



## **FIXING INSTRUCTIONS**

**Contact Details For Queries:**

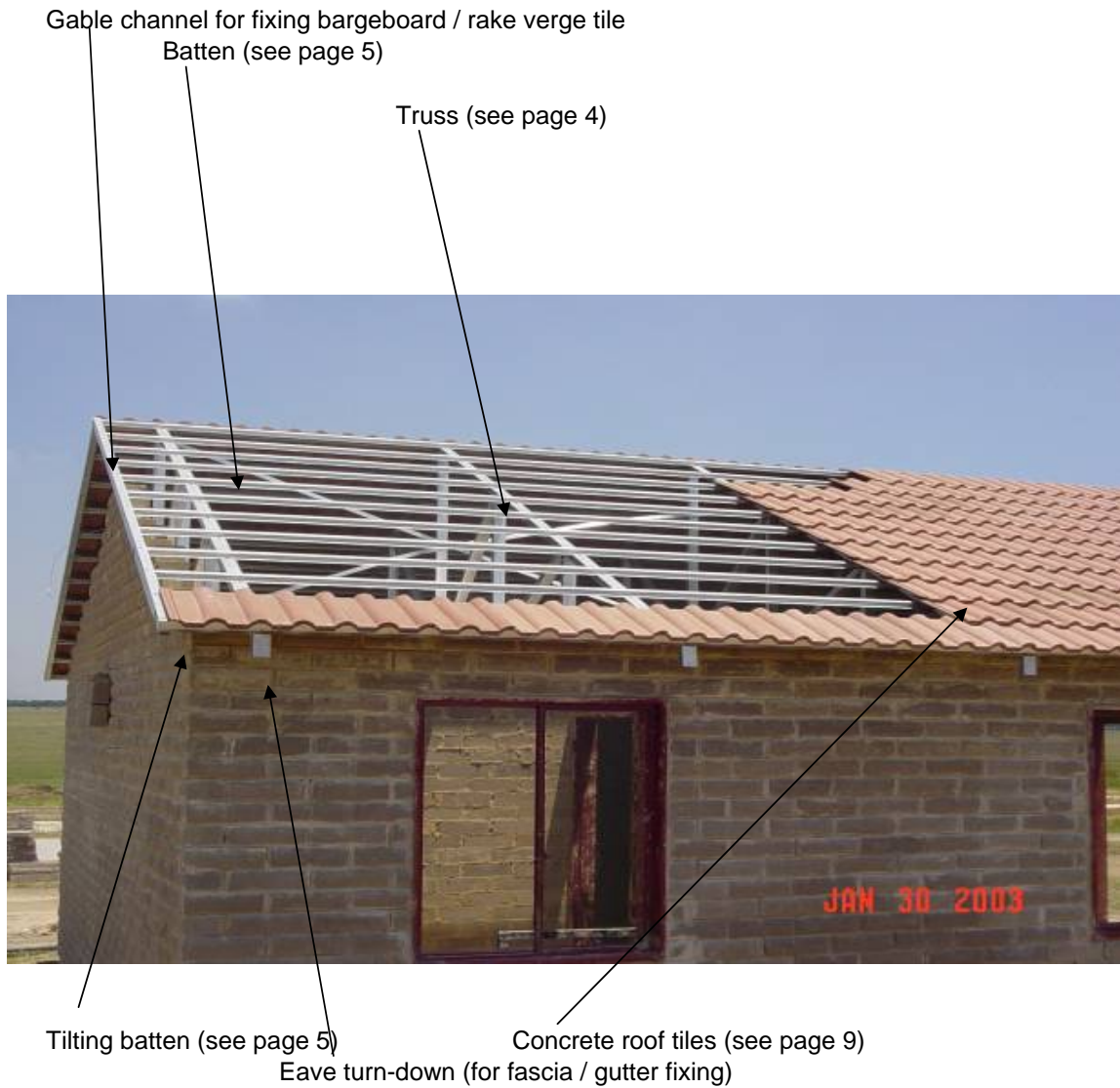
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## GENERAL TERMINOLOGY



### Note:

**The system complies with all the relevant codes of practice and are designed by registered Professional Structural Engineer. Both Dezzo Roofing and the design Engineer are members of the South African Light Steel Frame Building Association (SASFA).**

## FIRE RATING

### SABS 0400 - 1990 : PART L : ROOFS

The Dezzo Roofing lightweight steel support system complies with SABS 0400 in that it falls into the category "Deemed-to-satisfy Rule". Item LL4 on page 89 of SABS 0400 says:

#### **LL4 FIRE RESISTANCE AND COMBUSTIBILITY**

The fire resistance of any roof/ceiling assembly complete with light fittings or any other component which penetrates the ceiling and the degree of non-combustibility of such assembly shall comply with the requirements contained in rule TT5, TT12, TT49 and VV3, as the case may be.

The pertinent rules from the above is TT5. TT12 is related to adjacent roofs, TT49 if for stages, VV3 is for chimneys. Rule TT5 refers to:

#### **TT5 FIRE PERFORMANCE: GENERAL**

**TT5.1** Where any element or component of a building is required to have a particular fire resistance such requirement shall, in respect of the materials or method of construction of such element or component, be deemed to have been satisfied where --

- (a) such materials or methods are in accordance with the particulars set out in the Tables 11, 12, 13, 14, 15 and 16 contained in rule TT56.

We then move on to rule TT56 which states:

#### **TT56 PRESUMED FIRE RESISTANCE OF BUILDING MATERIALS AND COMPONENTS**

**TT56.2** The building materials and components contemplated in Tables 11 to 15 of this rule shall be deemed to satisfy the performance requirements, under fire conditions, provided that such materials and components comply with the relevant detailed descriptions given in such tables.

If one now looks through all the tables in rule 56 there are no references to steel roof support systems. The relevant rule is found in Rule 57 which states:

#### **TT57 NON-COMBUSTIBLE BUILDING MATERIALS**

##### **TT57.1 GENERAL**

The building materials listed in subrule TT57.2 are deemed to satisfy the requirements for non-combustibility as prescribed in SABS 0177: Part V singly or in combination with each other. Any addition of organic or other combustible material may render the listed material combustible in terms of SABS 0177: Part V and materials not listed are presumed to be combustible except where proved otherwise when tested in accordance with such code of practice.

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## FIRE RATING CONTINUED....

Moving on to Rule TT57.2 SABS 0400 lists the materials that are deemed to satisfy the requirements for non-combustibility. Rule TT57.2 states:

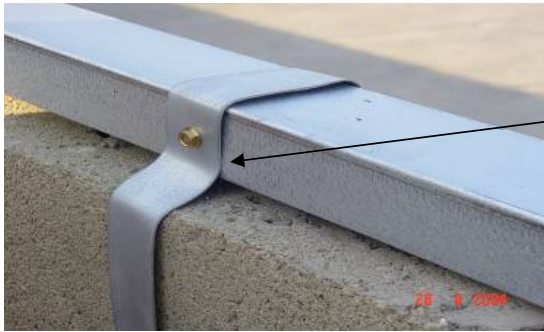
### **TT57.2 NON-COMBUSTIBLE BUILDING MATERIALS**

- Aluminium (extrusions or castings)
- Fibre-cement
- Fibre-cement with less than 7.5% combustible additives
- Brass
- Bricks (burnt clay, lime/sand, cement/sand)
- Cement (portland, blastfurnace, etc.)
- Clay (burnt or unburnt)
- Concrete
- Furnace slag
- Glass (solid)
- Glass fibres (spun, woven or wool, with less than 5% resin content)
- Gypsum (with less than 7.5% paper or other combustibles)
- Lime
- Metals (other than the alkaline metals)
- Mineral wool (with less than 5% resin content)
- Mortar (lime, cement, gypsum)
- Perlite
- Porcelain
- Pumice
- Sand
- \* **Steel (cast or rolled)**
- Stone, natural
- Vermiculite

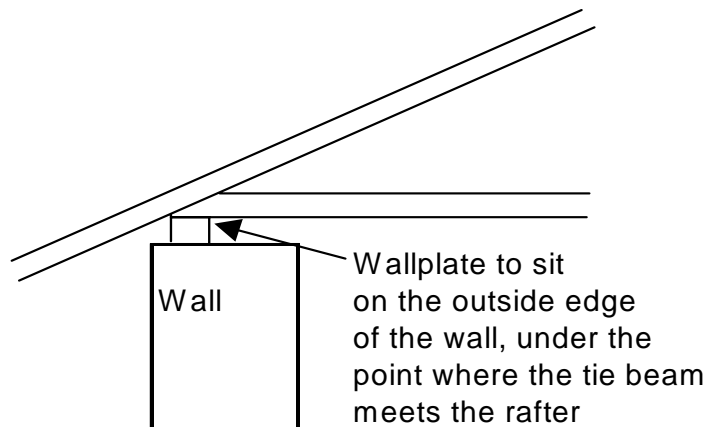
From all of the above text one can see that the steel complies in that it is deemed to be a non-combustible material and therefore satisfies the requirements of non-combustibility.

## WALLPLATE

The Dezzo channel wallplate should be fixed to the top course of brickwork with 8 gauge galvanized wire or galvanized hoopiron. Ideally the wire or hoopiron should be placed at the truss positions, however it can be placed every 1 to 1.5 metres and fixed over the Dezzo wallplate. If there is hoopiron, this should be fixed with a minimum of 2 self-drilling screws into the Dezzo wallplate.



The hoopiron should be wrapped over the wallplate and fixed with one screw on either side



### **Very Important**

Under no circumstances can the wallplate position be changed from the sketch to the left. Any changes must be confirmed in writing by Dezzo Roofing

## TRUSSES

The Dezzo trusses should be placed according to the drawing in terms of distance between. They should be fixed with 4 hurricane clips per truss, 2 on either end, one on either side, at the junction of the wallplate and the truss. Each hurricane clip should be fixed with a minimum of 3 self-drilling screws into the truss and 2 self-drilling screws into the wallplate.

Care should be taken during erection not to bend or buckle any of the truss members, however, should any damages occur, the damaged member should be bent straight again and double boxed and fixed with self-drilling screws at 300mm centers. The trusses are assembled with hex-head 12x20mm self drilling screws.



The trusses are fixed to the wallplate with a standard hurricane clip on either side

OR

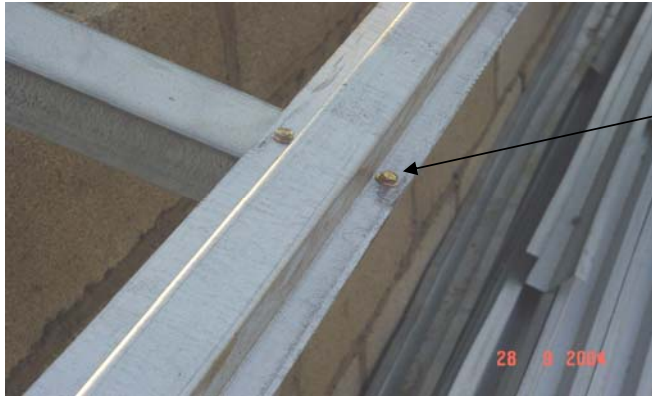


The hoopiron is placed at the truss position and wrapped over the truss and fixed into the wall. Wall fixing as per Engineer's requirements.

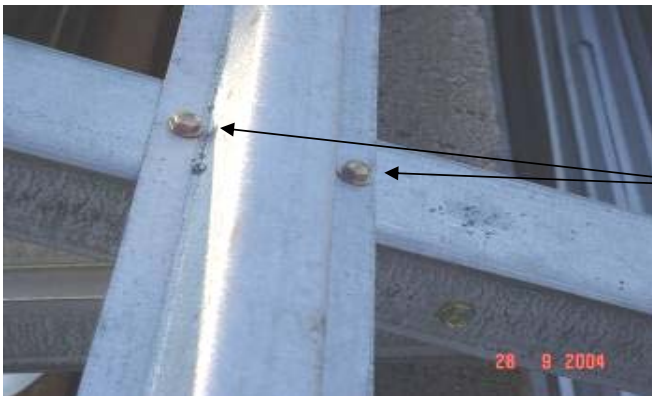
When installing the trusses they should be temporarily braced along the apex / ridge line with a batten to prevent the trusses falling over. The 1st truss should be temporarily anchored to the gable wall.

## BATTENS / TILTING BATTENS

The Dezzo battens / tilting battens should be fixed to the top chord of the trusses, positioned at centres as per the tile manufacturers specifications, and fixed with 2 self-drilling screws at the junction on the battens / tilting battens and the top chord of the truss. The self-drilling screws must be fixed 1 on either side of the battens / tilting battens on the battens / tilting battens flange. The battens / tilting battens should be lapped over a truss wherever possible and the lap should be secured with 4 self-drilling screws, 2 on either side of the battens / tilting battens on the flange, the lap should be a minimum of 200mm. The battens / tilting battens are fixed with hex-head 12x20mm self drilling screws.



The first tilting batten is fixed on the end of the top rafter at the eave with the flange flush with the end of the rafter



The batten is fixed on either side on the flange into the top truss rafter.

When installing battens for a tiled roof the batten spacings are as per the tile manufacturers specifications.

## PURLINS

The Dezzo purlins should be fixed to the top chord of the trusses, positioned directly over a vertical truss member, and fixed with 2 self-drilling screws at the junction on the purlin and the top chord of the truss. The self-drilling screws must be fixed 1 on either side of the purlin on the purlin flange. The purlins should be lapped over a truss wherever possible and the lap should be secured with 4 self-drilling screws, 2 on either side of the purlin on the flange, the lap should be a minimum of 200mm. The purlins are fixed with hex-head 12x20mm self drilling screws.

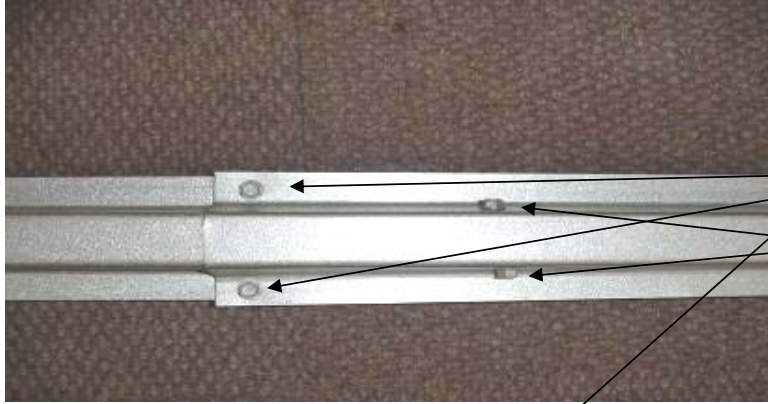


The first purlin is fixed on the end of the top rafter at the eave with the flange flush with the end of the rafter

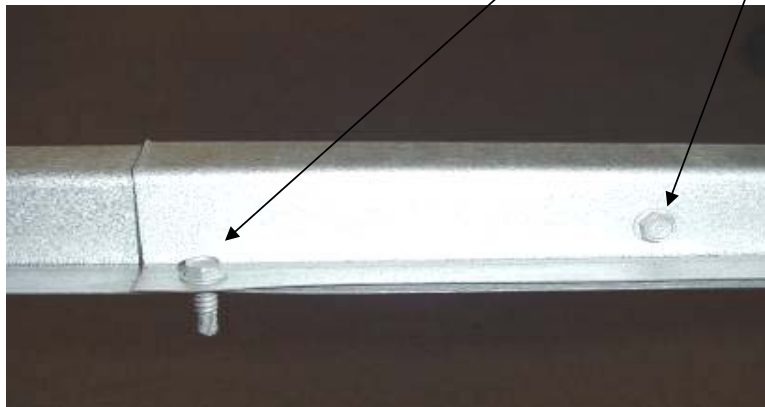
When installing purlins for a sheeted roof the purlins are placed over every vertical member of the truss plus one on the top and end of the top truss rafter

## BATTEN / PURLIN SPLICING

Care should be taken to join the battens / purlins / tilting battens in such a way that the join is secured with 4 self-drilling fixing screws (see picture below). Before the screws are fixed ensure that the 2 pieces of material are securely pressed together. The minimum lap at the join should be 150mm.



TOP VIEW

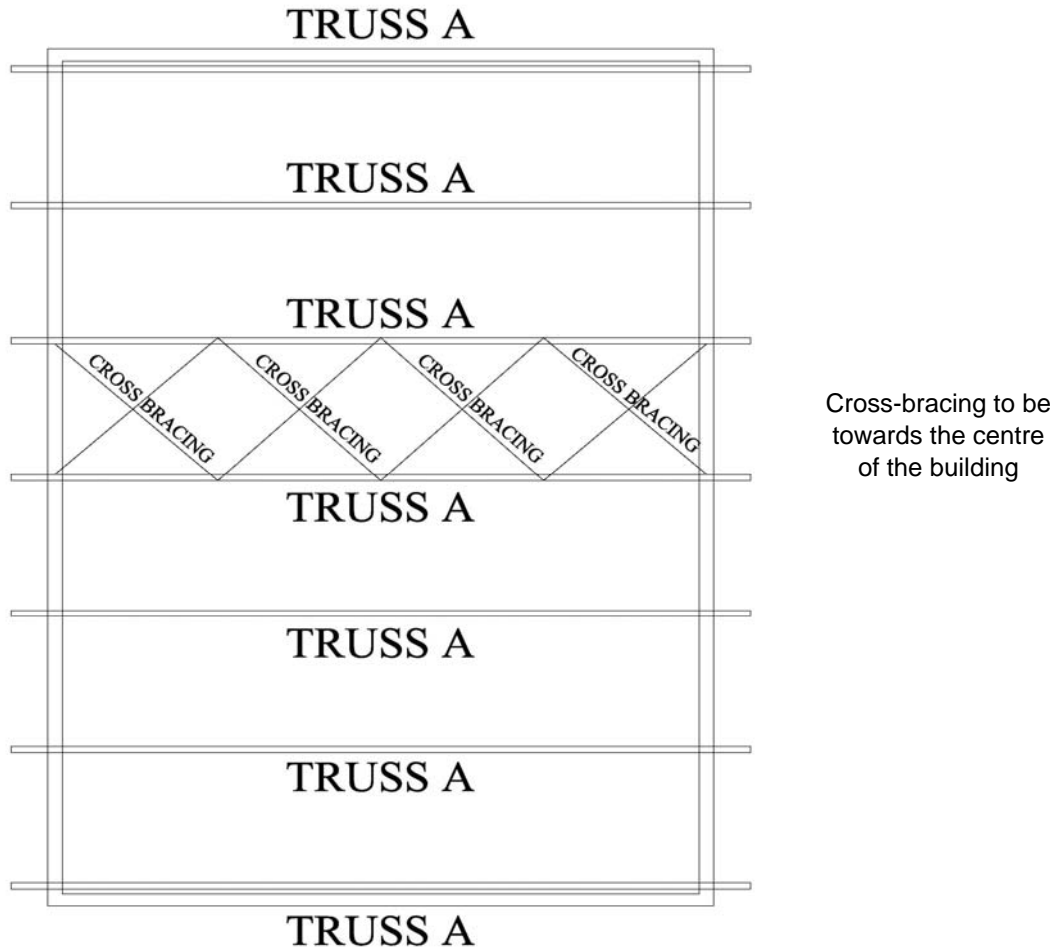


SIDE VIEW

The lap is joined with 4 fixing screws. 2 on the flange and 2 on the side of the material.

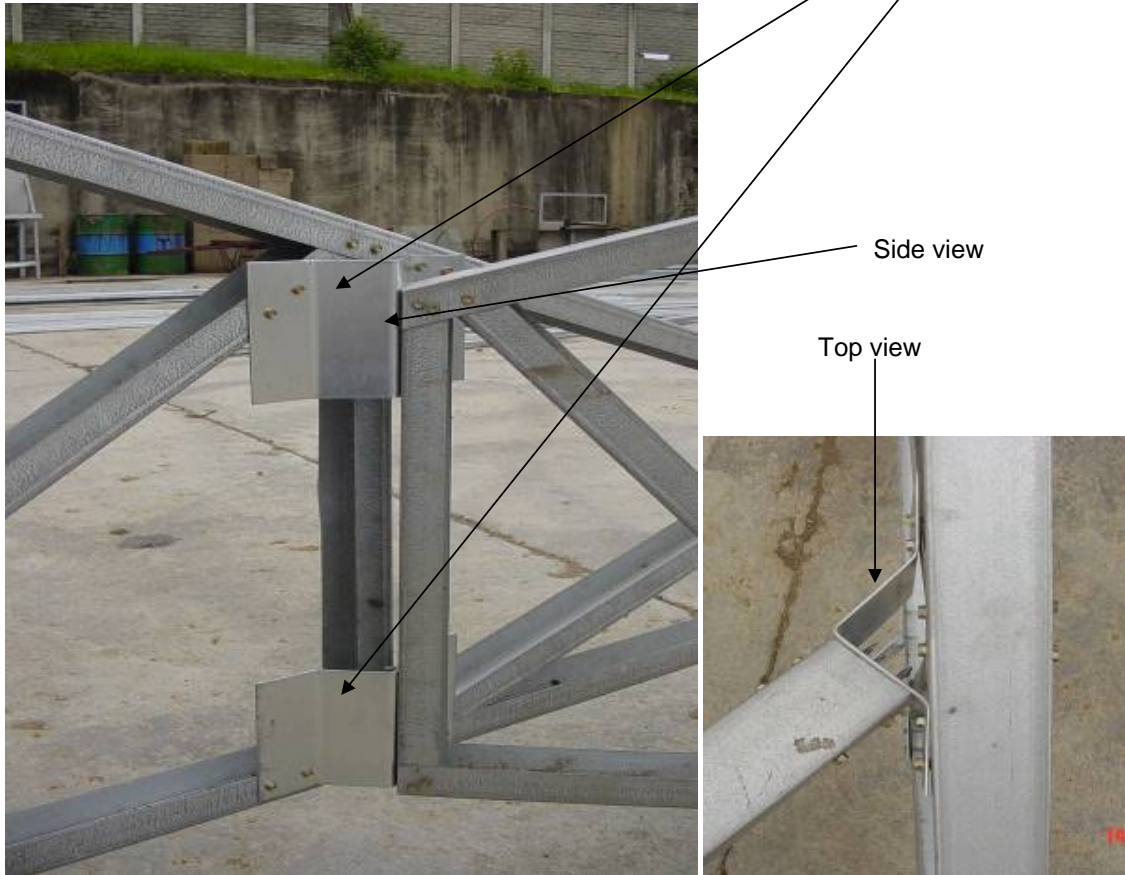
## CROSS-BRACING

The cross-bracing as supplied with the roof kit is 35mm wide x 1mm thick (similar to hoopiron) and should be placed between the 1st and 2nd truss on the rafter plane between the rafter and the battens. Below is a typical example.



## HIP END / TRUSS JOINERS

Where 2 trusses meet / join at a hip end, the trusses are fixed together by means of a 45 degree hanger bracket. The bracket will always be fixed to a vertical member in the receiving truss with a minimum of 6 No. 12x20mm self-drilling screws. The jack truss is then fixed to the 45 degree hanger bracket on the inside of the end vertical member with a minimum of 4 No. 12x20mm self-drilling screws. Note that 2 No. 45 degree hanger brackets per truss end are required.



## VALLEY TRUSS INTERSECTION

Where 2 trusses meet / join at a valley, the trusses are fixed together by means of a "U" hanger bracket. The bracket will always be fixed to a vertical member in the receiving truss with a minimum of 6 No. 12x20mm self-drilling screws. The stub truss is then fixed to the "U" hanger bracket on the inside of the end vertical member with a minimum of 4 No. 12x20mm self-drilling screws. Note that 2 No. "U" hanger brackets per truss end are required.

Side View



Rear View



## CEILING BATTENS

The Dezzo battens should be fixed to the bottom chord of the trusses, positioned as per the ceiling board manufacturers requirements, and fixed with 2 self-drilling screws at the junction on the batten and the bottom chord of the truss. The self-drilling screws must be fixed 1 on either side of the batten on the batten flange. The battens should be lapped over a truss wherever possible and the lap should be secured with 4 self-drilling screws, 2 on either side of the purlin on the flange, the lap should be a minimum of 200mm. The battens are fixed with hex-head 12x20mm self drilling screws.



Battens are placed at centres according to the ceiling board manufacturers specifications.

## TILE PACKING



When packing a tiled roof all tiles should be thrown from the ground to a person on the roof who immediately places them on the battens. The tiles should NOT be stacked in piles all over the roof.

## **RECOMMENDED FIXING SCREWS**

### **CONCRETE TILES**

Dezzo Roofing recommends the use of the Dezzo PVC storm clip to secure the tiles to the battens. It is generally accepted that 2 courses along the eaves be secured in this fashion, however, each tile manufacturer's specifications should be adhered to at all times.

### **STEEL SHEETING**

Dezzo Roofing recommends the use of the Buildex range of sheet fixing screws. Generally for IBR sheeting the 12x68mm Class3 Buildex screw should be used. These screws should be fixed on the ridge of the sheet at centres as prescribed by the sheet manufacturer.

### **HARVEY TILES**

All fixings as per the manufacturer's specifications - see Harvey Tile Manual

## VALLEY GUTTER



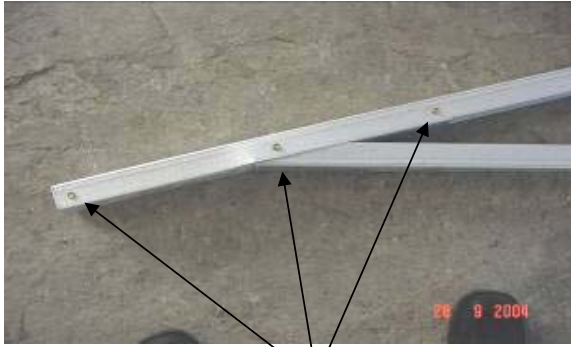
The Dezzo Roofing valley gutter should be installed up the valley line with the valley battens installed on either side of the valley gutter.



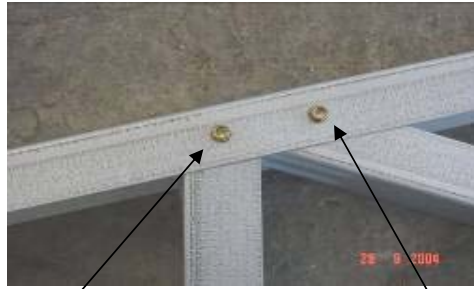
Note that the battens are fixed to the valley batten with two 12x20mm self drilling screws, one on either side of the batten flange.

## TRUSS ASSEMBLY DETAILS

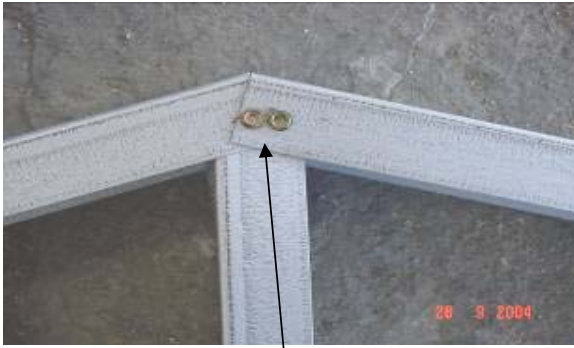
Trusses should be assembled as per Dezzo Roofing's Engineering drawings. Care should be taken to ensure that the distance between the fixing screw and the edge of the material should be a minimum of 15mm.



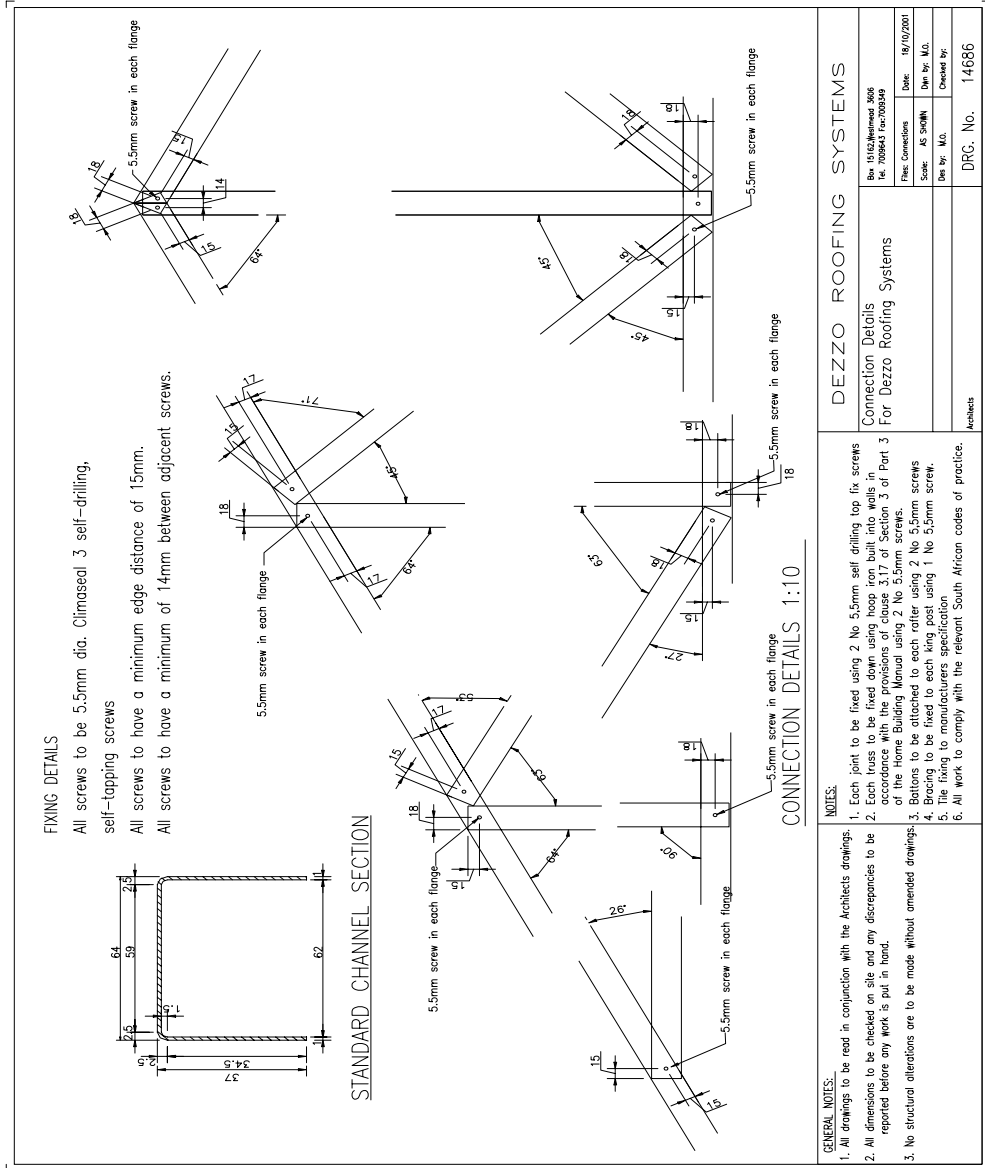
Screw positions for standard eave area



Screw positions for intersection point of internal truss members



Screw positions for standard apex point / ridge point



**GENERAL NOTES:**

1. All drawings to be read in conjunction with the Architects drawings.
2. All dimensions to be checked on site and any discrepancies to be reported before any work is put in hand.
3. No structural alterations are to be made without amended drawings.

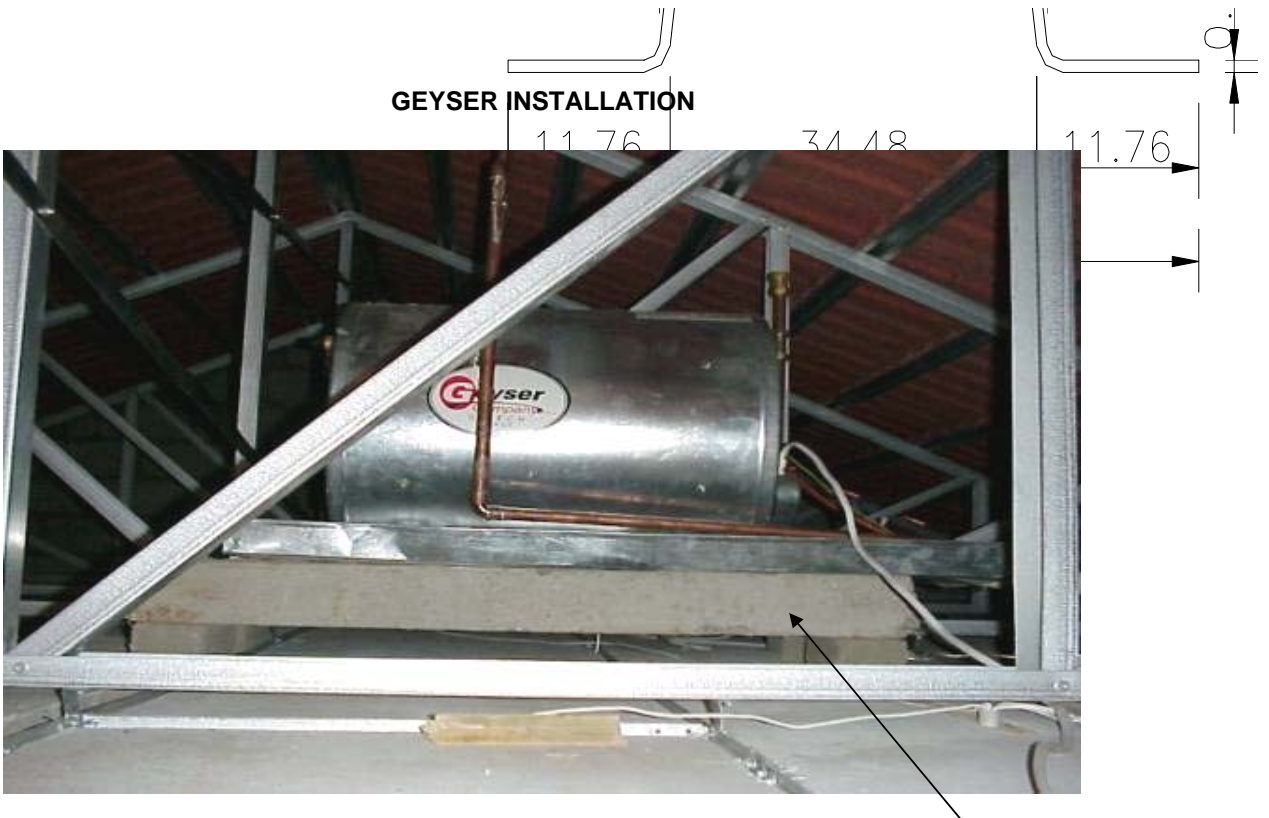
**NOTES:**

1. Each joint to be fixed using 2 No 5.5mm self drilling top fix screws
2. Each face to be fixed using 2 No 5.5mm self drilling top fix screws in accordance with the provisions of clause 3.17 of Section 3 of Part 3 of the Home Building Manual using 2 No 5.5mm screws.
3. Battens to be attached to each rafter using 2 No 5.5mm screws
4. Bracing to be fixed to each king post using 1 No 5.5mm screw.
5. The fixing to manufacturers specification
6. All work to comply with the relevant South African codes of practice.

<b>DEZZO ROOFING SYSTEMS</b>			
Connection Details For Dezzo Roofing Systems			
Rev: 14/02/2001 No. 709643 Fac00949	Date: 19/12/2001	Architects	
Drawn: JS 504MN	Drawn by: M.O.	DRC. No. 14686	
Scale: AS 504MN	Checked by:		



# GEYSER INSTALLATION



The geyser should be supported on internal walls by means of a lintol of suitable sized timber beams. At no time should the geyser be supported on the trusses. In order for the geyser to fit above the ceiling the internal walls should be raised to support the lintol / beam.

## BASIC TOOL REQUIREMENTS

*For any tooling questions / queries / advice, please phone Dezzo Head Office. Contact person Brandon Harding on 031 - 713 6571 or brandon@dezzo.co.za.*

1. Battery operated tekscrew machine (Hilti or Ryobi preferably 18V) with clutch setting
2. OR, 5.5 KVA generator to power electric tekscrew machines (Hilti Model ST18 or Ryobi tekscrew gun are preferable)
3. Tin snips
4. Builders level
5. Builders gut line
6. Chalk line
7. 5/16 th magnetic socket
8. PH2 phillips bit
9. Long ladder or sufficient scaffolding
10. Safety harnesses / rope
11. Leather gloves
12. Hard hat
13. Steel toe safety boots / shoes
14. Safety glasses / goggles
15. Angle grinder with masonry and steel cutting discs