

Fixing Recommendations

These are guidelines for good practice in normal conditions. For special applications or requirements please contact our technical department on 01484 405940.

Roof Cladding

N1000R and N1000RR roof sheets should be fixed with self-drilling, self-tapping screws fitted with self-sealing washers, from a reputable supplier.

Position the fixings in the trough of the sheet (crown fixing is also acceptable). In both cases we recommend fixing in every corrugation at sheet ends and at end laps, and at every other corrugation at the intermediate supports. Side lap stitching may be done with washered stitching screws or bulb-tite rivets. Caps should be fitted to protect the fixing heads. Roof sheets are not recommended on roof pitches of less than 4 degrees.

On a pitched roof of 4 to 15 degrees, side and end laps should be continuously sealed with mastic or lap tape, and the side laps stitched at a maximum of 450mm spacing. Over 15 degrees, side and end lap sealing may be omitted unless the building is in a severe weather area. End laps should be avoided, but where they occur, a minimum of 150 mm should overlap and be sealed, both above and below the fixing and as close to the sheet ends as practical. Although in many circumstances a 0.5mm thick steel sheet will satisfy the design loading requirements of a roof it is best practice to use 0.7mm thick steel to accommodate subsequent foot traffic and point loads without damage or distortion. Side laps should, wherever possible, be laid away from the direction of the prevailing wind.

Holes should always be drilled not punched and all swarf removed immediately. Any site cutting or pre-painted steel sheets should be done with a nibbler or cladding saw, angle grinders must not be used.

Liner Panels

The Wall Liner Panel is normally supplied in 0.4 mm thick steel, this is the N1000L+ profile. When used as part of a roof system it should not be used as a working platform. If a working platform is required we recommend N1000WL sheets be used in 0.7 mm thick steel with Bright White Liner profile on the underside of the sheet when fitted. For ordering / specification this product variation can be classified as N1000WL.

Wall Cladding

N1000C and N1000CR wall cladding sheets are usually supplied in 0.5 mm thick steel and can be fixed vertically or horizontally. Vertical sheet ends and end laps should be fixed in the trough at every corrugation; at intermediate supports fixing should be at every other corrugation.

Horizontal sheets should be fixed in every trough throughout, special care should be taken with the alignment of the end laps and the supporting steelwork must be 'plumb' and in line to avoid visible distortion of the cladding. This affect is known as canning and can occur on vertically fitted sheets if the steelwork is not plumb.

In either configuration the minimum end lap should be 100 mm. Side laps should be laid with the overlap away from the prevailing wind and at the cladding contractors' discretion stitched at a maximum of 600mm spacing.

Fixing Precautions

1. Protective clothing, particularly gloves should be worn whilst handling and fixing, as laceration of the skin can occur from the sheet edges.
2. Eye protection should be used when cutting in case of flying swarf.
3. Handling sheets and bundles should be in accordance with HSE recommendations
4. Sheets and flashings should be cut and fixed in accordance with our instructions.
5. If subject to abnormally high temperatures ensure adequate ventilation, as fumes may be produced. This would only happen if the products were being misused. e.g. cutting with abrasive wheel or flame cutting or if the product was involved in a fire.
6. Firmly secure all packs of sheets on site. Abide by HSE recommendations for all fixings especially in breezy/ windy conditions.

Maintenance

The roofs and façades of buildings are exposed to many kinds of impurities and pollution in the air. These include sulphur, chlorine and nitrogen compounds causing acid rain, and various mineral salts, dirt and soot. These impurities together with water and UV radiation of the sun affect the coating. The effects are worst on those areas of the building where impurities are not washed away by rainwater.

From the point of view of the durability of coated steel sheet the most critical things are knocks and scratches, in which the impurities come into direct contact with the zinc layer under the paint coating or, especially, with the steel core.

The effect of the impurities in the air is greatest close to polluted industrial and in coastal areas. Emissions containing sulphur or chlorine are especially difficult. Impurities put a strain on the coatings and reduce their useful life, so the regular cleaning of wall and roof surfaces is an important part of the care and maintenance of the coatings.

Annual Inspection

Parts of a building where colour coated sheets have been used should be inspected regularly. If any defects are found in the coating they should be repaired immediately, in order to ensure long life. The annual inspection should include the following procedures:

Initial inspection

Remove all loose objects such as loose fittings, pieces of sheet, drilling's swarf and other metal articles from roofs and rainwater systems immediately after the installation.

Visual inspection

Visual inspection of the coated surfaces should be carried out once a year as a general inspection. A more thorough inspection should be carried out every five years during the warranty period. The coated surfaces should then be inspected at a viewing distance of 1,5 metres. After the warranty period has expired, the surface should be inspected every two years at a viewing distance of 1,5 metres.

Rainwater Systems

Rainwater systems should be cleaned every year. Blocked, partly blocked and dirty rainwater systems cause icing and corrosion problems.

Remove any possible blockage and dirt and flush, and, if necessary, wash the whole system. Repair any damage.

Cleanliness of the roof

Check the roof for cleanliness. Dirt and soil cause a corrosion risk by keeping the surface of the sheet wet. A dirty roof also spoils the appearance.

Condition of the fittings

Check the condition and attachment of the fittings. Damaged or partly loose fittings cause leakage, decay, and a risk of corrosion. If a fitting is damaged, it and/or the roof batten should be replaced with a stronger one.

Condition of the coating

Check the condition of the colour coating. Remember to inspect the roof valleys and rainwater system edges. Peeling of coating, uneven fading, blistering and cracking as well as local scratching are all signs of the need to repair the coating. Follow the painting instructions given in this document when repairing the coating.

Washing and removal of dirt

Rainwater is usually sufficient to keep colour coatings clean. Impurities, such as leaves from trees, however, should be cleaned off the roof, roof valleys and rainwater systems once a year. Coating should be cleaned with a soft brush and water or high-pressure water (< 100 bar). More stubborn dirt can be removed using a cleaning agent suitable for paint coatings (see table 4). Difficult dirt spots can be removed with a cloth moistened in white spirit. The rinsing should be carried out from the top of the roof downwards after the cleaning agent has taken effect for a few minutes. The rainwater gutters should then finally be rinsed down with water. It should be noted that the use of unsuitable or excessively strong cleaning agents will damage the colour coating.

Touch-up painting and maintaining eaves edges

It is always worthwhile to repair any damage which occurs to the coating as soon as possible. Only paints suitable for repair painting of coatings should be used. Spray-paints must not be used.



Maintenance

Repair painting of damaged areas

- Scrape off any peeling or flaking coating.
- Remove any rust by sanding or with a steel brush.
- Paint the metal surfaces with a paint brush.

Recommended coating

- Clean the damaged area using white spirit or cleaning agent as necessary.
- Paint the damaged area, 1 – 2 coats.

Sheets should be touched up using the correct Plastisol, PVDF paint or whatever the original coating was.

The area should be touch-up painted using as small a brush as possible. If the damage reaches down to the primer coat only, one coat of paint is sufficient. If, however, the damage reaches down to the zinc, it is recommended that a second coat of paint be applied after the first coat is dry.

Edge corrosion, in which the cut eaves edge of the sheet begins to rust, can sometimes occur, particularly on low-pitch roofs. Painting the eaves edges after the new roof covering has been installed can prevent this. This is highly recommended especially in seaside conditions by transparent Marketing Paint lacquer.

Fire Performance

Firth Steels Profiles are non combustible and will not contribute to a fire. They achieve a Class 0 rating in the current Building Regulations

The profile range has the following fire classifications:

- A1 Non-combustible
- Class 0 National Class
- Class 1 (Highest Rating) to BS 476-7:2004
- AA Designation as defined in BS 476-3:2004
- Fire Classification C-S2-D1 European Class

Repainting of coating surfaces

Before any decision is made to completely repaint whole surfaces it must be checked that there are no local damages and the adhesion of the coating to the base is good. If significant localised damage is found, or the coating has faded unevenly, it is best to consult an expert to establish and plan a repainting scheme.

It is difficult to give an exact time for when maintenance painting should be carried out, as the useful life of colour coatings is dependent on many factors. These are colour and type of coating, local climate conditions, slope of the roof, building method, and installation method. The strain on coating is at its greatest on the south-facing slope of a roof, when the colour of the coating is dark.

The most general reasons for repainting are significant changes in the colour or gloss of the surface. Impurities in the air and the sun's UV and heat radiation have the greatest effect on coatings. Durability of different coatings varies.

It is recommended that **Polyester** be repainted after 12 to 20 years. **F200 Plastisol** after 20 to 30 years after installation. As a general rule it can be said that dark colours should be repainted earlier than light ones. A colour-coated surface, which is repainted in good time, grants an extremely long useful life (up to 50 years). Even when the protection given by the colour coating ends, the steel is still protected by the zinc coating.

Handling & Storage

The following guidance refers to the handling and storage of Firth Steels range of profiled sheets and flashings upon arrival.

During the manufacture process each and every sheet goes through a quality control procedure to ensure that the profiled sheet is of the highest quality. Each pack is thoroughly inspected before being edge strapped into wrapped bundles and stacked on timber supports.

Upon delivery packs must be lifted carefully in a suitable manor, avoiding dragging the packs. Packs are stacked using timber supports at regular intervals to aid movement.

If the packs are being stored on site they must be covered with a suitable canopy that allows airflow around the packs. The packs must be stored off the ground and on a slope to allow any penetrating water to drain. When moving sheets into position ensure that edges are protected.

