

ROOFLIGHT APPLICATION GUIDE

Fixsafe installation guide for rooflight replacement to suit asbestos fibre cement profiled roofs

The Filon Fixsafe system was developed to allow the safe removal and replacement of profiled rooflights and sheets from below the roof. Access to the top of the roof is not necessary, removing the need for scaffolding, edge protection and other safety measures that are normally essential. This document provides guidance for replacing a single skin rooflight in an asbestos cement or fibre cement profiled roof. A numbered component list is at the back of this document for reference.

Work may be carried out from a MEWP or mobile scaffold tower for example, but HSE guidelines for using such equipment must be followed.

Information

Filon Fixsafe Sheets

Filon Fixsafe sheets are available in a large range of profiles to suit the asbestos cement and fibre cement profiles that have been in use for many years. The standard specification for single skin rooflights is as follows:

Sheet type: CEDR24E.

Colour: Natural translucent.

Fire performance: Filon Grade 104, B_{ROOF} (t4) to BS EN 13501 Part 5. SAA to BS 476 Part 3. Class 1 to BS 476 Part 7.

Finish: Filon Protect clear UV absorbing coating to the weather face.

Filon Fixsafe Bar and Hooks

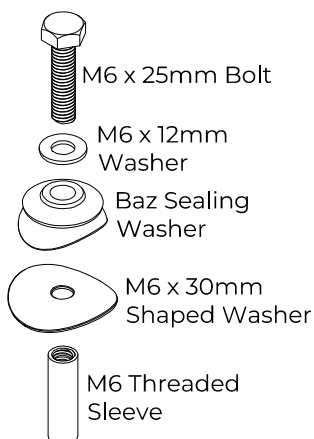
Threaded bars are available in the following lengths: 125mm, 150mm, 200mm, 250mm, or 300mm.

The following systems are available: Standard purlin (angle iron or cold rolled), Tubular purlin, Concrete purlin, I Beam purlin, Timber purlin, or trapezoidal Metal roof.

Fixing Assemblies

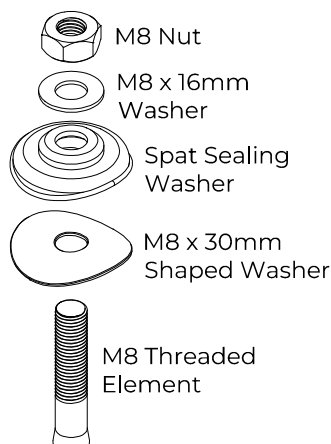
Type A

Downslope & Intermediate Position



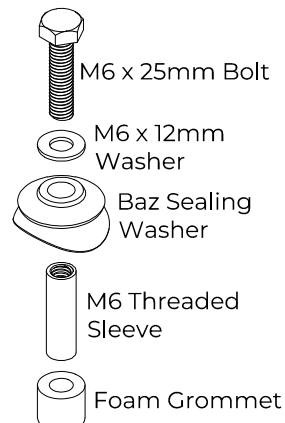
Type B

Upslope Position



Type C

Multi-lap Position



Type D

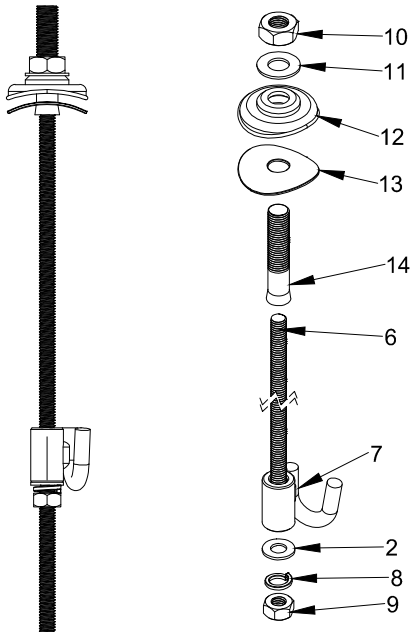
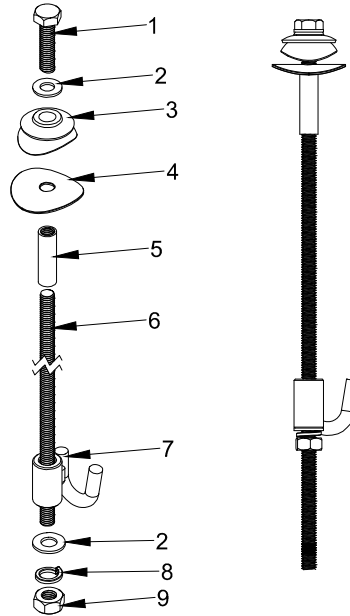
Sidelap Position



Standard Purlin Assembly

Type A Assembly

Item No.	Part	Qty
1	M6 x 25mm Bolt	1
2	M6 x 12mm Washer	2
3	Baz Sealing Washer	1
4	M6 x 30mm Shaped Washer	1
5	M6 Threaded Sleeve	1
6	M6 All Thread	1
7	Standard Hook	1
8	M6 Spring Washer	1
9	M6 Nut	1

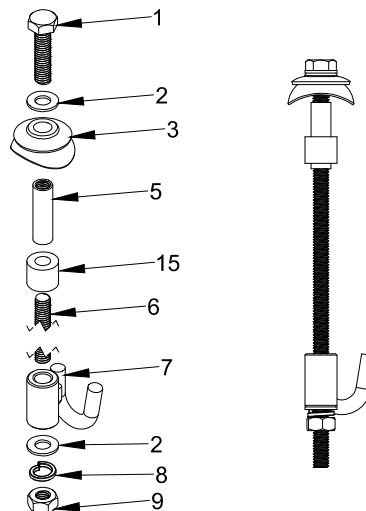


Type B Assembly

Item No.	Part	Qty
10	M8 Nut	1
11	M8 x 16mm Washer	1
12	Spat Sealing Washer	1
13	M8 x 30mm Shaped Washer	1
14	M8 Threaded Element	1
6	M6 All Thread	1
7	Standard Hook	1
2	M6 x 12mm Washer	1
8	M6 Spring Washer	1
9	M6 Nut	1

Type C Assembly

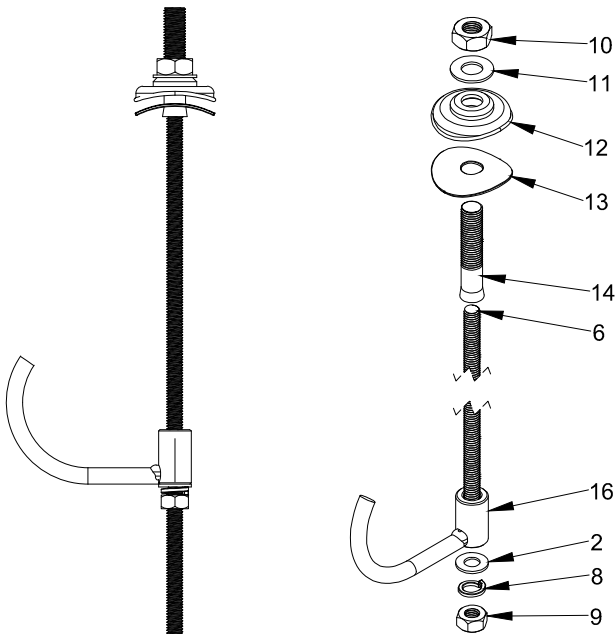
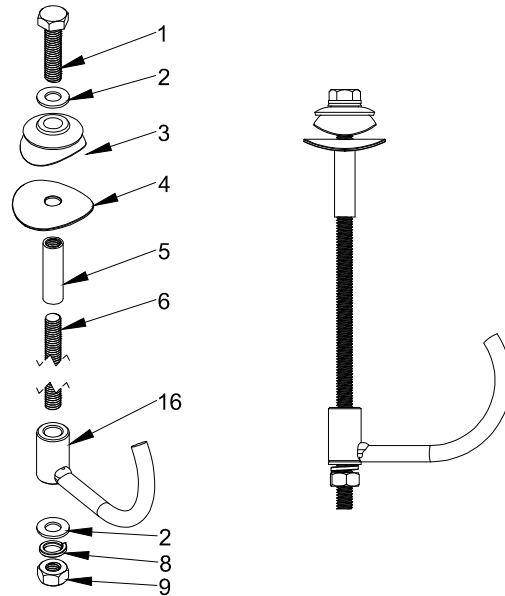
Item No.	Part	Qty
1	M6 x 25mm Bolt	1
2	M6 x 12mm Washer	2
3	Baz Sealing Washer	1
15	Foam Grommet	1
5	M6 Threaded Sleeve	1
6	M6 All Thread	1
7	Standard Hook	1
8	M6 Spring Washer	1
9	M6 Nut	1



Tubular Purlin Assembly

Type A Assembly

Item No.	Part	Qty
1	M6 x 25mm Bolt	1
2	M6 x 12mm Washer	2
3	Baz Sealing Washer	1
4	M6 x 30mm Shaped Washer	1
5	M6 Threaded Sleeve	1
6	M6 All Thread	1
16	Tubular Hook	1
8	M6 Spring Washer	1
9	M6 Nut	1

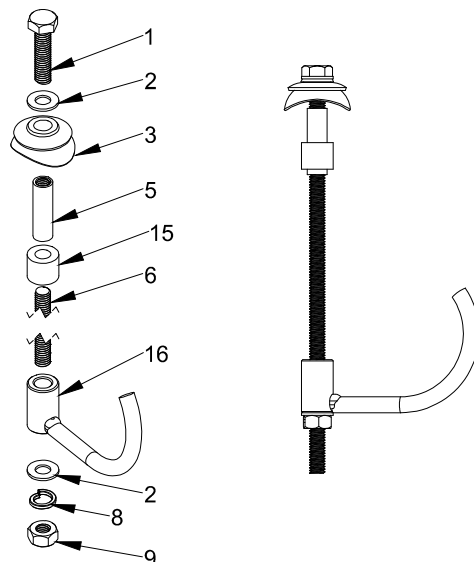


Type B Assembly

Item No.	Part	Qty
10	M8 Nut	1
11	M8 x 16mm Washer	1
12	Spat Sealing Washer	1
13	M8 x 30mm Shaped Washer	1
14	M8 Threaded Element	1
6	M6 All Thread	1
16	Tubular Hook	1
2	M6 x 12mm Washer	1
8	M6 Spring Washer	1
9	M6 Nut	1

Type C Assembly

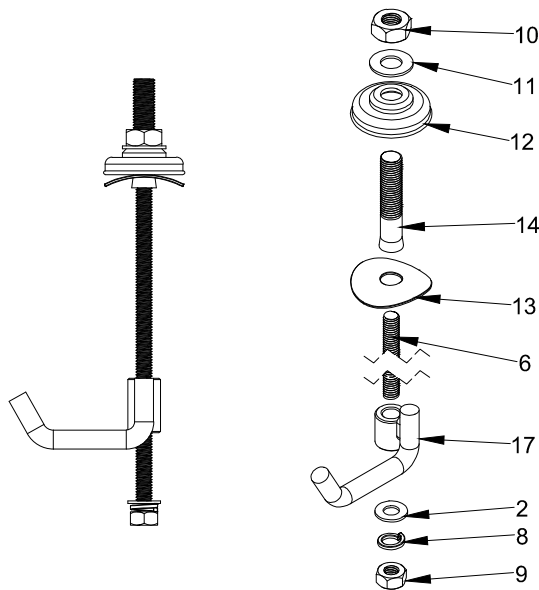
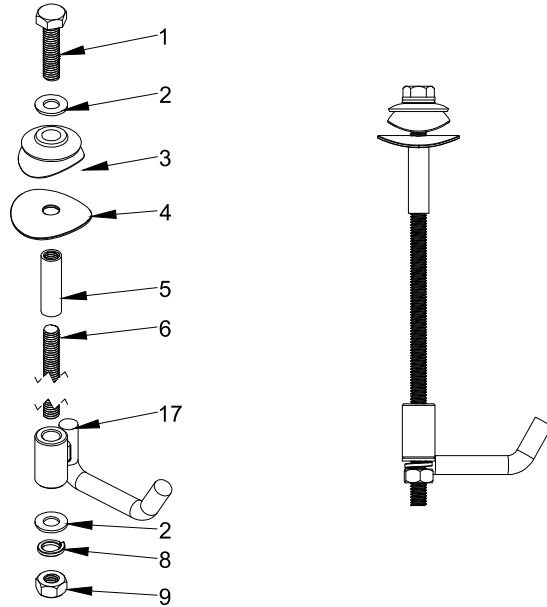
Item No.	Part	Qty
1	M6 x 25mm Bolt	1
2	M6 x 12mm Washer	2
3	Baz Sealing Washer	1
15	Foam Grommet	1
5	M6 Threaded Sleeve	1
6	M6 All Thread	1
16	Tubular Hook	1
8	M6 Spring Washer	1
9	M6 Nut	1



Concrete Purlin Assembly

Type A Assembly

Item No.	Part	Qty
1	M6 x 25mm Bolt	1
2	M6 x 12mm Washer	2
3	Baz Sealing Washer	1
4	M6 x 30mm Shaped Washer	1
5	M6 Threaded Sleeve	1
6	M6 All Thread	1
17	Concrete Hook	1
8	M6 Spring Washer	1
9	M6 Nut	1

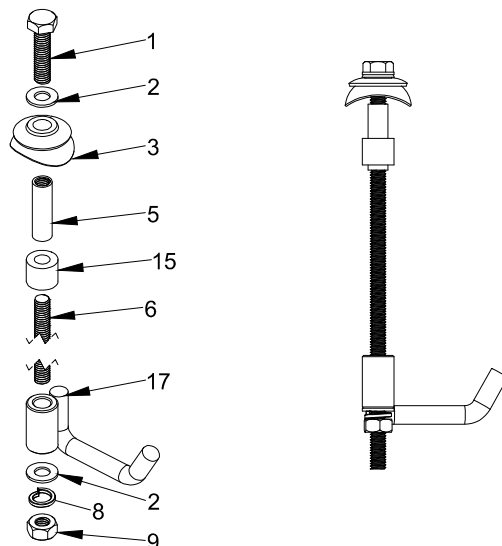


Type B Assembly

Item No.	Part	Qty
10	M8 Nut	1
11	M8 x 16mm Washer	1
12	Spat Sealing Washer	1
13	M8 x 30mm Shaped Washer	1
14	M8 Threaded Element	1
6	M6 All Thread	1
17	Concrete Hook	1
2	M6 x 12mm Washer	1
8	M6 Spring Washer	1
9	M6 Nut	1

Type C Assembly

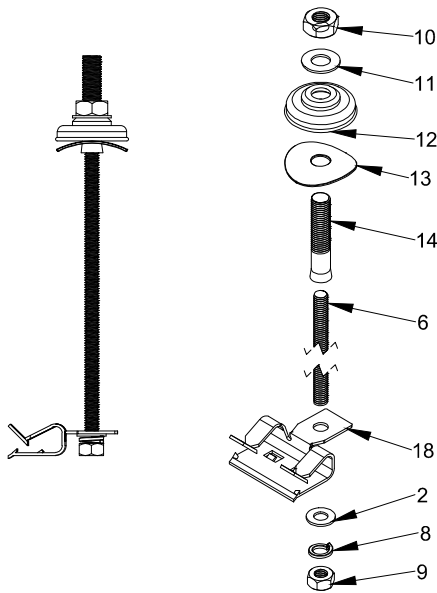
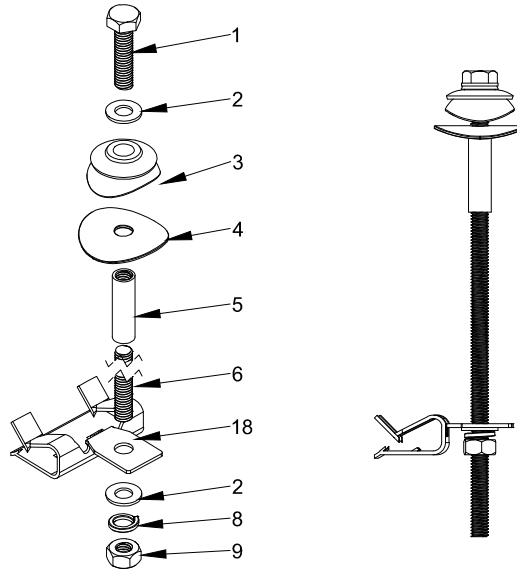
Item No.	Part	Qty
1	M6 x 25mm Bolt	1
2	M6 x 12mm Washer	2
3	Baz Sealing Washer	1
15	Foam Grommet	1
5	M6 Threaded Sleeve	1
6	M6 All Thread	1
17	Concrete Hook	1
8	M6 Spring Washer	1
9	M6 Nut	1



I Beam Purlin Assembly

Type A Assembly

Item No.	Part	Qty
1	M6 x 25mm Bolt	1
2	M6 x 12mm Washer	2
3	Baz Sealing Washer	1
4	M6 x 30mm Shaped Washer	1
5	M6 Threaded Sleeve	1
6	M6 All Thread	1
18	I Beam Clip	1
8	M6 Spring Washer	1
9	M6 Nut	1

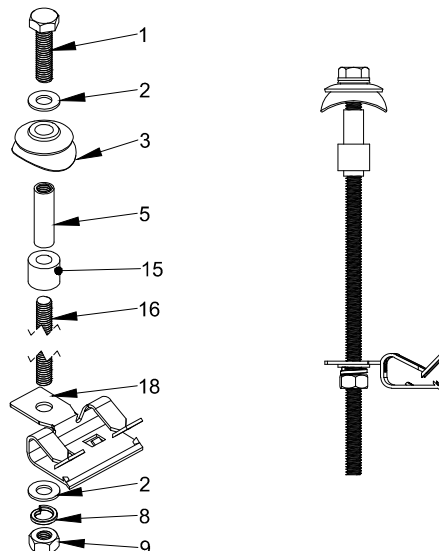


Type B Assembly

Item No.	Part	Qty
10	M8 Nut	1
11	M8 x 16mm Washer	1
12	Spat Sealing Washer	1
13	M8 x 30mm Shaped Washer	1
14	M8 Threaded Element	1
6	M6 All Thread	1
18	I Beam Clip	1
2	M6 x 12mm Washer	1
8	M6 Spring Washer	1
9	M6 Nut	1

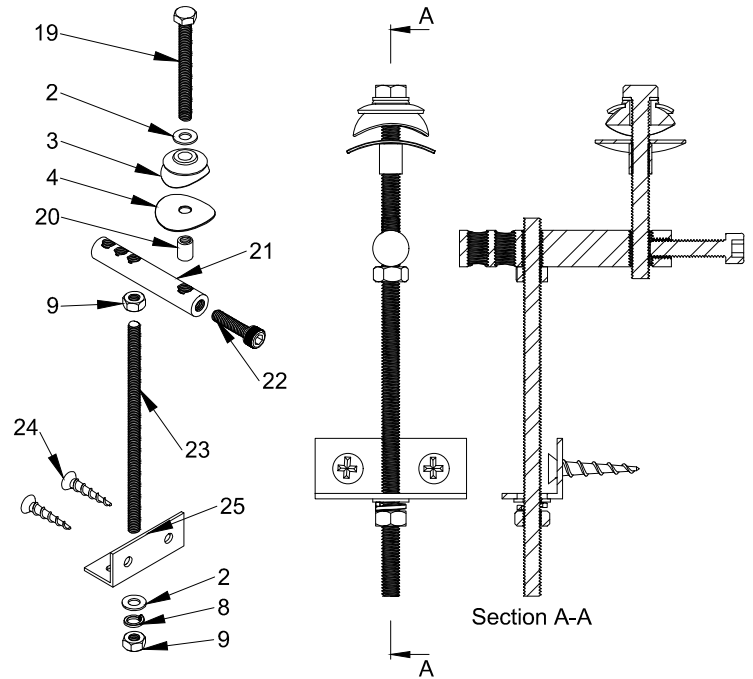
Type C Assembly

Item No.	Part	Qty
1	M6 x 25mm Bolt	1
2	M6 x 12mm Washer	2
3	Baz Sealing Washer	1
15	Foam Grommet	1
5	M6 Threaded Sleeve	1
6	M6 All Thread	1
18	I Beam Clip	1
8	M6 Spring Washer	1
9	M6 Nut	1

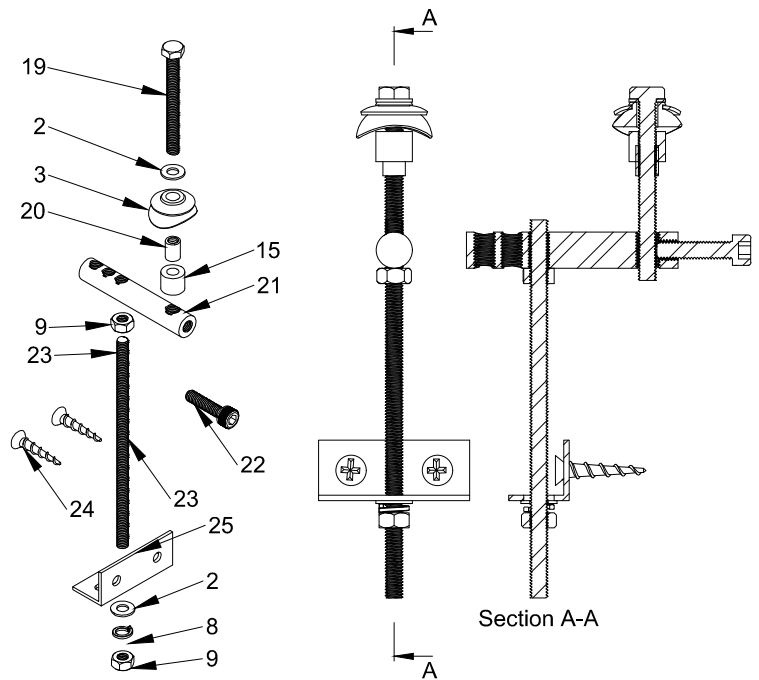


Timber Purlin Assembly

Type A & B Assembly		
Item No.	Part	Qty
19	M6 x 60mm Bolt	1
2	M6 x 12mm Washer	2
3	Baz Sealing Washer	1
4	M6 x 30mm Shaped Washer	1
20	Small M6 Threaded Sleeve	1
21	Timber Offset	1
22	M6 x 25mm Cap Head	1
9	M6 Nut	2
23	M6 All Thread	1
24	10 x 30mm Wood Screw	2
25	Timber Bracket	1
8	M6 Spring Washer	1

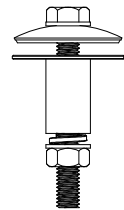
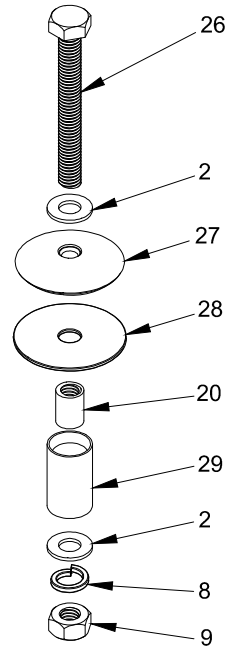


Type C Assembly		
Item No.	Part	Qty
19	M6 x 60mm Bolt	1
2	M6 x 12mm Washer	2
3	Baz Sealing Washer	1
20	Small M6 Threaded Sleeve	1
21	Timber Offset	1
22	M6 x 25mm Cap Head	1
9	M6 Nut	2
23	M6 All Thread	1
25	Timber Bracket	1
24	10 x 30mm Wood Screw	2
15	Foam Grommet	1
8	M6 Spring Washer	1

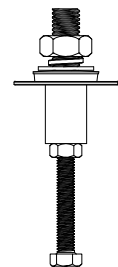
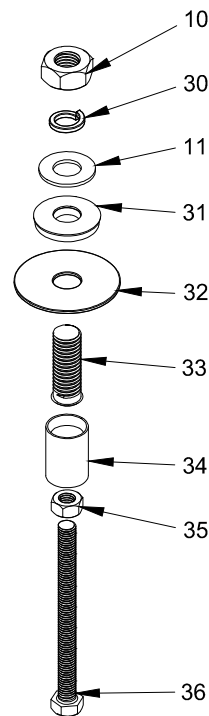


Metal Fixsafe Assembly

Type A Assembly		
Item No.	Part	Qty
26	M6 x 50mm Bolt	1
2	M6 x 12 Washer	2
27	M6 x 29mm Bonded Washer	1
28	M6 x 30mm Washer	1
20	Small M6 Threaded Sleeve	1
29	M6 x 20mm Boss	1
8	M6 Spring Washer	1
9	M6 Nut	1



Type B Assembly		
Item No.	Part	Qty
10	M8 Nut	1
30	M8 Spring Washer	1
11	M8 x 16 Washer	1
31	M8 x 19mm Bonded Washer	1
32	M8 x 30mm Washer	1
33	Small M8 Threaded Element	1
34	M5 x 17 Boss	1
35	M5 Nut	1
36	M5 x 60 Bolt	1



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Step 1 - Carefully position working platform under the sheet to be replaced.

Note: All access equipment and working procedures should comply with the current Health and Safety at Work guidelines and Asbestos Regulations.



Step 2 - Where hook bolts, J bolts or similar have been used to secure the existing rooflight; cut through the bolts with bolt croppers to release it.

Note: Take care when cutting the fixings as the top section may roll down and off the roof. The potentially affected areas should be cleared and cordoned off to prevent any damage to property or injury to people.



Step 2.2 - Where screw fasteners and or side lap stitch fasteners have been used; cut a hole through the rooflight with a reciprocating saw to allow access to the top of it. Remove main fasteners and side lap stitch fasteners from the top through the hole that has been created.



Step 3 - Remove the now unfixed sheet by carefully sliding it down the slope until clear and retract the sheet into the building.



Step 4 - If necessary, clean the existing roof sheets of loose debris ensuring appropriate techniques and respiratory equipment is used. For more information, refer to Asbestos Essentials Guidance Document A14 available for free download from the HSE website: www.hse.gov.uk/pubns/guidance/a14.pdf



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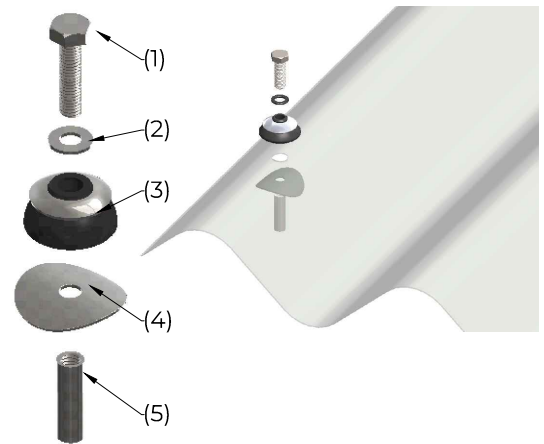
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Step 5 - Using the removed sheet as a template and with a drill and 10mm diameter HSS bit, drill the fixing holes in the new sheet.

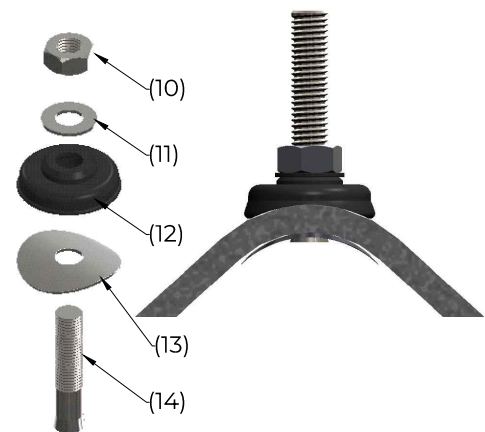
Note: Ensure that 150mm long endlaps are provided. To provide a greater level of tolerance, the upslope holes can be drilled using a larger drill bit to a maximum size of 16mm diameter.



Step 6 - Attach the top section of the **Type A** fixings to the downslope and midspan purlin position of the new sheet. Leave the underlap crown fixing positions empty as these will use **Type B** or **Type C** fixings (see step 8). The Shaped washer with a 6mm diameter hole (4) lies on the underside of the new sheet and is held in place by the Threaded sleeve (5) which connects to the Top bolt (1) through the Washer (2) and Baz Sealing Washer (3). Tighten by hand only.

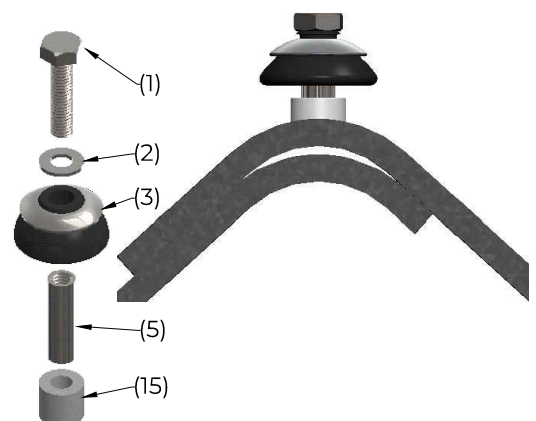


Step 7 - Attach the top section of the **Type B** fixings to the existing upslope roof sheet leaving the underlap crown fixing position empty as this will use the **Type C** fixing. The shaped washer with an 8mm diameter hole (13) lies on the underside of the existing roof sheet and is held in place by the Threaded element (14) which connects to the Top nut (10) through the Washer (11) and Spat Washer (12). Tighten by hand until the Spat washer is sufficiently compressed against the corrugation. Use a 13mm spanner if necessary.



Step 8 - At the underlap position, use the top section of the **Type C** fixing. This has a Foam collar (15) placed onto the bottom of the Threaded sleeve (5) which connects to the Top bolt (1) through the Washer (2) and Baz Sealing Washer (3). Tighten by hand only. This complete unit is then placed into the corresponding original hole on the roof sheet with the foam collar acting as a sacrificial wedge to hold it in place whilst the rooflight is being slid into position. If the hole in the roof sheet is over sized or damaged, alternative wedging methods could be used such as a line of butyl tape wrapped around the Threaded sleeve.

Note: The underlap position (**Type C** fixing) can vary depending on the direction the roof was laid.



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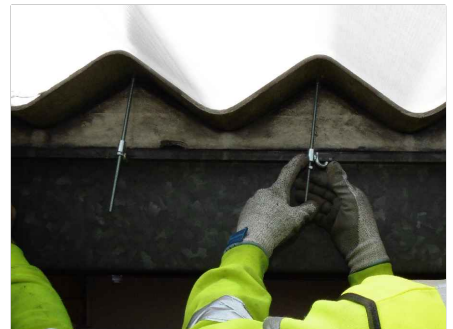
Step 9 - Apply sealant to the replacement sheet as shown and to the perimeter of the roof aperture – one line either side of the end lap fixing positions and one run to each side lap. Remove the backing paper and apply the PVA tape to the exposed surface. This will prevent the sealant from sticking whilst the new sheet is being slid into position. It will then dissolve following contact with moisture allowing the sealant to adhere. Asbestos cement sheet can hold almost 30% of its own weight in water. This is more than sufficient to dissolve the tape. No further measures are necessary.



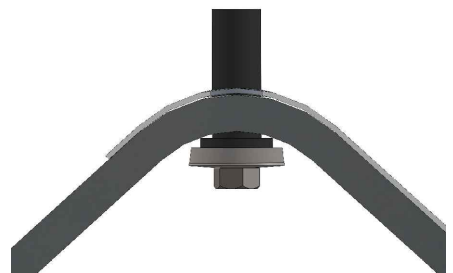
Step 10 - Lift the new sheet through the aperture and slide upslope into position until the lower fixings on the sheet drop into and protrude through the relevant holes in the downslope roof sheet. This will then automatically align all other holes in the sheet.



Step 11 - Slide the Hooked sleeve (7) onto the Threaded bar (6) and hook it onto the purlin. Secure with the Washer (2) and Retaining nut (8). Repeat for all fixings and tighten with a spanner.



Step 12 - If side lap fixings were used, push the laplocks up through the hole, hold the bonded washer in place and tighten the bolt. This will cause the captive nut in the rubber sleeve to be pulled down the shaft of the bolt to compress and expand the rubber creating a watertight seal. If no holes were originally present and side lap fixings are required, new holes will need to be drilled using a 10mm HSS bit. For safety advice when drilling Asbestos Cement sheets, see Asbestos Essentials Guidance Document A9 available for free download from the HSE website: www.hse.gov.uk/pubns/guidance/a9.pdf. Alternatively, add an additional row of side lap butyl to each side of sheet to ensure adequate sealing.



Step 13 - For continuous runs of rooflights a Fixsafe kit is potentially only necessary at the end of the run. If the profile is not too wide, normal hook bolts could be used by standing on the work platform and leaning through the opening and across the new sheet to install in almost the traditional method. Fixsafe will be required where the run ends, or if the work is temporarily stopped.



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Alternative Application: Twin Skin Asbestos Cement Roof Sheets With a Plasterboard or Similar Liner

For these applications, it is not possible to secure the **Type B** and **Type C** fixings to the upslope sheet as the liner panel obscures the hole. In this case use a type B fixing in all positions, but without the shaped washer (13). The top part of the fixing assembly should be attached to the Threaded bar (6) and dropped into the holes from above.

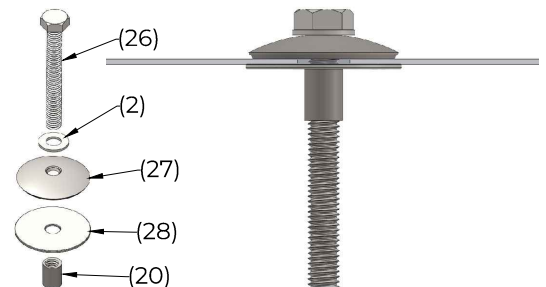


After drilling the holes in the upslope end of the new Filon roof sheet / rooflight, elongate the hole to create a slot. This can be done by using tin snips or similar equipment. Continue the installation from step 8.

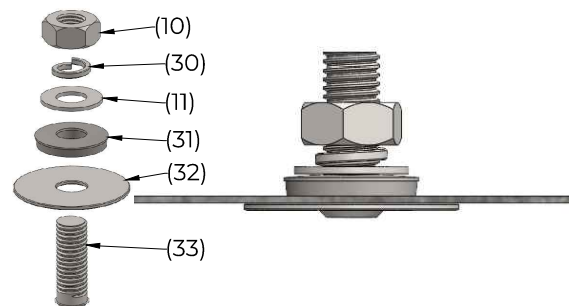


Alternative Application: Fixsafe Metal in a Trapezoidal Metal Roof

Fit the top of the **Type A** fixings to the downslope positions in the troughs. The Washer (28) lies on the underside of the new Filon sheet and is held in place by the Threaded Sleeve (20) which connects to the Top Bolt (26) through the Washer (2) and Bonded Washer (27).

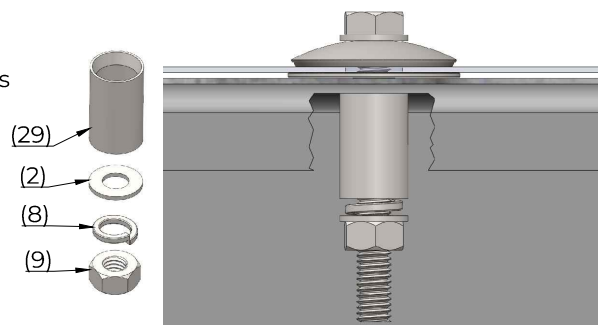


Fit the top of the **Type B** fixings to the existing upslope roof sheet in the troughs. The Washer with an 8mm hole (32) lies on the underside of the existing roof sheet and is held in place by the Small Threaded Element (33) which connects to the Top Nut (10) through the Bonded Washer (31), the Washer (11) and the Spring Washer (30). Tighten until the bonded washer is sufficiently compressed against the roof sheet.



Follow steps 9 & 10.

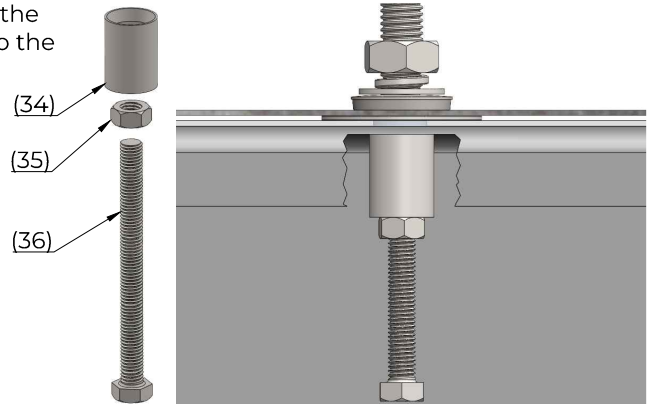
Once in position complete the **Type A** fixings by putting the Boss (29), the Washer (2) and the Spring Washer (8) onto the thread before securing with the Nut (9).



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Complete the **Type B** fixings by using the Nut (35) to secure the Boss (34) with the Bolt (36) passing through both and up into the Threaded Element (32).



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