HI·MACS

The shape of your ideas

9. SEAMINGS

FABRICATION GUIDELINES

Solid Surface Material

LX Hausys

The primary objective in seaming is to achieve a flawless joint with no visible gaps. A perfect seam ensures structural integrity under normal use. Poorly executed seams may result in visible lines and potential cracking over time.

1. Edge Preparation

1.1 Machining HIMACS Sheets for Seam Joints

The process of machining two HIMACS sheets to form a seam joint may be undertaken using various methods.

Key Considerations:

- The quality of the machined edge is paramount.
- Achieving a precise fit between the two machined pieces is the most critical aspect of preparation.
- Always strive to produce a seamless joint with no visible gaps by ensuring an exact fit.
- Prior to commencing preparation, confirm that the sheets to be joined are correctly positioned, manufactured in accordance with the production process,
- Bear the same batch number with consistent colour matching.

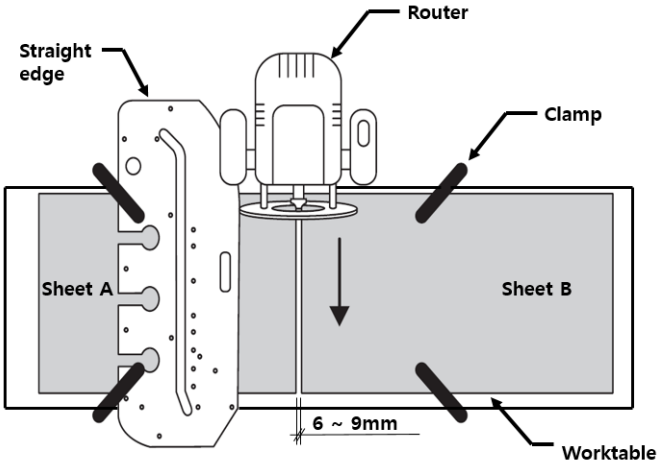
1.2 Mirror Cut

The most dependable method for creating a seam is the “mirror cut” technique, performed using a handheld router. This approach involves cutting both adjoining edges simultaneously in a single pass.

Procedure:

- Ensure the work surface is free from dust or debris that could prevent the materials from being level, square, and perfectly aligned in the same plane.
- Position the two pieces on a seaming table, leaving a gap of 6 to 9 mm between them, and secure them using G-clamps or screw clamps.
- Fix a metal or compact straight edge to one of the sheets and to a sturdy, stable table. This straight edge will act as a guide for the router.
- Fit a 12 mm double flute tungsten router bit into the handheld router. Move the router steadily in one direction, away from your body, cutting both sheets at once. Maintain a slow and consistent pace without pausing.
- The 12 mm router bit will remove approximately 1.5 to 3 mm of material from each sheet, producing mirror-image edges.
- After cutting, check that the joint aligns perfectly and mark the mating position with a pencil.

Mirror cut



1.3 Single Cut

An alternative method involves machining each edge separately using a standard workbench and a straight edge.

Procedure:

- Secure the workpiece to the bench and fix the straight edge to the sheet so that the router removes between 1.5 mm and 3 mm of material in total.
- Operate the router at a slow and steady pace without interruption.
- Repeat the process for the second sheet and then verify the accuracy of the joint.
- If the edges do not align correctly, one or both may need to be re-machined.

1.4 Other Cutting Methods

The use of CNC cutting and nesting programmes is becoming increasingly widespread. Such equipment is proving to be highly efficient, particularly for small-scale serial production or personalized requirements.

Recommendations

- Ensure the router path is completely clear of clamps before commencing work.
- A square-based router enhances accuracy. With a single controlled pass, you can produce identical edges on both sheets to be joined, resulting in the best possible dry fit.
- Using a router bit with a wavy profile can help prevent discrepancies in thickness between the two workpieces.

1.5 Cleaning

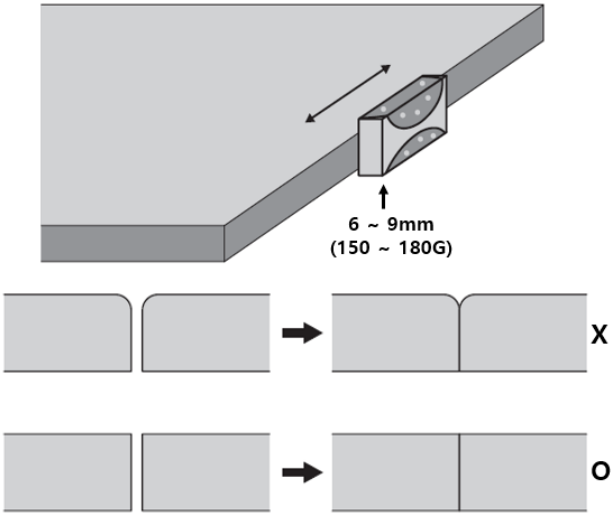
Following machining, both edges must be thoroughly cleaned and handled with care as outlined below:

- If the cut edges are rough, sand them using 150/180 grit abrasive paper. The edges should be sharp and clean after sanding.
- Remove any sheet identification numbers from the reverse side of the HIMACS sheets, as these may become visible through the seam.
- Clean the edges to be joined using a fresh, lint-free white cloth and denatured alcohol or acetone.
- Avoid using colored cloths or paper, as the alcohol may extract dyes that could stain the seam.
- Once cleaned, do not allow anything to met the edges. Even a single fingerprint can compromise the final seam quality.

Important Note:

The cloths used for cleaning must be genuinely lint-free. Not all white cloths are truly white. Some are made from colored materials that have been bleached and may not yield consistent results. In certain cases, “white” cloths may have been treated with substances (such as fire-retardants used in children’s sleepwear) that could negatively affect the appearance or performance of the seam.

Edge Sanding



2. Standard Butt Seam

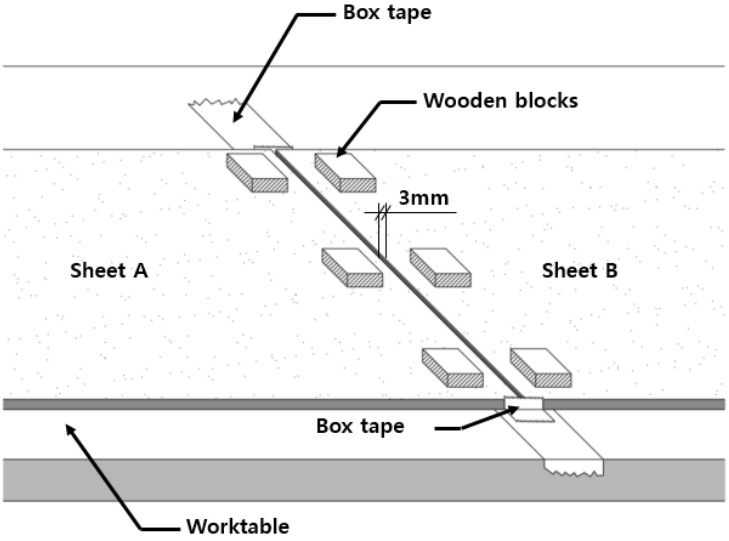
Bonding Preparation

Once the edges have been machined, sanded, and cleaned, they are ready for bonding.

Procedure:

1. Ensure the work surface is free from any dust or debris that could prevent the sheets from being level, square, and perfectly aligned in the same plane.
2. Position both pieces to be bonded on a worktable that is large enough to fully support them.
3. Before applying adhesive, cover the tray beneath the seaming table with transparent tape or packing tape to catch any excess adhesive.
4. Clean both edges using a clean white cloth and denatured alcohol (acetone).
5. Adjust the sheets until the edge alignment is precise.
6. Once aligned, set the two pieces 3 mm apart.
7. Seal both ends of the HIMACS sheets with transparent tape or packing tape to prevent adhesive leakage.
8. Use a vacuum clamp system or alternative clamps such as G-clamps, screw clamps, or bar clamps to secure the seam. If not using a vacuum clamp system, affix small wooden blocks to both HIMACS sheets using hot melt glue to assist with clamping.

Bonding setting's



9. Prepare the HIMACS adhesive system and the appropriate clamping equipment.
10. Apply a continuous bead of adhesive along the entire length of the joint.
11. Press the sheets together so that a uniform bead of adhesive is expelled from the seam.
12. Inspect the seam to ensure adhesive has been evenly distributed along its full length. Any gaps in the bead indicate weak points; if present, repeat the process from step 10.
13. Clamp the assembly securely, but avoid over-tightening, as this may result in adhesive starvation and a weakened joint. The seam should be no wider than half the thickness of a sheet of paper.
14. Check the level of both sheets at the seam. If there is any discrepancy, adjust using a rubber mallet to ensure alignment.
15. Once the adhesive has fully cured and is firm to the touch, remove the clamps and any wooden blocks.
16. Remove excess cured adhesive using either a portable handheld router fitted with skis or a small block plane with a sharp blade. Avoid using chisels wherever possible.
17. Complete the process with final sanding.

Recommendations

- Be mindful of clamping pressure. Excessive force is unnecessary and may result in a dry seam by squeezing out too much adhesive, thereby weakening the joint.
- Apply sufficient pressure to allow a consistent bead of adhesive to emerge from the seam.
- As the adhesive will shrink slightly during curing, avoid removing all excess from the joint immediately.
- Inspect the seam for any voids or air pockets and address these before the adhesive begins to set. Ensure the joint is tight and well-fitted.
- Any necessary adjustments must be made promptly, before the adhesive starts to harden.
- Allow the adhesive to cure for a minimum of 40 minutes under normal conditions, or until it is firm to the touch (e.g., resistant to a fingernail).
- Remove excess cured adhesive by levelling the seam using a router fitted with skis and a small levelling bit.
- Do not use a belt sander for this operation, as the heat generated may compromise the integrity of the seam.
- Complete the process by sanding all surfaces to a semi-gloss finish, in accordance with recommended guidelines.

3. Reinforced Seams

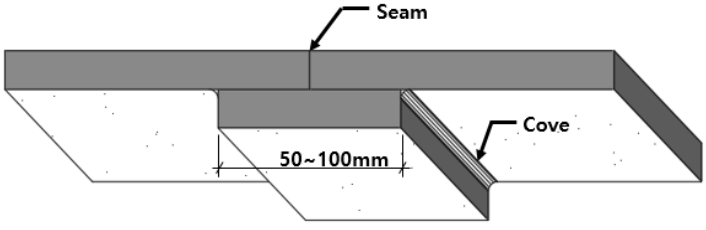
While properly executed standard butt seams are structurally sound, they remain the most vulnerable part of the assembly. To enhance their strength, it is advisable to reinforce the underside using offcut strips of HIMACS sheet. The reinforcement strip must be applied accurately along the full length of the seam's underside. It is recommended to use HIMACS strips of the same thickness and colour as the original sheets.

Procedure:

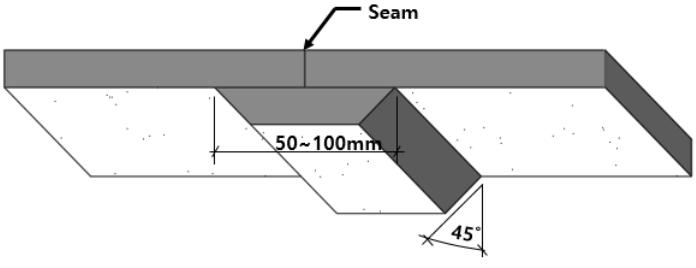
1. Invert the joined sheets.
2. Remove any cured excess adhesive from the reverse side using either a portable handheld router fitted with skis or a small block plane with a sharp blade. Avoid using chisels wherever possible.
3. Sand the reverse side with 150/180 grit abrasive paper and clean with denatured alcohol and a white cloth.
4. Prepare a reinforcement strip 50–100 mm wide and equal in length to the seam.
5. If the joint is likely to be exposed to heat, it is strongly recommended to bevel the edges of the reinforcement strip at a 45° angle.
6. Sand the surface of the reinforcement strip with 150/180 grit paper until smooth, then clean with denatured alcohol and a white cloth.
7. Use the same colour adhesive as used for the seam.
8. Apply adhesive to fully cover the surface of the reinforcement strip that will contact the sheet.
9. Position and attach the reinforcement strip evenly along the seam.
10. Press and clamp the strip firmly into place.
11. Ensure there are no voids or dry areas between the sheet and the reinforcement strip.
12. If a buildup strip (front skirt) is present, bond its ends to the reinforcement strip using joint adhesive.
13. Remove any excess adhesive that is expelled and smooth the edges to form a cove.
14. Complete the process with final sanding.

(See general examples on the following page)

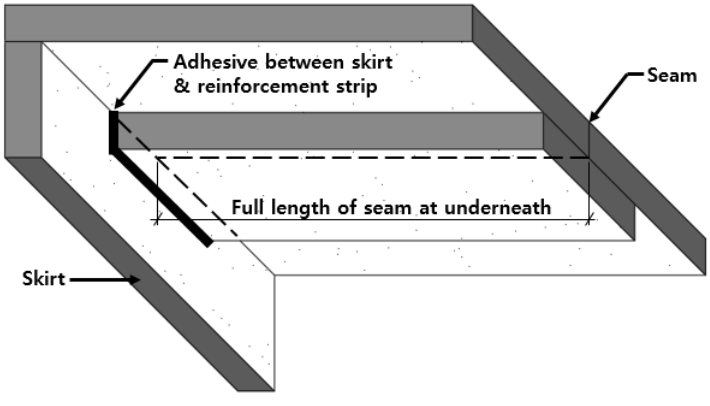
General reinforcement section



Heating zone reinforcement section



Joining with Skirt



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LX HAUSYS Europe GmbH
Lyoner Str. 15
60528 Frankfurt am Main
Germany