FIREFLY®

TBA Protective
Technologies Limited
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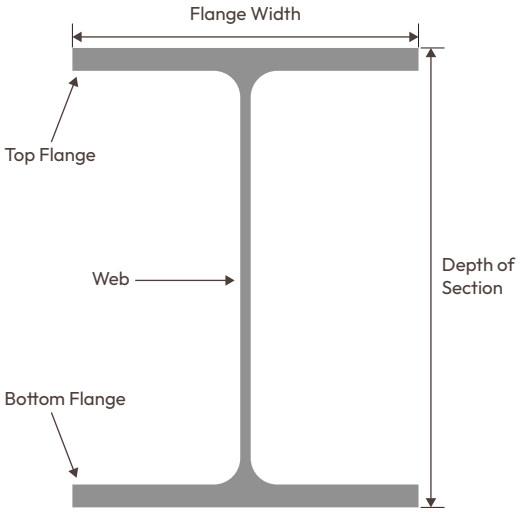
Installation Guide
Structural Steel Protection

Guides

Installation Guide | 2-sided exposed steel column

Step 1

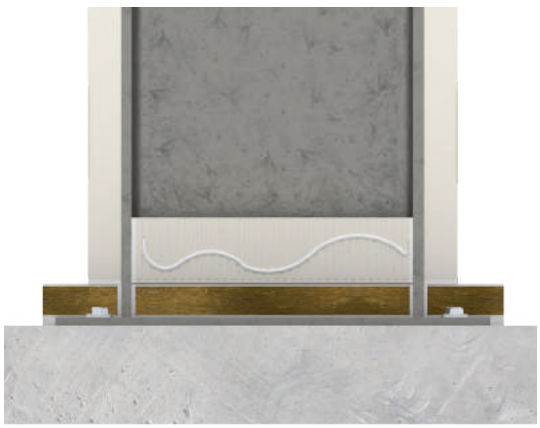
Remove dust from all sides of the steel column.



Step 2

Cut a 50 mm thick FB180 Ablative batt as per the profile of the base plate. The batt needs to extend 15mm beyond the baseplate. Apply FR Intumescent Acrylic on the base plate and the inner face of the batt, then install over the base plate/flange.

Note: The batt can be recessed by a maximum of 25mm to accommodate bolts/nuts.



Step 3

Measure the distance between column flanges to determine nogging lengths.

Note: Noggings must be cut out of FB180 Ablative batt to a length a few millimetres longer than the space between flanges to ensure a snug fit. It is advised that a dry fit test is conducted to check the fit before bonding the noggings.

Column end and intermediate noggings must have 100 mm width.

Noggings that occur at batt butt-joints must have 200 mm width.

Step 4

Apply on the edges of an end nogging and install between column flanges at the start of the column (over the batt installed in Step 2), flush with the column flange edges, ensuring a snug fit.

Step 5

Repeat Step 3 for the opposite end of the column.

Step 6

Install 200 mm width noggings at maximum 1200mm centres to coincide with the joints between the batts in Step 7. Install 100 mm width intermediate noggings at maximum 600mm centres between the 200 mm noggings as per Step 4.

Step 7

Cut a 1200 mm batt to a width corresponding with the distance between the steel column and wall plus an additional 50 mm. Apply a 10mm bead of FR Intumescent Acrylic to the noggings.

Paint the cut edges of batt with FIREFLY Ablative Coating and install it onto the noggings with temporary support to hold the batt in position until it can be fastened. The batt should protrude 50mm on the open side of the column.

Use pigtail screws, at 25mm from the edges and spaced 150mm apart, to fasten the batt to all noggings.

Step 8

Where the batt butt-joints occur, ensure there is a nominal 100 mm overlap with the batt and the 200 mm nogging. Fix the noggings and batts using 90mm pigtail screws at 25mm from the joint and edges and then at 150mm centres. Ensure that the edges of the batt are well sealed to each other.

Step 9

Measure the flange width side of the beam.

Step 10

Cut the flange cover batts to a width corresponding with the distance between the steel column. Dry fit the batts to check that there is a snug fit with no gaps > 2mm between the installed batt (in Step 7) and the flange cover batt.

Run a 10mm bead of FR Intumescent Acrylic along the centre of the column flange.

Paint the edges of the batts with FIREFLY Ablative Coating and install on the flange side of the column between the protruding batt and the wall. They should flush with the ends of the web side batt. Fasten the flange cover batts to the web site batts using 90mm pigtail screws, 25mm from the vertical batt edges at 150mm centres.

Butt joints between flange cover batts are bonded and sealed together with FIREFLY Ablative Coating.

Step 11

Use FR Intumescent Acrylic to fill the 15mm void between the batt and steel base plate

Step 12

If there is a gap of 50mm to 300mm between the wall and the column, install a 50 x 50 x 1.5mm steel angle. It should be fastened to the wall with 32mm 14G masonry screws at 300mm centres. The steel angle should further be fastened to the batt with 50mm pigtail screws at 200mm centres.

The use of steel angles is not required if the distance between the column and wall is less than 50mm.

Note: Any pre-slotted/solid angle irons with specifications equal to or greater than the above can be used. Use appropriate penny washers if the slots are larger than the fixings.

Apply extra FIREFLY Ablative Coating on all the joints / corners / edges. Ensure there are no exposed green edges of batts visible from outside.

Installation Guide | 3-sided exposed steel column

Step 1

Remove dust from all sides of the steel column.

Step 2

Cut a 50mm thick FB180 Ablative Batt as per the profile of the base plate. The batt needs to extend 15 mm beyond the base plate. Apply FR Intumescent Acrylic on the base plate and the inner face of the batt, then install over the base plate/flange.

Note: The batt can be recessed by a maximum of 25mm to accommodate bolts/nuts.

Step 3

Measure the distance between column flanges to determine nogging lengths.

Note: Noggings must be cut out of FB180 Ablative Batt to a length a few millimetres longer than the space between flanges to ensure a snug fit. It is advised that a dry fit test is conducted to check the fit before bonding the noggings.

Column end and intermediate noggings must have 100 mm width.

Noggings that occur at batt butt-joints must have 200 mm width.

Step 4

Apply FR Intumescent Acrylic on the edges of an end nogging and install between column flanges at the start of the column (over the batt installed in step 2), flush with the column flange edges, ensuring a snug fit.

Step 5

Repeat Step 3 for the opposite end of the column.

Step 6

Install 200 mm width noggings at maximum 1200mm centres to coincide with the joints between the batts in Step 7. Install 100 mm width intermediate noggings at maximum 600mm centres between the 200 mm noggings as per Step 4.

Step 7

Cut a 1200 mm batt to a width corresponding to depth of section (refer to the figure in Step 1) plus an additional 100 mm. Apply a 10mm bead of FR Intumescent Acrylic to the noggins.

Paint the cut edges of batt with FIREFLY Ablative Coating and install it onto the noggings with temporary support to hold the batt in position until it can be fastened. The batt should protrude 50mm on the open side of the column.

Step 8

Use pigtail screws at 25mm from the edges and spaced 150mm apart, to fasten the batt to all noggings.

Step 9

Where batt butt-joints occur, ensure there is a nominal 100mm overlap with the batt and the 200 mm nogging. Fix the noggings and batts using 90mm pigtal screws at 25mm from the joint and edges and at 150mm centres. Ensure the edges of the batt are well sealed to each other

Step 10

Measure the flange width side of the beam.

Cut the flange cover batts to a width corresponding with the distance between the steel column. Dry fit the batts to check that there is a snug fit with no gaps > 2mm between the installed batt (Step 7) and the flange cover batt.

Run a 10mm bead of FR Intumescent Acrylic along the centre of the column flange. Paint the edges of the batts with FIREFLY Ablative Coating and install on the flange side of the column between the protruding batt and the wall. They should flush with the ends of the vertical batt.

Fasten the flange cover batts to the web site batts using 90mm pigtail screws at 25mm from the vertical batt edges and at 150mm centres.

Butt joints between flange cover batts must be bonded and sealed together with FIREFLY Ablative Coating.

Repeat all steps for the other flange side of the column.

Step 11

Use FR Intumescent Acrylic to fill the 15mm void between the batt and steel plate.

Step 12

If there is a gap of 50mm to 300mm between the wall and the column, install a 50 x 50 x 1.5mm steel angle. Angle should be fastened to the wall with 75mm 14G masonry screws at 300mm centres. The angle should be further fastened to the batt with 50mm pigtail screws at 200mm centres. Repeat for the flange side, if required.

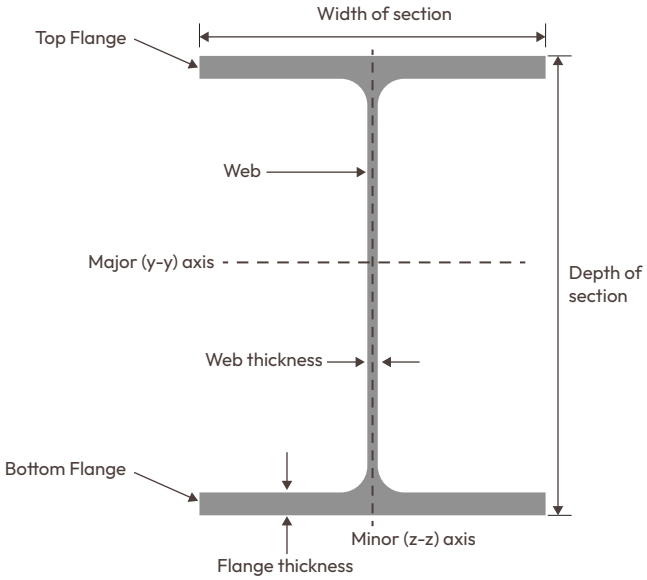
Note: The use of steel angles is not required if the distance between the column and wall is less than 50mm. Any pre-slotted/solid angle irons with specifications equal to or greater than the above can be used. Use appropriate penny washers if the slots are larger than the fixings.

Apply extra FIREFLY Ablative Coating on all the joints / corners / edges. Ensure there are no exposed green edges of batts visible from outside.

Installation Guide | 4-sided exposed steel column

Step 1

Remove dust from all sides of the steel column.



Step 2

Cut a 50 mm thick FB180 Ablative Batt as per the profile of the base plate. The batt needs to extend 15 mm beyond the baseplate. Apply FR Intumescent Acrylic on the base plate and the inner face of the batt, then install over the base plate/flange.

Note: The batt can be recessed by a maximum of 25mm to accommodate bolts/nuts.

Step 3

Measure the distance between column flanges to determine nogging lengths.

Note: Noggings must be cut out of FB180 Ablative Batt to a length a few millimetres longer than the space between flanges to ensure a snug fit. It is advised that a dry fit test is conducted to check the fit before bonding the noggings.

Column end and intermediate noggings must have 100 mm width.

Noggins that occur at batt butt-joints must have 200 mm width.

Step 4

Apply FR Intumescent Acrylic on the edges of an end nogging and install between column flanges at the start of the column (over the batt installed in step 2), flush with the column flange edges, ensuring a snug fit.

Step 5

Repeat Step 3 for the opposite end of the column.

Step 6

Install 200 mm width noggings at maximum 1200mm centres to coincide with the joints between the batts in Step 7. Install 100 mm width intermediate noggins at maximum 600mm centres between the 200 mm noggins as per Step 4.

Step 7

Cut a 1200 mm batt to a width corresponding to depth of section (refer to diagram in Step 1) plus an additional 100 millimetres. Apply a 10mm bead of FR Intumescent Acrylic to the noggins.

Paint the cut edges of batt with FIREFLY Ablative Coating and install it onto the noggings with temporary support to hold the batt in position until it can be fastended. The batt should protrude 50mm on each side of the column.

Use pigtail screws, at 25mm from the edges and spaced 150mm apart, to fasten the batt to all noggings.

Step 8

Where the batt butt-joints occur, ensure there is a nominal 100 mm overlap with the batt and the 200 mm nogging. Fix the noggings and batts using 90mm pigtail screws at 25mm from the joint and edges and then at 150mm centres. Ensure that the edges of the batt are well sealed to each other.

Step 9

Repeats Steps 3 to 7 for the other web side of column.

Step 10

Measure the flange width side of the beam. Cut the flange cover batts a few millimetres wider than the flange width. Dry fit the batts to check that there is a snug fit with no gaps > 2 mm between the installed batt (in Step 7) and the flange cover batt.

Run a 10mm bead of FR Intumescent Acrylic along the centre of the column flange.

Paint the edges of the batts with FIREFLY Ablative Coating and install on the flange side of the column between the protruding batts. They should flush with the ends of the vertical batt. Fasten the flange cover batts to the vertical batts using 90mm pigtail screws, 25mm from the vertical batt edges at 150mm centres.

Butt joints between flange cover batts are bonded and sealed together with FIREFLY Ablative Coating.

Repeat the process for the other flange side of the column.

Step 11

Use FR Intumescent Acrylic to fill the 15mm void between the batt and steel base plate.

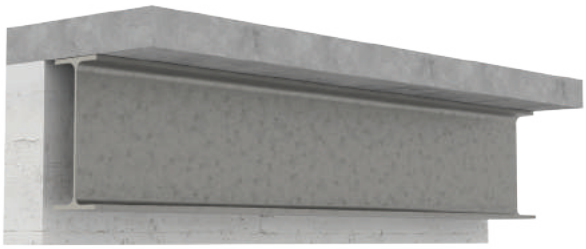
Step 12

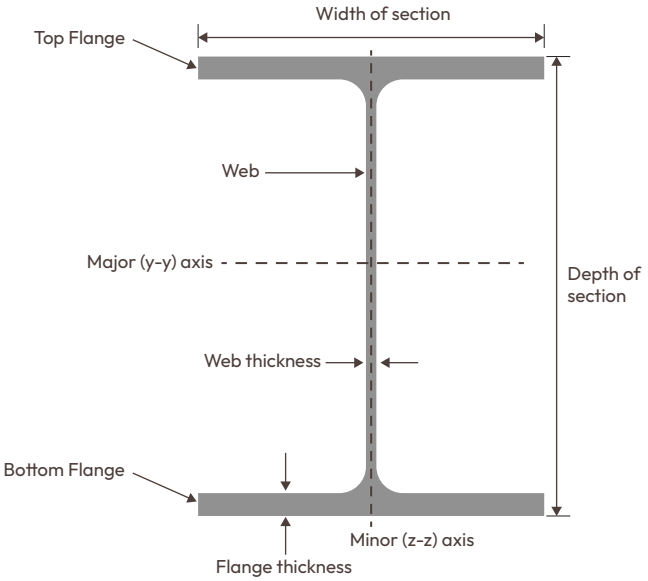
Apply extra FIREFLY Ablative Coating on all the joints / corners / edges. Ensure there are no visible cracks or exposed green edges of batts visible from outside.

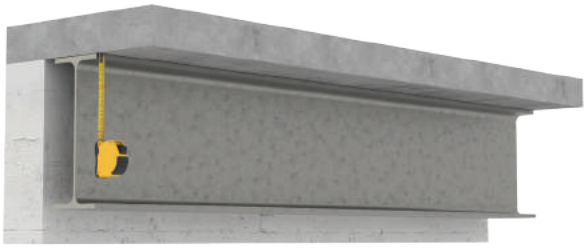
Installation Guide | 2 sided exposure - beam against slab to adjacent wall

Step 1

Remove dust from all sides of the steel column.







Step 2

Measure the distance between beam flanges to determine nogging lengths.

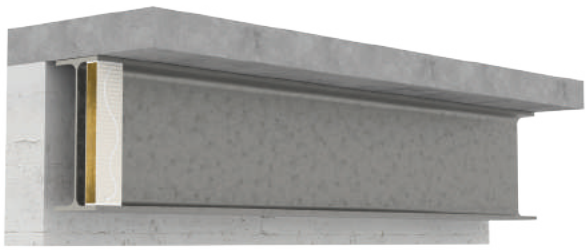
Note: Noggins must be cut to a length of a few millimetres longer than the space between the beam flanges to ensure a snug fit. It is advised that a dry fit is conducted to check the fit before bonding the noggings.

Beam end and intermediate noggings must have 100 mm width.

Noggings that occur at batt butt-joints must have 200 mm width.

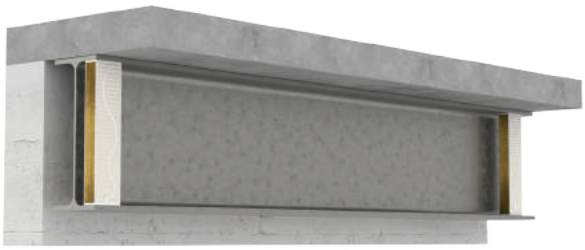
Step 3

Apply FR Intumescent Acrylic on the top and bottom edge of an end nogging and install between beam flanges at the start of the beam, flush with the beam flange edges, ensuring a snug fit.



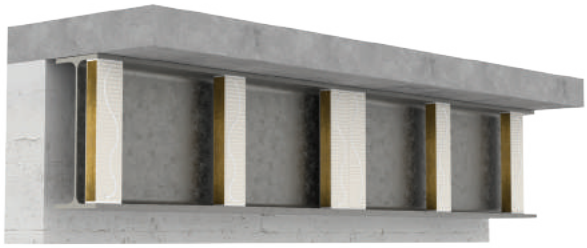
Step 4

Repeat Step 3 for the opposite end of the beam.



Step 5

Install 200 mm width noggings as in Step 3 at maximum 1200mm centres to coincide with the joints between the vertically orientated batts in Step 6. Install 100 mm width intermediate noggings at maximum 600 mm centres between the 200 mm noggings as per Step 3.



Step 6

Cut a batt to a width corresponding with distance between the slab underside and bottom flange, adding 50 mm for the bottom flange overlap.

Apply a 10mm bead of FR Intumescent Acrylic to the noggings.

Paint the cut edges with FIREFLY Ablative Coating and install it onto the noggings with temporary support to hold the batt in position until it can be fastened in Step 7.

Step 7

Cut a 1200 mm batt to a width corresponding to depth of section (refer to the figure in Step 1) plus an additional 100 mm. Apply a 10mm bead of FR Intumescent Acrylic to the noggings.

Paint the cut edges of batt with FIREFLY Ablative Coating and install it onto the noggings with temporary support to hold the batt in position until it can be fastened. The batt should protrude 50mm on the open side of the column.

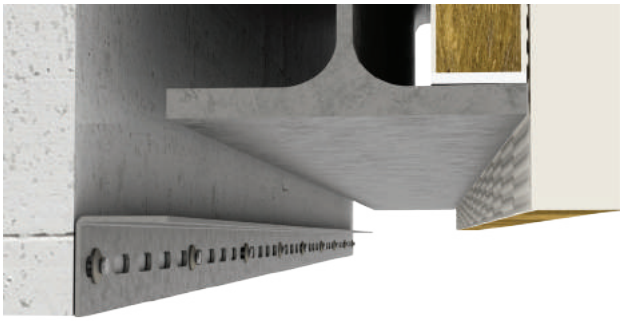
Step 8

Where batt butt-joints occur, ensure there is a nominal 100 mm overlap with the batt and the 200 mm nogging. Use pigtail screws at 25mm from the edges and spaced 150mm apart to fasten the batt to all noggings. Ensure that the edges of the batt are well sealed to each other.

Step 9

If there is a gap of 50mm to 300mm between the wall and the column, install a 50 x 50 x1.5 mm steel angle. The angle should be fastened to the wall with 32mm 14G masonry screws at 300mm centres.

Note: Any pre-slotted/solid angle irons with specs equal to or greater than above can be used. Use appropriate penny washers if the slots are larger than fixings.



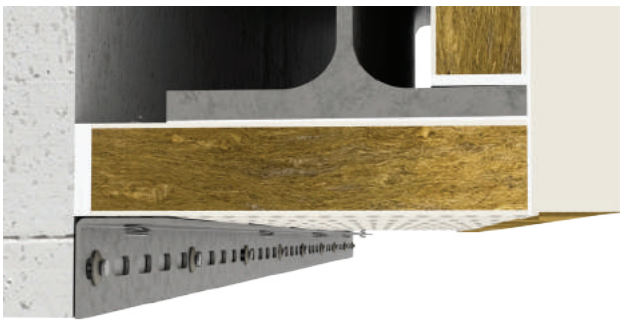
Step 10

Measure the flange width side of the beam.

Step 11

Cut underside flange cover batts to a width corresponding with the distance between the steel column. Dry fit the flange cover batts to check that there is a snug fit with no gaps > 2mm between the installed vertical batt.

Run a 10mm bead of FR Intumescent Acrylic along the centre of the beam flange and over the angle iron.



Step 12

Paint the edges of batts with FIREFLY Ablative Coating and install on the flange side of the beam. It should flush with the ends of the vertical batts. Fasten the flange cover batts to the vertical batts using 90mm pigtail screws, 25mm from the vertical batt edges at 150mm centres.

Butt joints between the underside flange over batts are bonded and sealed together with FIREFLY Ablative Coating.

Step 13

Apply extra FIREFLY Ablative Coating on all the joints / corners / edges, ensuring there are no visible cracks or exposed green edges of the batts visible from the outside.

Note: if there is a gap between 50 and 300 mm between the wall and the beam, install a 50 x 50 x1.5 mm steel angle. It should be fastened to the wall or floor with 75mm 14G masony screws. The steel angle should further be fastened to the batt with 50mm pigtail screws at 200mm centres.

Note: the use of steel angles is not required if the gap between the beam and wall/floor is less than 50mm. Any pre-slotted angle irons with specs equal to or greater than above can be used. Use appropriate penny washers if the slots are larger than fixings.

Installation Guide | 3 sided exposure - beam against slab

Step 1

Remove dust from all sides of the steel column.

Step 2

Measure the distance between beam flanges to determine nogging lengths.

Note: Noggins must be cut to a length of a few millimetres longer than the space between the beam flanges to ensure a snug fit. It is advised that a dry fit is conducted to check the fit before bonding the noggings.

Beam end and intermediate noggins must have 100 mm width.

Noggins that occur at batt butt-joints must have 200 mm width.

Step 3

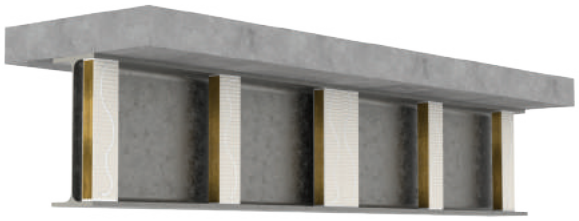
Apply FR Intumescent Acrylic on the top and bottom edge of an end nogging and install between beam flanges at the start of the beam, flush with the beam flange edges, ensuring a snug fit.

Step 4

Repeat Step 3 for the opposite end of the beam.

Step 5

Install 200 mm width noggings at maximum 1200mm centres to coincide with the joints between the vertically oriented batts in Step 6. Install 100 mm width intermediate noggins at maximum 600 mm centres between the 200 mm noggins as per Step 3.



Step 6

Cut a batt to a width corresponding with distance between the slab underside and bottom flange, adding 50 mm for the bottom flange overlap.

Apply a 10mm bead of FR Intumescent Acrylic to the noggings. Paint the cut edges of batt with FIREFLY Ablative Coating and install it onto the noggins with temporary support to hold the batt in position until it can be fastened in Step 7.

Step 7

Use pigtail screws at 25mm from the edges and spaced 150mm apart, to fasten the batt to all noggings.

Step 8

Where batt butt-joints occur, ensure there is a nominal 100 mm overlap with the batt and the 200 mm nogging. Fix the soldier batt and web site batts using 90mm pigtail screws at 25mm from the joint and edges and then at 150mm centres. Ensure that the edges of the batt are well sealed to each other.

Step 9

Repeat Steps 3 to 8 for the other web side of the beam.

Step 10

Measure the flange width side of the beam.

Step 11

Cut underside flange cover batts a few millimetres wider than the flange width. Dry fit the batts to check that there is a snug fit with no gaps > 2mm between the installed vertical batts and the underside flange cover.

Run a 10mm bead of FR Intumescent Acrylic along the centre of the beam flange and over the angle iron.

Paint the edges of batts with FIREFLY Ablative Coating and install on the flange side of the beam. It should flush with the ends of the vertical batts. Fasten the flange cover batts to the vertical batts using 90mm pigtail screws, 25mm from the vertical batt edges at 150mm centres.

Butt joints between the underside flange over batts are bonded and sealed together with FIREFLY Ablative Coating.

Step 12

Apply extra FIREFLY Ablative Coating on all the joints / corners / edges, ensuring there are no visible cracks or exposed green edges of the batts as seen from the outside.

Step 13

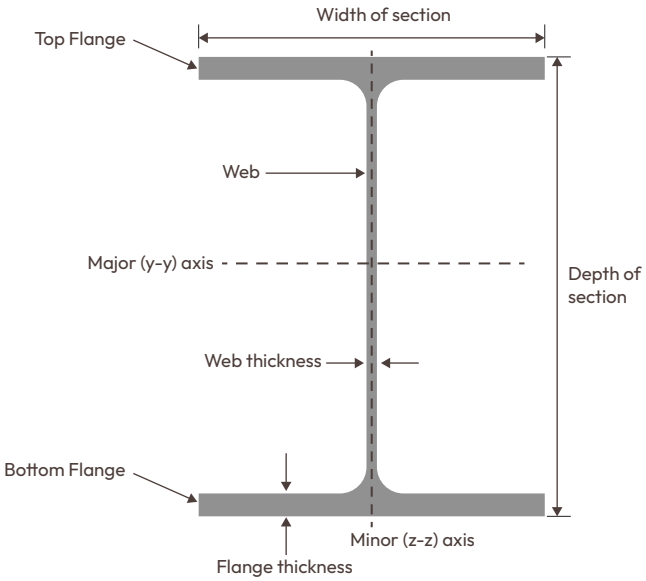
Note: if there is a gap of 50 to 300 mm between the wall and the beam and / or the floor and the beam, install a 50x50x1.5 mm steel angle. It should be fastened to the wall or floor with 32mm 14G masony screws. The steel angle should further be fastened to the batt with 50mm pigtail screws at 200mm centres.

Note: the use of steel angles is not required if the gap between the beam and wall/floor is less than 50mm. Any pre-slotted/solid angle irons with specs equal to or greater than above can be used. Use appropriate penny washers if the slots are larger than fixings.

Installation Guide | beam - 3 sided exposure

Step 1

Remove dust from all sides of the steel beam.



Step 2

Measure the distance between beam flanges to determine nogging lengths.

Note: Noggings must be cut out of FB180 Ablative Batt to a length a few millimetres longer than the space between the beam flanges to ensure a snug fit. It is advised that a dry fit is conducted to check the fit before bonding the noggings.

Beam end and intermediate noggings must have 100 mm width.

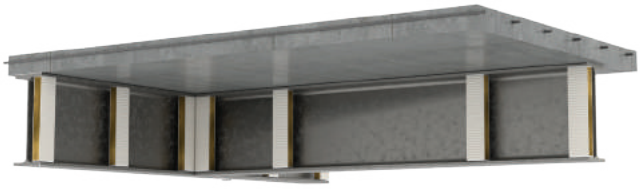
Noggins that occur at batt butt-joints must have 200 mm width.

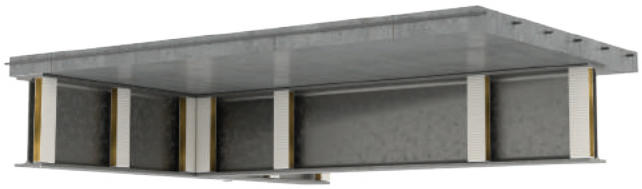
Step 3

Apply FR Intumescent Acrylic on the top and bottom edge of an end nogging and install between beam flanges at the intersection of two beams, flush with the beam flange edges, ensuring a snug fit.

Moreover, slide the nogging towards the opposite beam, such that it touches the web of the second beam.

Install another nogging at the intersection on the second beam as per above, slide the nogging such that it touches the front face of the nogging installed previously.





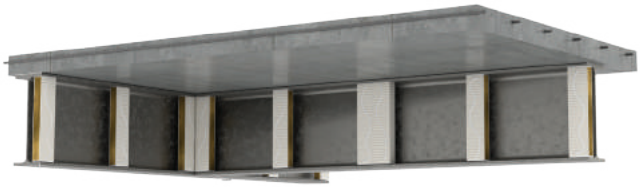
Step 4

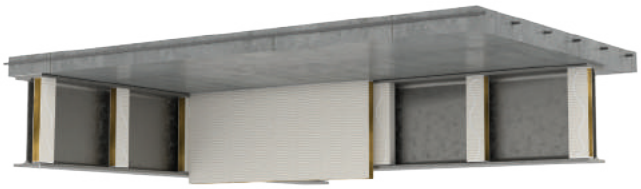
Apply FR Intumescent Acrylic on the top and bottom edge of an end nogging and install between beam flanges at the end of the beams, flush with the beam flange edges, ensuring a snug fit.

Install 100 mm width intermediate noggings at maximum 600mm centres between the 200 mm noggins as per Step 3.

Step 5

Install 200 mm width noggings at maximum 1200mm centres to coincide with the joints between the vertically oriented batts in Step 6.





Step 6

Cut a batt to a width corresponding with distance between the slab underside and bottom flange, adding 50 mm for the bottom flange overlap.

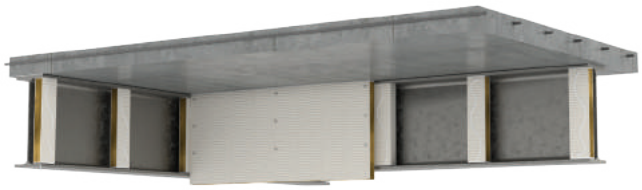
Apply a 10mm bead of FR Intumescent Acrylic to the noggings.

Paint the cut edges of batt with FIREFLY Ablative Coating and install it onto the noggins at the intersection such that it is flush with the nogging installed in Step 3.

Use temporary support to hold the batt in position until it can be fastened in Step 7.

Step 7

Use pigtail screws at 25mm from the edges and spaced 150mm apart, to fasten the batt to all noggings.



Step 8

Install 1200 mm batt as in Step 6 at the other beam. This batt should be flush with the 1200 mm batt installed in Step 6.

Use pigtail screws at 25mm from the edges and spaced 150mm apart, to fasten the batt to all noggings.

Where batt butt-joints occur, ensure there is a nominal 100 mm overlap with the batt and the 200mm nogging. Fit the noggings and web site batts using 90mm pigtail screws at 25mm from the joint and edges and then at 150mm centres. Ensure the edges of batt are well sealed to each other.

Step 9

Repeat Steps 3 to 8 for the other web sides of the beam.

Step 10

Measure the flange width side of the beam.

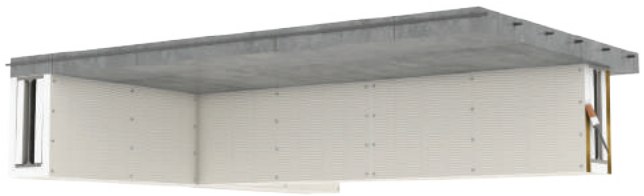
Step 11

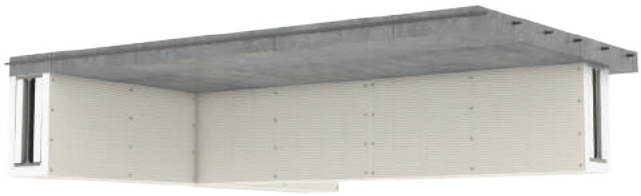
Cut underside flange cover batts a few millimetres wider than the flange width. Dry fit the batts to check that there is a snug fit with no gaps > 2mm between the installed vertical batts and the underside flange cover batt.

Run a 10mm bead of FR Intumescent Acrylic along the centre of the beam flange.

Paint the edges of batts with FIREFLY Ablative Coating and install on the flange side of the beam between the protruding vertical batts. They should flush with the ends of the vertical batts. Fasten the flange cover batts to the vertical batts using 90mm pigtail screws at 25mm from the vertical batt edges at 150mm centres.

Butt joints between the underside flange cover batts are bonded and sealed together with FIREFLY Ablative Coating.





Step 12

Apply extra FIREFLY Ablative Coating on all the joints / corners / edges, ensuring that there are no visible cracks or exposed green edges of the batts as seen from outside.

Step 13

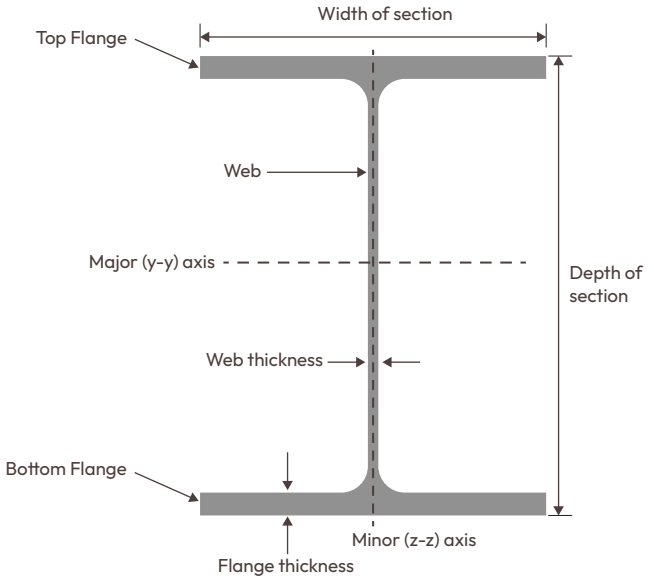
Note: if there is a gap of 50 to 300 mm between the wall and the beam and / or the floor and the beam, install a 50 x 50 x 1.5 mm steel angle. It should be fastened to the wall or floor with 32mm 14G masony screws. The steel angle should further be fastened to the batt with 50mm pigtail screws at 200mm centres.

Note: the use of steel angles is not required if the gap between the beam and wall/floor is less than 50mm. Any pre-slotted/solid angle irons with specs equal to or greater than above can be used. Use appropriate penny washers if the slots are larger than fixings.

Installation Guide | 4 sided exposed column beam intersection

Step 1

Remove dust from all sides of the steel beam.



Step 2

Cut a 50 mm thick FB180 Ablative Batt as per the profile of the base plate. The batt needs to extend 15mm beyond the baseplate. Apply FR Intumescent Acrylic on the base plate and the inner face of the batt, then install over the base plate / flange. **Note:** The batt can be recessed by 25mm maximum to accomodate bolts/nuts.

Step 3

Measure the distance between column flanges to determine nogging lengths.

Note: Noggings must be cut out of FB180 Ablative Batt to a length a few millimtres longer than the space between flanges to ensure a snug fit. It is advised that a dry fit test is conducted to check the fit before bonding the noggings.

Column end and intermediate noggings must have a width of 100 mm.

Noggings that occur at batt butt-joints must have 200 mm width.

Step 4

Apply FR Intumescent Acrylic on the edges of an end nogging and install between column flanges at the start of the column, over the batt installed in Step 2, flush with the column flange edges.

Step 5

Repeat Step 4 for the opposite end of the column.

Step 6

Repeate Steps 3 and 4 for the steel beam ie. install end noggings. Also install noggings at the intersection joint.

Step 7

Install 200 mm width noggins at maximum 1200mm centres, onto column and beam, to coincide with the joints between the batts in Step 6. Install 100 mm width intermediate noggings onto column and beam at maximum 600mm centres between the 200 mm noggins.

Step 8

Cut a 1200 mm batt to a width corresponding to depth of section of the column plus an additional 100 mm.

Apply a 10mm bead of FR Intumescent Acrylic to the noggins.

Paint the cut edges of batt with FIREFLY Ablative Coating and install it onto the noggins with temporary support to hold the batt in position until it can be fastned in Step 9. The batt should protrude 50mm on each side of the column.

Step 9

Use pigtail screws at 25mm from the edges and spaced 150mm apart to fasten the batt to all noggings.

Step 10

Where batt butt-joints occur, ensure there is a nominal 100mm overlap with the batt and the 200 mm nogging. Fix the noggings and batts using 90mm pigtail screws at 25mm from the joint and edges and then at 150mm centres. Ensure the edges of the batt are well sealed to each other.

Step 11

Repeat Steps 3 to 8 for the other web side of the column and for both web sides of the beam.

Step 12

Measure the flange width side of the column. Cut the flange cover batts a few millimetres wider than the flange width. Dry fit the batts to check that there is a snug fit with no gaps > 2mm between the installed batt (Steps 7 to 10) and the flange cover batt.

Run a 10mm bead of FR Intumescent Acrylic along the centre of the column flange.

Paint the edges of batts with FIREFLY Ablative Coating and install on the flange side of the column between the protruding batts. They should flush with the ends of the vertical batts. Fasten the flange cover batts to the vertical batts using 90mm pigtail screws at 25mm from the vertical batt edges and at 150mm centres.

Butt joints between flange cover batts are bonded and sealed together with FIREFLY Ablative Coating.

Repeat this step for the other flange side of the column and for both flange sides of the beam.

Step 13

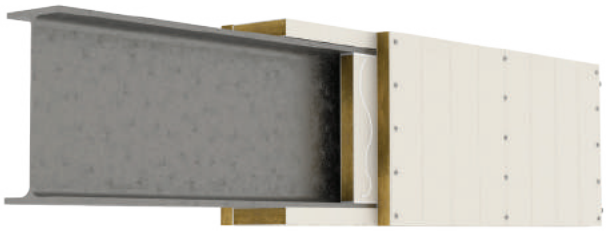
Fill the 15mm void between the batt and steel base plate with FR Intumescent Acrylic.

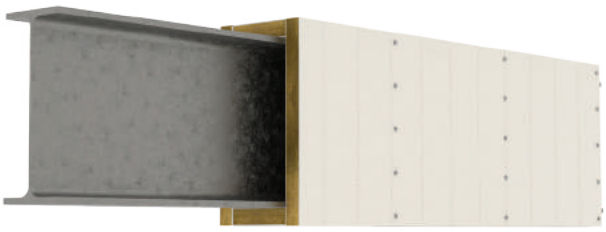
Apply additional FIREFLY Ablative Coating on all joints / corners / edges. Ensure there are no visible cracks or exposed green edges of batts as seen from outside.

Installation Guide | Beam - termination unprotected beam intersecting with protected beam

Step 1

Boxout the protected beam as per installation manual for 4 sided exposed steel beam.





Step 2

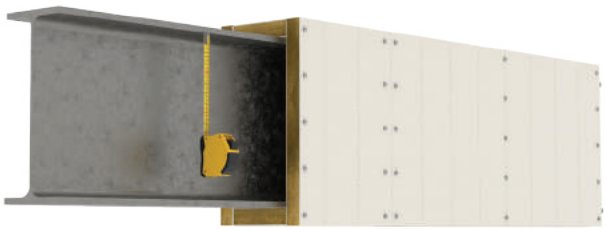
Continue boxout as in Step 1 for at least 300mm on the unprotected beam.

Step 3

Measure the distance between unprotected beam flanges to determine nogging lengths.

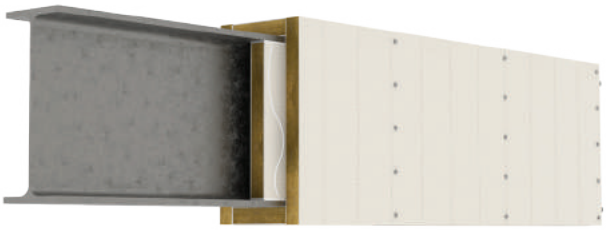
Note: Noggings must be cut to a length of a few millimetres longer than the space between the beam flanges to ensure a snug fit. It is advised that a dry fit is conducted to check the fit before bonding the noggings.

Beam end and intermediate noggings must have 100 mm width.



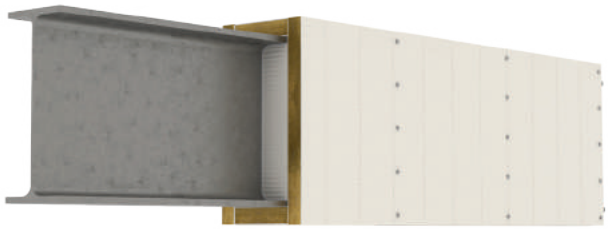
Step 4

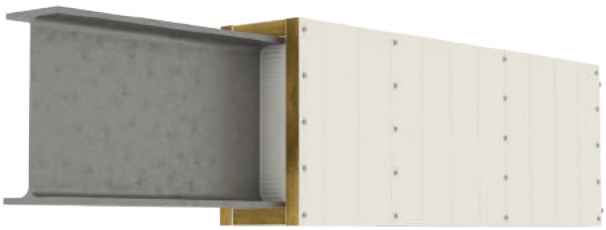
Apply FR Intumescent Acrylic on the top and bottom edge of the end nogging and install between beam flanges 50mm inside from the edge of the batt, flush with the beam flange edges.



Step 5

Cut another nogging as per profile of the steel beam. Dry fit the nogging to ensure there is a snug fit with no gaps > 2mm between the installed vertical batts and web of the beam. Apply FR Intumescent Acrylic on all sides and install it in the void between the web and batt at the end flushed with the batt.



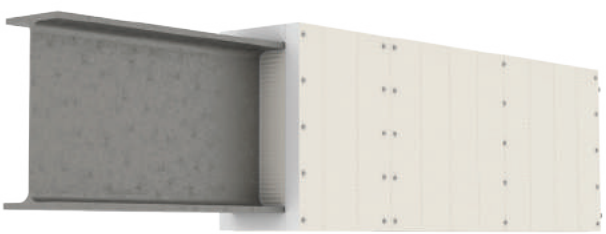


Step 6

Use pigtail screws at 25mm from the edges and spaced 150mm apart, to fasten the batt to the nogging installed in Step 5. Repeat Steps 5 and 6 for the other side of the beam.

Step 7

Apply additional FIREFLY Ablative Coating on all the joints / corners / edges. Ensure that there are no visible cracks or exposed green edges of batt as seen from the outside.



PSA for FIREFLYBatt protected steel beams and columns exposed to fire from four sides

Section factor Hp/A	Period of structural adequacy (minutes) for various critical temperatures (°C)						
(m^{-1})	300	350	400	450	500	550	600
65	**120**	**120**	**150**	**180**	**180**	**180**	**180**
75	90	90	120	120	150	150	150
85	90	90	120	120	150	150	150
95	90	90	120	120	150	150	150
105	90	90	120	120	150	150	150
115	90	90	120	120	150	150	150
125	**90**	**90**	**120**	**120**	**150**	**150**	**150**
135	60	60	90	90	90	120	120
145	60	60	90	90	90	120	120
155	60	60	90	90	90	120	120
165	60	60	90	90	90	120	120
175	60	60	90	90	90	120	120
185	**60**	**60**	**90**	**90**	**90**	**120**	**120**
195	60	60	60	90	90	90	120
205	60	60	60	90	90	90	120
215	60	60	60	90	90	90	120
225	60	60	60	90	90	90	120
235	60	60	60	90	90	90	120
245	60	60	60	90	90	90	120
255	**60**	**60**	**60**	**90**	**90**	**90**	**120**

PSA/FRL for FIREFLYBatt® protected steel beams exposed to fire exposed to fire from three sides

Section factor Hp/A	Period of structural adequacy (minutes) for various critical temperatures (°C)						
(m^{-1})	300	350	400	450	500	550	600
65	90	90	120	120	150	150	180
130	90	90	120	120	150	150	180
The outcomes of this table apply for beams with a section factor between 65 m^{-1} to 130 m^{-1}							

FIREFLY®