CUTTING & EDGE PROTECTION

TECHNICAL GUIDANCE — METAL PROFILED SHEETS

Applies to Briarwood Leathergrain PVC Plastisol coated steel sheets — 32/1000, 34/1000, 13/3 and 20/1000

This is Briarwood's published Cutting & Edge Protection guidance: how to cut a coated steel sheet without damaging it, and how to treat the edge afterwards so it does not become the place the roof starts to fail.

It covers cutting, drilling, swarf, the treatment of cut edges and holes, factory cut ends, mitres, and what to do when the coating is damaged. Storage and handling, fixings and fasteners, and cleaning and maintenance each have their own note and are not repeated here.

1. Why a cut edge matters

A Briarwood profiled sheet is a coating system, not painted steel. The weather face carries a nominal 200 micron leathergrain PVC plastisol film. The reverse carries a thin backing coat of about 7 microns. Both sit on a galvanised steel substrate. Every cut, every drilled hole and every punched hole goes through all of it and leaves bare steel along the line of the cut.

The zinc on the substrate protects that bare steel sacrificially across the thickness of the sheet, which is why a clean, free-draining cut edge performs for years. It does that only while the edge is clean, undamaged and able to drain. Heat, embedded swarf, burrs and standing water each shorten it.

> **CUT EDGES ARE GUARANTEED FOR TEN YEARS ONLY**
> A cut edge is the one place on a sheet where bare steel meets the weather. That is why the guarantee on cut edges runs for the first ten years only — a factory cut end, a site cut, a drilled or punched hole or a mitre alike — and why an edge treated on the day it was cut outlasts one that was not. This is the guidance that treatment follows.

2. Cut cold

Every approved method below cuts by shearing the steel. The coating is not heated and no hot debris is thrown onto the sheet. Use only a method listed as approved. A method that is not listed must not be used without Briarwood's written agreement.

Method	Status	Where it is used, and why
Powered nibbler	Approved	Cutting to length and to shape, including curves and cut-outs. Removes a narrow strip of waste, generates no heat, and throws debris downward rather than across the sheet.
Powered or hand shears	Approved	Straight and gently curved cuts. No heat and no swarf shower. Keep the blades sharp; worn blades tear rather than shear.
Guillotine or bench shears	Approved	Straight cuts in the yard or at a cutting station on site. The cleanest edge of any method and the easiest to deburr.
Hand snips	Approved	Small trims, notches and adjustments at the sheet, and cutting flashings.
Sharp HSS twist drill, step drill or hole saw	Approved	Fixing holes and penetrations. Low speed, sharp bit, steady feed. Speed and blunt bits both make heat.
Angle grinder or abrasive cutting disc	Prohibited	Burns the coating, destroys the zinc back from the cut under coating that still looks sound, and throws hot swarf across the sheet.

Method	Status	Where it is used, and why
Plasma, oxy or any other hot-cutting method	Prohibited	The same damage as an abrasive disc, over a wider area, and the edge is left oxidised and impossible to treat.
Blunt or worn drill bit	Prohibited	Tears the coating around the hole, work-hardens the steel and heats the sheet. A hole it has made cannot be sealed properly.

A prohibited method damages the coating whether or not the damage shows on the day.

3. Before you cut

Set up a cutting station away from finished work and take the sheet to it. Cutting or drilling over a laid roof, over a stack of sheets or over an open gutter puts swarf where it cannot afterwards be swept off.

At the cutting station

- Soft brush and clean dry cloths
- Touch-up coating for the colour being cut
- Board or dust sheet under the cut line
- Fine file or deburring tool
- Clean timber bearers or trestles
- Eye, hand and hearing protection

- Put the station downwind of, and clear of, installed sheets and open gutters.
- Support the sheet fully on clean timber so it cannot flex and cannot pick up grit off the ground.
- Work with the weather face down wherever the method allows, so debris falls away from the coating.
- Keep packs and finished work covered while cutting anywhere near them.
- Never cut or drill over a gutter, a valley, an open rooflight or a laid roof.

4. Swarf

Swarf is the commonest cause of what looks like coating failure on a plastisol roof, and almost never is. Bare steel filings lying on a coated face rust in the first dew and stain permanently. The reverse face, with only about 7 microns of backing coat, marks faster still.

1. Brush swarf off with a soft brush or a clean dry cloth as you cut, not at the end of the job.
2. Clear both faces of every sheet before it is lifted into position.
3. Clear laps, flashing returns, gutters and valleys before they are closed up. Swarf sealed into a lap cannot be recovered.
4. Sweep the whole working area at the end of every working day, and before any sheet is stacked or left out overnight.
5. Take the debris off site. Do not leave it on the roof, in a gutter, or on the ground against the cladding.

DO NOT WASH SWARF OFF

Do not use a wire brush, an abrasive pad, a pressure washer or a hose to remove swarf. Water drags the particles across the coating and scratches it, and a pressure washer drives them into the surface. A soft brush and a dry cloth are the whole method.

5. Treating cut edges and drilled holes

Every site cut edge, every factory cut end and every drilled or punched hole is to be deburred, cleaned and treated. Do it on the ground, before the sheet goes up, while both faces can still be reached.

1. Deburr the edge, or the rim of the hole, with a fine file or a deburring tool, working away from the coated face.
2. Brush and wipe off the filings. The edge must be clean and dry before anything is applied to it.
3. Apply a touch-up coating supplied or approved by Briarwood for the colour concerned, to the exposed edge only, in a thin film, with a fine brush.
4. Let it cure before the sheet is handled, stacked or lifted.
5. Check that each fixing seats square and that its washer is undamaged. An over-tightened fixing tears the coating around a hole you have just treated.

> **TOUCH-UP IS A REPAIR, NOT A FINISH**
> Touch-up goes on the damage and nowhere else. Do not feather it out over sound coating and do not spray a panel with it. A thick film does not cure properly and fails before the coating around it does. It will never be an exact colour match and it will weather differently, which is a further reason to keep it to the edge.

6. Factory cut ends

Briarwood cuts every sheet to length, so every sheet arrives with two cut ends. A factory cut end is a cut edge like any other. It gets the same treatment and the same care.

- Check the cut ends on delivery, before the pack is broken and before anything goes up.
- Lift sheets clear of one another. Dragging a sheet over the one below is the commonest way a cut end damages a coated face.
- Lay sheets so cut ends drain freely, or are covered by a flashing. A cut end where water stands is the shortest route to an edge failure.
- In storage, keep cut ends off soil, off concrete and out of standing water.
- Deburr, clean and treat them exactly as section 5 sets out for a site cut.

7. Mitres, and cut edges that hold water

A mitre at a ridge, a hip or a valley leaves a long cut edge at or near the horizontal, where water sits on it instead of running off it. A mitre is a cut edge, and it is the hardest cut edge to keep.

- Form mitres with snips or a nibbler. An abrasive disc on a mitre is the worst case there is: a long heat-damaged edge in exactly the place water collects.
- Deburr and treat the mitre before the sheet is lifted. It cannot be reached properly once the sheet is up.
- Set the work out so that water sheds off the mitre and away from the cut, never into it.
- Do not rely on a sealant to protect a cut edge. A sealant that has failed hides the edge underneath it, and nobody looks under a sealant.

8. Damage to the coating

Not every mark needs treating, and treating one that does not makes the roof look worse than the mark did. Judge it by whether the steel is exposed.

What you are looking at	What to do
A scuff in the embossed surface; the coating is intact and no metal shows	Leave it. Touch-up will be more visible than the scuff and will weather differently.
A scratch through the colour coat, but no bare steel	Clean and dry it, then touch up the scratch only. Do not feather over the sound coating around it.
Bare steel showing, or any cut or drilled edge	Deburr, clean, dry and treat as section 5.
Coating deformed, torn, burnt or heat-discoloured	Not repairable. Do not install the sheet. Set it aside and contact Briarwood.

A HEAT-DAMAGED SHEET CANNOT BE TOUCHED UP
Where a sheet has been cut with an abrasive disc or a hot-cutting method, the zinc has gone for a distance back from the cut, underneath coating that still looks sound. Treating the visible edge does not reach it and does not restore it. Do not install the sheet, and tell Briarwood.

9. What to record

If a question is ever asked about how a sheet was cut, the answer has to be shown, not remembered. Keep enough to show it.

- Which sheets were cut on site, and where on the building they are.
- Dated photographs of treated edges at mitres, valleys, ridges and penetrations, taken before they were covered.
- The Certificate Number, kept with the record.
- Hand the record to the building owner with the guarantee certificate. The twelve-monthly inspection is separate and has its own guidance note.

IF YOU ARE NOT SURE, ASK BEFORE YOU CUT
A question costs nothing. A sheet cut with the wrong tool cannot be put back, and a cut edge treated wrongly is not discovered until it fails. Briarwood's contact details are on the first page of this note.