



MANUFACTURING CONSIDERATIONS

3D scanning, CAD, CNC fabrication and installation tolerances

IMPORTANT - CUSTOM FABRICATION INVOLVES PRACTICAL TOLERANCES

GripForm products are created from a physical scan, converted into CAD, manufactured from flexible foam and then installed using pressure-sensitive adhesive. The design parameters and tolerances below form part of the expected custom-manufacturing process.

Key manufacturing parameters

CONSIDERATION	GRIPFORM STANDARD	PRACTICAL EFFECT
Corner radius	Minimum 12.5 mm	A larger radius may be required for material thicker than 6 mm.
Maximum component	1000 x 2000 mm	Larger areas are divided into multiple pieces with planned joins.
Scan-to-CAD tolerance	Aim: as close as practicable; up to +/- 5 mm	Minor variation may occur between the physical surface, scan data and CAD outline.
Perimeter offset	Nominal 10 mm inward	A deliberate clearance or reveal is left around the outer perimeter for fit and installation.
Large-component installation	Run-out minimised, not eliminated	Long panels may accumulate minor positional variation from the initial adhesion point.

These parameters are intended to create a practical, repeatable fit. They are not a guarantee of a zero-gap, zero-variation or perfectly uniform installation.

Component size, corner radii and perimeter clearances

The following design rules are applied before CNC cutting and are reflected in the final approved drawing.

1. Minimum corner radius

All component corners are designed with a minimum radius of 12.5 mm. Sharp square corners, knife points and tighter radii are not manufactured as standard because the final shape must suit the cutter, foam behaviour and the required edge quality.

- The standard minimum radius is 12.5 mm for material up to and including 6 mm thick.
- For material thicker than 6 mm, the minimum achievable radius will increase. GripForm will determine the required radius based on material thickness, cutting tool, cutting depth and the geometry of the component.
- Customer artwork or reference geometry containing sharper corners may be adjusted during CAD preparation. The adjusted geometry will be shown on the drawing issued for approval.

2. Maximum component size

The maximum finished size of any single GripForm component is 1000 mm x 2000 mm.

- Areas larger than 1000 mm x 2000 mm must be divided into two or more components.
- Join locations are selected with consideration to sheet size, component shape, material direction, visual layout, access and installation sequence.
- A join or panel split required because of the maximum component size is a normal manufacturing requirement, not a defect.

3. Standard perimeter offset

GripForm normally offsets the component outline 10 mm inward from the identified outer perimeter of the scanned area. This creates installation clearance and allows for scanning, CAD, manufacturing and placement tolerances.

- The 10 mm offset is nominal and is applied to the CAD drawing before manufacture.
- The finished gap or reveal may not remain exactly 10 mm at every point because the physical surface, scan data and installation position can vary.
- Where a different offset is requested, it must be reviewed by GripForm and clearly shown on the final approved drawing.

IMPORTANT: The perimeter offset is intentional. A visible border or clearance around a component is part of the approved design and should not be treated as a manufacturing defect.

From the physical surface to the approved drawing

GripForm uses a 3D scan as the primary reference, then creates a clean CAD drawing suitable for CNC manufacture.

STAGE	WHAT HAPPENS
01	3D scan GripForm scans the proposed installation area and captures the accessible surface geometry.
02	Scan preparation The scan is reviewed, aligned and cleaned so the relevant boundaries and features can be interpreted.
03	CAD creation GripForm creates a manufacturable CAD outline from the scan, applies the required radii, panel splits and standard offsets.
04	Drawing approval The final drawing is issued for review and approval before custom components are manufactured.

1. Scan-to-CAD tolerance

TARGET TOLERANCE: AS CLOSE AS REASONABLY PRACTICABLE, WITH VARIATION UP TO +/- 5 MM

GripForm aims to reproduce the scanned geometry as closely as possible. However, a variation of up to plus or minus 5 mm may occur between the physical surface, the captured scan data and the final CAD drawing.

The achievable result depends on the surface and scanning conditions. Variation can be affected by restricted line of sight, reflective or featureless surfaces, inaccessible edges, movement during scanning, scan alignment, interpretation of boundaries and later changes to the physical area.

- The scanned area should remain unchanged between scanning, drawing approval and installation.
- New fittings, repairs, coatings, hardware, movement or alterations made after scanning may affect the final fit.
- The final approved CAD drawing is the manufacturing reference used by GripForm.

2. Customer review and drawing approval

Before manufacture, the customer should review the final drawing for the overall component arrangement, panel splits, perimeter offsets, joins, openings, orientation and any dimensions or notes shown. Approval confirms that the displayed layout and manufacturing considerations are accepted for production.

Custom components are manufactured to the approved CAD drawing. Changes requested after approval or after machining has started may require redesign, replacement material and additional cost. This does not limit rights that cannot be excluded under the Australian Consumer Law.

Large components, first adhesion and positional run-out

Flexible material and pressure-sensitive adhesive require controlled alignment and progressive installation.

LARGER COMPONENTS MAY ACCUMULATE MINOR POSITIONAL VARIATION DURING INSTALLATION

Once the adhesive begins to bond, the component has limited ability to be repositioned. A small alignment difference at the first adhesion point can gradually increase along a long or large component.

1. How GripForm reduces run-out

GripForm uses a controlled installation process to reduce positional variation. Depending on the component and site, this can include dry fitting, reference marks, checking the nominal perimeter reveal, staged removal of the adhesive liner and progressive pressure application.

- The component is aligned before the adhesive is fully exposed.
- Installation proceeds progressively to reduce stretching, compression, twisting and trapped air.
- The team checks alignment as the component is bonded and makes practical corrections while movement is still possible.

2. What may still occur

Despite careful installation, minor run-out can still occur, particularly on long, wide or irregularly shaped components. The final perimeter reveal may therefore vary from the nominal 10 mm CAD offset.

- A perfectly uniform gap around every edge cannot be guaranteed.
- Panel joins may show minor positional variation across a larger installation.
- Flexible foam should not be stretched, compressed or forced into position to eliminate a variation, as this can distort the component or place stress on the adhesive.
- Reasonable installation variation is assessed in context, including component size, shape, access, substrate condition and the approved drawing.

3. Summary of customer expectations

ITEM	EXPECTED OUTCOME
Corner geometry	Minimum 12.5 mm radius; larger where required for material thicker than 6 mm.
Single-piece size	Maximum 1000 x 2000 mm; larger areas require multiple components.
Scan and CAD	As close as reasonably practicable, with potential variation up to +/- 5 mm.
Perimeter clearance	Nominal 10 mm inward offset, with final reveal subject to reasonable variation.
Large-panel placement	GripForm minimises run-out, but cannot guarantee zero positional variation.

This document explains standard manufacturing and installation considerations. It does not exclude, restrict or modify any rights or remedies that cannot be excluded under the Australian Consumer Law.

Document control: Draft V1.0 - July 2026. This document should be reviewed against GripForm's current equipment, materials, scanning process, CAD workflow, installation procedure and customer terms before issue.