

ARFA Technical Bulletin 003

# PVC Sheet Vinyl Coving

Coving sheet flooring refers to the process of extending PVC flooring material up a wall, typically to a maximum height of 150mm, creating a seamless transition between the floor and the wall surface.

DECEMBER 2025

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The coving sheet flooring technique is especially important in commercial, healthcare, and hygiene-critical environments because it provides:

### **1. Hygiene and Easy Cleaning**

Coving eliminates the 90-degree angle between the wall and floor where dirt, dust, and bacteria can accumulate. The curved transition allows for easier and more thorough cleaning, helping maintain sanitary conditions.

### **2. Moisture Resistance**

By sealing the joint between the floor and wall, coving helps prevent water and cleaning solutions from seeping into gaps, reducing the risk of mould, mildew, and damage to subflooring or walls.

### **3. Durability and Protection**

Coving protects wall bases from damage caused by foot traffic, cleaning equipment, and trolleys. It adds an extra layer of durability to the overall flooring system.

### **4. Compliance with Regulations**

In sectors like healthcare, laboratories, and food preparation areas, coving is often a legal or regulatory requirement to meet health and safety standards.

### **5. Aesthetics and Finish**

A well-installed cove creates a smooth, professional appearance that enhances the overall finish of the space.

As noted in AS 1884:2021, coving sheet flooring is required in areas with running water or constant water usage. While showers and commercial kitchens are typical examples, hospitals and aged care facilities also adopt this practice to aid in cleaning and address infection control considerations. Before starting any coving work, it is necessary to thoroughly review the manufacturer's installation guidelines to verify the product's compatibility with the intended procedure. Installers must strictly follow any specific coving instructions or procedures outlined by the manufacturer, including requirements for adhesive application and radius specifications for the installation.

## **01 Coving profiles**

Coving sheet vinyl can be achieved with or without the use of a supporting cove fillet. When a rounded profile is desired at the floor-wall junction, a PVC cove fillet is used. Radius sizes of 20mm or 32mm are common. Coving sheet flooring without using a profile is referred to as a "pencil cove." In this method, the radius at the wall-floor junction should not exceed 5mm. This limitation helps the flooring to bond well to both the wall and floor, minimizing any gaps or voids behind it.

## 02 Walling to flooring junction

When PVC flexible sheet walling is installed to coved vinyl, there are two installation methodologies for the junction between the walling and coved vinyl. The first method involves overlapping the walling over the coved vinyl by a minimum of 30mm to establish a secure bond. Depending on the thickness of both vinyls, a diminishing strip or ramping with an appropriate patching compound might be necessary to create a smooth and gradual transition. The second option entails thermally welding the two sheets together to create a water-resistant finish. It is essential that the transition between the two vinyls maintains the same thickness. To achieve this, a diminishing strip or wedge fillet extrusion should be used.

## 03 Substrate requirements

Prior to commencing the flooring installation with coving, confirm that the wall and floor substrates to be covered comply with the manufacturer's installation requirements. For flooring, the subfloor must meet the specifications outlined in AS 1884:2021, Section 3, pertaining to “subfloors and underlays”. For walls and referencing the “Guide to Standards and Tolerances,” any deviation in a wall, whether vertical or horizontal, should not exceed 4mm over two metres, including all internal and external corners. Additionally, the wall/floor junction should maintain a continuous 90-degree angle, be in sound condition, and free from any irregularities such as lumps or dips that could affect the installation or final appearance.

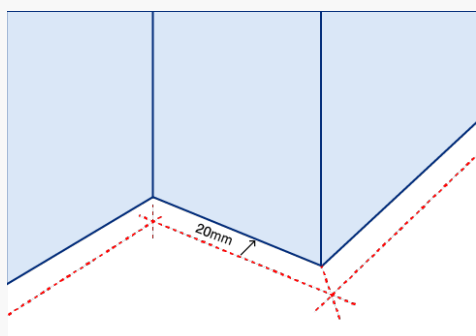
## 04 Installing cove fillet

Before installing any cove fillet, the finished cove height should be marked on the wall. There are two options to create an acceptable finish. At no point can there be dips or rises on the cove finish. It must not deviate, and a continual straight line must be achieved. Depending on architectural requirements, the following two methods are recommended.

1. Using a laser, mark all corners to the designated height required. Using a chalk line, mark all walls to coved. (Picture of laser being used for cove height marking)
2. Mark all internal and external corners at the same height. Using a non-permanent chalk line, connect all the marks in the areas to be coved.

**Note:** While cove cutting tools are commonly used to trim coved flooring, they may not be ideal for marking cove heights—especially in areas with falls to waste or where floor deviations, though within AS 1884:2021 tolerances, would be visually noticeable if followed.

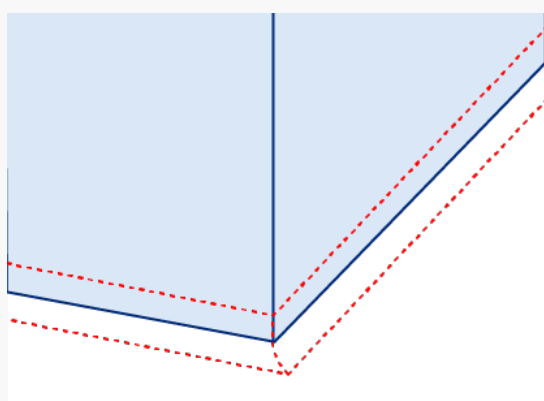
After confirming the correct size has been provided, a cove fillet or cove former radius (i.e the radius refers to the curvature of the cove fillet/former) should be securely bonded to both the wall and floor substrates. It must be fitted uniformly and maintain visual consistency across all walls. To help with uniformity, a line can be drawn on the floor parallel to the wall, with the distance from the wall matching the radius size of the cove fillet. Figure 1 shows a diagram of a line parallel to the wall with the distance indicated as the radius size of the cove fillet. A cove fillet is a pre-formed, curved strip usually made of plastic or rubber installed at the junction where the floor meets the wall. This creates a smooth concave transition that allows the resilient flooring to be curved up the wall neatly, leaving a neat smooth finish.



**Figure 1**

Both solvent-based and water-based contact adhesives are suitable for bonding cove fillet. These adhesives necessitate coating both the cove fillet and substrates, allowing them to dry before fitting. Please follow instructions recommendations provided by the adhesive manufacturer to achieve a successful bond. Alternatively, a high-quality double-sided tape that is fit for purpose can also be used.

Ensure a precise 45-degree mitre on all internal and external corners when fitting. Inaccurate mitres can lead to deterioration of vinyl on corners and potential failure of welds. Figure 2 shows a diagram of a cove fillet mitre.



**Figure 2**

When finishing a coved detail to an end point, it may be required to reduce the radius back to a pencil cove. A pencil cove refers to a tight-radius coving where the resilient flooring is formed up the wall without a cove fillet, creating a very small radius or almost square transition at the floor-to-wall junctions. In this instance, the cove fillet shall be cut as per the diagram in Figure 3 to neatly reduce the radius, so the cove is not protruding or creates an end gap.

Note, heterogeneous sheet vinyls which have limited flexibility, may require extra distance to reduce the radius back to a pencil cove, for example, up to 300mm back from the architrave or door jamb. Figure 3 shows a diagram of a cove fillet being reduced by the mitre technique.

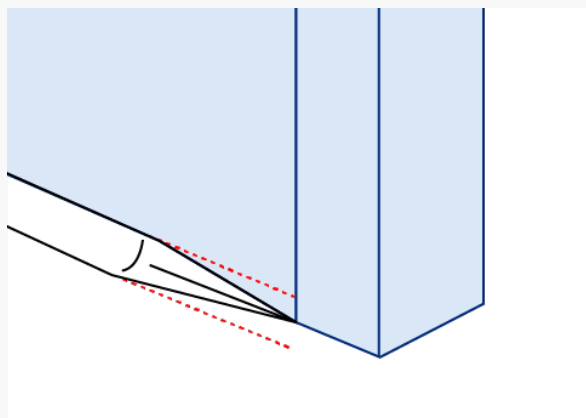


Figure 3

## 05 Coving sheet vinyl

Follow the manufacturer's adhesive recommendations when preparing walls and sheet flooring for adhering. This might include applying contact adhesive to all surfaces or utilizing double-sided tape on walls and cove fillet as directed. This should always be conducted **before** adhering the main floor area. If using a contact adhesive, it's often easier to apply contact to the flooring while face-up. Once dry, the flooring can be positioned ready for install.

When applying adhesive or double-sided tape to the wall to be coved, **do not** exceed the top of the finished coved height. This will cause paint and plaster to be damaged during the trimming in of the resilient flooring.



Once the main resilient flooring has fully bonded to the substrate, coving can begin. Heat can sometimes aid in achieving a tight bond at the radius point, but it is crucial to confirm with the flooring manufacturer whether it is suitable. Start from the middle of the wall. Use a damp cloth or hand roller to apply even pressure to the cove fillet, avoiding contact above the cove. Work in both directions, stopping just before corners.

When coving with no cove fillet/former, the use of a stair tool or small wheeled roller is essential as shown in Figure 4. The wall to floor junction must always be tightly secured with no gaps or ripples in appearance. These tools will enable a consistent finish to be achieved. Figure 4 shows an example of the stair tool being used.

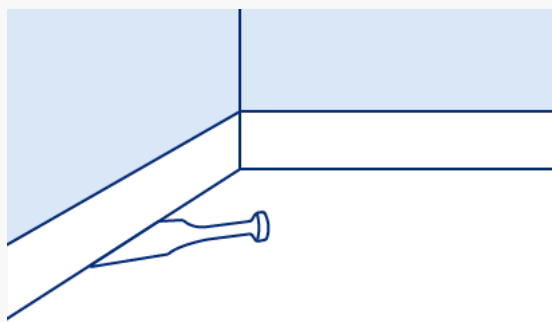


Figure 4

## 06 Seams on corners

Seams on both internal and external corners must not align with the corner edges; they should be positioned at a 45-degree angle. This arrangement reduces the impact of potential structural movement in the corners on the welded joint. This precaution is particularly crucial in wet areas, where water can easily penetrate damaged or poorly welded internal or external corner seams. To achieve the required angle, it is best practice to use a straightedge with a 45-degree end. A diagram of a straight edge with a 45-degree angle is shown in Figure 5.

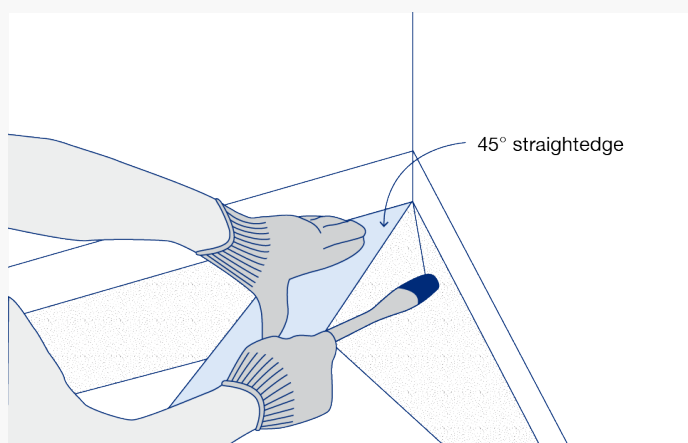


Figure 5

## 07 Internal Joint

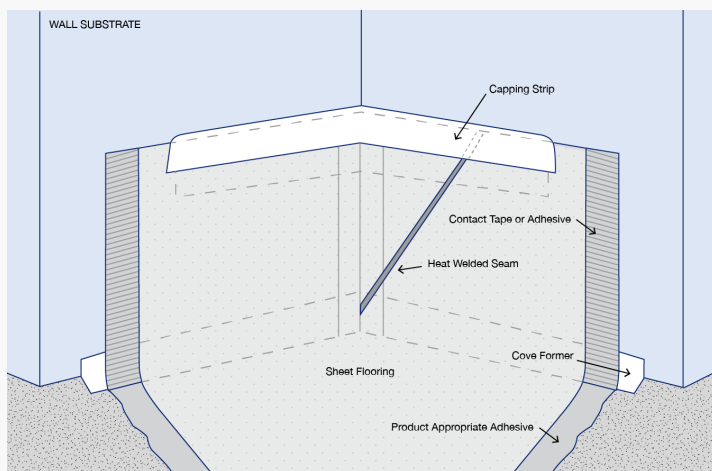
Before cutting the internal 45-degree seam, ensure the coved vinyl is tightly secured to the internal joint. When coving without a cove fillet/former, start the cut in the middle of the profile and fit the cut edge to the wall, making sure the seam is flat and with no ripples. For coving with a cove fillet, the internal joint cut should start 5mm above the finished floor level (FFL), or where the cove radius finishes.

Once the first cut has been fitted to the wall, the return piece is now ready for fitting. The integrity of this joint is based on the internal transition between the two separate walls. Using a stair tool or small wheeled roller, roll the return vinyl tightly into the internal joint, ensuring there are no gaps behind the vinyl. The returning flap of vinyl can now be adhered to the next wall up to the 45-degree cut previously fitted. Neatly cut this piece to the seam. Like all seams, there should be a 0.5mm gap between the joints when completed.

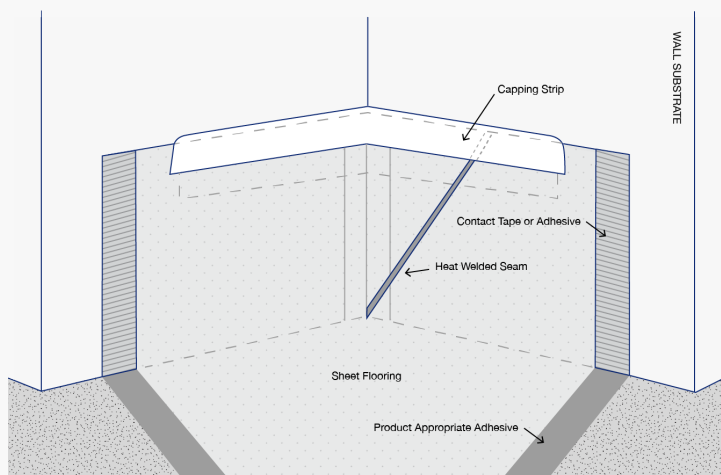
Roll all areas of the junction making sure all areas are flat and well secured. There should be no puckering and the bottom of the seam. If this occurs, the seam has been incorrectly installed and must be rectified before any welding takes place. Figure 6 shows an example of an internal joint.



**Figure 6**



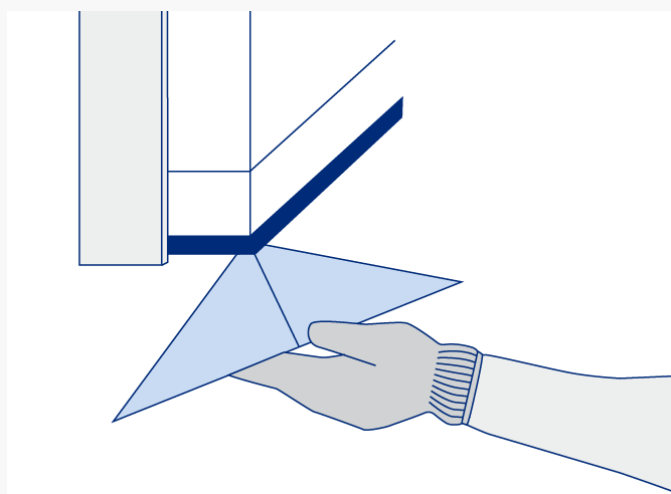
**Figure 7.**  
**Coved internal with fillet**



**Figure 8.**  
**Coved internal without fillet**

## 08 Installation of External butterfly joints in coved resilient flooring

There are multiple methods to finish this joint. Like the internal joint, the seam can be cut at a 45-degree angle aligned with the wall. Alternatively, it can be cut at the external corner, integrating with the field vinyl. To achieve this, the field vinyl must be installed and positioned precisely at a 45-degree angle relative to both walls.



**Figure 9**

## 09 Overview

This section outlines the recommended procedure for installing butterfly joints at external corners in covered vinyl flooring applications, including both standard cove fillet and pencil cove profiles.

### 1. Cutting the Field Vinyl

Before installing the butterfly joint, the main field vinyl should be cut and fitted:

- For **covered vinyl over a cove fillet profile**, the seam should begin at the **centre of the radius**.
- For **pencil cove installations**, the vinyl should finish **approximately 5 mm above the finished floor level (FFL)** or just above the curved transition.

### 2. Adhering Vinyl to the Wall

Once the vinyl is cut to suit the external corner:

- Begin at the **base of the cove radius** and securely adhere the vinyl to both adjacent walls.
- Ensure that the cut angles on both sides of the corner are **equal**, typically set at **45 degrees**.
- It is critical to achieve full adhesion at the base of the external corner. **Poor adhesion may lead to air pockets or bubbling**, which can result in:
  - o Seam failure during normal use
  - o Cracking of the vinyl at the cove fillet transition

### 3. Installing the Butterfly Joint

After the field vinyl is in place around the external corner:

- Fill the gap with a **single piece of vinyl**, commonly referred to as a **butterfly joint**.

#### Manufacturer Recommendations:

Before proceeding, **refer to the flooring manufacturer's guidelines** for this detail.

Recommendations may include:

- **Removing a portion of the vinyl backing** to improve flexibility and adhesion around the corner.
- **Applying controlled heat** to soften the material for easier forming.

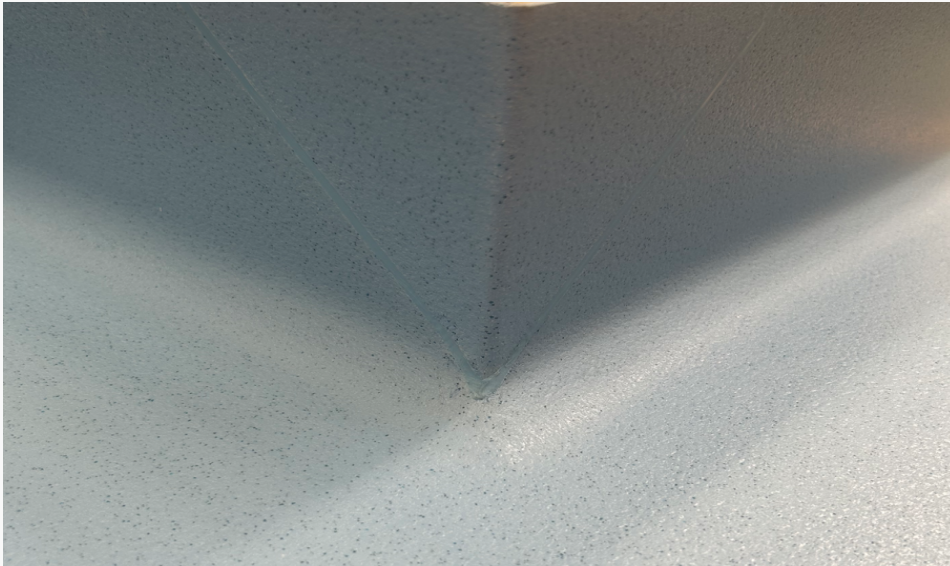
If no guidance is provided, **contact the manufacturer** directly to confirm the best practice for the specific product being installed.

## 4. Finishing the Weld

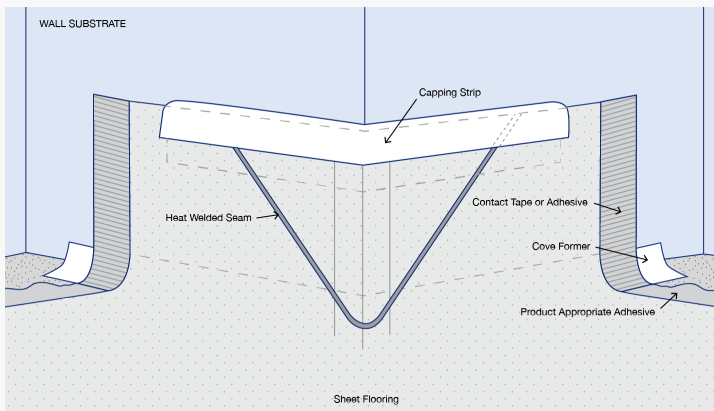
Once the butterfly joint is fitted tightly and free from bubbling:

- Trim the seams to create a **consistent 0.5 mm gap** for welding.
- Proceed with welding as per standard practice.

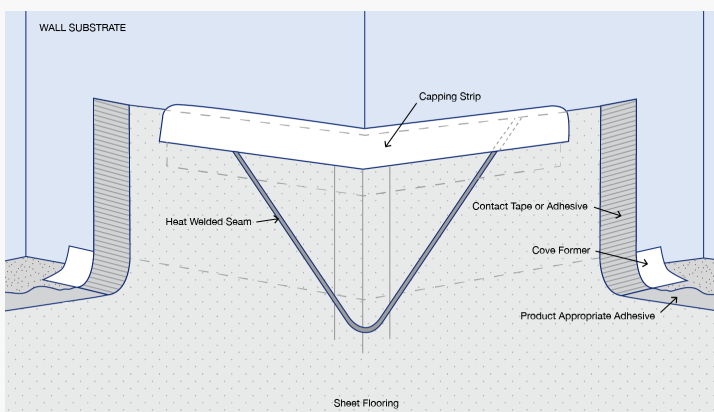
Refer to **Figure 10** for a visual example of a correctly installed and welded external butterfly joint.



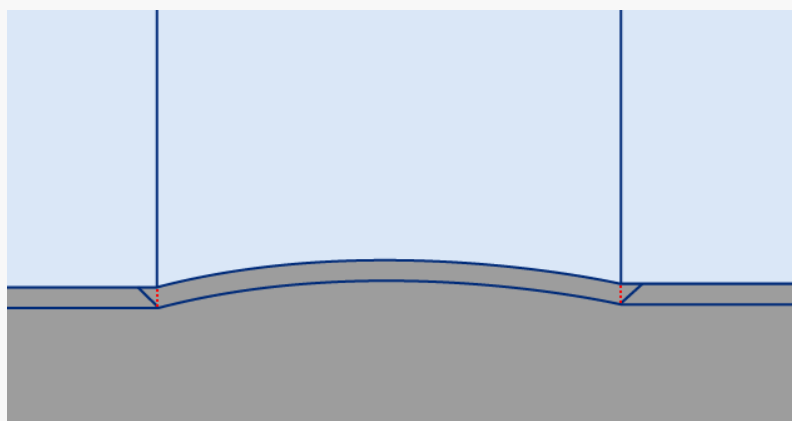
**Figure 10**



**Figure 11**  
**Coved external with fillet**



**Figure 12**  
**Coved external without fillet**



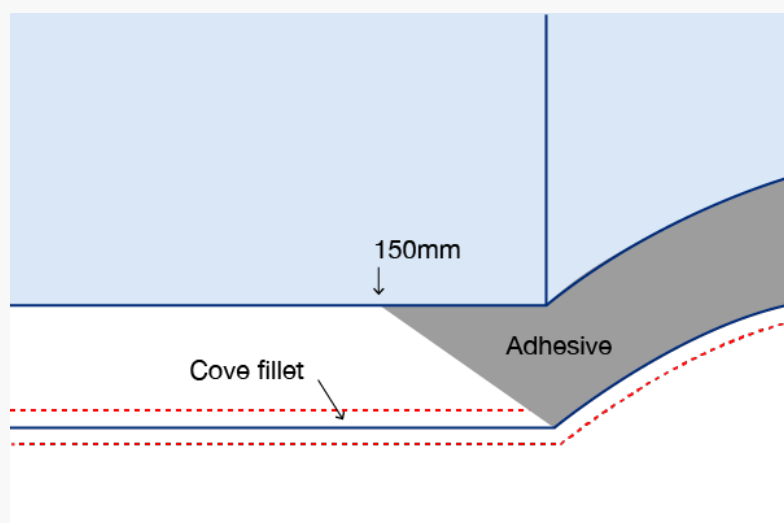
**Figure 13**

## 10 Coving on a radius wall

When coving a radius wall, a single continuous infill piece should be used around the radius, avoiding the use of gussets and infills. This process applies equally to both concave and convex radii. For this application, it is recommended to fit the infill first.

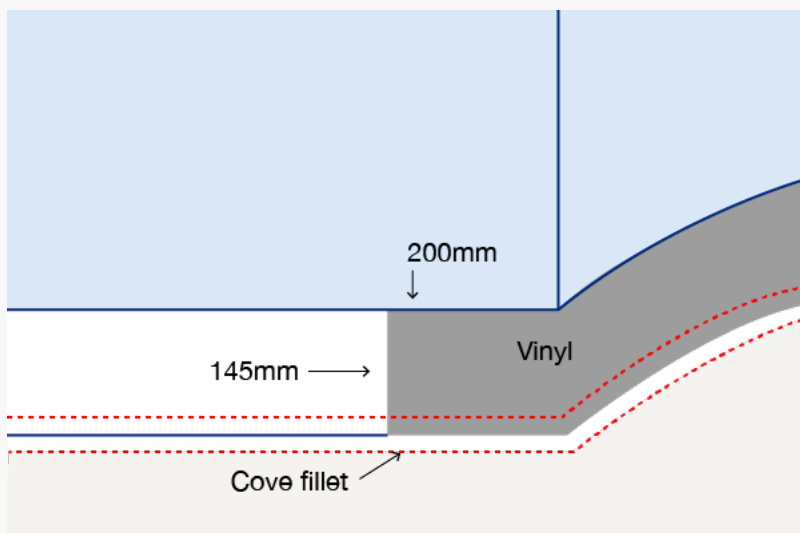
Or use a single continuous infill piece for concave and convex radii - no gussets. Fit the infill first.

- Apply adhesive only where the infill will be fitted. The infill should begin 150mm before the start of the external for a 150mm high cove and be applied on a 45-degree angle to the cove fillet external mitre. The adhesive should be applied from the top of the marked cove height down to the cove fillet. OR Apply adhesive only where needed. Start 150mm before the external and apply it down to the cove fillet.



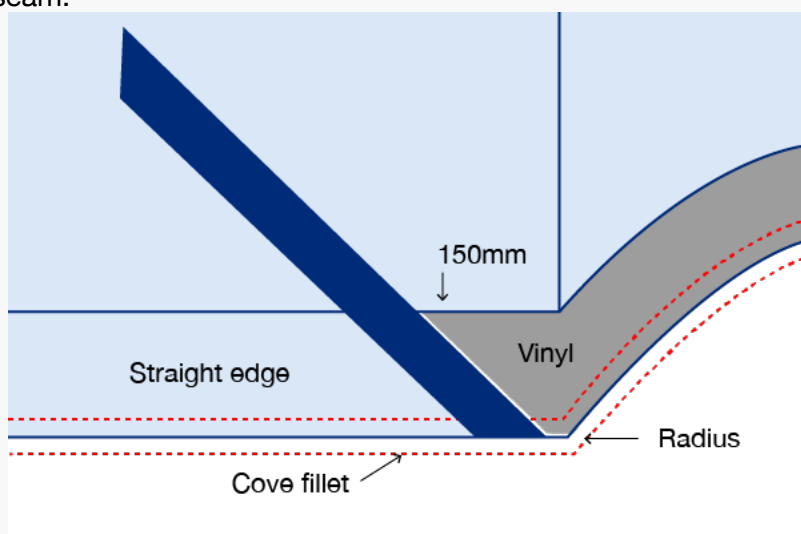
**Figure 14**

- When cutting the infill piece, reduce the width by 5mm less than the specified cove height for a 20mm cove fillet. For example, for a 150mm cove height, pre-cut the infill to a width of 145mm. The intent is that the seam will fall in the middle of the cove fillet. For the length, allow 200mm beyond both external corners plus the length of the wall area. Begin installation 200mm beyond the external corner, aligning the top edge of the infill with the adhered finished cove height. Form the infill smoothly around the external corner, maintaining alignment, and continue installation along the length until the infill is fully fitted. Use heat (if recommended by the manufacturer), a damp cloth, or a hand roller to secure the bond to the wall and the cove fillet.
- OR Cut the infill 5mm shorter than the cove height (e.g., for 150mm cove, cut to 145mm).
- Start 200mm before the corner and continue fitting around and along the wall. Use heat (if recommended by the manufacturer), a damp cloth, or a hand roller to press securely to secure the bond to the wall and cove fillet.

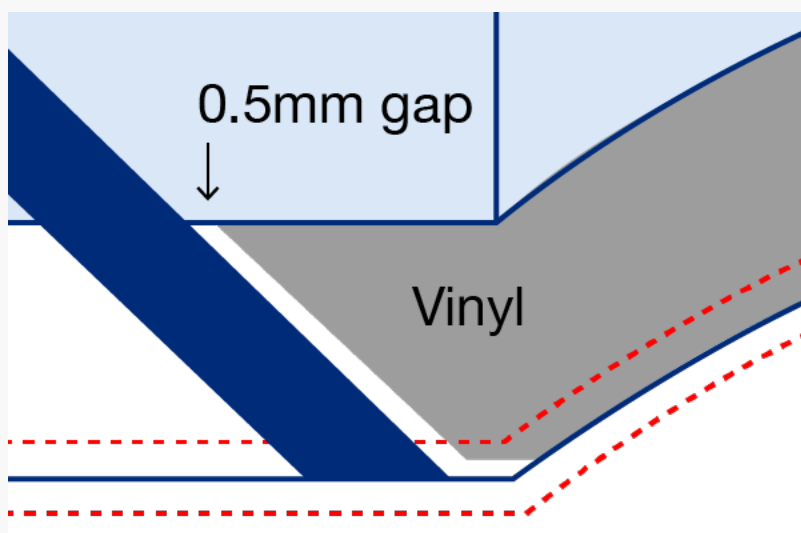


**Figure 15**

- Using a straightedge, cut the end of the infill at a 45-degree angle, stopping 15mm short of the bottom. Complete the cut with a 15mm radius at the bottom of the infill to allow for continuous welding of the seam.



**Figure 16**



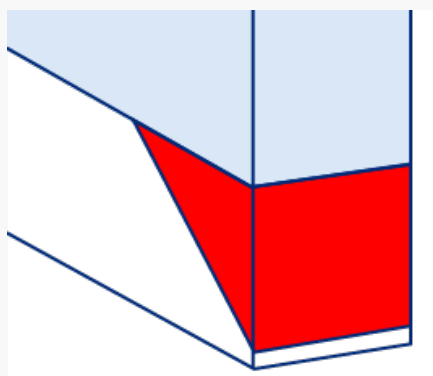
**Figure 17**

The field vinyl can now be installed. When cutting to fit the infill, a consistent 0.5mm gap is required along the entire seam.

## 11 Coving to a nib wall

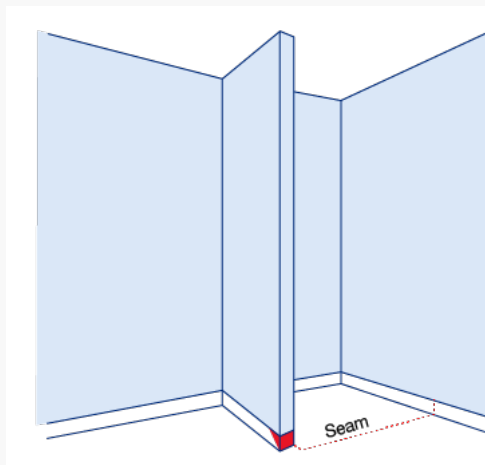
When two external corners are close, using two standard butterfly infills is not practical. For a more robust result, infill both external corners with a single piece.

Like covering a radius wall, the infill should be fitted first. Extend a standard butterfly joint, with the bottom joint traversing along the cove fillet of the nib wall and returning around the second external.

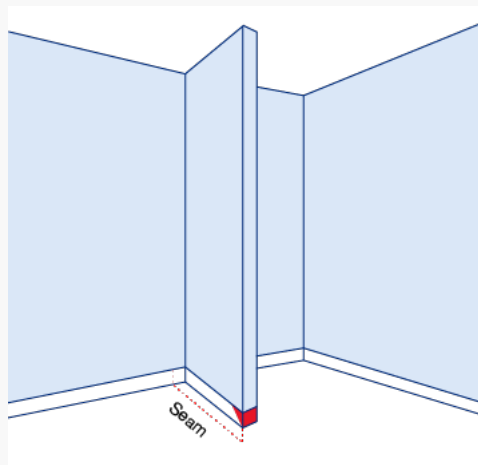


**Figure 18**

Due to the nib wall thickness (typically 120mm), a material joint must be placed either parallel or perpendicular to the nib wall. Plan and document the location of the joint before starting.



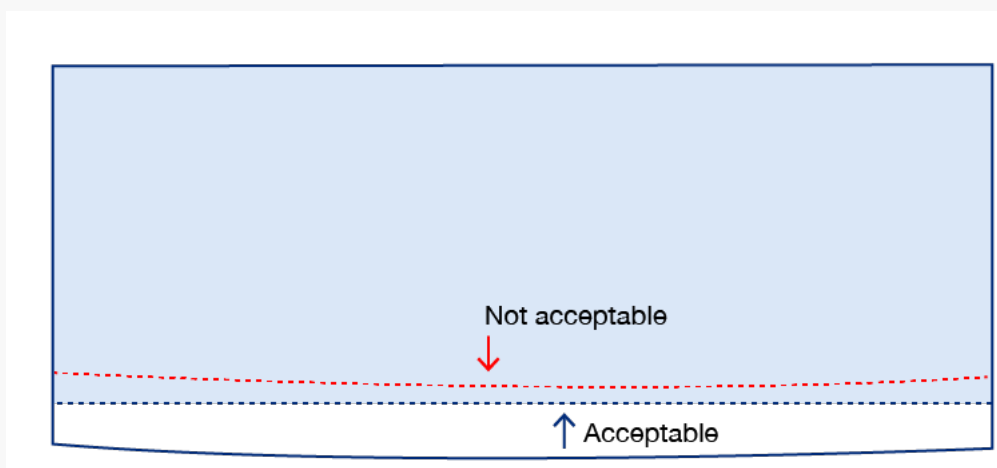
**Figure 19**



**Figure 20**

## 12 Cutting the top of the coves

After completing all coving areas, including butterfly infills, the top of the coving can be cut back. This work must always be done using a straight edge. There are cove cutting tools available on the market for cutting the top of covered vinyl. However, to use these tools, the flooring substrate must be both flat and level. Any dips and rises in the subfloor will transfer to the cut cove, which may result in an aesthetically unacceptable finish.



**Figure 21**

When cutting back the cove height, it is easy to accidentally cut or damage the wall substrate. To prevent this, use a concave blade to score the surface at the designated height. Then, using a hook blade, follow the scored line to cut the top of the cove, ensuring you avoid any damage or tearing to the wall surface.

After cutting has been completed, roll the material, and inspect to confirm a good bond has been achieved to the wall substrate.