

Technical Installation Manual

Dura Cladding Flush Resist



Strong and durable, Dura Cladding looks and feels just like natural wood. Our unique formula provides long lasting composite timber cladding that is environmentally friendly, easy to install and requires minimal maintenance compared with traditional timber.

To ensure you get the best results from your Dura Cladding, we recommend working with a professional contractor with previous cladding installation experience. As well as the detailed installation instructions provided in this Technical Manual, a helpful video is available on the Dura Composites website to offer additional visual guidance.

If you require any further information or support, please visit www.duracomposites.com/cladding or call us on +44 (0)1255 440299 where one of our knowledgeable staff will be happy to help.

Unlocking the Power of Composites™
» for the Cladding & Façades

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Preparation



Use Professionals

Dura Cladding Flush Resist has been designed for beauty as well as ease of installation. However, to ensure long-term performance, we recommend that a professional trades-person carries out the installation. The installation MUST be carried out in accordance with these instructions including the use of Dura Composites proprietary trims and accessories otherwise the warranty for the product will be invalidated.

Dura Composites recommends that all cladding designs be approved by a licensed architect or engineer prior to installation. Please ensure that your plans meet any relevant local building codes before you begin the installation. Dura Cladding Flush Resist must be supported by a code compliant substructure. While Dura Cladding Flush Resist is ideal for re-cladding (removing old cladding planks and installing on a code-compliant substructure), it CANNOT be installed on top of existing cladding.

Note: The Dura Cladding Flush Resist system offers a level of water resistance but is not designed to be a fully waterproof system. A joint sealing strip (minimum 50mm in width) with sufficient stiffness should be applied under the vertical joints to protect the bearer. As the joint sealing strip is not exposed to light, a black polyethylene (PE) 0.5 mm thick joint sealing strip is sufficient. If the joint sealing strip is exposed to light, a UV-resistant material such as EPDM must be used.

Dura Cladding Flush Resist should provide adequate weather protection for buildings. However, it must be assumed that not all wind driven rain will be deflected. Therefore, a well ventilated, free draining cavity should always be included in the detailed design. A minimum 25mm ventilation gap must be left behind the planks with a minimum 10mm continuous gap left at the top and bottom of the system for full ventilation.

Cladding onto Timber framed properties:

The inner wall structure should be fitted with a breather membrane. This serves to seal the building against damp and weather penetration. As such it should be highly durable and tear resistant in accordance with Type 1 membranes in BSI British Standard BS4016.

Cladding onto Masonry properties:

Where cladding is fitted to an existing building with solid walls, to prevent water penetration the wall should be given a waterproof coating or membrane, or wax treated insulation board should be fitted.

Dura Cladding Flush Resist is NOT intended for use as columns, support posts, beams or other primary load-bearing members.

Safety First

- Keep unauthorised personnel away from the work area until the job has been completed and tools have been stored safely.
- Refer to the operator's manuals for safety guides for all power tools being used.
- When handling Dura Cladding Flush Resist, always wear gloves with additional eye protection and work in a well-ventilated area.
- Do not burn composite timber off cuts. Dispose of them safely as refuse.
- Wear eye protection when pressure washing or scrubbing.
- Always wear a dust mask when cutting.

Storage and Handling

Store flat on suitable pallets and protect edges and corners. Keep dry and covered prior to installation. Any temporary transportation wrapping should be removed to release any trapped moisture, and the pack re-covered with an opaque tarpaulin.

When loading and unloading by hand, make sure that both ends are lifted on the edge to avoid permanent deformation of the plank and/or damage to the plank. Planks should only be lifted off the stack, and not dragged.

We advise that the cladding planks are stored on site at least 72 hours before installation, to allow the composite to acclimatise. When the planks arrive, lay them on a ground sheet and keep them covered.

Dura Composites cannot be held responsible for damage caused by improper storage and handling of the product.

Fire Performance

British Standards and European codes use different grading systems to class fire performance of materials, resulting in confusion for the industry. Dura Cladding Flush Resist is designed to cut through the noise.

Some competitors may reach Class B when tested specifically with certain fire rated barriers but fail when following the install guide (due to lack of airflow). Our test was conducted with a void to replicate a site install, rather than being fixed to a fire rated barrier.

Engineered to resist the ignition of fire the Dura Cladding Flush Resist range has been rigorously tested for consumer peace of mind. The co-extruded 360° outer armour protects the core, increasing its defensive properties against fire. Dura Cladding Flush Resist achieves B s1 d0 according to BS EN 13501.

Customers can have confidence that Dura Cladding Flush Resist has been certified and tested by a recognised body, satisfying current fire legislation; with testing carried out in an environment to closely resemble that of an actual installation for the avoidance of doubt. For buildings below 18 metres including dwelling houses or domestic properties, a minimum fire rating specification is required by law. This applies to both protected areas such as stairwells or other refuge points, and unprotected areas such as property boundaries or the boundaries with adjacent buildings.

The standard to which external cladding materials must comply is known as EN BS 13501 and is the latest iteration of fire standards and improves on previous tests such as BS476 which were limited in both scope and classification.

Current guidance regarding dwelling houses and other buildings below 18 metres require a minimum classification of Class B s3,d2. Dura Cladding Flush Resist has successfully achieved the superior classification of B s1,d0 – in recognition of its lower smoke volume and the absence of droplet production in the event of a fire. These attributes, combined with its limited contribution to flame spread mean that should the building be under attack from fire, firefighters' visibility would be less impeded, leaving them able to expediently deal with extinguishing the fire. In addition, the unique composition of Dura Cladding also prevents spontaneous re-ignition when the source of the flame is removed – further enhancing its safety properties.

For more information or for technical advice, please contact us on +44 1255 440299.

Please note that it is the responsibility of the client and contractor to ensure that your planned design is fully compliant with Building Regulations. For further guidance on fire safety, please refer to the latest government documentation which can be found here: www.gov.uk/government/publications/fire-safety-approved-document-b

Tools Required

Dura Cladding Flush Resist can be installed using a number of standard tools. The list of tools and supplies you may need includes the following:



Measuring Tape



Spirit Level



Sawhorse/Bench



Combination Square



Drills



Jigsaw

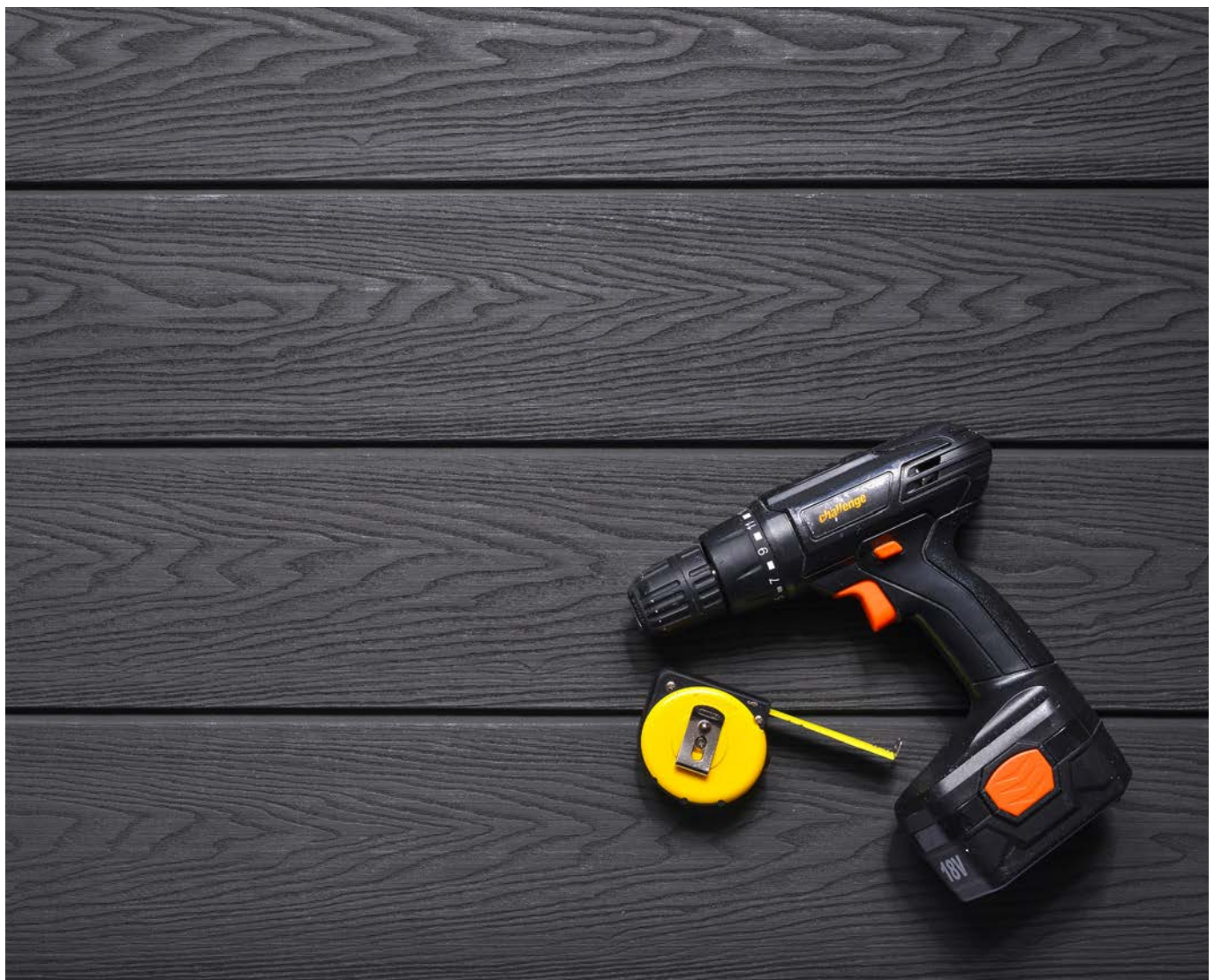


Chopsaw



Circular Saw

IMPORTANT: Only use a drill or drill driver on a low setting. Hammer settings or impact drivers are not compatible with the screw types used for Dura Cladding installations and must not be used.



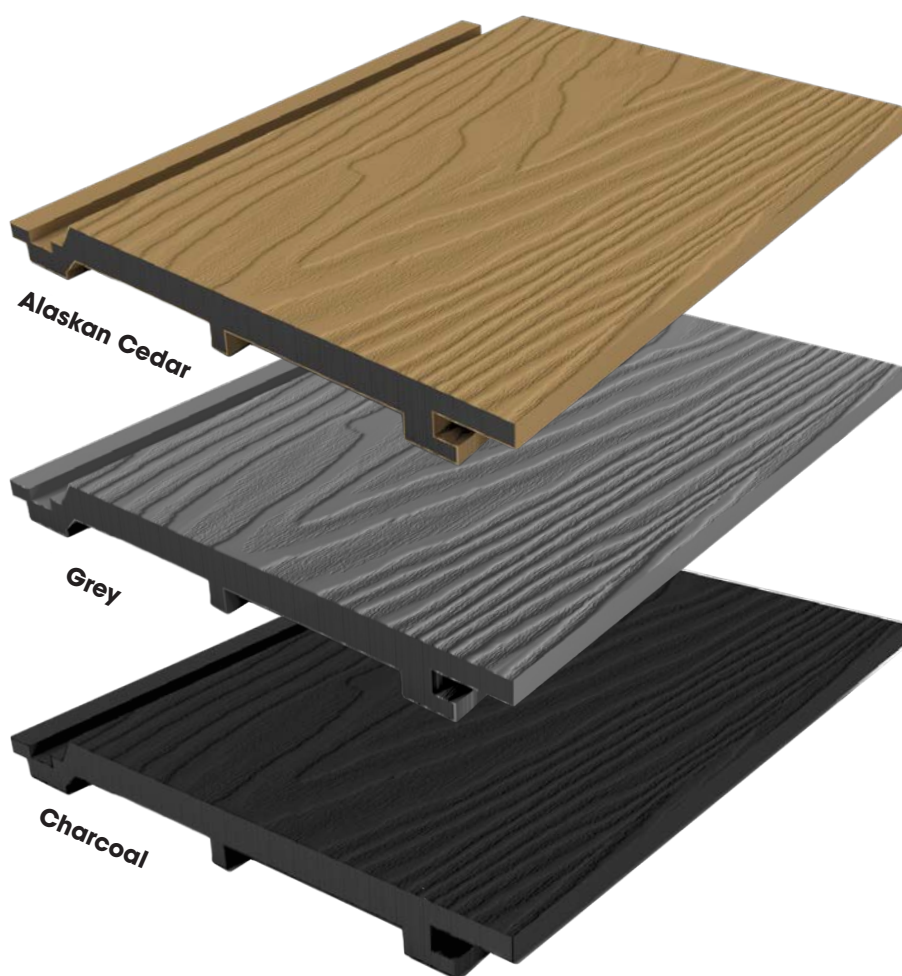
Materials



2

Dura Cladding Flush Resist Planks

Dura Cladding Flush Resist planks are 3660mm in length with a 174mm profile - they are designed to be installed in a tongue and groove style leaving a visible 150mm face on show.



Please note: colours shown are representative only; actual colours may vary slightly. Whilst Dura Cladding Flush Resist is extremely colour stable, there will likely be some initial colour lightening as the product weathers, which typically occurs in the first 3 months. The rate of weathering will vary according to the amount of UV, elevations on your building and its surroundings. For more information visit the Troubleshooting section of this Manual. Dura Composites' manufacturing process results in a high level of colour consistency although some variation in colour may be apparent across planks from different production batches.

Dura Cladding Flush Resist Accessories

The Dura Cladding Flush Resist range includes a simplified range of slimline custom-made aluminium trims and fixing screws.

There are 6 aluminium trim styles, all of which are low profile and powder coated to match or complement the colour of the Dura Cladding Flush Resist planks.

Please note: all the trims are available in Alaskan Cedar, Grey and Charcoal.



Expansion Trim
(M & F Parts)
31 x 14 x 3660mm



Window/Door Reveal Trim
(M & F Parts)
37 x 31 x 3660mm



Corner Trim External Use
(M & F Parts)
49 x 49 x 3660mm



Corner Trim Internal Use
(M & F Parts)
32 x 32 x 3660mm



Universal Start/End Closure Trim
(M & F Parts)
14 x 31 x 3660mm



Aluminium Bearer
25 x 48 x 3660mm
50 x 48 x 3660mm
75 x 48 x 3660mm







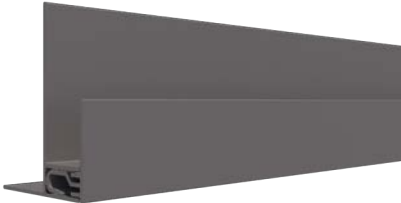

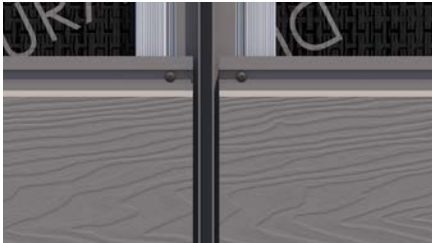

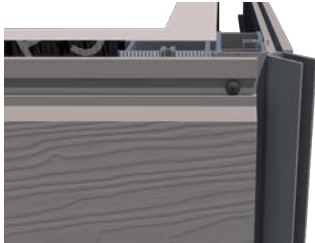
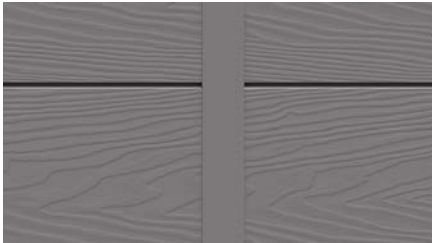

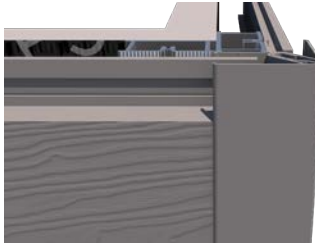
Panhead Screw
(Used to fix cladding to bearer)



Countersunk Screw
(Used to fix trim to bearer also used
for timber bearer)

Fast Fit 2-Part Aluminium Trims

The images below show how the Dura Cladding fast-fit 2 part aluminium trim components (F and M) interlock and fit into a scenario. Please ensure when fitting the Aluminium trims you use the appropriate expansion gap for your project by using the tables on page 37.

Expansion Trim	Window/Door Reveal Trim	Corner Trim (External Use)
		
Base Part (F)	Base Part (F)	Base Part (F)
↓	↓	↓
		
Base Part (F) of Expansion Trim with inserted Outer Part (M)	Base Part (F) of Window/Door Trim with inserted Outer Part (M)	Base Part (F) of Corner Trim with inserted Outer Part (M)
↓	↓	↓
		
Expansion Trim Base Part (F) in position	Window/Door Reveal Trim Base Part (F) in position	Base Part (F) in position when installing as external trim
↓	↓	↓
		
Expansion Trim with inserted Outer Part (M) in position	Window/Door Reveal Trim with inserted Outer Part (M) in position	Combined F + M Parts in position when installing as external trim

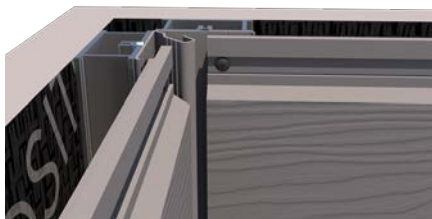
Corner Trim (Internal Use)



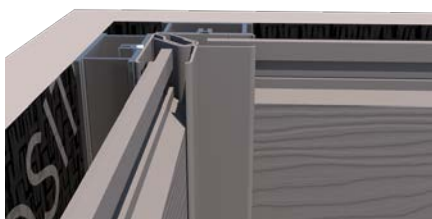
Base Part (M)



**Base Part (M) of Corner Trim with
inserted Outer Part (F)**



**Base Part (M) in position when
installing as internal trim**



**Combined M + F Parts in position
when installing as internal trim**

Universal End Closure Trim



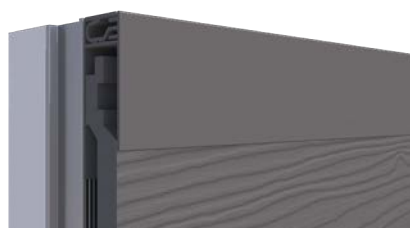
Base Part (F)



**Base Parts (F) of End Trim with
inserted Outer Part (M)**



End Trim Base Part (F) in position



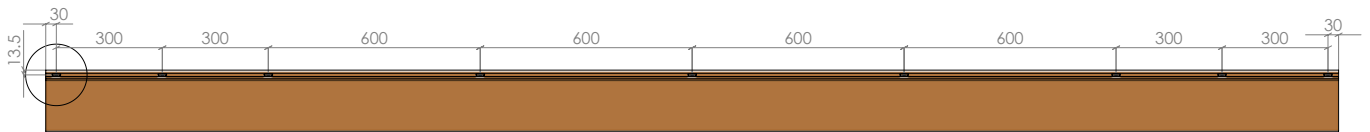
**End Trim with inserted Outer Part
(M) in position**

Dura Cladding Design Explained

Fixing Holes

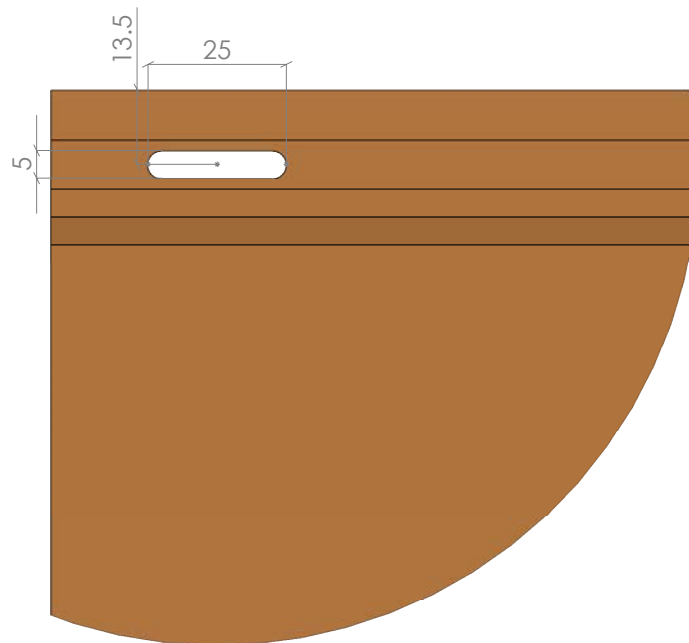
Our cladding plank incorporates a central fixing point to ensure any expansion of the plank during hot weather is controlled equally in both directions. If the cladding plank is cut please remember to make a 5mm diameter new centre hole to ensure any expansion is equal on both sides of the plank.

Hole Details



Our beautifully designed composite timber Flush Cladding comes with convenient pre-drilled holes at defined intervals to make life easier. However, not every build is the same and if a degree of flexibility is needed, or if your install scenario is particularly complex, you can drill additional holes to your own positions easily, allowing you to keep on track with your project schedule. The 25mm pre-drilled elongated hole have a 5mm centre which allows for equal distribution of expansion on either side of the plank centre.

25mm pre-drilled elongated hole detail showing 5mm centre and 2.5mm radius:



Cladding Preparation



3

Decide on which direction to install

It is possible to install Dura Cladding in either direction, both vertical and horizontally. Once you have decided where you want your cladding situated, measure the length and width of the total area. Cladding is installed horizontally as standard, but Dura Cladding can also be installed vertically to provide a different final look.



Select the area to be clad and produce a bill of quantities.

Before you finalise your order, it is best to choose exactly which part(s) of the building you wish to clad with Dura Cladding Flush Resist. Review the size of the area and then consider the cladding planks and colour matching trims that you may require. It is best practice to produce a bill of quantities based on a computer aided design (CAD) layout, taking into account the plank length (3.66m) – this is something that Dura Composites may be able to assist with subject to sufficient time and information.

Most customers find that it is beneficial to build in a waste factor of 10-15% to account for the inevitable quantity of material that cannot be used due to cutting – this may be more or less depending on the number of cuts required to fit around awkward shapes. By taking these factors into account, all of your planks can be delivered in a single load, thus avoiding an additional delivery charge.

Preparing the bearers

Now that you know the direction of the cladding and the exact area of your cladding, next you must determine the bearer layout. Although timber bearers have traditionally been used for residential cladding, we also supply A2 fire rated aluminium bearers to enable the installation of a safer system. Your chosen bearer materials must be fixed to the building using a suitable fixing system and each Dura Cladding plank must be supported every 600mm.

Extra care is required in order to provide sufficient bearer installation in and around obstacles such as windows, fascias, soffits, guttering, ventilation points etc.

Bearer Installation

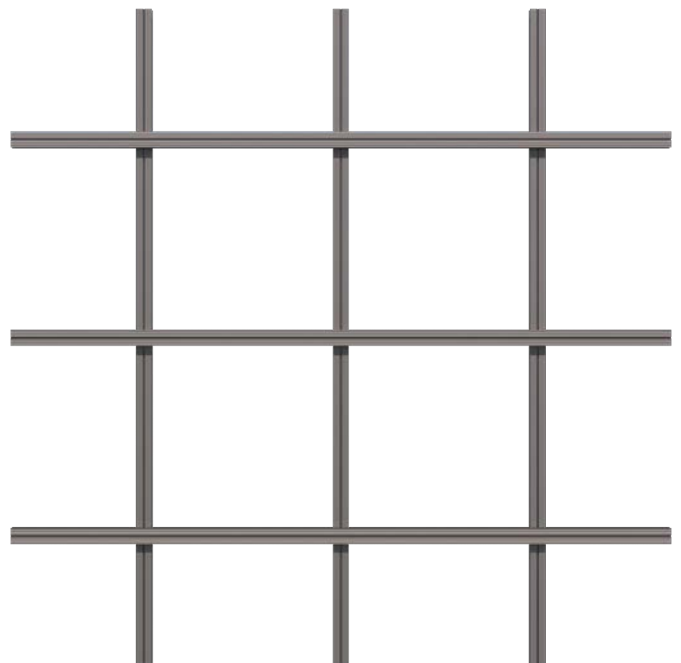
- The Dura Aluminium Bearers used in this example are 25mm x 48mm.
- The first bearer should be 100mm from the floor.
- Timber bearers should be fixed into position at 600mm centres using a suitable A4 Stainless Steel countersunk wood/masonry screw.
- Ensure all bearers are flat to the wall surface, using packers where appropriate.
- Timber bearers should be no less than 38mm x 50mm wide and fire treated to allow a maximum of 38mm air flow behind the cladding.
- Cladding planks have pre-drilled slotted holes at 600mm intervals with smaller centres at the end of each plank.
- Fixing the cladding to the bearer should be carried out using an A4 Pan Head 8 gauge, suitable for bearer options. The screw should be positioned in the centre of the slotted hole to allow for expansion & contraction. Do not over tighten the screws and adjust torque settings according to your drill manufacturer's instructions.
- If the hole centres miss the bearers, appropriate slotted holes must be drilled to allow for expansion and contraction.

Tip: To do this, drill a hole with a 5mm Drill Bit, then use a 5mm Solid Carbon Burr to create a 25mm elongated hole.

- Add appropriate bearer installation for all trims, i.e. around doors and windows.
- For vertical cladding, counter bearer installation is advised to allow sufficient airflow. Also, timber bearers with a 15 degree top edge are advised to shed water into the cavity.



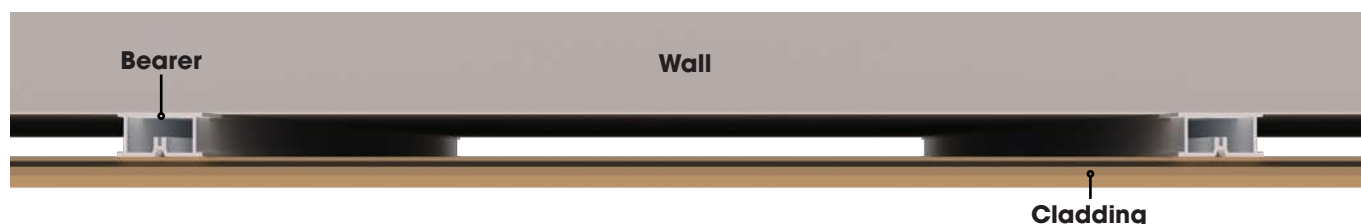
Bearer Installation For Horizontal Cladding



Bearer Installation For Vertical Cladding

Specification Notes:

Dura Cladding Flush Resist should provide adequate weather protection for buildings. However, it must be assumed that not all wind driven rain will be deflected. Therefore, a well ventilated, free draining cavity should always be included in the detailed design. Whether a solid masonry or timber frame structure, we recommend that this cavity shall be a minimum of 25mm deep to protect against moisture penetration and preserve the life of your cladding. Please note that whilst it offers excellent water-resistant properties, Dura Cladding Flush Resist is NOT designed to be a fully waterproof system.



Horizontal Cavity



Vertical Cavity

Cladding onto Timber framed properties:

The inner wall structure should be fitted with a breather membrane. This serves to seal the building against damp and weather penetration. As such it should be highly durable and tear resistant in accordance with Type 1 membranes in BSI British Standard BS4016.

Cladding onto Masonry properties:

Where cladding is fitted to an existing building with solid walls then to prevent water penetration the wall should be given a waterproof coating or a waterproof membrane or wax treated insulation board should be fitted.

Bearer size:

Bearers should be 25mm x 48mm Aluminium or 38mm x 50mm treated timber.

Pre-Treatment Specification:

Horizontal

Softwood bearers/studding/support frame shall be pre-treated by an industrial process in accordance with BS8417 for a BSEN335:1 Use Class 3 application - Wood Protection Association Commodity Specification Code: C6. This code is also referred to in NBS as Z12/120). A cavity of at least 25mm shall be incorporated into the design to permit air circulation and unrestricted drainage of rainwater that penetrates the cladding. The more open the cladding joints then the width of the cavity shall be increased. All openings into the cavity should be fitted with insect mesh.

Vertical

Softwood bearers/studding/support frame shall be pre-treated by an industrial process in accordance with BS8417 for a BSEN335:1 Use Class 3 application - Wood Protection Association Commodity Specification Code: C6. This code is also referred to in NBS as Z12/120).

Installation Steps



Dura Cladding Flush Resist is able to be installed either horizontally or vertically, according to your aesthetic preference. Your chosen orientation will affect your bearer design however, as these run the opposite way to the cladding, so vertical cladding fixes to horizontal bearers and vice versa.

Please Note: Some of the installation steps on the following pages are specific to either horizontal or vertical installations, so please ensure you read them through thoroughly before planning and beginning your installation. If your planned method is not shown in this document, please ensure you consult your Dura Composites representative prior to installation.

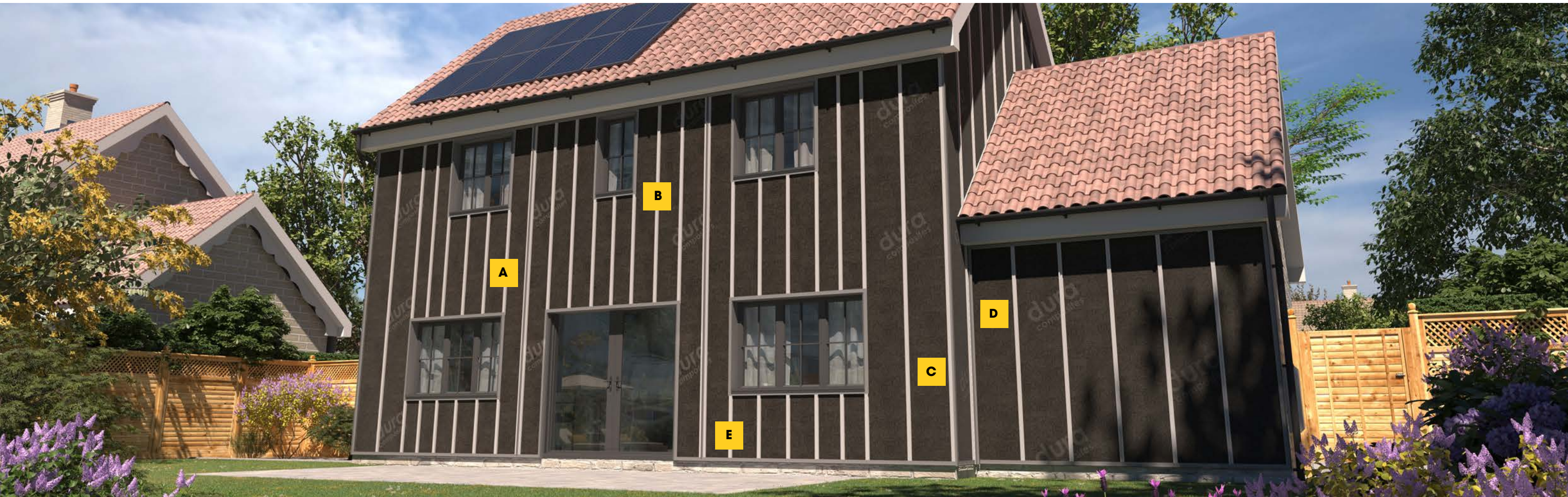


Horizontal Cladding

Horizontal Cladding (Dura Cladding Flush Resist in Anthracite)

Horizontally installed cladding remains the most popular method and makes a real impression on both new build properties and renovation projects. Installation of the cladding begins with adding all bearers, followed by base part trims, followed by cladding planks then finally outer part trims.

The Dura Cladding Flush Resist range includes a simplified range of fast-fit 2 part aluminium trims. There are 6 aluminium trim styles, Internal/External is reversible, all of which are low profile and powder coated to match or complement the colour of the cladding planks. All trims are available in Cedar, Mist and Anthracite. Installation of the cladding begins with adding all bearers, followed by base part trims, followed by cladding planks then finally outer part trims.



When fixing the Cladding to Bearer ensure you use a Panhead Screw.



Panhead Screw

When fixing the Trims to Bearer use a self drilling Countersunk screw for Aluminium or 30mm countersunk wood screws for timber bearers.



Countersunk Screw



Expansion Trim

This 2-part trim is used to cover the butt joints between two lengths of cladding and enables expansion. The outer part (M) is clipped into place once all planks have been fixed in position.



Window/Door Reveal Trim

The 2-part reveal trim is used to frame around windows and doors. The base part (F) of the trim is fixed to the bearer first, then the cladding plank is slotted into place. Once in position, the outer part (M) is clipped into place.



Corner Trim (External Use)

The 2-part corner trim is used for external 90° corners and is designed to provide a neat and tidy finish. The base part (F) is installed under the cladding, then the outer part (M) is added after the planks have been fixed.



Corner Trim (Internal Use)

The 2-part corner trim is used for internal 90° corners. The base part (F) is installed under the cladding, then the outer part (M) is clicked in once the planks have been installed.

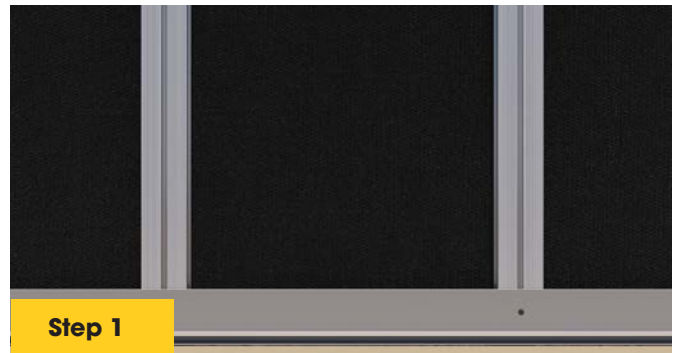


Universal Start/End Closure Trim

This 2-part trim is used to terminate cladding planks to adjacent façades such as: brick, render, soffits and gable ends and should be used in cases where there is no need to create a corner.

Step 1: Universal Start/End Closure Trim (to start cladding)

- Mark level lines on the bearers.
- Place the Starter Trim (F) in position.
- Fixing the Starter trim (F) to the bearer should be carried out using self drilling screws for Aluminium.
- Use the appropriate torque setting to ensure you don't over-tighten the screw.
- Ensure that the Starter Trim (F) is firmly in position, lying flat across bearer faces.
- Torque settings are present on most combi drills. Please note that all drill driver settings are slightly different so if you are using more than one on site, please ensure to check them all.
- Next add all base part trim (F) components and fix into place. Now you are ready to add your first cladding plank.
- Measure your cladding to ensure you are able to install with the recommended expansion gap between the plank end and adjacent base trim part.



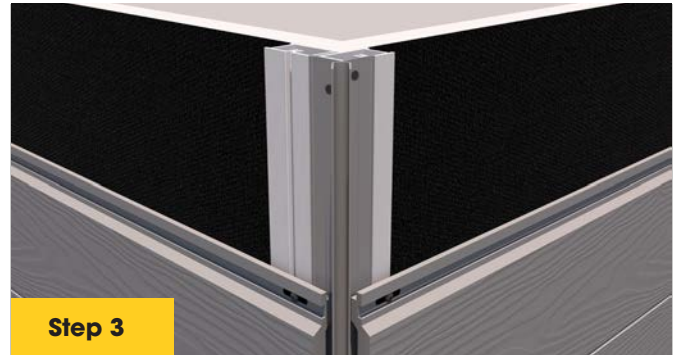
Step 2: First Plank

- Place the plank in the correct position into the Starter Trim (F) and drill appropriate holes in line with the centre of the bearers.
- Using the same method as the Starter Trim, fix the cladding plank using self drilling screws for Aluminium or 30mm countersunk wood screws for timber bearers, starting from the centre and then working outwards towards the ends on both sides. Do not over-tighten the screws.
- Ensure that the cladding plank is secure and repeat this process along each plank, checking the level before each plank is fixed.
- Make any slight adjustments as required



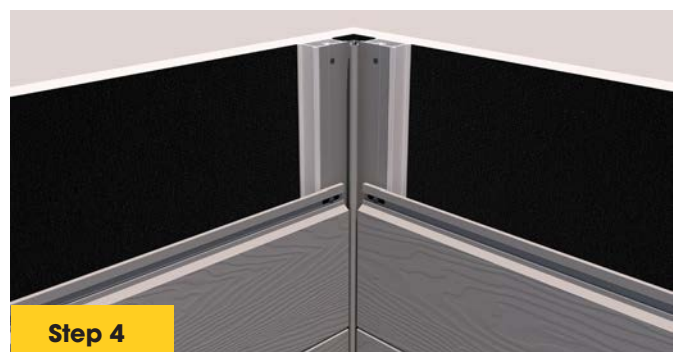
Step 3: External (Corner) Trim

- The base part (F) of External Trim will already be in position.
- Again, ensure your cladding planks have been measured and cut to allow appropriate expansion gaps (refer to Gap Guide page 37).
- Fix planks into position using your recommended screw.
- The outer part (M) of the Corner Trim will not be added until after all your planks have been installed. Once installation is complete the M part trim can be added using a push-fit technique.



Step 4: Internal (Corner) Trim

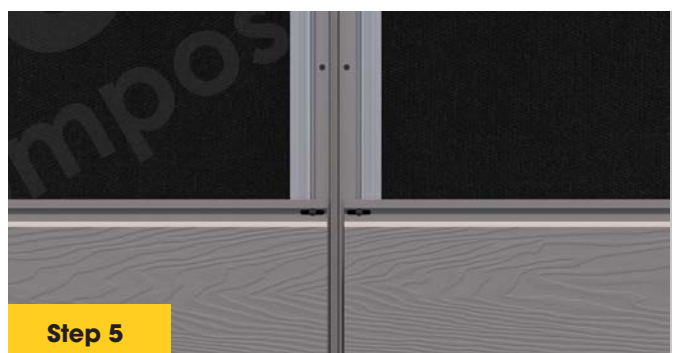
- Cladding should be positioned adequate expansion gaps (refer to Gap Guide page 37) following the same method as the External Corner Trim above.
- The outer part (F) of the Corner Trim can be added after your planks have been installed using a push-fit technique.





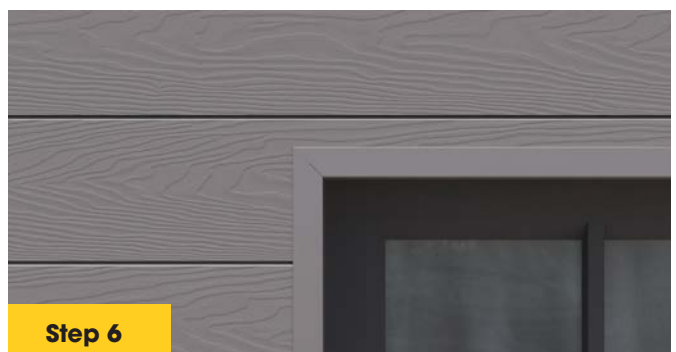
Step 5: Expansion Trim

- The Expansion Trim can be used to cover the butt joints between two lengths of cladding and enables expansion.
- The base part (F) of your expansion trim will already be in position following your initial bearer installation.
- Once all of the planks have been fixed into position allowing for the appropriate expansion gaps (refer to Gap Guide page 37), clip the outer part (M) into place using a push-fit technique.



Step 6: Window/Door Reveal Trim

- Bearers should be no less than 25mm x 48mm Aluminium Bearers.
- Following the fixing of your bearers into position, measure the required amount of Reveal Trim and cut to required length.
- Mitre down at 45 degrees on the Reveal Trim ends if being placed next to each other at wall edges (Step 6).
- Place the base part (F) of the trim over the bearer, pre-drill and Screw into place with countersunk A2/ A4 Stainless Steel screws.
- Only slot the cladding planks into place once all base part trims have been installed ensuring you allow for the appropriate expansion gap (refer to Gap Guide page 37).
- Fascia trims can be cut down to size to suit windows or door frames. These can be cut from our standard solid fascia board 180mm x 10mm.
- Mark and cut where appropriate. Mitering or butt joining is acceptable.
- Once planks are in position, the outer part (M) of the trim can be clipped in.



Step 7: Universal Start/End Closure Trim (to finish cladding)

- This 2-part trim is used to terminate cladding planks to adjacent façades such as brick, render and gable ends and should be used in cases where there is no need to create a corner.
- The procedure for fitting this 2-part trim is similar to the previous trim parts. The base part (F) should be installed first and then after the last cladding plank is installed, the outer part (M) of the End Closure Trim can be snapped into the base part (F) to provide a neat finish.
- If you have scenario where you need to cut down a board, please see page 28.

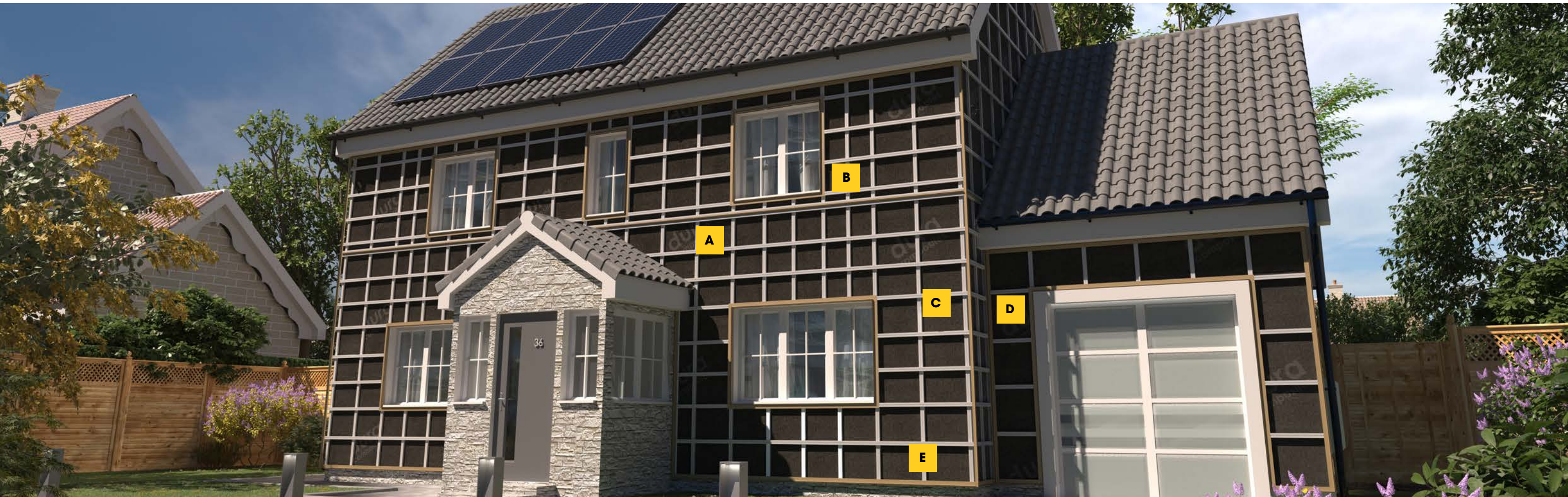


Vertical Cladding

Vertical Cladding (Dura Cladding Flush Resist in Alaskan Cedar)

To begin vertical installation, first install all bearers ensuring they are plumb to the wall and appropriate counter-bearer has been used. Next, place the base part (F) of the Universal End Closure Trim (or other preferred trim) into position, followed by the Starter Trim laid vertically. Next fix the Starter Trim through the base part (F) of the Universal End Closure Trim (or other preferred trim) and ensure it securely fixed to bearer.

Architects and designers looking to add the illusion of height and a uniform appearance to a building are increasingly opting for vertical cladding board installations. When installed vertically, Dura Cladding Flush Aluminium creates stunning contemporary finish.



When fixing the Cladding to Bearer ensure you use a Panhead Screw.



Panhead Screw

When fixing the Trims to Bearer use a self drilling Countersunk screw for Aluminium or 30mm countersunk wood screws for timber bearers.



Countersunk Screw



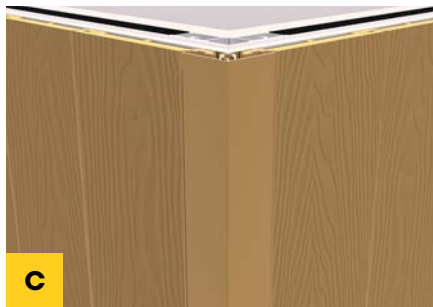
Expansion Trim

This 2-part trim is used to cover the butt joints between two lengths of cladding and enables expansion. The outer part (M) is clipped into place once all planks have been fixed in position.



Window/Door Reveal Trim

The 2-part reveal trim is used to frame around windows and doors. The base part (F) of the trim is fixed to the bearer first, then the cladding plank is slotted into place. Once in position, the outer part (M) is clipped into place.



Corner Trim (External Use)

The 2-part corner trim is used for external 90° corners and is designed to provide a neat and tidy finish. The base part (F) is installed under the cladding, then the outer part (M) is added after the planks have been fixed.



Corner Trim (Internal Use)

The 2-part corner trim is used for internal 90° corners. The base part (F) is installed under the cladding, then the outer part (M) is clicked in once the planks have been installed.

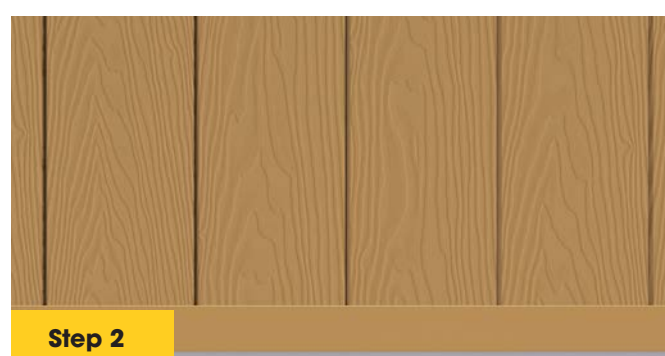
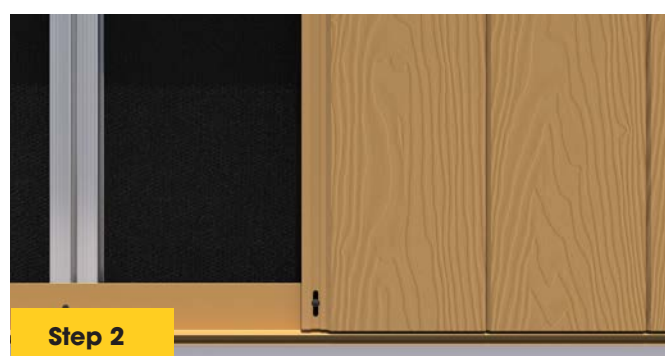
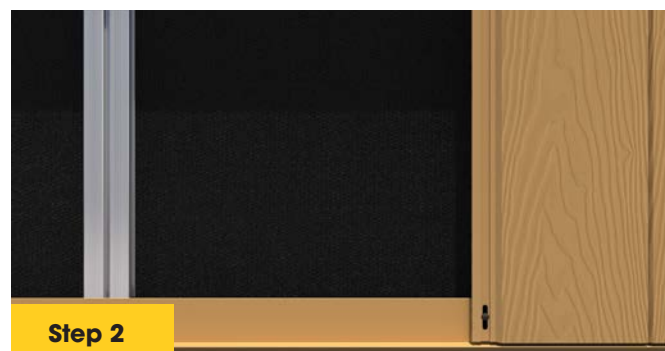
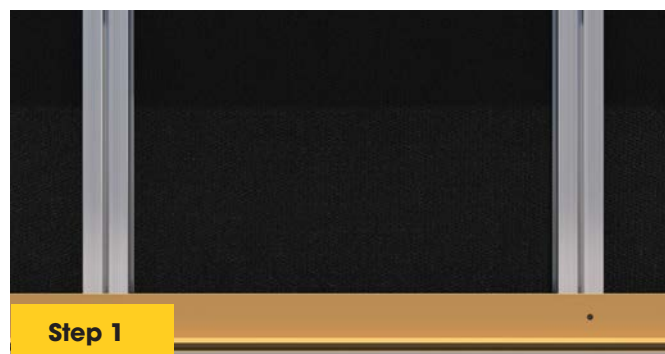


Universal Start/End Closure Trim

This 2-part trim is used to terminate cladding planks to adjacent façades such as: brick, render, soffits and gable ends and should be used in cases where there is no need to create a corner.

Step 1: Universal End Closure Trim (to start cladding)

- Use the appropriate torque setting to ensure you don't over-tighten the screw as this will restrict expansion and contraction.
- Ensure that the Trims are firmly in position, lying flat across bearer faces.
- Ensure that you add all of the base part (F) trims needed for your project before any cladding planks are installed.
- The outer part (M) can be only added once all the cladding planks have been fixed into position.

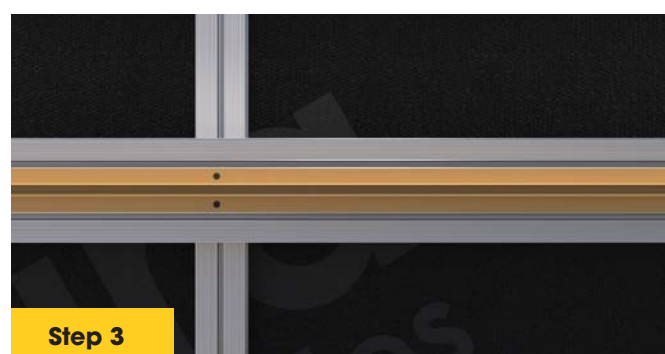


Step 2: First Plank

- Place the plank in the correct position on the UEC Trim ensuring the fixing positions line up with the bearers. (Drill appropriate holes if required).
- Fix the cladding plank using a self drilling screw for Aluminium starting from the centre and then working outwards towards the ends on both sides. Remember to ensure that the appropriate expansion gap is left (refer to Gap Guide page 37)
- Once again, do not over-tighten the screws.
- Ensure that the cladding plank is secure.
- Repeat this process, checking the level before each plank is fixed. Slight adjustments maybe required.

Step 3: Expansion Trim

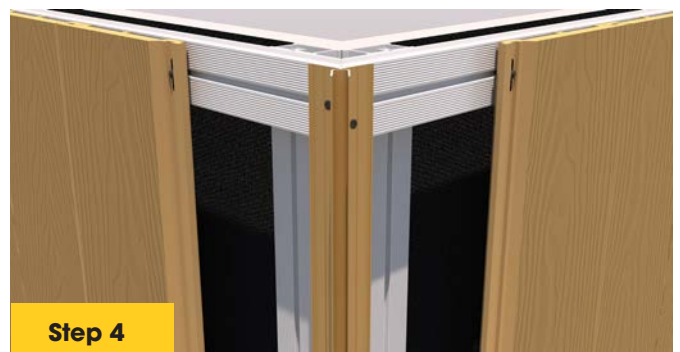
- Cut down the Expansion Trim to the length required.
- Screw the base part (F) into place with countersunk A2/A4 Stainless Steel screws on to the bearer.
- The outer part (M) is clipped into place once all planks have been fixed in position ensuring that the appropriate expansion gap (refer to Gap Guide page 37).





Step 4: External (Corner) Trim

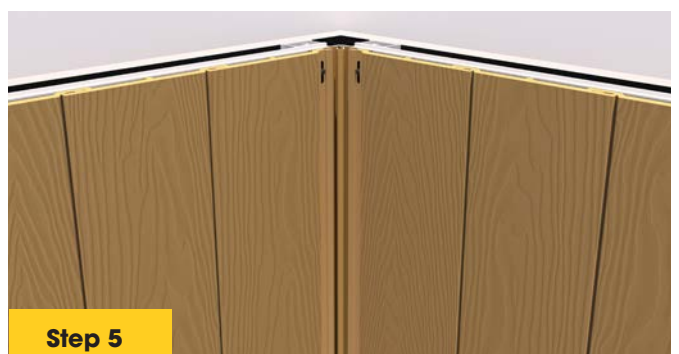
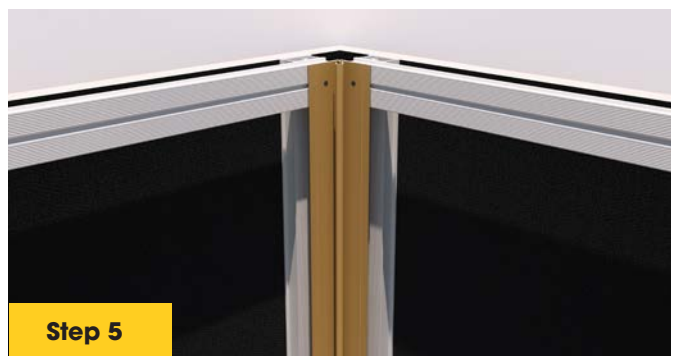
- Cut External Trim to the length required.
- Place the External Trim in position and mark on bearers to show where the cladding planks will finish.
- Ensure that the appropriate expansion gaps are left (refer to Gap Guide page 37).
- Fix the base part (F) into position with self drilling screws for Aluminium.
- Push-fit the outer part (M) of the trim into position once all the planks have been added.





Step 5: Internal (Corner) Trims

- Cut the trim to the lengths required.
- Position the base part (F) of the Internal Trim onto the bearers.
- Cladding should be positioned approximately half way into the recess to ensure that a suitable gap (refer to Gap Guide page 37) is allowed for expansion and contraction.
- Fix into position and then add the outer part (M) of the trim once all cladding planks have been fixed.



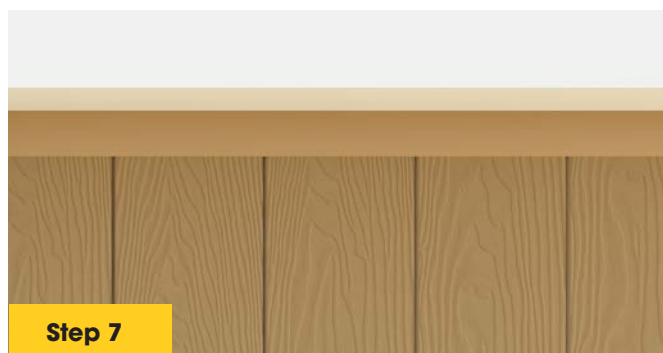
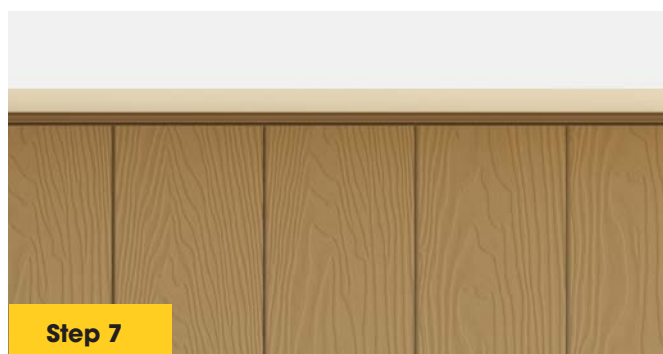
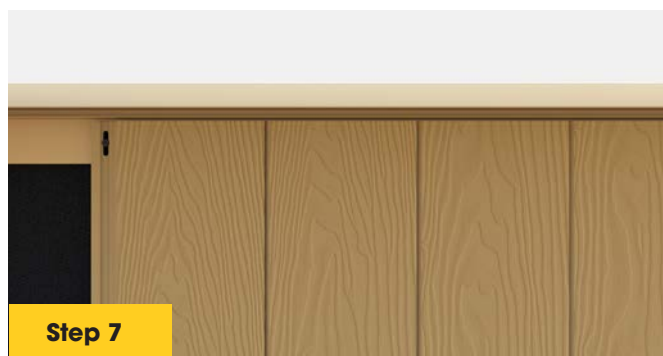
Step 6: Window/Door Reveal Trim

- Bearers should be no less than 25mm x 48mm Aluminium Bearers.
- Measure the required amount of Reveal Trim and cut to the length required.
- Mitre down at 45 degrees on the Reveal Trim ends if being placed next to each other at wall edges (Step 6).
- Place over the Bearer, pre-drill and screw into place.
- Position the Trim. Mark and cut where appropriate. mitering or butt joining is acceptable.
- Push outer part (M) of trim into place once all surrounding planks have been fixed with the appropriate expansion gaps (refer to Gap Guide page 37). Mitering or butt joining is acceptable.



Step 7: Universal End Closure Trim (to finish cladding)

- This 2-part trim is used to terminate cladding planks to adjacent façades such as brick, render and gable ends and should be used in cases where there is no need to create a corner.
- The procedure for fitting this 2-part trim is similar to the previous trim parts. The base part (F) should be installed first and then after the last cladding plank is installed, the outer part (M) of the End Closure Trim can be snapped into the base part (F) to provide a neat finish.
- Ensure you have left the appropriate expansion gaps (refer to Gap Guide page 37).
- If you have scenario where you need to cut down a board, please see page 28.

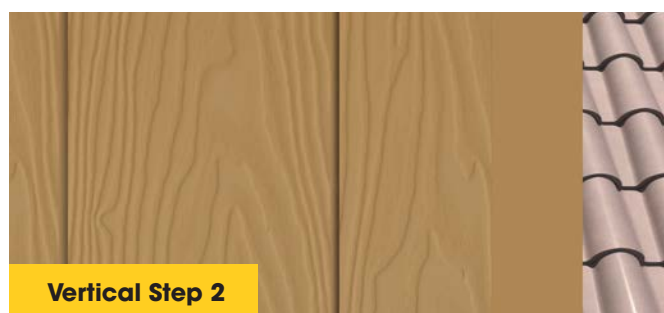
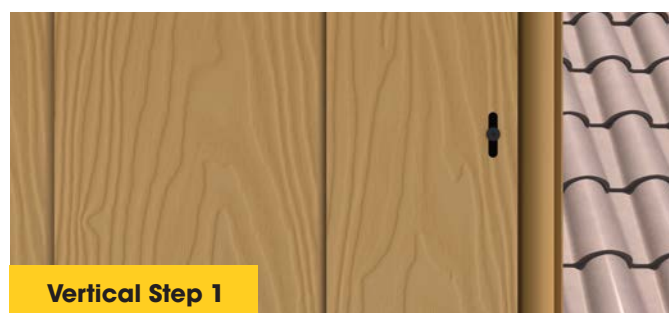
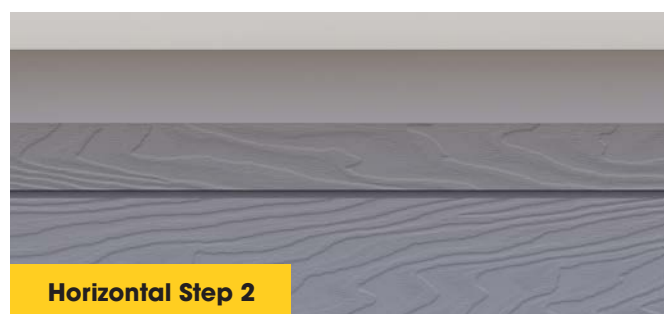
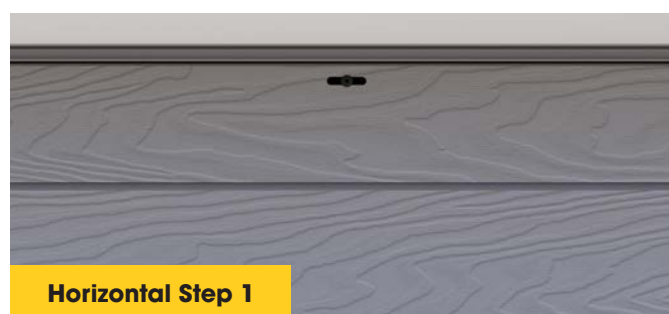


Horizontal & Vertical Additional Finishing Options

Finishing the Last Plank When Not On A Full Board

It is unlikely that cladding will terminate on a full width plank, and if this is the case it may be necessary to cut the last plank down in width.

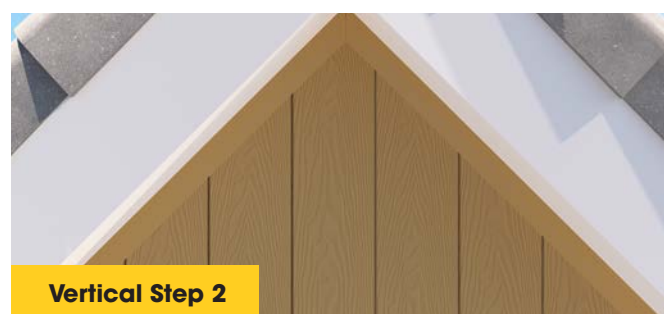
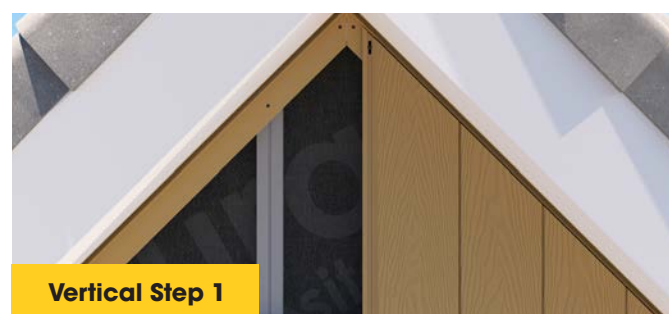
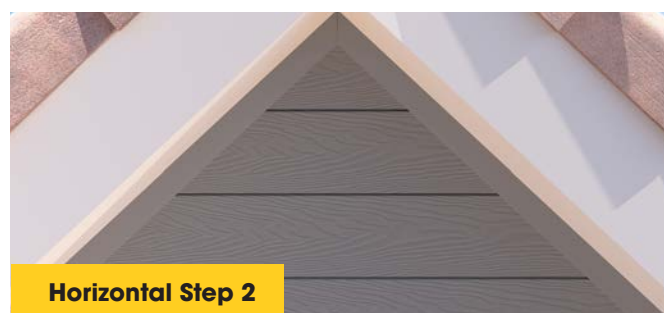
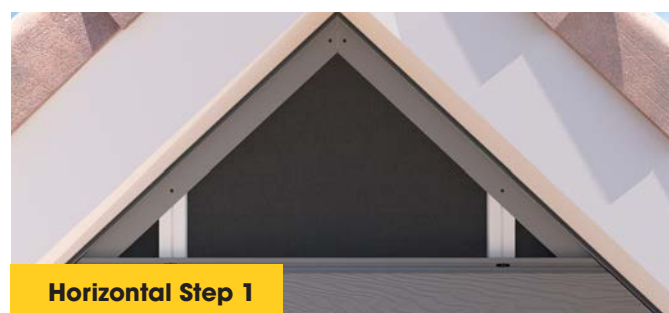
Standard woodworking tools can be used to cut the plank down its length. We would recommend a chop saw for maximum efficiency and neatness of the cut edges. Your cut plank will be held in position by the trim. Please follow Step 7 instructions for further detail.



Finishing Gable Ends

There are 2 methods for finishing cladding at gable ends or dormer windows.

1. Ending with a mitred Finishing Trim – this method is largely adopted for refurbishment projects or re-installation.
 2. Alternatively, a PVC or similar barge board & soffit from another manufacturer can be used to conceal the top of the cladding – this system is generally used on a new build project or if the barge board & soffit is being replaced.
- Ensure that the appropriate expansion gaps have been left in both methods (refer to Gap Guide page 37).

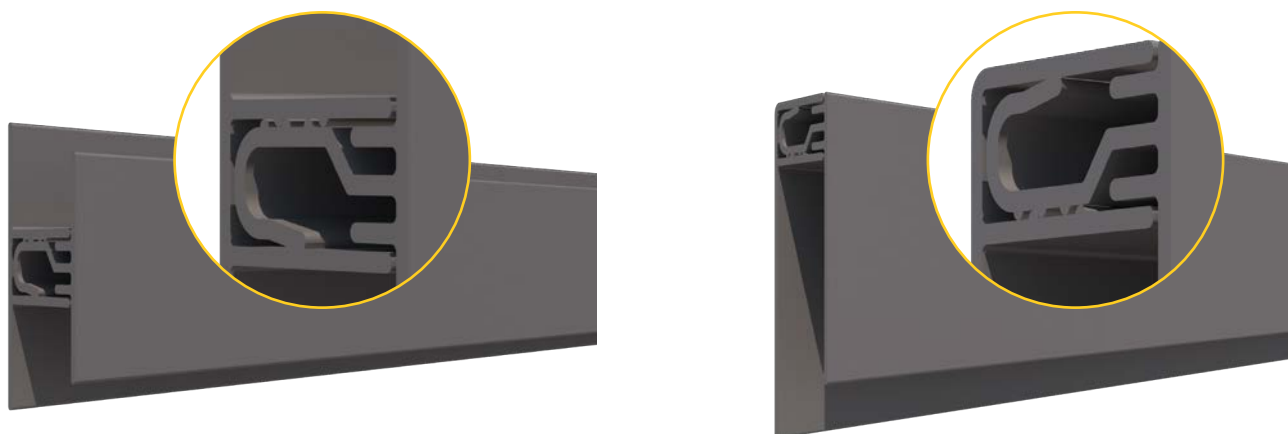


Additional Notes for both Horizontal and Vertical Surface Mounted Features

Where building features, such as gutters, canopies, signs, etc., are to be fixed, additional bearer work should be included. Additional pilot holes must be drilled through the Dura Cladding Flush Resist planks to the substrate. Refer to the 'Tips' in the 'Bearer Installation' section on page 10 for further information.

Please note: Under no circumstances should Dura Cladding Flush Resist planks receive additional structural loads, e.g. signage.

Trims must be installed teeth to teeth as shown in the images below, to ensure they can be separated if required at a later stage.



Insulation

Should insulation be required then additional cavity depth can be gained with the use of cross bearers or adjustable brackets. It is possible to securely fix horizontal bearers onto the wall or substrate – these will accommodate any insulation required, whilst supporting the vertical bearers to which the Dura Cladding Flush Resist planks will be fixed. Alternatively, you can fix the insulation to the wall between the bearers or brackets, ensuring that there are no gaps. Vertical bearers will then be fitted on top of the horizontal bearers.

Please note: screws must be inserted perpendicular to the panel surface and should not be over-tightened to ensure the free expansion of the plank is not impeded.

Dispose of Off Cuts

- Safely dispose of Dura Cladding Flush Resist as per local legislation.
- Do not burn.
- Treat as construction waste.
- If unsure, consult your local governing body/council.



Finished Horizontal and Vertical Projects



Installations without Dura Cladding Flush Resist Trims & Accessories

Certain applications may require a specific finish that can only be achieved using trim parts from 3rd party suppliers using materials such as natural wood, plastic, etc. The use of 3rd party products is not recommended and may invalidate your Dura Composites warranty if not pre-approved by Dura Composites at the design stage, however if you choose to do this, we have produced guidelines that allow the installer to install alternative trims. These guidelines take into account the natural expansion and contraction that occurs as the product goes up and down the temperature range.

Please therefore use the appropriate expansion gaps between plank lengths in accordance with your region and the temperature at the time of the installation to accommodate for this movement (see Dura Cladding Flush Resist Expansion Gap Guide Tables page 37). Always allow 3mm minimum gap where planks meet an adjoining fixed structure/post regardless of plank length. This chart should also be used if for whatever reason your project does not require trims.



Additional Info



Troubleshooting & Frequently Asked Questions

How is the UV Stability of the product affected by overhangs or the elevations on my building?

Dura Cladding has been extensively UV Weather Tested to ISO 4892-2 Xenon Arc (5000hrs) to ensure it will not splinter, warp or rot and doesn't require any staining or painting. As with any cladding (including natural timber), large overhangs on your building may lead to uneven 'weathering' and can sometimes create areas of differential colour beneath shaded areas. The rate of weathering will also vary according to the amount of UV, the elevations on your building and its surroundings. South facing elevations for example will initially fade at a more rapid rate than north facing elevations, but in time all elevations will stabilise to a similar level once the satisfactory UV exposure has been attained.

If your building has overhangs, this will prevent rain water naturally washing the surface clean of dirt particles. Cladded surfaces beneath overhangs should be regularly pressure washed to ensure that they are clean from surface dirt or debris. If your planned design includes overhangs, it's a good idea to save a few planks which have been acclimatised to direct sunlight during your install process for use in these areas.

Following installation I have noticed discolouration to the edges of some of the boards. How do I correct this?

Whereas traditional wood planks require regular painting or staining to preserve their natural beauty and protect them, UV inhibitors can be added to a WPC or composite timber cladding such as Dura Cladding at the point of manufacture to protect against the elements. If you are noticing discolouration to the edges of your Dura Cladding boards then there may be an issue with your underlying breather membrane. The correct membrane installed as part of your substructure will provide excellent resistance to both wind and rain and protection against humidity and wind, increasing the lifetime and the effectiveness of both the insulation and of your cladding.

Some of my cladding boards are showing signs of cupping. What should I do?

Dura Cladding is extremely dimensionally stable, is highly resistant to the absorption of moisture, unlike traditional wood cladding. Although water resistant, Dura Cladding is NOT designed to be a fully waterproof system. Therefore, a well ventilated, free draining cavity should always be included in your detailed design. If the space behind your cladding is not adequately ventilated and drained, then there is a small risk of the boards 'cupping'. Cupping is where the board curves across its width, caused by one side absorbing more moisture than the other, and swelling at a different rate. Allow adequate ventilation space behind the cladding as specified within this Technical Manual to allow your cladding boards to dry as rapidly as possible after wetting and avoid any risk of cupping.

How do I prevent rainwater ingress to my cladding trims when installing?

The best way to prevent rainwater ingress in this scenario is to use a suitable low modulus sealant to bead along the upper transition joint between your trim and your cladding. For more information please contact your Dura Composites representative. Please note that the Dura Cladding system offers a level of water resistance but is not designed to be a fully waterproof system.

Maintenance and Cleaning

Basic Cleaning

Spray with a hose to remove surface debris. Use warm soapy water and a soft-bristled brush to clear dirt and/or debris from grooves or contours.

Pressure Washing

Pressure washers up to 1500psi may be used to maintain cleanliness of timber composites. To prevent any damage, always keep the pressure washer nozzle at least 15cm (6 inches) from the surface and avoid concentrated spraying on one area for more than 3 seconds. The use of a pressure washer in the correct manner will not shorten the life of the material.

Marking

Always use a non-permanent marker such as a dust-off marking chalk to mark cutting and plumb lines.

General dirt and debris

Spray with a hose to remove surface debris. Use warm soapy water and a soft-bristled brush to clear dirt and/or debris from grooves or contours. Pressure wash to remove more stubborn stains.

Oil, grease, food and drink

Remove and wipe as soon as possible. Spray with a hose and use warm soapy water and a soft-bristled brush. Pressure wash to more stubborn stains.

Colour fade

Dura Cladding Flush Resist contains natural wood, meaning that depending on the colour selected there will be a small amount of initial colour fading to be expected during the life of the product. Our extensive lab testing and experience from real-life installations shows that any minor colour fading occurs in the first 3 months following installation and then subsides, making Dura Cladding Flush Resist a great choice for projects which require a striking and long-lasting finish. Our manufacturing process results in a high level of colour consistency although some variation in colour may be apparent across planks from different production batches.

Rust stains and engrained dirt

Cleaning products containing Oxalic or Phosphoric Acid can be used but DO NOT use bleach as this will lighten the cladding. With any cleaning product, test it on a small, inconspicuous area first, following the cleaning manufacturer's instructions.

Mould and mildew

Remove as soon as possible– spray with a hose and use warm soapy water and a soft-bristled brush. Pressure wash more stubborn stains.

Please note: All timber based products will release tannins but these will naturally stabilise after approximately 12 weeks, depending on the temperature, UV and exposure to rain.

Data



Technical Specifications

Definition

Range of products produced from Wood Polymer Composite (WPC) which is manufactured by an Extrusion process using a mix of recycled plastics and hardwood wastes with various bespoke additives.

Applications

WPC is an immensely versatile material which combines the traditional appearance of natural timber with the durability and resilience of an engineered composite. Given it is available in a wide range of colours and huge range of profile sections, the engineer can create a product or component suitable for many applications.

Benefits

Natural appearance, long life, lightweight, low maintenance, no warping, no rotting, no trip hazards, corrosion/ electrical resistance, low tooling/installation cost, long service life, no splintering, UV stable. WPC products compete very favourably on a life cycle cost basis versus traditional materials due to their limited maintenance needs and long life span.

Raw Materials

WPC is manufactured using a composition comprising high density polyethylene, hardwood waste plus a number of specialist additives such as coupling agents, inhibitors and stabilisers. The exact composition used for Dura Composites' products is confidential. It is this highly developed, precise composition that enables the composite to deliver such strength and durability.



Product

Dura Cladding comprises a range of low maintenance composite timber cladding products that provide a natural wood appearance for commercial or residential building façades. The Cladding is designed for a 25-year service life, features a unique concealed fixing system and does not require painting or any other form of protection, only basic cleaning. The materials will not warp, rot or splinter like natural wood and due to the pre-cut slotted holes, screw fixing is very rapid making for quick and efficient installations. The Dura Cladding system offers a level of water resistance but is NOT designed to be a fully waterproof system. Dura Cladding should provide adequate weather protection for buildings. However, it must be assumed that not all wind driven rain will be deflected. Therefore, a well ventilated, free draining cavity should always be included in the detailed design.

Product Range

Cladding Profile	Thickness	Plank Length	Visible Face Width when installed	Maximum Fixing Span	Weight I/m
Dura Cladding Flush Resist Plank	18mm	3660mm	150mm	600mm	2.08kg
Internal Corner Trim	1.5mm	3660mm	19.5mm	600mm	0.9kg
Window/Door Reveal Trim	1.5mm	3660mm	20mm	600mm	0.47kg
External Corner Trim	1.5mm	3660mm	35.6mm	600mm	0.73kg
Expansion Trim	1.5mm	3660mm	21.5mm	600mm	0.37kg
Universal Start/End Closure Trim	1.5mm	3660mm	20mm	600mm	0.37kg

Manufacturing Tolerances

Width:	+1mm	-	1mm
Thickness:	+1mm	-	1mm
Length:	+3mm	-	3mm

Material Specifications

Test Item	Test Parameter	Test Data
Linear Thermal Expansion (Lengthways)	Test method: ISO 11359-2:1999 Method A Rate of temperature: 3 °C/min	29x10 ⁻⁶ K ⁻¹
Water Absorption	Test method: EN 317:1993	0.45%
Density	Test method: ASTM D792-13 Method B	1.29 g/cm ³
UV Light Ageing Test	Test method: ASTM G154-16 & ASTM D2244-16 UV Exposure cycle: Exposure duration: 1000h	ΔE*ab = 2.60
Tensile Strength	Test method: ASTM D638-14	12.3 MPa
Flexural Strength	Test method: reference to ASTM D7032-17 Section 4.4 and ASTM D4761-13 Section 8	39.80 MPa
Low Temperature Effect (-29 ±2°C)	Test method: ASTM D7032-17 Section 4.5.1 and ASTM D4761-13 Section 8	45.10 MPa
High Temperature Effect (52 ±2°C)	Test method: ASTM D7032-17 Section 4.5.1 and ASTM D4761-13 Section 8	22.70 MPa
Moisture Effect (85%RH)	Test method: ASTM D7032-17 Section 4.5.2 and ASTM D4761-13 Section 8	39.60 MPa
Freeze-Thaw Effect	Test method: ASTM D7032-17 Section 4.7 and ASTM D4761-13 Section 8 Freeze-thaw exposure cycle : Submerge underwater for 24h -29°C, 24h 23±2°C, 24h Step ~ as one cycle, total three cycles	Flexural Strength after freeze-thaw resistance: 32.50 MPa
Flexural Stiffness	Test method: reference to ASTM D7032-17 Section 4.4 and ASTM D4761-13 Section 8	Flexural Stiffness: 3870 MPa
Resistance to Indentation	Test method: EN 15534-1:2014 Section 7.5	Brinell Hardness: 56.17 MPa
Charpy Impact Strength	Test method: EN ISO 179-1:2010	2.6 kJ/m ²
Flammability Resistance	Test method: EN13501-1 (EN ISO 9239-1) and (EN ISO 11925-2)	B-s1, d0

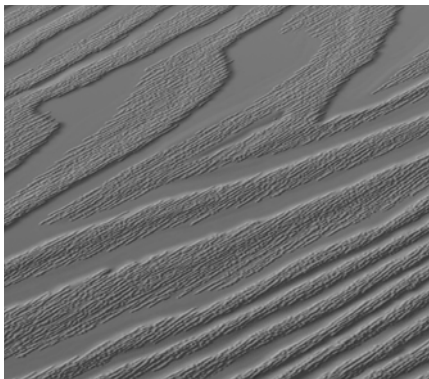
*While the above test data is considered to be true and correct at the date of publication, changes to the product composition after the time of publication may impact on the accuracy of the data. Please consult your Dura Composites representative for copies of the most up to date test data available. Please note that it is the responsibility of the purchaser to make their own decisions about the accuracy, recency and correctness of the information provided and the product's suitability for their specific application.

Colours

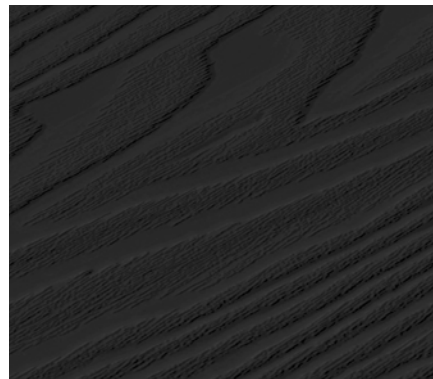
A range of standard wood-look colours are available to suit every project need. Dura Cladding Flush Resist planks are reversible, with the choice of an embossed woodgrain finish on one side and a fine grain finish on the reverse. It is possible to produce the cladding planks in various bespoke colours subject to minimum order volumes of 1500 sqm. Please ask for details.



Alaskan Cedar



Grey



Charcoal



Gap Guide

Please refer to this guide to ensure your planks have adequate space for expansion and contraction and to preserve the service life of your cladding.

Dura Cladding Flush Resist Recommended Gap Tables (Europe)

Installation Air Temp (°C)	Dura Cladding Expansion Gap Guide (mm)
	3660mm Board
	Solid
-10	7.4
-5	6.6
0	5.7
5	4.9
10	4.1
15	3.3
20	2.5
25	2.0
30	2.0
35	2.0

*Assuming worst case scenario of flush resist range installed at -10°C and reaching +35°C

Dura Cladding Flush Resist Recommended Gap Tables (Middle East)

Installation Air Temp (°C)	Dura Cladding Expansion Gap Guide (mm)
	3660mm Board
	Solid
10	4.1
15	3.3
20	2.5
25	2.0
30	2.0
35	2.0
40	2.0
45	2.0
50	2.0
55	2.0

*Assuming worst case scenario of flush resist range installed at +10°C and reaching +55°C

Safety Data Sheet

This section provides data for protection against substances hazardous to health.

Material Identification and Use

Chemical Name:	Wood Polymer Composite
Common Name:	WPC, Composite Timber
Product Identification:	Dura Cladding Flush Resist
Uses:	Building envelope on new builds & renovations below 18 metres in height (domestic or commercial)

Composition

High density polyethylene, hardwood waste materials from industry, coupling agents, UV stabilisers, mould inhibitors and Polypropylene wrap. Components are extruded through die, heated and cured.

Hazard Identification

None by contact. Dust produced by cutting or grinding can penetrate pores and skin causing itching. Avoid breathing dust, skin contact or dust inhalation when cutting. People with a condition that could be aggravated by dust should avoid cutting or grinding.

First Aid procedure: Skin – shower with water and soap. Eyes – flush with sterile eye wash solution.

Product Appearance

Solid profile sections. Some sharp edges, woodgrain or fine groove finish. Wood Odour. Not soluble in water. Standard colours are Alaskan Cedar, Charcoal and Grey.

Fire Fighting Measures

Standard extinguishing equipment, water, foam, A, B or C fire extinguishers. Produces black smoke while burning, carbon particles. Use air respirator.

Waste Disposal

Product is not considered a hazardous waste. Abide by local laws and procedures.

Handling/Cutting

Wear masks and goggles when cutting or grinding. Cover exposed parts of the body. Wear gloves when moving or lifting. Use standard wood working equipment & tools for cutting. Avoid direct fire source.

Product Warranty

15-year limited warranty. Please register your product with us to activate your warranty. Dura Composites warranty gives you peace of mind and expert back up should you ever need it, so you can rest assured you're buying the best in design excellence, quality and durability.

Please note that your warranty must be registered and activated within 30 days of your invoice date to be eligible. See www.duracomposites.com/warranty

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» for the Cladding & Façades

Due to our policy of continual improvement we reserve the right to change specifications at all times without prior notice.

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