# Bracing Solutions

# SUPERCROSS BRACING

## Specification and installation manual

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NEW ZEALAND MADE

Version 1.0

# Contents



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# Compliance with building code

**Based on findings from the 2011 Canterbury earthquake we have designed a bracing system that far exceeds the minimum requirements of the building code.**

## SCOPE OF USE

**This document is a guideline to wall bracing for light timber frame buildings constructed in accordance with NZS3604:2011**

**Supercross is designed for use at the framing stage of construction making sure that the building you are working on is safe and will not move.**

**Ask your Builder this question:**

**How many times have they plumbed walls only to go back later to find the walls have moved using convential temporary bracing?**

## FRAMING

**Wall framing must comply with:**

- **NZBC B1 - Structure: AS1 Clause 3 Timber (NZS 3604:2011)**
- **NZBC B2 - Durability: AS1 Clause 3.2 Timber (NZS 3602)**

**Framing dimensions and height are as determined by the NZS 3604 stud and top plate tables for load bearing and non-load bearing walls. Kiln dried verified structural grade timber must be used. Machine stress graded timber, SG8 stress grade minimum is recommended.**

## BOTTOM PLATE FIXING

**Use 15kn hold-down connections at each end of the bracing element.**

**Refer to manufacturer installation instructions supplied with the connectors for correct installation instructions and bolt types to be used for either concrete or timber floors. Within the length of the bracing element, bottom plates are fixed in accordance with the requirements of NZS 3604.**

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# Compliance with building code

## NAILING ON THE SUPERCROSS PANELS

**This is very simple, wherever there is a nail hole that has timber behind it, fill it with a 30mm x 3.15 diameter product nail.**

**You can nail the panel on either by hand or with a product nail gun.**

**(See fig. 1)**

fig. 1

**Supercross Bracing Systems are designed to meet the requirements of the New Zealand Building Code and have been tested and analysed using the P21 method referenced in NZS 3604:2011 listed as an acceptable solution B1/AS1 Structure. Testing was carried out using Supercross panels manufactured by Bracing Solutions Ltd.**

## WALL LININGS

**Supercross Bracing gives you the advantage of lining the interior walls with whatever product you wish to use, as long as the lining complies with the building code requirements.**

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# What are the advantages

- **Supercross is Code Marked and accepted by all territorial authorities**
- **Cost effective - Costs less than conventional bracing systems**
- **No cutting needed - Saves time for the builder**
- **No marking needed - Just nail on where the punched holes are**
- **No temporary bracing required - Bracing is installed once frames are up**
- **Supercross panels are made of galvanized steel**
- **Supercross portal system - In a lot of cases it eliminates steel portals**
- **Freedom to select internal wall linings**
- **Performance not affected by moisture**
- **Can be retro fitted**
- **Simple installation either at pre-nail or on site**
- **Can be fitted to exterior or interior walls**

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# Fitting instructions for SC4 and SC6 panels

- Make sure all health and safety regulations are followed.
- Wear correct personal protection equipment at all times.
- Check positioning of Supercross panels in accordance with consented plans.
- Check to make sure the frames framing widths are suitable for supercross panels.

Step 1

Place Supercross panel in position.

Step 2

Nail the bottom corner of the panel.

Step 3

Line the side of the panel up with the stud and then nail.

Step 4

Nail the top corner of the panel.

Step 5

Nail all pre-punched holes where there is timber behind.

Step 6

Once all holes are nailed then go onto installing 15Kn brackets.

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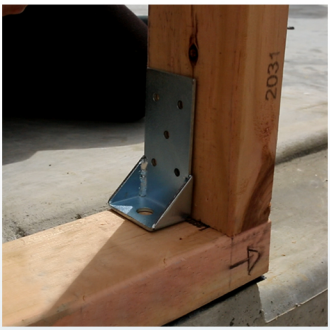
# Fitting instructions for

## 15Kn hold down bracket for SC4 and SC6



Step 1

Place bracket on the inside edge of the frame. Giving the correct distance from edge of slab.

Step 2

Screw bracket to the stud that the supercross panel will be nailed to.

Step 3

Next drill a 12mm hole into the slab. Make sure that the hole is cleaned out before the screw bolt is put in place.

Step 4

Screw the 15Kn screw bolt into the foundations.

Step 5

Make sure the screw bolt is screwed in tight.

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# Fitting instructions for Supercross portals

Step 1

Follow fitting instructions for 15kn hold down brackets (page 7) For portal frames fix an extra centre bolt and washer to each side of the portal frame.

Step 2

Nail bottom corner of Supercross panel.

Step 3

Line the side of the panel up with the stud and then nail.

Step 4

Nail the opposite side.

Step 5

Continue to nail every hole that has timber behind it.

Step 6

Nail the Supercross panel onto the LVL lintel until all holes are filled.


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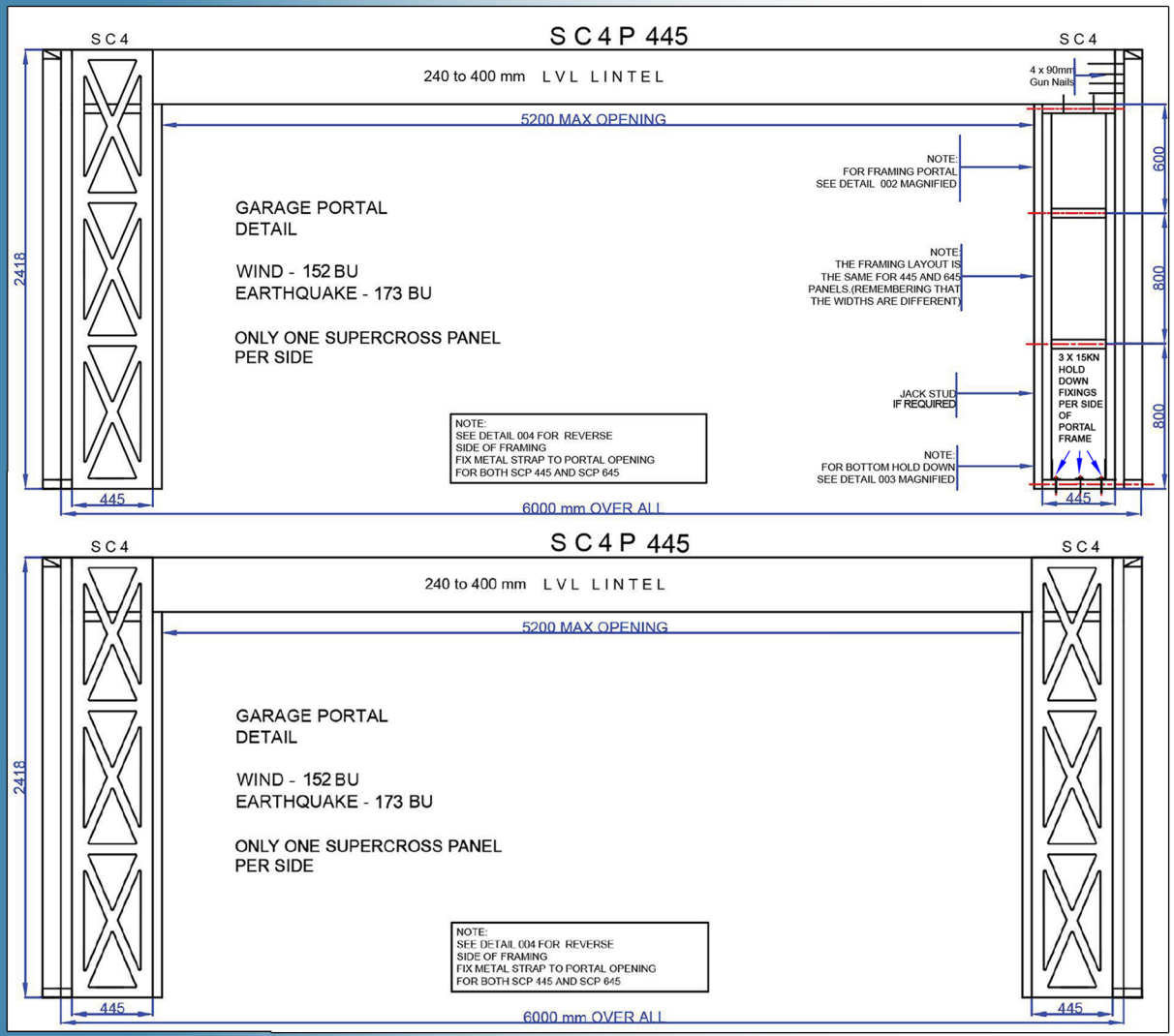
# Drawing details for SCHP



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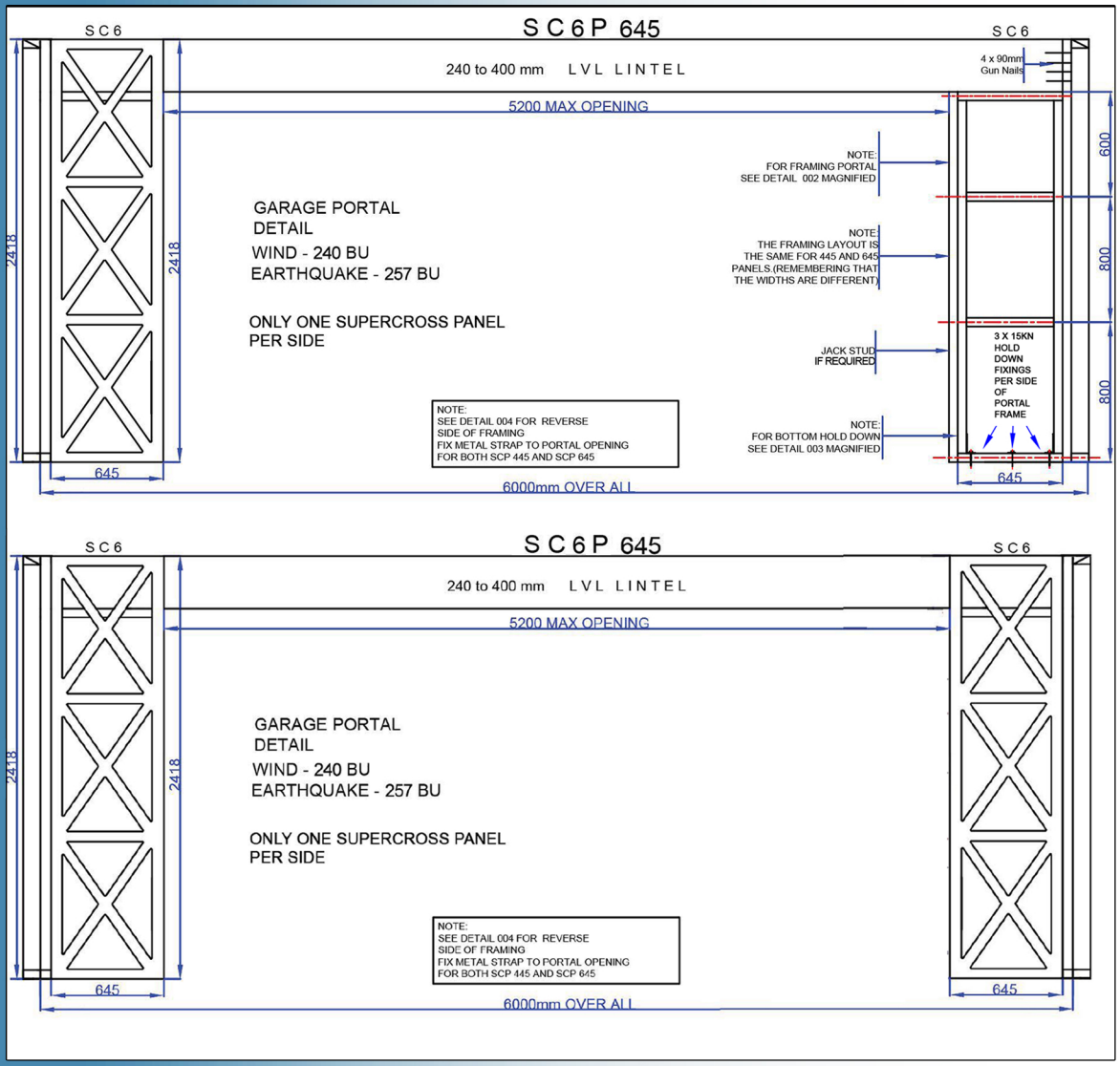
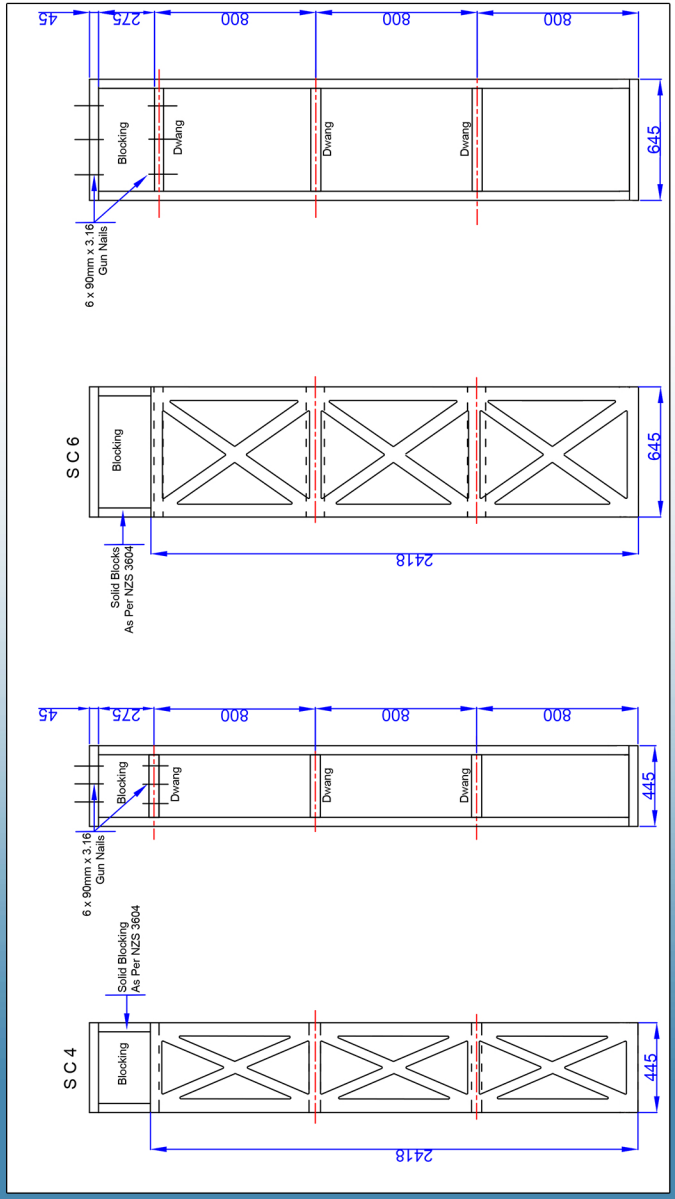
# Drawing details for SC6P



# Drawing details for 2.7 high frames

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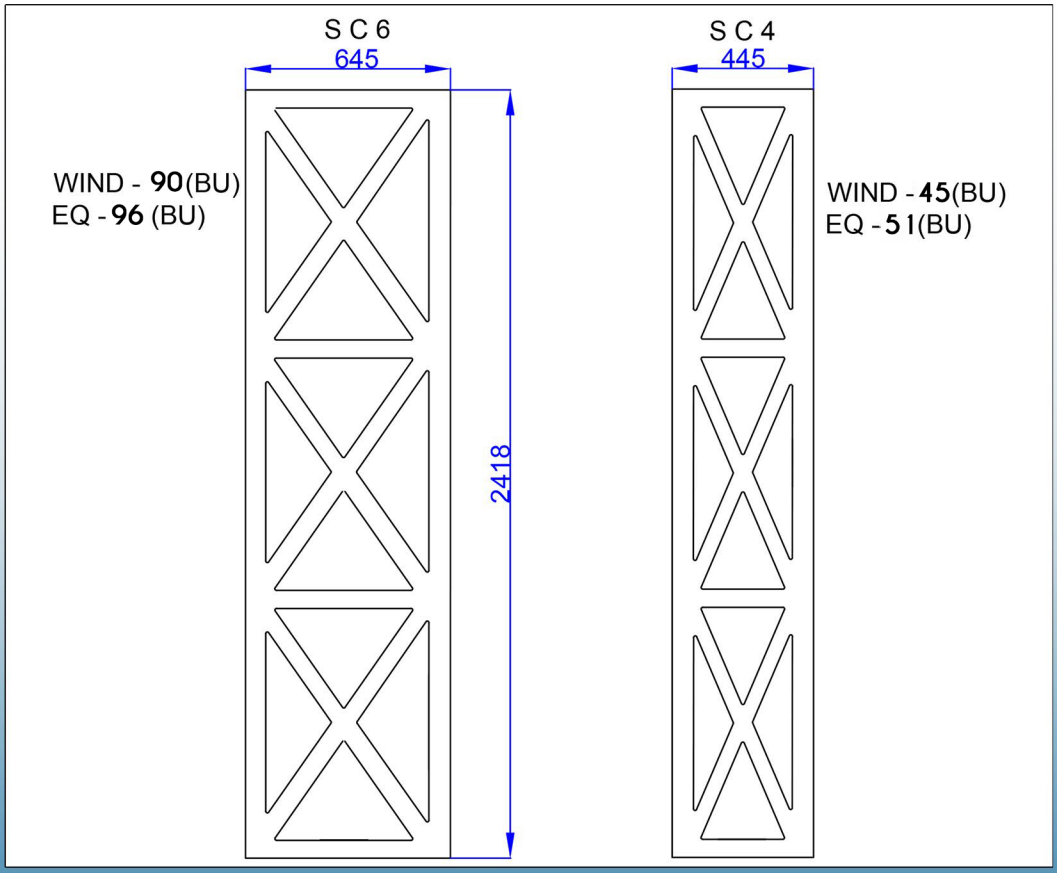
# Drawing details for SC4 and SC6

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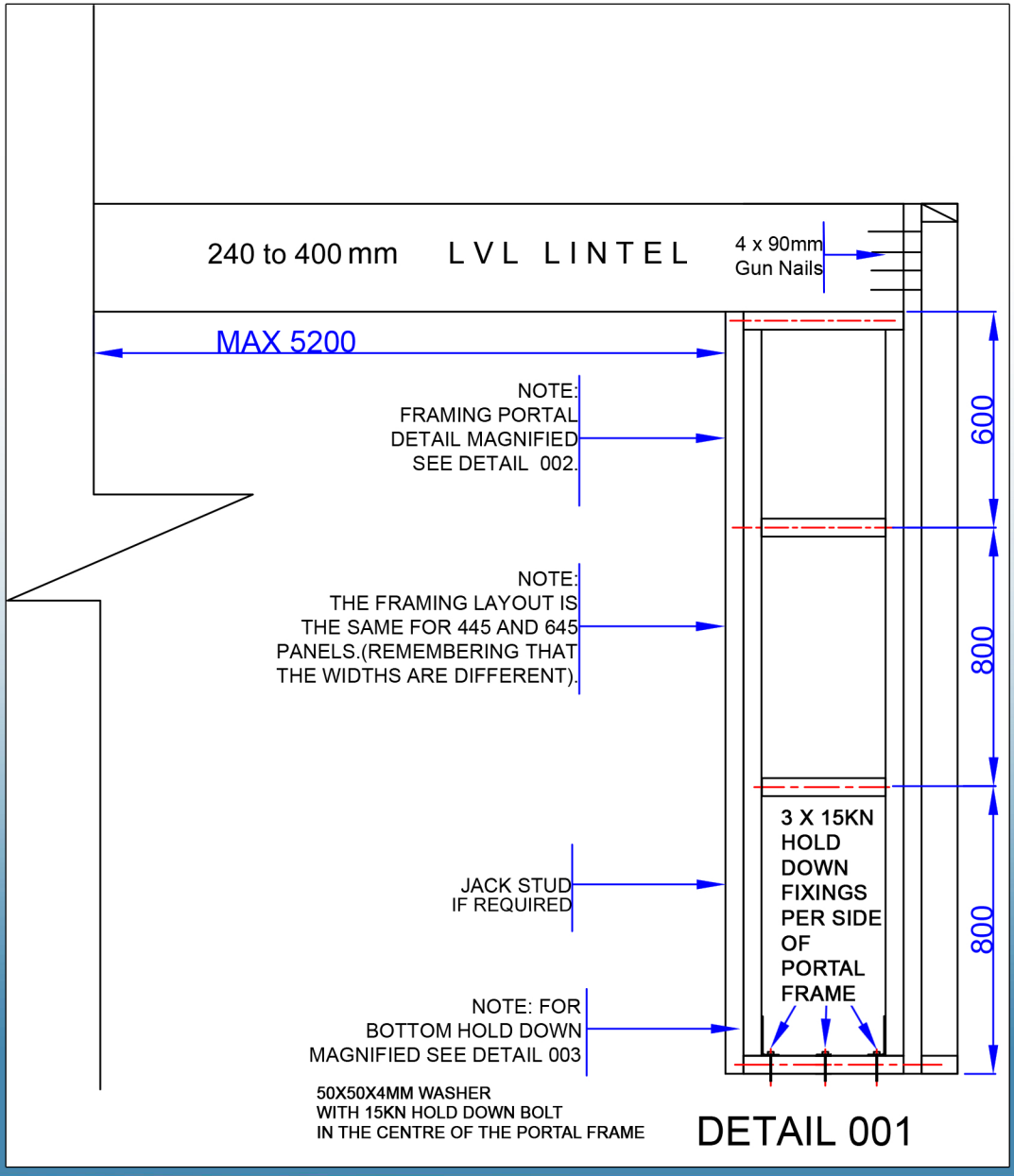
# Drawing details
# 001

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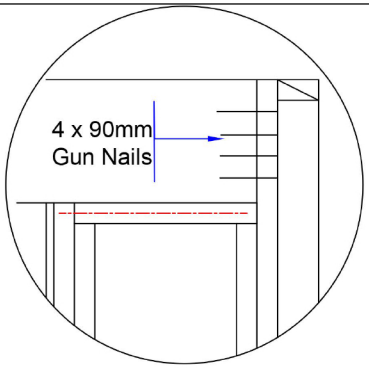
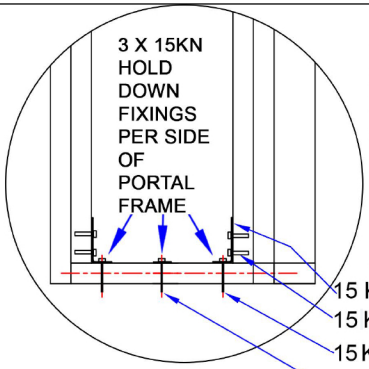
# Drawing details
# 002, 003, 004




DETAIL 002




DETAIL 003

Bottom Hold Down

Garage Portal Detail

Wind- 127 BU

Earthquake - 146 BU

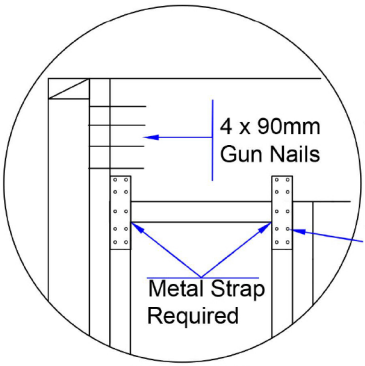
NOTE: 15Kn hold down brackets must be screwed to the side studs that the SUPERCROSS panels are nailed to. If you fail to screw the brackets in the fashion they were tested in the P21 test, then you are not achieving the correct bracing units required.
You may be asked by your local council representative to provide proof that the way you are fixing the panels down complies with the P21 test.

15 Kn Bracket

15 Kn 5 x screws in Each Bracket

15 Kn Hold Down Bolt

50X50X4MM WASHER WITH 15KN HOLD DOWN BOLT IN THE CENTRE OF THE PORTAL FRAME



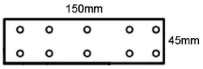

DETAIL 004

NOTE:
Metal strap is required to be fixed to reversed sides of each framing unit in both applications of SPC 445 and SPC 645 when constructing portals. All nail patterns are to be adhered to, to provide the strength required to meet local council requirements and NZS 3604.

Nail metal straps on with 30mm x 3.16 product nails Fill each hole on strap.

## METAL STRAP DETAIL

150X45MM FRAME TO LINTEL PLATE PLACED ON OPPOSITE SIDE TO THE SUPERCROSS PANEL. SEE DETAIL 004.

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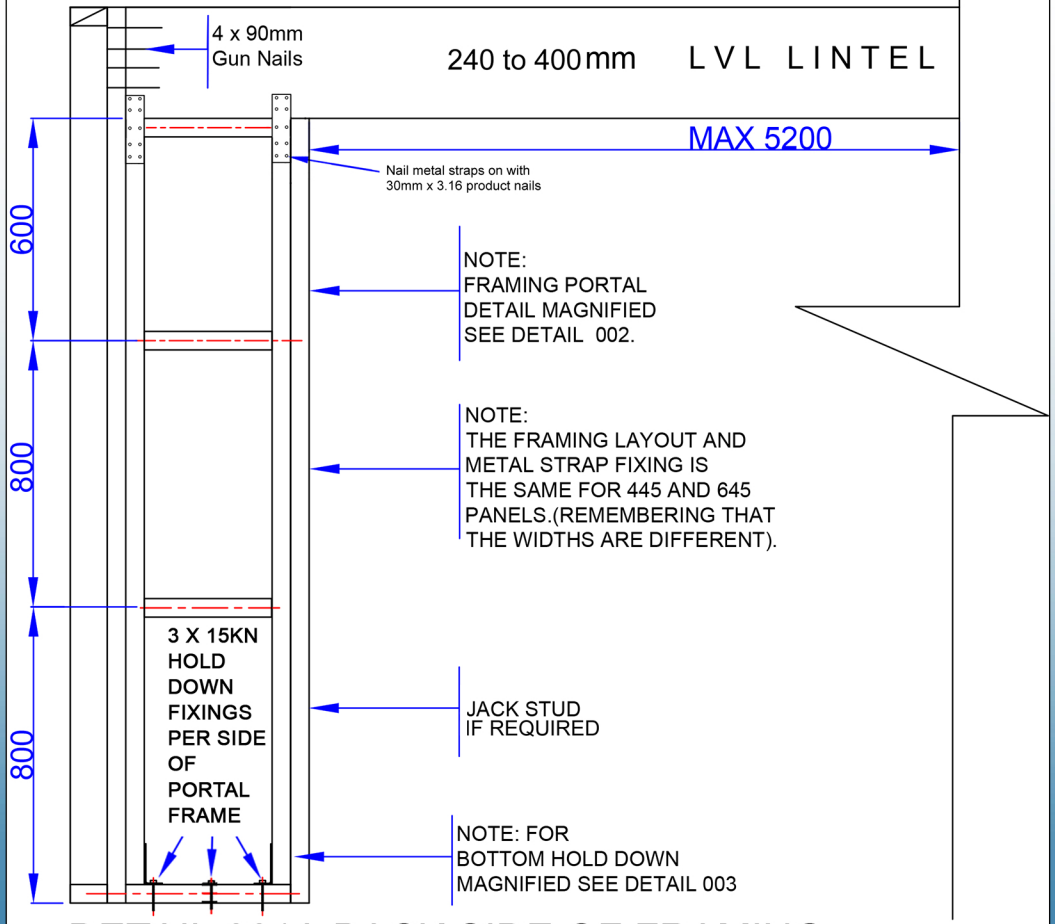
# Drawing details for 001A




DETAIL 001A BACK SIDE OF FRAMING
SAME FOR SCP 645 AND SPC 445 INCLUSIVE

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# Bracing values

| Item | Single or double | Bracing units (BU) EQ | BU /m EQ | Bracing units (BU) Wind | BU /m Wind | 15kn bracket | Extra bolt | Panel width |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| Supercross SC4 | Single | 51 | 114 | 45 | 102 | Y | N | 445mm |
| Supercross SC6 | Single | 96 | 150 | 90 | 140 | Y | N | 645mm |
| Portal SC4P | Single | 173 | 195 | 152 | 171 | Y | Y | 890mm |
| Portal SC6P | Single | 257 | 199 | 240 | 186 | Y | Y | 1290mm |
| Portal SC4PD | Double | 208 | 233 | 175 | 196 | Y | Y | 890mm |
| Portal SC6PD | Double | 323 | 250 | 285 | 221 | Y | Y | 1290mm |

Bracing units per metre are only an indication for other companies bracing software. You can only use a per panel bracing unit value as above in yellow.

**For double sided portals please nail a Supercross panel on the front and the back of the side frames following steps 1 to 6 on page 8.**


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**Bracing solutions recommends that you use Supercross bracing systems in conjunction with GIB plaster board internal linings.**

GIB®

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# On site check list for Supercross bracing systems

## Pre-cladding installation check list

### For builders, LBPs and building inspectors

Consent No: _____

Commence Date: _____

Client name _____ Phone _____

Builder _____ Phone _____

Designer _____ Phone _____

Builder/ LBP must have the framing and other components of the building correctly installed to enable the installation of Supercross bracing systems.

| | Y | N |
|---|---|---|
| Have you read this entire manual before fitting/installing supercross systems | ☐ | ☐ |
| Have the Supercross panels been delivered without damage | ☐ | ☐ |
| Have all the components been delivered | ☐ | ☐ |
| Is the framing correct and straight before fitting Supercross bracing | ☐ | ☐ |
| Is Supercross fitted in according with the specifications in this manual | ☐ | ☐ |
| Has the building inspector checked that Supercross is installed correctly | ☐ | ☐ |
| Has Supercross been installed by a LBP | ☐ | ☐ |
| Has the Supercross installation been supervised by an LBP | ☐ | ☐ |
| Has every nail hole in the Supercross panel with timber behind it been filled | ☐ | ☐ |
| Have the 15kn brackets been installed correctly according to the manual | ☐ | ☐ |
| Have the 15kn bolts been installed correctly according to the manufacturer | ☐ | ☐ |
| Has all the bracing been installed in the correct places according to the plans | ☐ | ☐ |

Builder/LBP:_____ LBP Number:_____

Signature:_____

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**To purchase Supercross bracing contact your local Carters store.**

CARTERS
Your Building Partner

www.carters.co.nz

SUPERCROSS
BRACING

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# CERTIFICATE OF CONFORMITY

CODEMARK™

This is to certify that

## The SuperCross Bracing SC4 & SC6 System - supplied by Bracing Solutions Ltd.

BEAL CERTIFICATION SERVICE

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HIKINA WHAKATUTUKI

JAS-ANZ

www.jas-anz.org/register

**Complies with the New Zealand Building Code:**
Performance Clauses B1.3.1 and B1.3.3 (b), (f) & (h)
Performance Clauses B2.3,1 (a)
Performance Clause F2.3.1.
Compliance with other clauses have been considered and found not applicable.
**Subject to the following:**

Limitations of use -
A. All designs and construction shall be within the requirements and the tables set out in the SuperCross Bracing Specification and Installation Manual ver.1.0 available from the manufacturer's website www.bracingsolutions.kiwi ; and, all other uses are outside the scope of this certificate.
B. Accessories and componentry to comply with that specified in the SuperCross Bracing Specification and Installation Manual ver.1.0 and the Bracing Solutions Ltd.'s Building Product Quality Plan ver .1.0;
C. Installation shall be performed by or supervised by Licensed Building Practitioner;
D. Installation and maintenance - where required - of the SuperCross Bracing SC4 & SC6 System, shall be in accordance with the Bracing Solutions Ltd.'s Building Product Quality Plan ver .1.0, available on request;
Conditions of certification -
E. The Building Product Quality Plan for the SuperCross Bracing SC4 & SC6 System shall be reviewed and subject to audit at their head office and building sites by the issuer at least once a year;
F. This CodeMark Certificate shall be revalidated on an annual basis;
H. This CodeMark Certificate is subject to S15 of the Building Product Certification Regulations 2008.

**Technical information:**
Information that forms part of this certificate or the basis for certification is available from the issuer on request and may be subject to a fee.

**Note that this certificate may only be reproduced in its entirety.**

**Product description**

The SuperCross Bracing SC4 & SC6 System is manufactured from nominal 1.15 mm thickness cold-rolled galvanized carbon steel coil strip to AS1397-2011 G300M Z275, to form bracing elements used with timber framing. The SuperCross bracing is designed to be attached to framing with 30 x 3.15mm galvanized nails.

**Product purpose or use**

The SuperCross Bracing SC4 and SC6 system is used with timber framing to provide bracing. In addition, SuperCross bracing can provide additional bracing to 445mm and 645mm wide frames.

**Certificate Holder**

**QUAKETECH Ltd.**
**Is owner of Bracing Solutions Ltd.** 16 Rire Hau Lane, The Lakes, Pyes Pa, Tauranga 3112.

**CodeMark Certification Body**

BEAL Certification Service Limited
2A Plimmerton Drive
Plimmerton, Porirua 5026, NZ
Phone: +64 4 233 6661
E-Mail: bcs@beal.co.nz

| 11 August 2017 | BCS-167317-CMNZ |
|---|---|
| **Date updated** | **Certificate Number** |

**C R Prouse**
**Director**
**BEAL Certification Service**

This certificate is issued by an independent certification body accredited by the product certification accreditation body appointed by the Chief Executive of the Ministry of Business, Innovation and Employment (MBIE) under the Building Act 2004. MBIE does not in any way warrant, guarantee, or represent that the building method or product the subject of this certificate conforms with the New Zealand Building Code, nor accept any liability arising out of the use of the building method or product. MBIE disclaims, to the extent permitted by law, all liability (including negligence) for claims of losses, expenses, damages, and costs arising as a result of the use of the building method(s) or product(s) referred to in this certificate.

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