractor should forward the necessary details to Kāinga Ora for consideration.

3.3 Supporting documentation

This *Kāinga Ora Fencing Scoping Guide (M-241)* should be read in conjunction with other Kāinga Ora PBMC Reference Material. Current versions of the following documents will provide valuable information and context to assist the Contractor in completing and submitting appropriate and accurate scopes. All Contractors' Scopers should have access to copies of current versions of all the following Reference Materials when undertaking scoping on site.

Reference Material	Purpose
Kāinga Ora Amenity Condition Manual(ACM-200)	Provides guidance on what Kāinga Ora determines is an acceptable or unacceptable condition for specific componentry of a property.
Kāinga Ora Supplier Code of Conduct (M-360	Outlines Kāinga Ora's expectations with regard to on-site behaviour and conduct.
Kāinga Ora Asbestos Management and Control Policy (HS-213)	Outlines Kāinga Ora's expectations with regard to the safe management and control of asbestos (as a hazardous material).
Kāinga Ora Lead-based Paint Management and Control Policy (HS-214)	Outlines Kāinga Ora's expectations with regard to the safe management and control of lead-based paint.
Kāinga Ora Maintenance and Programmed Work Specification (M-215)	Provides a detailed trade-by-trade description of how the relevant work must be undertaken.
Kāinga Ora Method of Measurement (M-216) (included in the Kāinga Ora Schedule of Rates)	Provides instruction on how specific property features should be measured. The method of measurement is particularly relevant to scoping as it defines how to measure the quantity of specific material and/or amount of work required under a specific work order.

Kāinga Ora Building Materials Procurement Schedule (M- 217)	Provides a full list of the materials, products and their costs that Kāinga Ora procures under a national supplier agreement and which must be used when undertaking the relevant work.
Schedule of Rates(M-218)	Provides a description of a particular maintenance activity and the associated cost.
Insulation Inspection and Scoping Guide (M-242)	Provides instructions and guidance for Contractors in compiling a site-specific scope of works for insulation.
Mechanical Extraction Scoping Guide (M-243)	Provides guidance for Contractors in compiling a site-specific scope of works for mechanical extraction and associated installation works.
Curtain Scoping Guide (M2-44)	Provides guidance for Contractors in compiling a site-specific scope of works for curtains and tracks.
Heating Scoping Guide (M-245)	Provides guidance for Contractors in compiling a site-specific scope of works for closing off existing open fireplaces and, where required, reviewing and up-grading existing heating sources. This work is designed for selected Kāinga Ora properties to achieve compliance with the *Resource Management (National Environmental Standards for Air Quality) Regulations (2004)*.
Customer and Contractor Agreement Form (M-323)	This form describes the process for securing customers' agreement for the Contractor to work on the property and to use specific facilities.
Tenancy Services (2019). Heating Assessment Tool: Guide. Retrieved from: https://www.tenancy.govt.nz/heating-tool/guide/	Provides guidance for contractors for using the heating assessment tool.

3.4 Programme agreements

Healthy homes interventions will be included on the scope to ensure the property is compliant with current legislation and Kāinga Ora's standards.

Please note: In the event a customer objects to any or all of the following interventions this should be recorded on the *Healthy Homes interventions completion form* and returned to the Healthy

Homes programme team along with the *Customer and Contractor Agreement (M-323)* and the *Heating Calculator* at: healthyhomesprogramme@kaingaora.govt.nz.

3.5 Contact details for Kāinga Ora

Any questions regarding the interventions within this scope should be sent to the Healthy Homes programme team at healthyhomesprogramme@kaingaora.govt.nz.

3.6 Kāinga Ora internal process

Many teams in Kāinga Ora are involved in the Healthy Homes programme. In order to explain the internal Kāinga Ora process more clearly the primary roles involved are:

- Asset Managers – work with the *Healthy Homes Programme* team to review any requests requiring additional consideration, such as requests for additional heating appliances. They are also involved in identifying candidate addresses for this programme.
- Healthy Homes programme team - This team creates, reviews, and authorises programme work orders. They are responsible for ensuring the programme is delivered on time and budget (according to Kāinga Ora's quality standards). This team responds to programme-related questions and handles any access-related issues.
- Planned Programmes team - This team provides support by working alongside the *Healthy Homes Programme* team to complete programmes and reduce any negative impacts on the customer.
- Quality Homes Advisory team – This team leads the process of developing performance requirements for the design of new builds undertaken by Kāinga Ora and for the products and systems used by Kāinga Ora (e.g. heaters or extraction fans) in its homes. Team members provide technical advice and support to other Kāinga Ora teams around wider design issues, including those related to the *Healthy Homes Programme*.
- Regional Maintenance team – This team provides as-needed support to the *Healthy Homes Programme* team in coordinating and overseeing work undertaken by PBMCs.
- Tenancy Managers - Tenancy Managers work with the *Healthy Homes Programme* team to solve customer-related issues (e.g. overcrowding).

  If a property needs additional heating, insulation, and/or ventilation amenities, and it is not on this programme, Tenancy Managers submit a request to the *Healthy Homes Programme* team. If a property requires out-of-scope responsive repair(s), the Healthy Homes Programme team who will raise work orders via Kāinga Ora's internal systems (Kotahi).

4. Healthy Homes Interventions

The *Healthy Homes Programme* includes a number of specific interventions that include:

- Heating
- Insulation
- Ventilation
- Moisture ingress and drainage
- Draught-stopping
- Carpets
- Curtains.

Please note:

The Contractor must check with the Healthy Homes Programme team for confirmation before applying any exemptions.

Any new work surrounding heating, insulation, ventilation, moisture ingress and drainage or draught-stopping, must comply with the Residential Tenancies (Healthy Homes Standards) Regulations 2019.

4.1 Heating

Requirements

1. There must be a fixed heating device that is capable of achieving a minimum temperature of 18°C in the main living-area.
   a. Under this standard, the living-area is considered to be a lounge, dining, sitting, or family room used for general or everyday living.

      Any other connected spaces that are always open to the living area (that is, there is no solid barrier such as a door or window between the living area and the connected space) must also be included as part of this requirement.
   b. In the event there is more than one living-area, the requirement only applies to the main (that is, the largest) living room.
   c. As living room boundaries include the walls, ceiling, floors, and any windows or doors, an open-plan living area (for example, an open-plan living and dining area) should be treated as one single space.
2. Contractors will be required to measure the internal/external walls along with the total floor area. These measurements will then be entered into a calculator provided by Kāinga Ora to determine the heating capacity requirements.
   a. The specific heating source required depends on the results of this calculation, which takes account of both the size of the living area/space, areas of external walls and glazing, the age and air-tightness of the dwelling, the region in which the property falls, and an assessment of insulation.

3. Once heating capacity requirements are obtained, Contractors should work directly with Kāinga Ora's nominated supplier to select the most appropriate heating-type.

Please note:

Where it is deemed additional heating is required in other parts of the dwelling (for example, in bedrooms), the Contractor is to liaise with the Healthy Homes Programme team before taking any action.

Exemptions

The requirements set out above may not apply in the event:

- It is not reasonably practical to install a qualifying heating device.
- The property is a certified passive home.
- The property will be demolished or substantially rebuilt within 12 months.
- The resident was the former owner of the property within the 12 months from the date of the tenancy starting.
- A property is part of a building the property owner does not own in its entirety. In this instance, the proprietor may be partially exempt, but they must take all reasonable steps to comply with the standards as much as is reasonably practicable.

4.2 Insulation

Requirements

Under this standard, properties should either:

1. Provide ceiling and under-floor insulation that meet the requirements of the *Building Regulations* (1992); in particular, amendments introduced by the *Building Amendment Regulations (No. 2)* (2007).

   OR

2. Include existing ceiling insulation that is at least 120-millimetres thick, complete, dry and undamaged.

Exemptions

The requirements set-out above may not apply in the event:

- It is not reasonably practical to install insulation (for example, there is insufficient space in the roof-cavity and/or sub-floor.
  - Note: this exemption **only** applies to the affected areas – the remaining area requires insulation.
- The property will be demolished or substantially rebuilt within 12 months.
- The resident was the former owner of the property within the 12 months from the date of the tenancy starting.
- A property is part of a building the proprietor does not own in its entirety. In this instance, the proprietor may be partially exempt, but they must take all reasonable steps to comply with the standards as much as is reasonably practicable.
-

4.3 Ventilation

Requirements

Here there are two separate, room-specific, components:

1. **Bedrooms, dining rooms, living-areas, or otherwise habitable spaces that do not include a shower, bath, or cook-top**: include openable windows and doors that have a total area of five per cent of the respective floor-area.

   AND

2. **Rooms containing a bath, shower, or cook-top**: have an appropriately-sized extractor fan that vents to the exterior.
   a. Rooms with a cook-top must include:
      i. a fan and ducting that is at least 150 millimetres in diameter
      or
      ii. a fan with ducting with an exhaust capacity of 50 litres-per-second

   b. **Rooms with a bath and/or shower must include**:
      i. a fan and ducting that is at least 120 millimetres in diameter
      or
      ii. a fan with ducting with an exhaust capacity of 25 litres-per-second

Exemptions

The requirements set out above may not apply in the event:

- With regard to requirement (1) above: the property met all legal requirements at the time it was built, even if it did not include an openable window or door in the relevant room.
  - The room(s) in question must also continue to meet any alternative ventilation requirements in force at the time of construction.
- With regard to requirement (2) above: it is not reasonably practical to install an extractor fan or fans.
- The property will be demolished or substantially rebuilt within 12 months.
- The resident was the former owner of the property within the 12 months from the date of the tenancy starting.
- A property is part of a building the proprietor does not own in its entirety. In this instance, the proprietor may be partially exempt, but they must take all reasonable steps to comply with the standards as much as is reasonably practicable.

4.4 Moisture ingress and drainage

Requirements

The following requirements apply to this standard:

1. There is efficient drainage for the removal of storm-, surface-, and ground-water.

   AND

2. Gutters, down-pipes, and drains are in place for the removal of roof-water.
   AND
3. If enclosed, the sub-floor cavity has a ground moisture-barrier installed.

Exemptions

The requirements set out above may not apply in the event:

- It is not reasonably practical (for example, the sub-floor space is not accessible) to install a ground moisture-barrier
- The property will be demolished or substantially rebuilt within 12 months.
- The resident was the former owner of the property within the 12 months from the date of the tenancy starting.
- A property is part of a building the proprietor does not own in its entirety. In this instance, the proprietor may be partially exempt, but they must take all reasonable steps to comply with the standards as much as is reasonably practicable.

4.5 Draught-stopping

Requirements

Under this standard, landlords are required to:

1. Stop any unreasonable gaps in walls, windows, floors, and/or doors that cause noticeable draughts.
   a. This means, if the edge of a New Zealand $2 coin can fit into the gap, the gap needs to be sealed or draught-stripped.

Please note:

If the customer does not want the fireplace or chimney of an open fireplace blocked off, the Contractor should contact the Healthy Homes Programme team. In this instance, Kāinga Ora must have a record of the approved written request and subsequent agreement with the customer.

Opening windows and/or doors with intentional gaps that are part of the construction do not require sealing.

Exemptions

The requirements set out above may not apply in the event:

- The property will be demolished or substantially rebuilt within 12 months.
- The resident was the former owner of the property within the 12 months from the date of the tenancy starting.
- A property is part of a building the proprietor does not own in its entirety. In this instance, the proprietor may be partially exempt, but they must take all reasonable steps to comply with the standards as much as is reasonably practicable.

4.6 Additional requirements

In support of the Healthy Homes standards outlined above, Kāinga Ora has further requirements around interventions for carpets and curtains.

4.6.1 Carpeting

New carpets should be provided where there is only bare flooring/ threadbare carpet/ carpet causing significant trip hazards in:

- bedrooms;
- living rooms; and/or
- hallways.

4.6.2Curtains

Where required, existing curtains, blinds, and tracks should be removed and replaced with new thermal curtains and tracks (see *M-244: Curtain Scoping Guide*).

4.6.3 Other maintenance works

Where minor maintenance works are required by the same trade, these works can be included in the Healthy Homes scope of works.

5. Scoping for Healthy Homes

5.1 Scoping outcomes

The *Healthy Homes Programme* is designed to provide customers living in nominated properties with healthier living environments by providing homes that are safe, healthy, fit-for-purpose, and sustainable, resulting in improved health and comfort outcomes for customers.

The *Healthy Homes Scoping Guide (M-602)* defines how Kāinga Ora staff and Contractors will achieve desired outcomes for heating in existing Kāinga Ora properties.

This scoping guide should be used for the scoping, supply, and installation of all nominated interventions and associated works to all existing properties owned and/or managed by Kāinga Ora.

5.2 Scoping tables

If specific components are absent or not functional, all nominated works listed on the tables below shall be reviewed and scoped for inclusion in the works order.

No.	Items to be scoped	
1.	**Ventilation**	
1.1	Complete the following items as defined by the current version of *M-243: Mechanical Extraction Scoping Guide*: **1.** Mechanical extraction systems in the kitchen. **2.** Mechanical extraction systems in the bathroom. **3.** Non-standard extraction systems (where required). **4.** Scaffolding and edge protection (where required). Note: a. Item 6.14 of *M-219: Void Scoping Guide* should not be undertaken. b. Unless declined by the customer, Contractors should ensure window-opening restrictor-stays are provided to at least one opening sash for every room in the property. c. Quadrant-stays are an acceptable opening-restrictor for high-level fanlight windows (1.7m from the interior floor height to the sash). d. Existing passive ventilation strips, vents, or grilles in windows are not acceptable as sole sources of passive ventilation. Such passive ventilation sources may remain in place for the length of their useful life. e. Where the exterior fall-height is greater than 2m and the bottom-edge of the opening sash is equal to or less than 1.5m from the floor, an opening-restrictor is required (see item *4.5: Window Safety from Falling* in *M-219: Void Scoping Guide*). For cleaning required refer to the *Kāinga Ora Mechanical Extraction Scoping Guide (M-243)*.	**Job Codes** EFN 050 – 700 EFN 500 DRE 050 – 065 *CHW 150 – 170* **ACM** 76.2 – 76.3 *55.8* **MPWS** *7687HV; 5521*

2.	**Bathroom ceiling linings**	
2.1	Ensure: 1. Mould-affected plasterboard ceilings are cleaned according to Kāinga Ora's *M-215: Maintenance Work Programme Specification*. 2. Areas of plasterboard ceiling-lining ≥ 1m^2 affected by penetrating mould are removed. AND As per M-215, the entire ceiling is overlaid with the batten and glue-fixed wet-wall ceiling lining and Silkline® PVC scotia.	**Job Codes** DAP 200 CLW 410 – 500 **ACM** 67.2 **MPWS** 5134H
3.	**Heating**	
3.1	**Living room heating** Confirm the form of fixed-heating provided in all living areas meets the requirements of Kāinga Ora's *M-245: Heating Scoping Guide*. To determine the heating capacity for the living room refer to the *Kāinga Ora Heating Scoping Guide (M-245)* for heating calculator instructions. Once the kilowatt output has been calculated, liaise with the nominated supplier to select an appropriate heating source. **Rest of house** Heating interventions will be extending to the whole of house and is currently being finalised. In the meantime, where there is existing heating in bedrooms and other areas of the home identified, note on the scope and refer to the Healthy Homes Programme team. Note 1. Refer to the *Heating Scoping Guide (M-245)* for heating sizing instructions. 2. If additional heating is required in other areas (e.g. bedrooms or secondary living areas), liaise with the Healthy Homes Programme team before taking any action.	**Job Codes** *Refer to M-245* **ACM** 77.7 **MPWS** 7701; 7673; 7556
4.	**Fireplace Closure**	
4.1	Ensure all existing open fire places are closed off and works are completed in accordance with *M-215: Maintenance and Programmed Work Specification* and job code (i.e. includes capping the top of the chimney and boarding up the fire place with a plywood panel).	**Job Code/s** CMS200 **ACM** 75.2 **MPWS** 3820; 7556
4.2	**Checking Closed Fire places** Ensure all previously-closed fire places are still securely-boarded and the chimney is capped in accordance with the *M-215: Maintenance and Programmed Work Specification*.	**Job Code/s** CAA 100 **ACM** 75.2 **MPWS** 3820; 7556

6.	**Curtains**	
6.1	Ensure procured curtains and tracks are fitted and complete in accordance with *M-244: Curtain Scoping Guide* in all habitable rooms / spaces (i.e. the living room, dining room, bedrooms, hallways, and stairways). Remove any existing non-procured curtains and/or tracks that do not match the functionality requirements of Kāinga Ora-procured curtains and/or tracks. Note i. If the curtain track cannot be safely reached in stairs and hallways contact the Healthy Homes Programme team before taking action. ii. Kitchens, bathrooms, toilets, and laundries are excluded. iii. If a customer does not want these items removed, refer to the section *3.4 Programme Agreements* above. All works must be undertaken by the nominated supplier.	**Job Codes** *Tenanted:* CHM 275-280 *Removal:* CHM 294-296 **ACM** 55.12 **MPWS** 5530L
7.	**Flooring**	
7.1	**Carpets** Ensure all bedrooms, living areas, and hallways are carpeted. a. Install new carpet in rooms with bare timber or concrete flooring. b. Re-stretch carpet where loose and causing trip hazards. Note Where carpet is threadbare or poses a significant trip hazard, it should be included on the scope.	**Job Code** FCA 100 – 500 **ACM** 65.1 **MPWS** 6511
7.2	**General vinyl flooring** Ensure: 1. Vinyl is installed in bathrooms, toilets, showers, laundries, kitchens, and dining areas where there are exposed timber floor boards (i.e. any timber floor boards that are unfinished or treated with polyurethane) with gaps greater than 2mm. 2. All new vinyl in bathrooms, toilets, showers, and laundries is coved. Where a ranch slider is the main-entry, there is a 300mm procured non-slip vinyl strip along the full length of the ranch slider.	**Job Code** FVN 100 – 520 **ACM** 64.1 **MPWS** 6411
8.	**Insulation**	
8.1	**Ceiling Insulation** Please refer to *M-242: Insulation Inspection Scoping Guide*.	**Job Codes** CIN 151-152; 165-170 **ACM** 47.1 **MPWS** 4798

8.2	**Ceiling Down-lights** Please refer to *M-242: Insulation Inspection Scoping Guide*.	**Job Codes** CAA 100 CLI 100-200 ELF 520-530
		ACM 47.1
		MPWS 4798
8.3	**Ground Vapour Barrier** Please refer to *M-242: Insulation Inspection Scoping Guide*.	**Job Codes** CIN 150 *Repairs* CAA 100-200
		ACM 41.1
		MPWS 4710
8.4	**Under-floor Insulation** Please refer to *M-242: Insulation Inspection Scoping Guide*.	**Job Codes**
		ACM
		MPWS
8.5	**Insulation Inspection** Please refer to *M-242: Insulation Inspection Scoping Guide*. **Please note:** Insulation must be in reasonable condition (that is, free of damage including, but not limited to, rips or tears, water-damage, or mould). All foil insulation must be removed (refer to *M-242: Insulation Inspection and Scoping Guide*).	**Job Codes** AIC 110-190 AIF 110; 130; 160-170; 190-210
		ACM
		MPWS
8.6	**Scoping Fee/Futile Charge** Please refer to *M-242: Insulation Inspection Scoping Guide*.	**Job Codes** AES 600
		ACM N/A
		MPWS N/A
8.7	**Associated Works Items** Please refer to *M-242: Insulation Inspection Scoping Guide*.	**Job Codes** CIN 610-620; 250 KCH 050
		ACM 47.1 – 47.2
		MPWS 4798
9.	**Moisture Ingress and Drainage**	
9.1	**General Drainage**	**Job Codes**

	Undertake an external visual check around the perimeter of, and under, the dwelling for evidence of surface water from surrounding ground, paths, driveways etc. flowing under the building.	**ACM** **MPWS**
9.2	**Spouting and down-pipes** 1. If the spouting system is not functioning correctly (e.g. there are signs of blockage or over-flowing), scope for clean-out and wash the entire spouting and water collection system (including all spouting, down-pipes, and drainage systems) to ensure the system is complete and functioning well, and is clear of plant growth or any other blockage. 2. Where required, replace sections of damaged down-pipes and/or spouting. 3. Check there is no stagnant water pooling in the spouting and repair/re-align where required. **Note** Two codes are available for cleaning spouting: i. Use PSP100 when all spouting requires cleaning on a free-standing house ii. Use PSP110 on smaller structures or if the property is a duplex or twin-unit; this is measured by the lineal meter.	**Job Codes** PSP 100-115 PSP 115-300 PDP 100-300 **ACM** 74.1 **MPWS** 7411
9.3	**Wall Cladding** 1. Scope for repair as required: visually check all exterior cladding for signs of significant damage, rot, or broken parts, and ensure it is functioning well. a. Where the damage requires extensive repairs (e.g. 10% or more of the cladding), advise the Healthy Homes Programme team. For external paintwork, refer to *M-240: Exterior Paint Scoping Guide*; ensure all patch-paint matches and blends into the existing paint finish. (DPE Codes).	**Job Codes** CLX 110 – 600 **ACM** 42 **MPWS** 3320 – 4282
9.4	**Services Penetrations** Scope for repair as required: a. visually check all plumbing, drainage, electrical, and gas services fixtures and fittings that penetrate the exterior cladding or are under the property; ensure they are weather-tight and prevent ingress of moisture	**Job Codes** CAA 100 – 200 **ACM** 74.2 **MPWS** 3320 – 4282
10.	**Sub-floor Ventilation**	
10.1	Ensure all sub-floor ventilation grilles are clear and functional.	Job Codes CVX 100 – 250 **ACM**

	Please note: A sub-floor is enclosed if the airflow into and out of the space is significantly obstructed along at least 50 percent of the perimeter of the sub-floor space by one or more of the following: - A masonry foundation wall. - Fibre-cement sheets, timber skirting, or other cladding. - Other parts of the building or any adjoining structure(s). - Rock, soil, or other similar material. - Any other (semi-)permanent structure that significantly obstructs air-flow. Even where vents are built into the sub-floor perimeter walls, air-flow into and out of the space is usually significantly obstructed. However, perimeter claddings such as trellis or base-boards with multiple continuous gaps that are more than 20mm-wide do not significantly obstruct air-flow.	48.3 **MPWS** 5521
11.	**Roof**	
11.1	**Roof Leaks** Visually check – internally and externally (from the ground) – for signs of roof leaks. Where there are signs of leakage (e.g. water-stained or bubbled wall/ceiling linings, or broken or missing roof tiles), instruct the nominated roofing contractor to provide a roof report. a. Send all roof reports to Kāinga Ora's Planned Programmes team. Any remedial or new works will be completed under a separate works order.	**Job Codes** RMS 050 **ACM** 43.1 – 43.3 44.1; 45.3 **MPWS** 4311 – 4323; 4422
12.	**Draught Stopping**	
12.1	**Doors and Windows** Ensure exterior doors and windows (including flashings, locks, hinges, and hardware) are present and fully-functioning, and seal well. Check for signs of an unreasonable draught from windows: a. If there is an unintentional gap that is <2mm: install draught stripping. b. If there is an unintentional gap that is 2-8mm: install draught stripping and/or, where inappropriate, provide double-catching to the window. c. If there is an unintentional gap of >8mm: examine the opening sash and surrounding frame for signs of damage and repair or replace as required. d. If there is currently a louvre-type window installed and there is an unintentional gap of >2mm, replace the louvre-window with a procured full window-unit.	**Job Codes** CHD CHW CWT **ACM** 45.1 – 45.2 **MPWS** 4511 – 4521

	Note i. When replacing a sash or full window-unit, replace 'like-for-like'. ii. Where a large proportion of the window–unit is affected and/or in marginal condition, the contractor should use their discretion to determine whether to scope to repair or replace the sash or the entire window-unit.	
12.2	**Weather seals to Exterior Doors** Ensure all exterior doors seal well or have an operational weather-seal to the external face. If not, scope to provide a weather seal to the outer bottom face-edge using the procured product.	**Job Codes** CHD 800 **ACM** 45.2 **MPWS** 5521
12.3	**Walls** Check all internal and external walls for signs of holes/ gaps/cracks or damage that may produce a draught. Any paint patch is to match and marry into existing paint finish (DPE codes).	**Job Codes** CLI200 CLX110-600 **ACM** **MPWS**

5.3 Associated maintenance scoping

Nominated work items are considered appropriate for inspection at the time of scoping. If any items are found, they shall be scoped for repair or replacement and included on the relevant work order.

No.	Items to be scoped	
1.	**Interior**	
1.1	**Internal mould** Inspect the interior of the property for signs of mould. a. Where mould, dampness, or fungal growth is observed or reported by the customer: i. If testing is required, or there is a need to check whether testing is required, contact the Healthy Homes Programme team. ii. Scope for removal in accordance with Kāinga Ora's *ACM-200: Amenity Condition Manual* and *M-215: Maintenance Work Programme Specification*.	**Job Codes** TAA 340 **ACM** 67.2 **MPWS** 3897
2.	**Exterior**	

2.1	**Overgrown vegetation** Check for signs of excess or overgrown vegetation, including hedging, shrubs, or trees that significantly prevents the house from receiving sunlight. Scope for removal and trimming if required. Note If the customer does not want the obstructing vegetation to be removed, contact the Healthy Homes Programme team.	**Job Codes** YMG 300-570 **ACM** 83.1 **MPWS** 8320 – 8382

5.4 Scoping notes

1. The Contractor must address every nominated item described in the tables above to ascertain whether it is present, functioning, and meets an acceptable standard as defined by Kāinga Ora's *ACM-200: Amenity Condition Manual* and associated *Scoping Guides*.
   a. If an item is present and acceptable, no further work is required.
   b. If an item is missing, not functioning, or is in an unacceptable condition, the item should be scoped for repair or replacement.
   c. If an item is **not** included on the tables above, it must not be scoped.
2. Where a Contractor has an issue or concern regarding the application of the scoping tables, they should raise this with the Healthy Homes Programme team for clarification.
3. In order to undertake the scoping, the power and gas must be on at the property.

5.5 Contact details for nominated sub-contractors / suppliers

Contact details for nominated sub-contractors who may be engaged by the PBMC to undertake the complete scoping, supply, installation, and certification of the nominated works items are presented on the table below.

CURTAINS	
Harvey's Furnishings Limited	9(2)(a)
ROOFING	
Edwards & Hardy	9(2)(a)
MECHANICAL EXTRACTION	

Hometech Limited	9(2)(a)

The table below lists Kāinga Ora supply and installation Contractors who may be engaged directly by Kāinga Ora (not PBMC) for these work items.

INSULATION	
Smart Energy Solutions	9(2)(a)
HEAT PUMPS	
Switch/Below Zero	9(2)(a)

6. Records

Retain all records within Kāinga Ora's records system - refer 'Records retention and disposal' (R-105).

7. Version control

Details of previous versions are stored in Kāinga Ora's document management system (Objective). Refer to header and footer information for reference document elements or for any queries contact Atamai@kaingaora.govt.nz.