

2. METALWORK MATERIALS AND WORKMANSHIP

All materials and workmanship are guaranteed for one year from date of installation.

2.0.1 Materials generally:

Grades of metals, section dimensions and properties to be traceable from the supplier to appropriate British Standards. When a specific contract does not specify an exact standard, grade and sections will be selected appropriate for the purpose and within costs allowed for the project. Where a specification calls for blasting or any other type of pre-finishing, then this material preparation will be applied prior to any fabrication. Due care and attention will be taken not to damage or alter the appearance of the pre-finish. However, during the course of fabrication a certain amount of surface damage will take place, in the form of minor scratches and bruising. This damage will be cleaned up prior to the application of any surface finishes; where this damage is detrimental to the quality or performance of the work.

2.0.2 Fabrication generally:

All components will be manufactured and fabricated to ensure compliance with the design and performance requirements of the contract. All tolerances will be specified on Viking drawings issued for manufacture. Where no drawings are issued the following general tolerances will apply:

Cumulative size and positional tolerance up to 5000mm +/- 10mm
Over 5000mm +/- 15mm

2.0.2 General design:

All Stairs and balustrading will be designed to comply with the requirements of BS 5395. Other elements will be designed under related codes of practice. Where customers request design indemnity, Viking will employ the services of a structural engineer on behalf of the customer to approve any designs. Indemnity will be covered by Viking Engineering PI insurance and the related insurance of the appointed structural engineer.

2.0.3 Welding

1.Welding will comply with the requirements of BS 4872 for general welding where no external inspection is required.

2.Where external non-destructive testing of welding is required, or for any customer welding specification not covered by BS4872 welding will comply with the requirements of BS EN288/3.

2.0.4 Finishing Specifications

1. Work supplied primer or galvanised finish

Weld spatter will be removed and any weld high stop/start spots in visual areas will be ground down. Sharp edges and protrusions will be fettled. Full weld contour will be provided. Incomplete penetration will not exceed 25% of joint length as BS 4872 Pt2 6.1.1. Any undercut will not exceed 10% of material thickness or 1mm whichever is smaller as BS 4872 Pt2 6.1.2.

2. Work supplied powder coated standard finish

Weld spatter will be removed and the full weld contour will be ground to remove high stop/start spots. 90% of surface imperfections will be removed. Any areas of powder coating damaged in transit or on site will be touched up.

3. Work supplied powder coated with high quality finish

As spec 2.0.4.2 and welds will be fully ground to a smooth finish. 90% of surface imperfections will be removed. If the customer requires 100% surface perfection then any imperfections visual after powder coating can be filled and smoothed prior to the spray application of a further topcoat of paint after powder coating. Note spray touch up only applies on Matt colours. Metallic finishes cannot be touched up and clients are recommended to avoid metallic finishes.

4. Stainless Steel work supplied in pre-finished material

As spec 2.0.4.1. Surface integrity will be protected and supplied with less than 5% minor scratches and imperfections. Where visual damage or blemishes occur such as scratches or weld pitting, or where welded corners are blended in, then localised areas will be cleaned up as closely to the pre-finish. Note scratches on the main surface cannot be matched to the original finishes and minor damage scratches not exceeding 10mm in length to a depth of 0.1mm will be left alone.

5. Stainless Steel work supplied fully hand polished.

As spec 2.0.4.3. for 98% surface perfection. 100% surface perfection cannot be achieved in hand polishing without putting peaks and troughs in the surface plane. Welds will be polished in to the surface of the materials removing peaks and troughs to within 90% surface perfection. The surface finish will match the grain density but will be hand polished rather than machine applied. Variations will exist in the line lay of the finish. This is consistent with hand polished stainless Steel.

6. Other Materials

Other materials such as wood will be supplied as received. These materials normally fall outside the scope of supply of the company. However, we are able to issue information about our scope of supply, i.e. handrail core rail dimensions so that other trades can supply materials. We are able to fit wood handrails within a general tolerance of approx 0.5 to 1mm on mitres and connections. Our scope of supply excludes high quality finish specifications such as French Polishing or additional work to improve fitting tolerances to less than 0.25 mm gaps.

NOTE:

Viking Engineering will supply whatever our clients' request. However, we can NOT take any responsibility for the condition of natural materials such as wood after it has been installed. Natural materials may shrink, sag and deteriorate, it is the customers responsibility to be aware of this and to ensure they keep the correct climate for the material they have chosen, and that the original designs take operating conditions into account

2.0.5 Finish protection.

Powder coated and Stainless Steel Balustrade will be provided suitably protected. Unless specified balustrade will be either cardboard wrapped or bubble wrapped. Once site fix is complete the engineers will unwrap the items prior to certification. Site engineers will not leave site without re-wrapping the balustrade. Once the balustrade is certified complete it is the responsibility of the customer or main contractor to ensure that the balustrade is suitably protected.

2.0.7 Operation and Maintenance.

1. Work supplied in primer finish normally falls into two categories; structural steels and stairs installed prior to the application of a paint finish. Where no paint specification has been authorised the primer will be red oxide. Once the product is supplied it is the responsibility of the main contractor to ensure the paint finish is applied and Viking will take no responsibility for the surface integrity of the product once supplied. It is the responsibility of Viking Engineering to ensure that any localised areas, where the primer finish has been scuffed or damaged, are touched up before handing over the work. It is recommended that any paint finishes are applied following the paint system instructions. Clients are notified that periodic inspection of the steelwork should be made to ensure that no subsequent damage has occurred. Should

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damage be found the client should rub down areas with 180 grit abrasive cloth to key the area and remove any localised oxidisation. Primer should be applied followed by the paint system. Inspection should be carried out regularly; monthly for external systems, and six monthly for internal systems. Viking give no guarantee for the surface integrity and life expectancy of steelwork supplied primer finish.

2. Work supplied Galvanized is generally maintenance free. The client is recommended to inspect the steelwork yearly to ensure that no damage has removed the zinc layer exposing the steel. Repairs can be made by rubbing down with 180 grit abrasive cloth and touching up the exposed steel with Galvafruid paint system. Viking guarantee steelwork for 15 years when it is supplied hot-dip galvanised. For items supplied pre-galvanised no guarantee is given for the surface integrity of any joints or connections not galvanised.

3. Work supplied which complies to a specified paint or finish system will be guaranteed in compliance with the systems specification. Viking will ensure the surface integrity of the product up to handover. The client must inspect the product on a monthly basis to ensure the surface integrity has not been damaged. Damage must be repaired in compliance with the complete finish specification. If the product is not repaired correctly it will no longer be guaranteed. If the client is unable to repair the damage in compliance with the specification he should contact Viking who will make the repairs on behalf of the client or contractor. Viking engineering do not recommend the use of metallic colours where touch up is required. It is not possible to match any metallic colour perfectly when touching up. There will always be shade variations.

4. Stainless Steel. Viking Engineering guaranteed all stainless steel components for 25 years. - In general the minimum of care is needed to maintain stainless steel in its original condition however, a routine cleaning program will maximise performance and service life. The solutions to specific problems are shown in the table. A number of rules should be noted:

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DO

- use the mildest cleaning procedure that will do the job effectively.
- follow the polishing lines when using abrasive cleaners.
- rinse thoroughly after every cleaning operation.
- wipe dry to avoid water marks.

DON'T

- use ordinary steel scrapers or knives in removing heavy dirt deposits. This may cause rust spots. Use wood, plastic or stainless steel tools.
- allow chemical sterilizers, bleaching agents or any solution containing chlorides to remain in prolonged contact with stainless steel.
- use stainless steel utensils or containers for prolonged storage of food or other materials containing salt.

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Problem	Cleaning	Notes
Routine Cleaning	Soap, ammonia or detergent and warm water. Sponge with cloth then rinse with clear water and dry. Where disinfection is also required a bacterial detergent such as Odourless Shield should be used.	Satisfactory for use on all finishes.
Fingerprints	Soap and warm water or organic solvent (e.g. iso-propyl alcohol, acetone, Genklene).	Satisfactory for all finishes. Oil or wax cleaners can be used to minimise recurrence (e.g. steel-clean, Johnsons Deep Gloss).
Oil, grease marks.	Organic solvents (e.g. acetone, alcohol, Genklene-trichlorethane, Usher-Walker Tinnors no. PF8017).	Where swabbing or rubbing is not practical, use: 4-6% solution of sodium metasilicate or 4-6% solution of trisodium phosphate or 4-6% solution of sodium pyrophosphate or 4-6% solution of sodium metaphosphate
Stubborn spots and stains and other light discolouration.	Mild abrasive cleaners (e.g. Jiff, Exoclean D329, Goddard stainless Steel Care)	
Hard water spots, scale and water marks generally	Mild abrasive cleaners (e.g. Jiff, Exoclean D329).	Heavy scale can be loosened by long soaking in hot, 10% phosphoric acid or 25% vinegar solution. The component must be rinsed well in ammonia solution and water after treatment.
Tannin stains	Washing soda (sodium carbonate) in hot water followed by washing in water or chempro T.	Satisfactory for all finishes.
Oily deposits in coffee urns	Baking soda (sodium bicarbonate) in hot water	Ammonia solution will remove heavy deposits.
Heat tint or heavy discolouration.	Formula 9, Hi-sheen, Goddards Stainless Steel Care, Duraglit.	Slight scratching may occur during the polishing treatment.
Baked on carbon matter.	Jif, Exoclean D329, Ajax cream, Jonelle Household Cream.	Fine scratching may be present after cleaning.

5. Cleaning and maintaining Copper and Brass.

Viking Engineering usually supply Copper and Brass without a lacquer coating. We do not recommend coating with lacquer as the surface will gradual oxidise and tarnish under the coating. The material cannot then be polished to shine.

If Viking is asked to polish and lacquer we will not guarantee that the surface will remain shiny.

For finishes supplied un-lacquered, they can be maintained using the following methods.

Brass and copper supplied with mirror or dull mirror finishes can be cleaned using polish such as Brasso and Duraglit. Any product stating compatible application with the material can be used. Please check the product details before use. Also, it is a good idea to test any new product on a small area and leave for a day or so.

It is recommended to polish regularly rather than leaving for long periods. The longer the material is left, the longer it takes to re-polish to the original finish.

On highly polished surfaces it possible to remove light fingerprints using White Vinegar. Apply the vinegar to a lint free cloth and wipe over the whole area. It will remove light oxidisation and brighten the surface. This will not be effective on dark oxidisation.

Where materials are supplied with a brush finish, they should be left to oxidise naturally. The surface will gradually darken. This is normal. Should the surface get blotchy with fingermarks and other surface contamination it is recommended to clean the entire area with polish as described above and then allow the surface to start oxidising again. The longer the surface is left the darker it becomes and the longer it takes to re-polish. Fingermarks will not be visible on highly oxidised surfaces.

Over a period of time it may be that clients will want to re-finish the surface to remove graffiti or light damage. It is proposed that the client should contact Viking to discuss suitable methods to re-finish the surface. If the finish is specialised Viking Engineering can arrange for this work to be carried out on behalf of the client.

It is not recommended to use any form of abrasive cleaner or wire wool to remove stains or damage. Copper and Brass is too soft to withstand abrasive cleaning.

Cleaning Glass Panes.

All glass and window cleaners found in most retail departments can be used, if more natural cleaners are preferred to be used there are many alternatives.

An easy way to clean glass is to use a printed newspaper with a little water. Moisten that newspaper and rub away. The printing ink on the newspaper is excellent for cleaning glasses.

Another way is to add a little water to used tea leaves and use this water to clean a dirty glass window. The window panes will sparkle as the grime vanishes.

Vinegar also works well on paint stains on glass. Heat a teaspoon of vinegar and apply it with a piece of cloth over the stained area. Do wait for a few seconds and then rub with an old newspaper to see the stains vanish.

For greasy windows create a solution of one tablespoon powdered starch diluted in one liter of water. Use a cloth to clean the grease off with this solution. Do remember to dry them off immediately.
