PSA Forge Bar System – PSA FBI Inserts

Installation Guide – October 2025

PSA Forge Bar Inserts are used to anchor reinforcing bars of the same size; they are most commonly used to create reinforcement continuity through construction joints between walls and slabs.

The following items are covered by this document:

Bar Size	Insert	Starter bar	Nailing Plate	Colour
N12	FBI12-100	FBSB12540	FBNP12	Purple
N16	FBI16-120	FBSB16700	FBNP16	Blue
N16	FBI16-160	FBSB16700	FBNP16	Blue
N20	FBI20-150	FBSB20800, FBSB201000	FBNP20	Yellow
N20	FBI20-190	FBSB20800, FBSB201000	FBNP20	Yellow

For easy identification, all Inserts and nailing plates for the PSA Forge Bar system are colour coded using the colours in the table above.

PSA FBI Inserts can be installed using PSA Plastic Nailing Plates or in conjunction with the PSA Bar Box.

Bar Size	PSA FBI Bar Box	Starter bar
N16	BB16-120FBI3-300	Bar Box assembled with FBI16-120 @ 300mm spacing
N16	BB16-120FBI4-200	Bar Box assembled with FBI16-120 @ 300mm spacing
N16	BB16-120FBI5-150	Bar Box assembled with FBI16-120 @ 300mm spacing

+ Boxes with different inserts and spacings are available on request.

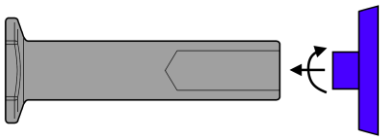
Installation of a PSA FBI Inserts using Nailing Plates:

If PSA FBI Anchors are installed to the edge or bottom of timber formwork it is recommended to use PSA Nailing Plates to attach the PSA FBI Anchor to the formwork.

1

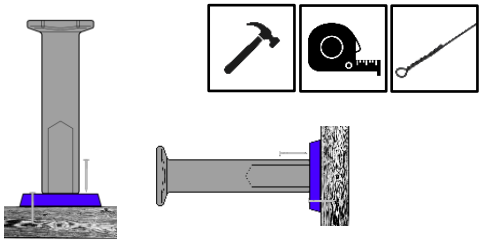
Check that the PSA FBI Insert matches the specification on the drawing. The anchors are colour coded to identify the correct bar diameter. The table on the previous page identifies the colours for the available bar diameters.

2



Attach the nailing plate to the insert by screwing it on. Nailing plate and PSA FBI Inserts are colour coded for easy identification.

3



Nail the plate to the formwork. It is recommended to fix the foot of the PSA FBI Insert to the reinforcement to avoid displacement during pour or vibration.

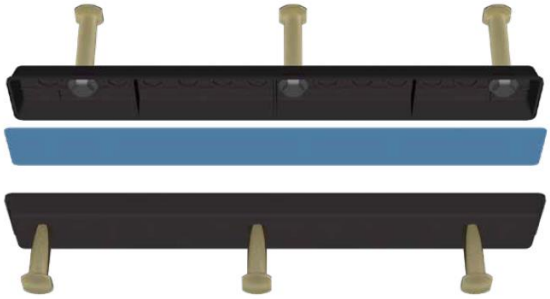
It is essential to install the PSA FBI Inserts in the correct location and perpendicular to the formwork. This guarantees that the subsequently installed starter bars are properly aligned.

Installation with Steel Formwork

When PSA FBI Anchors are used in conjunction with steel formwork, the nailing plate should still be used to ensure the thread is protected from concrete ingress. While the nailing plate can be secured to the steel formwork using double sided tape, this will not suffice to hold the load of the insert itself and the imposed loads during the pour. When used with steel formwork the anchor should be connected to the reinforcement cage and firmly pressed against the formwork.

Installation of a PSA FBI Inserts using the PSA Bar Box:

To provide a shear key between concrete pours, PSA FBI Inserts can be installed using the PSA Bar Box.

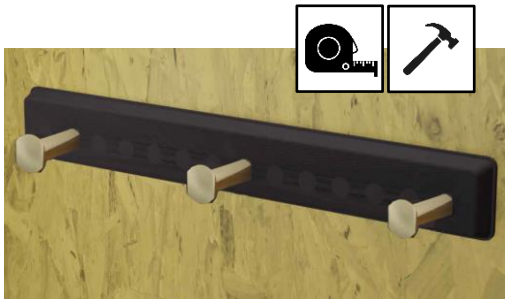


The single-use Bar Boxes come pre-assembled with PSA Forge Bar Inserts in the specified spacing.

1

Check that the specification of the PSA FBI Bar Box matches the specification on the drawing. E.g. **BB16-120FBI3-300** specifies a bar box with **3 FBI16-12**- Inserts installed in a spacing of **300mm.**

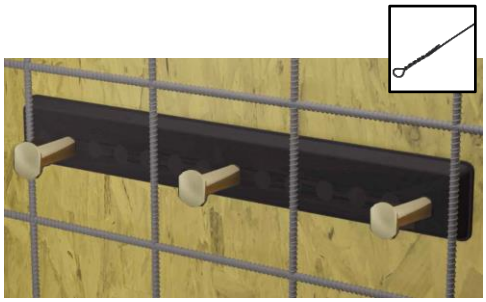
2



Nail or screw the bar box to the formwork in the specified location by driving nails or screws through the body of the box. Confirm anchor spacing of anchors between neighbouring boxes.

It is essential to install the PSA Bar Box in the correct location and perpendicular to the formwork. This guarantees that the subsequently installed starter bars are properly aligned.

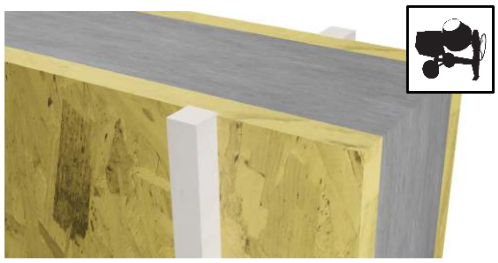
3



Install the wall reinforcement and ready formwork for concrete pour.

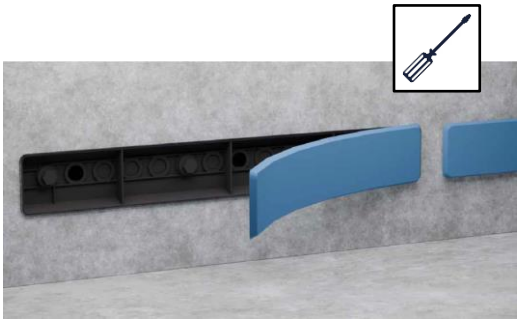
It is recommended to fix the foot of the PSA FBI Insert to the reinforcement to avoid displacement during pour or vibration.

4



Complete concrete pour ensuring adequate compaction is done around the PSA FBI Inserts

5



Strip the formwork and remove the box lid.

6

Remove the disposable HDPE bolts using a rattle gun and strip the box out.

7

Hand screw the starter bar into the PSA Forge Bar Inserts.

Any handling of the bar that results in cold working—especially bending within the threaded section—is strictly prohibited, as it has the potential to compromise the integrity of the connection.

Installation of a PSA FBI Inserts using Re-useable Polyurethane Borads:

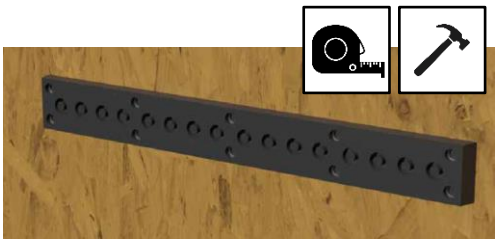
To provide a shear key between concrete pours, PSA FBI Inserts can be installed using the PSA Polyurethane Board.

The PSA Polyurethane board can be ordered customised for the required site conditions. It is available for single and double rows of PSA FBI Anchors.

1

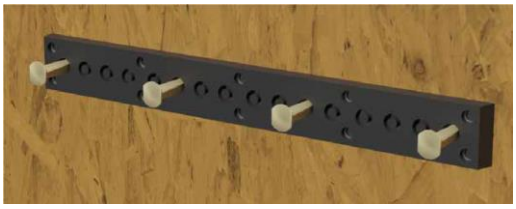
Check that the specification of the PSA Polyurethane board matches the specification on the drawing. E.g. **RB90 1000 – 30 50 FBI16S** specifies a **90mm** wide board with a length of **1000mm** that allows for the installation of a **single row** of **FBI16** anchors to be installed every **50mm.**

2



Install the rebate board on to the formwork with nails in pre-drilled holes. Use screws instead of nails, if rebate board needs to stay on the formwork when stripping.

3



Push the Forge Bar Inserts firmly into the slots in rebate board at required spacings. Cover the un-used slots with tape or grease to prevent slurry getting in.

4

Install the wall reinforcement and ready formwork for concrete pour.

It is recommended to fix the foot of the PSA FBI Insert to the reinforcement to avoid displacement during pour or vibration.

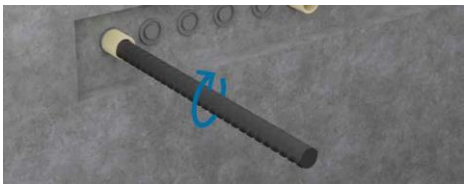
5

Complete concrete pour ensuring adequate compaction is done around the Forge Bar Inserts.

6

Strip the formwork and use M20 bolts in the provided slots to push the rebate board out. Rebate board will come out with the formwork if screws were used for fixing.

7



Screw the starter bar into the Forge Bar Insert.

Any handling of the bar that results in cold working—especially bending within the threaded section—is strictly prohibited, as it has the potential to compromise the integrity of the connection.

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