Steel Window Association

Fact Sheet 4

THE STEEL WINDOW ASSOCIATION, 42 HEATH STREET, TAMWORTH, STAFFORDSHIRE, B79 7JH

Aftercare and Maintenance of Steel Windows

Steel windows, properly maintained, can be expected to last the life of the building.

Simple measures, such as always having the metal frame surfaces washed down at the same time as the glass is cleaned, and undertaking an annual inspection of working parts, gasket weatherseals and joint sealants, will do much to ensure their trouble-free performance.

This Fact Sheet gives general guidance on taking care of steel framed windows and doors so that they will continue to give years of satisfactory service. Where materials are to be procured for renovation or replacement, the recommendations of their manufacturer should always be sought for confirmation of suitability for the specific application.

SURFACE FINISHES – FACTORY APPLIED

Most modern steel window frames have a factory applied stoved polyester colour coating. Wash down periodically – at intervals of between three and 12 months, depending on the amount of grime and salt in the atmosphere – using a mild non-alkaline detergent in warm water, applied with a soft cloth or sponge. Using nothing harsher than a bristle brush or nylon pad. Give a final rinse with clear water. The finish will then last between 10 and 20 years before a decorative re-coat becomes necessary.

If, after many years of exposure, the polyester coated surface needs redecoration, a standard undercoat/top coat alkyd system can be used, after the surface has been cleaned and slightly roughened to provide a key.

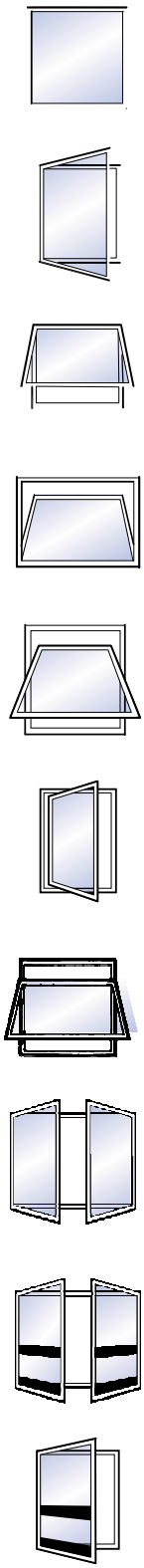
Small areas of finish that become chipped or scratched can be made good by the application of a touch-in paint available from your window supplier. This will be air drying and cannot be expected to weather in the same way as the original “oven-baked” coating, so its use should be limited. Large areas of damage are best repaired by specialist contractors, using two-pack resin and hardener spray applied systems.

SURFACE FINISHES – SITE APPLIED

The bare zinc of a hot dip galvanized finish needs a zinc chromate etch primer before further brush paint coats are applied. Oil based glazing putties and mastic sealants likewise need priming and sealing.

Take great care to keep flexible weatherseals and moving parts of fittings free of paint.

Steel windows supplied galvanized only, without a factory applied polyester colour coating, have clearances set up between meeting surfaces sufficient for three or four coats of paint. When the repainting programme has exceeded this, the paint build up starts to force the meeting surfaces apart and excessive force may be needed to close the window. This, in turn, can cause the window to bow or hinges distort.



If distortion has not gone too far, it may be sufficient to strip the paint off all meeting surfaces, taking particular care to clean off paint in the hinges. With the window in the closed position, check for excessive gaps between the fixed and moving parts. The gap should be large enough to allow a feeler gauge to slide into the gap without too much slackness.

If the gap is too great or the frame is badly bowed (tight at the centre and gaping at the corners), seek expert assistance from a member of the Steel Window Association.

PRE-WAR WINDOWS

Early steel windows, manufactured prior to the introduction of rustproofing treatments at the end of the 1930's such as hot zinc spray and hot dip galvanizing, may require additional maintenance. Wartime painting was often neglected and rust allowed to set in, often unseen beneath the putty in the glazing rebates. Cracked glass, provoked by compression from the building up of corrosion products, is a sure sign.

Such windows are often worth conserving and can usually be put back in good order by:

- Hacking out the glass and putty
- Abrading, filing or grinding off rust down to bright metal, then
- Applying a good zinc-rich primer, before
- Reglazing and building up the paint finishing coats
- Ensuring a watertight paint seal between putty, glass and frame.

When extensive conservation work is required, involving the repair or replacement of hardware, the dismantling of composite assemblies, or the piecing in of replacement bars, it may be worth

having the windows taken out, removed to a workshop, stripped down and hot dip galvanized before re-assembly. A Steel Window Association member should be contacted to advise on the best course of action.

OPENING LIGHTS

Outer frame sill channels have drain holes that can become clogged with paint, grime or insects. Clean them out and keep them open to ensure that the windows maintain their designed weather performance.

HARDWARE

Hinges and pivots should be lubricated using a light penetrating oil at yearly intervals. If seized up, they should be doused with a penetrating spray (such as WD40) and gently worked free. For safety reasons, lubrication is NOT generally recommended for friction types in case they swing too freely without restraint. Friction hinges and pivots have stainless steel, brass, or nylon bearings which normally function well without lubricating oil, but their tightening screws and locking nuts should be checked periodically.

Handles, stays and catches should be checked for proper operation. They should move freely and be lightly oiled, waxed or greased as necessary. If damaged, they can usually be repaired or replaced. Steel windows and doors have evolved gradually over the past hundred years and have retained the many characteristics and components that permit ease of maintenance. Member companies of the Steel Window Association can advise on and help resolve any problems.

WEATHERSEALS

The synthetic rubber weatherseals should also be included in periodic maintenance inspections. The most common cause of damage is site applied paint. If paint removal proves impossible, weatherseal replacement can be undertaken, preferably with materials supplied by the original manufacturer. They may be bonded to the frames with adhesive, retained in preformed grooves, or clipped onto studs. Retrofit of replacements by the same method is strongly recommended whenever possible.

PERIMETER SEALANTS

The joint sealants between window frame and wall opening, and at couplings between window units, will generally have a shorter life than the frames themselves. If deterioration is observed, the original sealant should be raked out, the joint thoroughly cleaned up, and new sealant applied which is compatible with the original.

Traditional oil based mastic sealants depend on a paint overcoat to maintain their service life. Modern polymer sealants are more resistant: over-painting remains desirable with acrylics, is possible but not necessary with polysulphides, and is to be avoided with silicones. Seek advice from the sealant manufacturers.

GLAZING MATERIALS

Glazing putties, mastics, gaskets and sealants are

likewise subject to some degradation by exposure to weather. Annual inspections can anticipate many problems before they become serious.

Loose putty should be raked out, replaced with metal casement putty (NOT linseed oil based putty intended for wooden windows) and overpainted.

Frames that have been factory finished with a stoved polyester coating will have been glazed originally with special non-setting compounds or with metal beads and sealants that adhere well to the polyester finish and do not require overpainting. If defective, they should be raked out, the joint thoroughly cleaned up, and new glazing sealant applied which is suitable for painted metal surfaces.

Insulating double glass units require particular attention to the maintenance of their glazing seals, as the constant presence of water trapped within the glazing rebates will shorten the life of the unit edge seals. Check the outside face of the glazing frame's bottom rail to see that the glazing seal sheds water and that any drain holes are free from blockage.

GLASS REPLACEMENT

The edges of double glass units and single panes must be spaced from the metal frame glazing rebate with setting and location blocks. They must also be carefully separated from the glazing upstand with distance pieces, mastic tapes or pre-formed gaskets.

Putty fronted single glass is retained by spring steel glazing clips placed in holes pre-drilled in the glazing frame rebate. Re-use or replace them when re-glazing.

For general guidance on glazing, see the Steel Window Association Fact Sheet No. 3 on Installation.

The Steel Window Association represents the great majority of UK steel window manufacturers, ranging in size from the smallest of craft-based companies that specialise in replacement and repair work, particularly on windows for Heritage buildings, through to large, multi-site companies that manufacture and install windows in literally every type of building. There is not a single steel window project of any description, anywhere in the UK, that one of the SWA members cannot handle.

All windows produced by SWA members in hot rolled steel sections to BS.6510 are protected by the hot dip glavanizing process in accordance with BS.729. Cold formed steel section windows are also available and all steel section windows can be supplied with a decorative finish available in a range of colours. This process, in which polyester powder is electrostatically applied then heat fused under factory controlled conditions to BS.6497, gives a high quality, attractive and durable finish with a life expectancy of at least 15 years.

The Steel Window Association supports its member companies with a wide ranging service relating to product development, market research and promotion and the SWA helps ensure that each member operates to the highest industry standards. Every contract undertaken has the personal attention of senior management and SWA member companies operate established and flexible services in window design, manufacture, installation and repair and refurbishment.

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