FOREWORD

These General Specifications for Plastering & Painting is an excerpt from the Technical Specifications which have been adopted from the General specifications of the “Institute for Construction Training and Development” of Sri Lanka, with their permission, for use in the Hulhumalé Project.
12.0 PLASTERING

12.1 LIME PLASTERS – 15 MM THICK
The plaster shall not exceed 15 mm total thickness. This shall consist of a single
coot of lime mortar including where necessary the setting coat of pure white lime
putty.

12.1.1 MATERIALS
Lime mortar 1:2 or other specified proportion conforming to the requirements of
Clause 3.1.

12.1.2 SURFACE PREPARATION
New brickwork or stone masonry shall have been finished with recessed joints to receive plastering
see clauses 6.2.7 and 7.2.3 respectively. In the case of stone masonry, the bushings on the wall to be
plastered, shall be removed to within 12 mm projection.

Where so specified for dense and smooth surfaces a suitable bonding treatment
shall be applied to manufacturers instructions before plastering.

All soft joints in old stone masonry or brick work shall be ranked out to a depth of
not less than 12 mm.

The walls shall be brushed clean of all dust, thoroughly wetted and surface dried
before plaster is applied.

12.1.3 APPLICATION
Plastering of walls shall commence after completion of ceiling plastering if any. The plastering shall be
started from the top and worked down towards the floor. All put-log-holes (i.e. holes left for
scaffolding) shall be properly filled in advance of the plastering.

To ensure an even thickness and a true surface, gauges of plaster 15 mm x 15 mm, or broken clay tiles
set in mortar shall be first established on the entire surface at about 2 metre intervals both vertically
and horizontally.

The thickness of the plaster specified excludes the key i.e. the grooves or open joints in the brick
work.

The minimum thickness of the plaster over any portion of the surface shall not vary from the specified
thickness by more than 3 mm.

Mortar shall be applied between the gauges to slightly more than the require thickness i.e. slightly
proud of the gauges. The plaster shall be well pressed into the joints, levelled and brought to a true
surface by working on a wooden straight edge reaching across gauges, with small upward and
sideways movement. Finally the surface shall be finished true with a wood float or trowel according to
the type of finish required.

If a sandy granular texture is needed, the surface shall be wood floated. If a smooth finish is needed,
trowelling shall be done to the extend required; during this process the setting coat of pure white lime
putty shall be applied on the surface to facilitate finishing.

All moulded work, apart from the cover shall be formed and run in lime cement mortar 1:1:15 all
ornaments, mitres etc. neatly formed. These shall be finished with lime putty as described above.

All arrises shall be plastered in lime cement mortar 1:1:15 and finished with lime putty for wedges of
not less than 25 mm along each face of the arris.
All necessary dubbing behind, rounding of corners at the junctions of the walls plastering of cornices etc. shall be done.

In suspending work at the end of the day, the plaster shall be left cut clean to line both horizontally and vertically. When recommencing the plastering, the edge of the old work shall be scraped, cleaned and wetted with lime putty before plaster is applied to the adjacent areas, to enable the tow to be properly jointed together. Plastering work shall be closed at the end of the day on the body of the wall not nearer than 150 mm to any corners or arrises. It shall not be closed on the body of features such as plaster band and cornices, nor at corners or arrises.

Horizontal joints in plaster work shall not be formed on parapet tops and copings, as these invariably lead to leakages.

No portion of the surface shall be left out initially to be patched up later on.

Any cracks which appear on the surface and all portions which sound hollow when tapped, or are found to be soft or otherwise defective shall be cut out in rectangular shape and redone as directed by the officer-in-charge.

12.1.4 FINISH
The plaster shall be finished to a true and plumb surface and to the degree of smoothness required. The work shall be tested frequently as the work proceeds with a true straight edge not less than 2.5m long and with plumb bobs. The gap between the straight edge and any point on the plastered surface shall not exceed 3 mm. All horizontal lines and surface shall be tested with a level and all jambs and corners with a plumb bob as the work proceeds.

12.1.5 CURING
Curing shall be started 24 hours after finishing the plaster. The plaster shall be kept wet for a period of seven days. During this period it shall be suitably protected for all damages, at the contractor’s expense by such means as the officer-in-charge may approve.

12.2 LIME CEMENT PLASTER 15 mm THICK
The plaster shall not exceed 15 mm in total thickness it shall consist of a single coat of lime cement mortar including where necessary the setting coat of pure white lime putty.

12.2.1 MATERIAL
Lime cement mortar 1:1: 15 or other specified proportions conforming to the requirements of clause 3.3

12.2.2 SURFACE PREPARATION AND APPLICATION
Preparation of surface of the masonry/brickwork, and the application and curing shall be as specified in clause 13.1

12.2.3 SURFACE FINISH
Unless otherwise specified all surfaces of lime cement plaster for external rendering shall be wood floated; internal plastering shall be trowelled and finished with a setting coat of lime putty.

12.3 15mm THICK CEMENT PLASTER ON MASONRY/BRICK WORK
The plaster shall not exceed 15 mm total thickness comparing a single coat of cement mortar and the setting coat of neat cement slurry.

12.3.1 MATERIALS
The cement mortar 1:3 or other specified proportion conforming to the requirements of clause 3.2
12.3.2 SURFACE PREPARATION AND APPLICATION
The surface preparation, application and curing shall be similar to the procedure specified in clause 13.1 taking account of the following details:

The setting coat of neat cement slurry shall be applied within an hour of the completion of plastering.

It shall be trowelled smooth without showing signs of trowel marks or waviness or folds. Where a smooth finish is not specified, the surface shall be finished off with a rough wood float to the texture approved by the officer-in-charge.

12.4 18mm THICK COLOURED CEMENT PLASTER – 2 COAT WORK
This shall consist of 2 coats. The base coat shall be cement mortar 12 mm thick with a surface coat of coloured cement mortar 6 mm thick.

12.4.1 MATERIALS
Cement mortar 1:3 or other specified proportion conforming to the requirements of Clause 3:2.

An approved water proofing additive shall be used where specified.

12.4.2 SURFACE PREPARATION AND APPLICATION
Surface preparation, application and curing shall be similar to the procedure in clause 13.1 taking account of the following details:

The base coat of cement mortar shall where specified include 3% by weight of an approved water proof additive. The base coat shall be left roughened with a wire brush to provide a key for the surface coat. The surface coat shall consist of a mortar of coloured cement and sand mix as specified applied to thickness of 6 mm. It shall be applied not earlier than 24 hours of applying the base coat. It shall finished with a rough texture to accord with the approved sample are or as directed by the officer-in-charge.

12.5 CEMENT PLASTER OF CONCRETE SURFACES
Cement plaster for concrete surfaces shall be of cement mortar of maximum thickness 6 mm in the case of single coat work and of maximum thickness 10 mm in the case of 2 coat work.

The thickness of the plaster on the soffit of suspended floors shall be the minimum possible.

12.5.1 MATERIALS
Cement mortar 1:3 or other specified proportion conforming to the requirements of clause 3:2

12.5.2 SURFACE PREPARATION
Projecting burs of formed surfaces shall be removed and the surface scrubbed with wire branches.
The surface shall then be prepared as follows:

i. A first coat of spatter dash shall be applied over smooth clean concrete surface if so directed by the officer-in-charge. The dashing shall consist of 1 part of cement and 2 parts of clean fairly coarse and mixed to a thick slurry and kept well stirred. It shall be applied using a strong whipping motion normal to the face of wall. On setting and hardening the spatter dash shall give a good key for the subsequent coat to be applied.
12.6.3 APPLICATION

ii. Where directed by the officer-in-charge the surface shall be hacked with a pointed tool at spacings of not more than 50 mm the hacks being not less than 3 mm deep. The surface shall then be cleaned of all mould oil, grease etc, by scrubbing with water containing detergent and washing off with plenty of clean water. The surface shall be allowed to dry before application of plaster.

12.5.3 APPLICATION

(a) Soft Plaster

Floor rendering and finishes of a suspended floor shall have been completed before commending plaster its soffit. In the case of flat roofs, the weather proofing and other work shall have been completed so that the soffit plaster is not disturbed by subsequent operations on the floor or the roof. The concrete surface shall be wetted in acrance and allowed to dry before application of plaster.

To ensure an even thickness and a true surface, suitable gauges shall be established at about 1.5 metre intervals in both directions as described in Clause 13.1.3 and the plaster applied and finished smooth as described therein with a floating coat of lime putty. The finished soffit shall not show trowel mark, waves or folds and shall be true and plane. The mortar shall be used within an hour of adding water to the dry mix.

(b) In the case of concrete surface other than soffits of suspended floors, the plaster shall be finished to a true and plumb surface and to the proper degree of smoothness required. All horizontal surfaces shall be tested with a levelling instruments and all jambs and corners with a plumb bob as the work proceeds. All internal surfaces shall be finished smooth with a floating coat of lime putty and external surfaces wood floated rough to the texture desired, all to the satisfaction of the officer-in-charge.

12.5.4 CURING

Shall be as in 12.1

12.6 20 MM THICK 2 COAT WORK

2 coat work 20 mm thick shall comprise a first coat of 12 mm thickness, and a second coat of 8 mm thickness including the final lime putty.

12.6.1 MATERIALS

The cement mortar, of specified proportions conforming to the relevant clauses of Chapter 3.

12.6.2 SURFACE PREPARATION

Surface preparation shall be as for 15 mm thick lime plaster clause 131.2

12.6.3 APPLICATION

The first coat (Scratch coat) 12 mm thick. This shall be as per clause 13.1.3 except that the thickness of plaster is 12 mm as measured from the face of the brick work or stonework to the plastered surface. It shall be carried to the full length of the wall or to natural breaking points like doors and windows. The scratch coat shall be cross scratched to provide a mechanical key for the subsequent
coat. The surface shall be kept continuously damp for at least 2 days following its application. It shall then be allowed to dry before application of the second coat.

The second coat 8 mm thick

Before starting to apply the second coat the surface of the scratch coat shall be campened evenly by using fog spray to get uniform suction. The second coat shall be 8 mm thick and pressed well into the first coat. It shall be brought to a true even surface, with a trowel and the surface finished smooth with a setting of pure white lime putty.

12.6.4 FINISHING AND CURING
Finishing and curing shall be as per clause 13.1.4 and 13.1.5

All plaster work shall be kept damp continuously for a minimum period of 7 days after the application of the finishing coat.

Should the plaster crack through neglect of curing or because of any other fault, the work shall be removed and redone at the contractor’s expense.

12.7 20 MM THICK ROUGH CAST PLASTER
(Note: This is a good water proof covering generally for external work)

It shall consist of 2 coats: the first coat shall be 12 mm thick of either lime cement mortar 1:1:5 or cement mortar 1:3. The second coat which is the finishing coat shall be at least 8 mm thick and made up of a mixture of cement and stone chips in specified proportions dashed over the freshly plastered first coat.

Where directed, a sample panel of rough cost work shall be done first and approval of the officer-in-charge obtained.

12.7.1 MATERIALS
Cement mortar 1:3 or lime cement mortar 1:1:5 conforming to the relevant clauses of Chapter 3.

12.7.2 PREPARATION OF THE SURFACE
This shall conform to the requirements of clause 13.1.2

12.7.3 APPLICATION
The first coat of plaster 12 mm thick shall be applied and left rough to receive the finishing coat. The finishing coat or rough cast shall consist of a mixture of one part of cement and three parts of stone chips 6 to 10 mm size. It shall be mixed well to a paste of proper consistency and flung on the first coat with large sized trowels to form an even rough coat. The second coat shall be applied while the first coat is still soft and unset.

The plastering shall be cured for at least 7 days.
12.8 LATH AND PLASTER

12.8.1 MATERIALS

Metal Lath

Metal lathing for plasterers’ work shall be expanded metal lathing of the gauge specified and conforming to BS 1369: or other approved reinforcement, nailed and fixed to studs, brackets etc.

The material shall be protected by one coat of bituminous paint or by galvanising.

Cement Mortar

Cement mortar 1:3 shall conform to requirements of clause 3:2

12.8.2 PROCEDURE

The expanded metal shall be fixed with the ‘long way’ of the mesh across the supports. Sheets shall be lapped not less than 25 mm at the sides and ends. Sides shall be wired together with galvanised wire of not less than 18 S.W.G every 75 mm between supports.

Before plastering operations are commenced the metal lathing shall be thickly coated with cement slurry.

The cement mortar shall be applied in not less than three coats and finished smooth with pure white lime putty. No lime plaster shall be in direct contact with any metal work.
13.0 GLAZING

DEFINITIONS

GLAZING

Fixing of glass or a similar material in a framework opening to admit light.

CLEARANCE

Edge clearance - the clearance between the bottom edge of the glass and the rebate.
Back clearance – the clearance between the inside face of the glass and the rebate

SPRIG

A small headless nail used for securing glass in wood surrounds while the putty hardens.

SURROUND

Any frame, sash, casement or other building component into which glass is glazed.

13.1 MATERIALS

GENERAL

All glass used for glazing work shall be cut accurately to size with clean, undamaged edges and shall be free from flaws, specks or bubbles and surface disfigurement of any sort.

Toughened glass and laminated glass, where specified shall be manufactured to precise glazing sizes and with a permanent identification mark in a position which is visible but not prominent after fixing. If so directed, samples of glass to be used shall be submitted to the officer-in-charge and his approval obtained before purchase of the glass.

13.1.1 The following types of glass shall all conform to BS 952

- Transparent sheet glass
- Clean sheet glass flashed colour sheet glass
- Pot colour sheet glass.
- Transparent glass
- Flat & polished plate glass
- Translucent glass
- Rough cast glass patterned glass opal glass
- Wired glass
- Laminated and toughened glass

13.1.2 LINSEED OIL PUTTY

This shall conform to BS 544
Note: As initial setting is controlled by absorption of some of the oils into the frame it may be used for soft woods. Linseed oil putty shall not be used on non absorbent hardwoods like teak.

13.1.3 METAL CASEMENT PUTTY
This shall be of an approved type suitable for bedding and fronting into metal surrounds, sealed timber or sealed concrete surface.

13.1.4 SELF ADHESIVE GLAZING TPES/VELVET AND WASH LEATHER SHALL BE OF APPROVED MAKE

13.2 WORKMANSHP
Glazing and fixing of glass for buildings shall generally comply with BS CP 152. In respect of all materials and products, the instructions of the manufacturer shall be followed.

External glazing shall be completely wind and water tight.

Note:
Thickness of glass to be used for windows, doors and other low level glazing shall be as specified and conform to clause 3.8 and 3.9 of BSCP 152 and Clause 7.4.2 of the Manual for Design and Buildings for High Winds issued by the Ministry of Local Government, Housing and Construction.

13.2.1 PREPARATION
All rebates and grooves shall be clean, dry and unobstructed. All heads and rebates in woodwork made of soft wood shall be given a coat of wood primer before glazing. In the case of hard wood which is non-absorbent, a metal casement putty shall be used.

Rebates shall be sealed with primer and at least one undercoat before applying metal casement putty.

In the case of metal surrounds a specified primer shall be applied to the surround and heads. The metal surrounds shall be free from dirt, dust, grease burs weld spatter and other projections. They shall be smooth and undistorted and shall be painted before glazing is commenced.

Stone/brick/concrete surrounds, rebates or grooves shall be sealed with at least two coats of alkali-resistant sealer before application of compound.

13.2.2 FIXING

GENERAL
Glass panes shall be cut to fit the rebates of the ashes leaving an edge clearance of 3 mm all around in which to bed the putty so that the glass does not touch the surround at any point. For panes exceeding 0.2 m² in area, the glass shall be set on small blocks of resilient material spaced at not more than 75 mm from the corners, to locate the pane properly within the surround.

In timber or metal frames, the thickness of back putty shall not be less than 2 mm. A rebate of 10 mm shall generally be available for fixing glass externally. Patterned/wired glass shall be fixed with patterns or wires parallel to the surround or as directed. Adjacent panels shall be aligned as directed.
13.2.2.1 GLAZING WITH PUTTY
The bedding putty shall be applied uniformly over the rebate and the glass pressed into position and secured with glaziers sprigs. These fixings shall be spaced at 450 mm around the frame. On pressing in the glass a certain amount of bedding putty is pressed out and the remaining putty which is called the back putty shall be at least 2 mm thick between the glass and rebate. The glass is then ‘front puttied’ and the putty shall be stopped about 2 mm from the sight line of the rebate sot ht when pain is applied it is carried over the glass unto the sight line and so seals the edge of the putty to the glass.

The front putty shall be sloped at an angle to prevent accumulation of water. The back putty shall also be stopped at an angle to prevent shrinkage causing a groove in which dirt can accumulate.

The putty shall be left for 14 days to harden before painting.

13.2.2.2 GLAZING WITH BEADS
The beads shall be of approved hard wood secured by rust proofed panel pin or preferably by brass counter sunk screws and cups. Pins shall not be more than 75 mm from the corners or more than 200 mm apart. For double glazed units, cups and screws shall be used.

Rebate and beads shall first be sealed with proprietary sealing compound applied by brush. The glass shall then be bedded in glazing compound and set in position using setting blocks and distance pieces to restrain movement. The bead shall then be bedded with the glaziers putty and screwed or pinned in position. For internal bead glazing, the bedding for the bead can be omitted.

Plate glasses shall be bedded on a strip of asbestos tape of felt to tact as a cushion between the glass edge and the bead.

Dry bead glazing where specified in internal situations shall be of self adhesive glazing tapes or self adhesive black velvet or wash leather, passed round the edge of the glass and trimmed off flush on both sides in accordance with the instructions of the manufacturers. The beads shall be sealed as specified and fixed to the surround by springs of screws.

13.2.3 PROTECTION AND CLEANING OF FINISHED WORK
White wash indicators shall be restricted to small central areas of panes. All smears and excess putty and sealant shall be cleaned off.

Putty shall be sealed and protected as soon as sufficiently hard by paint or varnish as specified or as directed.

Broken panes shall be replaced and redecorated as directed by the Officer-in-Charge.
14.0 PAINTING AND DECORATION

DEFINITIONS

ALUMINIUM PRIMER
A primer containing a proportion of aluminium pigment. It should be distinguished from an aluminium paint in which the aluminium is designed to float to the top of the film giving metallic brilliance, a feature undesirable in a primer. Aluminium primers are especially valuable on resinous timber or timber which has been treated with oil soluble wood preservative. This term must not be confused with a primer for aluminium.

ANTI-CORROSIVE PAINT OR COMPOSITION
A paint used for preventing the corrosion of metal and more particularly, a paint especially formulated to prevent the rusting or iron or steel.

BITUMINOUS PAINT
Originally a paint from the class of paints consisting essentially of natural bitumens dissolved in organic solvents; they may contain softening agents, pigments and inorganic filters. It is usually black or dark in colour. By extension the term is applied also to dried film. Within recent years the term ‘bituminous’ has by common usage come to include bitumen-like products such as petroleum asphalt; it is not recommended that the term should be used for paints based on coal tar or coal tar pitch. These are more generally known as black varnish (q.v) or ‘black paint (coal tar or base)

CEMENT PAINT
A paint based essentially on Portland Cement, supplied as a dry powder, for mixing with water immediately before use.

COPAL
Natural resins formed from the exudation of various tropical tree. The hard fossil types are the basis of copal varnishes, the softer types frequently obtained by the tapping of live trees being mostly used for spirit varnishes. Congo copal is the main surviving member of the fossil class, Manila copal that of the spirit soluble class.

DISTEMPER
Although there is a tendency to apply this term to all interior water paints used for house decoration, it should preferably be used solely to describe the earlier types of such product, namely those in which the binding medium consists essentially of either glue or casein or similar sizing material. (see also ‘water paint’)

DRIERS
Substances which, when incorporated in relatively small proportions in drying oils, or in paint or varnished based on drying oils, bring about an appreciable reduction of their drying times at ordinary temperatures. These substances are usually compounds of lead, manganese or cobalt.

DRYING
The process of change of a coat of paint or varnish from the liquid to the solid state, due to evaporation of solvent, physicochemical reactions of the binding medium or a combination of these causes.

TOUCH DRY
When a very slight pressure with the fingers does not leave a mark or reveal thickness.

HAND DRY
When the drying has reached such a stage that if desired a further coat can be satisfactorily applied by brushing, necessary after flatting. The term is also used to describe certain degrees of film hardness when tested by specified methods.
DRYING OIL
A oil usually of vegetable origin of which linseed (q.v) and tung oil (q.v) are the commonest examples, having the property of hardening by oxidation to a tough film when exposed in the form of a thin layer to air.

EFFLORESCENCE
The development of a crystalline deposit on the surface of brick, cement, etc, due to water containing soluble salts, coming to the surface and evaporating so that the salts are deposited. In some cases, the deposit may be formed on the top of any paint film present, but usually the paint film is pushed up and broken by the efflorescence under the coat.

EMULSION PAINT
organic binder in water. Industrially the name is mainly restricted to these paint in which the medium is an emulsion of a synthetic resin. The medium may also be called a jatex by analogy with natural rubber latex; polyvinyl acetate emulsion paint is typical example.

ENAMEL
One of a class of finishes obtained by melting siliceous materials. The term is also used in the paint industry to describe pigmented varnishes which stimulate in appearance the flow smoothness and gloss of vitreous enamel. The same broad definition applies to ‘enamel paint’ and ‘hard gloss paint’, although all three may differ in degree in respect of one or more properties, such as flow, smoothness, gloss, capacity and in the retention of these properties on agening.

EPOXY PAINT
A paint based on an epoxy resin: the designation is frequently qualified to indicate the nature of the cross linking agent used, ‘epoxy /amine’, ‘epoxy / polyaide’ or ‘epoxy / isocyanate’ where the cross linking agents are polyamines, polyamides and isocyanates respectively.

FILLER
1. A composition used for filling fine cracks and indentations to obtain a smooth, even surface preparatory to painting. It may vary in consistency from a paint to a paste, and may be applied in successive coats by brush or in one application by means of a broad knife.
2. Synonymous with ‘extender’ (q.v)

FLAME-CLEANING
The application of an intensely hot flame to structural steel resulting in the removal of mill scale and the dehydration of any remaining rust, leaving the surface in a condition suitable for wire brushing followed by the immediate application of paint.

FLAT (MATT)
The description of a painted surface which scatters or absorbs the light falling on it, so as to substantial free from gloss or sheen (see also ‘gloss’)

FLATTING DOWN
Cutting or rubbing down the surface of a paint varnish with fine abrasive to produce a smooth dull surface.

FRENCH POLISH
A lacquer made essentially from shellac and methylated spirit. Other spirit – soluble gums, such as sandarach and benzoin, are sometimes added to impart some special property. It is supplied with a cambrec covered ‘rubber’ cotton wool, lubricated with oil. The oil is afterwards removed by ‘spiriting off’ (q.v)
GLOSS
The degree to which a painted surface possesses the property of reflecting light in a mirror-like manner (specular reflection) the extent to which this property developed depends mainly on the composition of the paint, and the surface ranging from dead flat to full gloss being obtainable. The following stages in increasing order of gloss are normally recognised.

FLATT OR MATT
Practically free from sheen even when viewed from oblique angles.

Eggshell felt
Eggshell gloss
Semi-gloss
Full-gloss – smooth and almost mirror-like surface when viewed from all angles.

GOLD SIZE
1. An oleo-resinous varnish which dries rapidly to a tack condition, but which hardens off slowly. It is used chiefly at, an adhesive for fixing gold leaf to a surface.
2. An oleo-resinous containing a high proportion dries, which rapidly dries hard after application. It is frequently used for preparations of stopping and filling composition.

HARD STOPPING
A material in stiff paste from, which is usually applied by means of a knife to fill deep indentation in a surface and which dries hard throughout. It should not be confused with glazing putty which is of a different consistency and which hardens more slowly.

INHIBITIVE PIGMENT
A pigment which retards or prevents the corrosion of metals by chemical and or electrochemical means, as opposed to a purely barrier action. Red lead and zinc chromate are examples of inhibitive pigments as opposed to red iron oxide which has little or no inhibitive action.

KNOTTING
A quick-drying composition used in the preparation of joinery for painting to form a local impervious covering knots and other resinous areas liable to stain or soften a superimposed coat of paint.

The most usual composition consists of a solution of shellac in industrial methylated spirit.

LACQUER
1. A coating composition dries solely by evaporation of the solvents e.g. cellulose and spirit lacquers.
2. A gold stoving finish for tinplate which is not formulated on a spirit or cellulous basis and does not dry solely by solvent evaporation.

LAYING OFF
The final light strokes of the brush during a painting operation.

LEAD PAINT
A paint, the dry pigment content of which contains more than 5 per cent of soluble lead compounds (expressed as PbO) of the dried pigment.
MASTIC
An adhesive composition. The term is loosely used to describe a plastic filler, stopper, putty or adhesive. Not to be confused with 'gum mastic' which is natural resin used for picture varnish.

RESIN, NATURAL
A glassy amorphous organic substance produced either in the metabolism of tree growth, e.g. copal (q.v) or by insects, e.g shellac. The former may be obtained from growing trees or dug up from the ground. (fossil resin) where it has lain since the trees from which it was formed decayed in prehistoric times. These resins, as distict from gums, are not soluble in water but may be dissolved in organic solvents or vegetable oils. If necessary after heat treatment to form varnishes.

RESIN, SYNTHETIC
Originally, a member of a group of synthetic substances which resemble and share some of the properties of natural resins, but now used for material which bear little resemblance to natural resins. The term is generally used to understand to mean a member of the hetergeneou group of compounds by condensation and/or polymrization. Chemically modified natural polymers, such as cellulose acetate and hardened casein, are not considered to be synthetic resins.

RESINOUS TIMBER
Wood from certain trees which contain resinous material in the cells. The resins have high solvent power for many paint media, even wheere these have partially dried. This resin frequently exudes through pain films applied on such wood, especially in sunny locations.

SEALER
A clear or pigmented liquid used on absorbent surfaces prior to painting, which when dried reduces the absorptive capacity of surface, often known as 'suction'. Also used where necessary to prevent any soluble or diffusible matter from 'bleeding' (q.v) into and disfiguring new paint, or to protect the existing paint system from the softening action of solvents in a top coat. (See also 'sanding sealer)

SHORT OIL
A low ration of oil to resin in a medium (See also 'long oil)

PINK PRIMER
Traditionally, a wood primer based essentially on white and red lead pigments. Now sometimes loosely applied to wood primer, pink in colour, but base on pigment other than lead. The use of the term is therefore to be deprecated and where priming paints based on a mixture of white and red lead are required they should be referred to as such.

PLASTER TIMBER
Primers with a degree of resistance to alkali which are used for priming plasters and cements of varying degrees of alkalinity. The primers must not only resist saponification but must insulate succeeding coats of paint from attack. Plaster primers based on tung oil/phenolic resin varnishes or tung oil/coumarone varnishes usually are sufficiently alkali-resistant for use on more plaster.

PLASTIC EMULSION PAINT
These are paints which are bound with emulsion of vinyl acrylic and polyurethane polymers. They harden within 2 – 3 hours and provide matt, sheen, lustre or gloss surfaces. Emulsion paint are tougher, more elastic and through permeable are more resistant to weather than oil bound distempers.
PUTTY

A stiff plastic material of high mineral filler content which is applied by a knife and which normally hardens as exposure.

GLAZING PUTTY
A type of putty used for fixing glass panes in frames, based on whiting and linseed oil

HARD PUTTY
See ‘hard stopping’

a. Short oil alkyd. An alkyd resin containing not more than 40 per cent of oil as modifying agent.

b. Short oil varnish. An ole-resinous varnish other than an alkyd, containing not more than 1 ⅓ parts by weight of oil to 1 part by weight resin, in the finished varnish.

SOLVENT
A liquid usually volatile, which is used in the manufacturer of paint to dissolve or disperse the film forming constituents and which evaporated during drying and therefore do not become a part of the dried film. Solvent are used to control the consistency and character of the finish and to regulate application properties.

SPIRIT
In the paint industry, this term is used somewhat loosely but generally refers to commercial ethyl alcohol normally sold as industrial methylated spirit.

The term mineral spirits is used particularly in America, for what is known in the U.K as ‘white spirit’ (q.v). This consists mainly of a mixture of aliphatic hydrocarbons with a proportion of aromatic hydrocarbons.

SPIRIT VARNISH
A lacquer based on a solution of resin or resins industrial methylated spirit.

The more correct term would be spirit lacquer (See lacquer)

STAIN
Solution or suspension of colouring matter in a vehicle designed to colour a surface by penetration without hiding it. True stains are classified as water stains, oil stains spirit stains, according to the nature coloured with transparent material. These have not the same powder penetration as the true stains and leave a coloured coating on the surface.

STAINERS
Coloured pigments ground in a paint vehicle, which can be added in relatively small proportions to already prepared paints to modify theire colour. (see also ‘tinters’)

STOPPER
A stiff paste used for filling holes and cracks and similar defects in surfaces, normally applied after priming. (see ‘hard stopping’)

Slight stickiness of the surface of a film of paint, varnish or lacquer apparent when the film is pressed with the finger.
THINNERS
Volatile liquids added to paints and varnishes to facilitate application and to aid penetration by lowering the viscosity. They should be completely miscible with the paint or varnish at ordinary temperature and should not cause precipitation of the non-volatile portion either in the container or in the film during drying. For some purposes, thinners containing a small proportion of non-volatile material may be used.

TENTING
The final adjustment of the colour, of a paint to the exact colour required.

TURPENTINE
A colourless volatile liquid distilled from the products of certain pine trees and consists of a complex mixture terpene hydrocarbon.

Turpentine was formerly extensively used in paints and varnishes but has now been largely replaced by ‘white spirit’ (q.v)

UNDERCOAT
The coat or coats applied to a surface after priming, filling etc. or after the preparation of a previously painted surface, and before the application of a finishing coat. An undercoat should possess good hiding power, build up a film which can be rubbed down to a very smooth surface and a colour leading up to that of the finishing coat, and should otherwise be suitable for use with the other paints in the system.

VARNISH
A transparent coating composition based essentially on drying oils, resins and solvents. (See also ‘spirit varnish’ and of ‘lacquer’) it provides a clear finish to timber enhancing its natural beauty.

VINYL RESIN
A synthetic resin of the thermoplastic type obtain by the polymerization of monomers containing the vinyl group. In strict chemical terminology the description covers not only the polymerized vinyl ester, e.g. polyvinyl acetate but also polystyrene and the polycrylates. Vinyl resins may be applied as solution in organic solvent as plastisols (q.v), as organosols (q.v) or in aqueous dispersion or latex form (see ‘emulsion paint’)

WHITE SPIRITS
The most commonly used thinner for paints and varnishes.

ZINC-RICH PRIMER
An anticorrosive primer for iron and steel incorporating zinc dust in a concentration sufficient to give electrical conductivity in the dried film, thus enabling the zinc metal to corrode preferentially to the substrate, i.e. to give cathodic protection.
14.1 WHITE WASHING AND COLOUR WASHING OF NEW WALLS

GENERAL
Unless otherwise specified new wall surfaces shall receive there coats of white/colour wash.

14.1.1 PREPARATION OF THE SURFACE
New surfaces shall be thoroughly cleaned of mortar or other splashes. Any damage to the plaster shall be made good to match the adjacent surfaces and the surface brushed clean of dust and dirt.

14.1.2 PREPARATION
Lime used for white or colour washing shall be fresh burnt shell like. The lime shall be screened through a sieve of 850 microns and dissolved in a tub of sufficient water to give a thin creamy consistency.

When thoroughly mixed, it shall be strained through a clean coarse cloth. Gum Arabic or glue in the proportion of 4 gm per litre of the cream shall be added.

Colour Wash
Where colour wash is specified colouring matter of the colour specified shall be added. In the case of yellow was, finely powdered yellow clay commonly known as “Samara” may be used.

The contractor shall paint sample areas for approval of the tint by the officer-in-charge.

Note: Only sufficient wash for the day’s work shall be prepared each morning. The wash shall be stirred continuously during use.

14.1.3 APPLICATION
Each coat shall be laid on with a brush and allowed to dry before the next coat is applied. One coat comprises a stroke of the brush given from the top downwards, another from the bottom upwards over the first stroke and similarly one stroke from the right and another from the left over the first brush before it dries. The number of coats to be applied shall be as specified. At the end of the work, the whole surface shall present a uniform appearance and colour shall be of event tint without exhibiting any patches, streaks or hair cracks.

The contractor shall take every precaution to prevent the white/colour wash being splashed on the wall, floor, doors, windows, furniture and other surfaces and articles not to be white/colour washed. The contractor shall clean up at his own cost, all such items to the satisfaction of the officer-in-charge. Ladders, poles, scaffolding etc. shall be shod with gunny bags to prevent damage or scratching of the walls and floor.

14.2 WHITE WASHING AND COLOUR WASHING OF OLD WALLS

GENERAL
Unless otherwise specified old walls shall receive one coat if there is no change of colour. The white or colour wash shall be prepared as specified in clause 14.1.2

14.2.1 PREPARATION OF SURFACE
All loose scales and flakes of the old white wash/ colour wash shall be removed thoroughly. Minor repairs to plaster and making good shall be carried out to the satisfaction of the officer-in-charge. Where so specified the entire surface of old whitewash colourwash shall be thoroughly removed by scraping the surface cleaned.
14.2.2 APPLICATION
For old work, after the surface has been prepared as in clause 14.2.1 a coat of white or colour wash shall be applied over the patches and repaired areas. One or more coats as specified shall be then applied over the entire surface.

One or more coats as specified shall be then applied over the entire surface.

14.3 DISTEMPERING 'NEW SURFACES' WITH OIL BOUND DISTEMPERS

14.3.1 MATERIALS
Oil bound distempers shall be of approved quality primer for new surfaces shall be an alkali resistant such as cement primer or distemper primer as specified and shall be of the same manufacture as the distemper.

14.3.2 SURFACE PREPARATION
The plastered ‘surface’ shall be well cleaned down of efflorescence dust etc by scrubbing and washing. It shall then be allowed to dry for at least 48 hours and sand papered to give a smooth and even surface. Unevenness and pittings and small holes shall be filled with gypsum and allowed to set.

14.3.3 APPLICATION
14.3.3.1 PRIMING COAT
The priming coat shall be with distemper primer or cement primer as specified.

Note:
The priming coat shall be with distemper primer or cement primer as specified.

1. The cement primer is composed of a miduem a pigment which are resistant to the alkalis present in the cement, lime or lime cement the wall finish; it provides a barrier for protection of subsequent coats of oil emulsion distemper paints.
2. If the plaster has not dried completely, cement primer shall be applied before distempering the wall. But if the distempering is done after the wall surface is dried completely, distemper primer shall be applied.
3. Oil bound distemper is not recommended to be applied within six month of the completion of wall plaster.
4. For old work no primer coat is necessary.

14.3.3.2 DISTEMPER COATS
Note: 50 mm double bristled distemper brushes shall be used. Old brushes which are dirty and caked with distemper shall not be used on the work. After each days work, brushes shall be thoroughly washed in hot water with soap solution and up to dry.

After the primer coat has dried for at least 48 hours, the surface shall be lightly sand papered to make it smooth for receiving the distemper taking care not to rub out the priming coat. All loose particles shall be dusted off after rubbing. One coat of distemper properly diluted with thinner (water or other liquid as stipulated by the manufacturer) shall be applied with brushes; a horizontal stroke followed immediately by a vertical one together constitute one coat.

The subsequent coats shall be applied in the same way. Two or more coats of distemper as are found necessary shall be applied over the primer coat to obtain an even shade.

A time interval of at least 24 hours shall be allowed between consecutive coat to permit the proper drying of the preceding coat.
14.4 DISTEMPERING OLD WALLS WITH OIL BOUND SURFACES

14.4.1 MATERIALS
This shall be as per clause 14.3.1

14.4.2 SURFACE PREPARATION
All loose pieces and scales shall be thoroughly removed by sand papering. The surface shall be cleaned of all grease, dirt etc. Pitting in plaster shall be made good with plaster or paris mixed with the colour to be used. The surface shall be rubbed down again with a fine grained sand paper and made smooth. A coat of distemper shall be applied over the patches. The patched surface shall be allowed to dry thoroughly before the regular coat of distemper is applied.

14.4.3 APPLICATION
No primer coat is necessary. For old work the distemper shall be applied over the prepared surface in the same manner as for new work. One or more coats of distemper as are found necessary shall be applied to obtain an even and uniform shade

At the end of work the surface shall be uniform in colour without patches, overlap and brush marks.

14.5 CEMENT PAINTING NEW SURFACES
14.5.1 MATERIALS
Cement paint shall be of approved quality.

14.5.2 PREPARATION OF SURFACE
The surface shall be thoroughly cleaned of all mortar dropping dir, dist, grease and other foreign matter by brushing and washing.

All holes shall be filled with cement mortar of gypsum and allowed to harden:

14.5.3 MIXING AND APPLICATION
The cement paint shall be thoroughly mixed with water to the proper consistency as specified by the manufacturer and applied uniformly with broad hairbrushes. The paint shall be used within an hour of being mixed.

After the first coat has set, it shall be cured with water spray at least for the next 24 hours. The surface shall then be watered again before the application of the next coat. A primer shall be used instead of the first coat if so specified by the pain manufacturer. The number of coats shall be as specified. Unless otherwise specified, new wall surfaces shall be given one cement primer coat and two finishing coats of cement paint.

14.6 CEMENT PAINTING OLD SURFACES

14.6.1 MATERIALS
The cement paint shall be of approved quality.

14.6.2 PREPARATION OF SURFACE
All loose particles shall be removed and dirt and foreign matter brushed off from the surface. Pitted surfaces shall be made good and patches wetted and primed with a coat of cement paint. The surface shall be sprayed with water several times with a few minutes interval between each spraying, to allow the moisture to soak into the surface.
14.6.3 MIXING AND APPLICATION
This shall be as per clause 14.5.3

14.7 PAINTING NEW SURFACES WITH PLASTIC EMULSION PAINT

GENERAL
Manufacturers instructions shall be followed, in the choice of paints for external work.

14.7.1 MATERIALS
Emulsion paints shall be of approved manufacture. The instructions of the manufacturer shall be followed in all respects, and in the choice of paints for external work.

14.7.2 SURFACE PREPARATION
Surface preparation shall be as per clause 14.3.2
New surfaces shall be painted until they are perfectly dry.

14.7.3 APPLICATION
A coat of alkali resistant primer shall be applied to the prepared wall surface. If the pain itself is of alkali resistant composition, one coat of the pain itself could be used as primer. Unless otherwise specified, emulsion painting of new walls shall consist of a coat of alkali resistant primer and two coats of emulsion paint to match approved samples.

Splashes of paint on floors shall be cleaned out without any delay as they will be difficult to remove after hardening.

14.8 PAINTING OF OLD SURFACES WITH PLASTIC EMULSION PAINT

14.8.1 MATERIALS
These shall be as per clause 14.7.1

14.8.2 SURFACE PREPARATION
This shall be as per clause 14.4.2

14.8.3 APPLICATION
This shall be as per clause 14.7.3

14.9 PAINTING

GENERAL

a) Materials
Paints, oils, varnishes etc, of approved manufacturer shall be used. Ready mixed paint as received from the manufacturer shall be used without any admixture. If for any reason, thinning of ready mixed paint in necessary the brand of thinner recommended by the manufacturer or as instructed by the officer-in-charge shall be used.

Approved paints, oils, or varnishes shall be brought to the site in their original containers in the sealed condition.
Where directed, sample areas shall be provided of each type of coating including preparation of surfaces, and not approved by the officer-in-charge before proceeding with the painting.

b) Preparation

Painting shall not be started until the preparations have been inspected by the officer-in-charge and approval given by him to commence the painting work. Painting shall not be carried out in adverse weather conditions as condensation may occur on surface being painted.

Painting except the priming coat, shall generally be commenced after practically finishing all other building work. The rooms shall be thoroughly swept out and the entire building cleaned at least one day in advance of starting the paint work.

c) Application

Application of finishing coats shall be by brush spray or roller as specified and approved by the officer-in-charge. Paints uses shall be brought to the requisite consistency by adding a suitable thinner recommended by the paint manufacturer. Each coat shall be allowed to dry thoroughly this should be facilitated by thorough ventilation. Each coat except the last coat, shall be lightly rubbed down with sand paper or fine pumice stone and dust cleaned off before the next coat is laid. The paint shall be stirred thoroughly in its containers before pouring into smaller containers. Whilst applying also, the paint shall be continuously stirred in the smaller containers so that its consistency is kept uniform. No left over plant shall be put back into the stock tins. When not in use, the containers shall be kept properly.

Brushing

The paint shall be laid on evenly and smoothly by means of crossing and laying off.

The crossing and laying off consists of covering the area over with paint, brushing the surface hard for the first time over and then brushing alternatively into the opposite direction two or three times and then finally laying off in the direction two or three times and then finally laying off in the direction of the grain in the case of wood work. In this process, no brush marks shall be left after the laying-off is finished. The full process of crossing and laying off will constitute one coat.

Spraying

Where stipulated, the painting shall be done by spraying. The spray machine used may be a high pressure (small air aperture) type, or a low pressure (large air gap) type, depending on the nature and location of work to be carried out. Skilled and experienced work men shall be employed for this class of work. Spray painting shall be done only when dry conditions prevail.
No hair marks from the brush or clogging of paint puddles in the corners of panels, angles of moulding etc. shall be left on the work.

In painting doors and windows, the putty round the glass must also be painted; but care must be taken to see that no paint stains etc. are left on the glass. Tops of shutters and surfaces in hidden locations shall not be left out in painting.

In painting steel work, special care shall be taken while painting over bolts, nuts, rivets, overlaps etc.

The additional specifications for primer and other coats of paints shall be as per the detailed specifications under the headings.

### 14.9.1 PAINTING NEW WOODWORK

#### 14.9.1.1 Preparation of Surface

At the time of painting, the moisture content of timber shall not exceed that appropriate to its use.

Large, loose knots and other gross defects shall be cut and the holes plugged with sound wood.

All heads of screws and nails shall have been set at least 3 mm below the surface and filled with hard stopping.

The surface shall be sand papered to a smooth and even finish and all projections, tool marks and other irregularities smoothened off. Resinous knots shall be treated with an approved quality shellac knotting conforming to B.S 1366. Where resinous or oil exuding woods are to be painted, the entire areas shall be treated with shellac knotting and allowed to set hard.

#### 14.9.1.2 Priming coat for wood

The priming coat for new wood surfaces shall be as follows:

**Non-resinous woods**

Pink primer consisting of white lead in linseed oil, with not more than 10% red lead, or aluminium wood primer or acrylic emulsion primers.

**Resinous or oily woods**

Aluminium wood primer

Hardwoods like teak containing excess of natural oil shall be degreased by washing down with white spirit. The priming coats shall be applied by brush, worked into the surface, joints and angles, and particular care shall be of adequate thickness and suit the surface porosity.

Any primed surfaces which have deteriorated on site or in transit shall be touched up or reprimed as directed by the officer-in-charge. Immediately after joinery work is approved and before fixing, joinery surfaces shall like bottom edges of door shutters shall be primed and painted before fixing. Backs of members which will be in contact with external wall shall receive at least two coats, preferably of Aluminium wood primer.
14.9.1.3

After priming is over nails and screw holes and similar depressions shall be stopped with a propriety hard stopping or putty (BS 544) pressed in well and finished off flush with the surface.

14.9.1.4

To obtain a fine smooth surface free from even minor irregularities a filler shall be applied with a broad knife after priming or sealing and stopping. The filler shall be gypsum plaster or a water soluble cellulose based filler for interior work, and water proof proprietary paste filler for outdoor work.

14.9.1.5 UNDERCOATS

All exposed surfaces shall be painted with an even film of the undercoat specified avoiding uneven thickness at edges and angles. The undercoat shall be rubbed down to a smooth surface with abrasive paper and the dust removed before applying the finishing coat.

14.9.1.6 FINISHING COATS

The finishing coat shall be applied evenly over all exposed surfaces, avoiding brush marks, sags, runs and other defects. Where two hard gloss finishing coats are specified, the second coat shall be applied within 48 hours of the first coat.

The specified coats of paint shall be applied to rebates and beads before glazing and the putty shall be primed and patented in the same manner after glazing.

14.9.2 REPAINTING OLD WOOD WORK

14.9.2.1 PREPARATION OF SURFACE

In the old paint is sound and firm and its removal is considered unnecessary, the surface shall be rubbed down with pumice stone after it has been cleaned of all grease by washing with lime solution; it shall then be rinsed with water and dried. All dust and loose paint shall be completely removed and edges or surrounding paint work feathered off. The surface shall then be washed with soap and water, wiped and allowed to dry.

Prescribed treated decayed timber shall be cut out and replaced by compatible wood, except small areas where an approved hard stopper may be used. If decay of old wood work is considered likely, a paintable preservative shall be applied liberally and allowed at least 48 hours to dry before priming.

All cracks, splies and defects shall be spot primed, made good with an approved hard stopping, rubbed down to a smooth level surface and brought forward with an undercoat.

If the old painted surface is blistered or flaked badly, the old paint shall be completely removed as described in Clause 15.16

14.9.2.2 APPLICATION

Painting including priming shall be as per new work. See clauses 15.9 and 15.9.1

14.9.3 PAINTING NEW IRON/STEEL SURFACES

Painting of iron/steel surfaces shall afford protection from corrosion.

Note: Aluminium wood primers have an alkali or oleoresinous medium which adheres well even on dense and non absorbent wood. They seal against bleeding of resins in soft woods dispensing with the need for shellac knotting.
14.9.3.1 PREPARATION OF SURFACE
The surfaces of iron/steel shall be cleaned before application of the paint by chipping, scraping and wire brushing of the surfaces to remove rust, loose scale, welding slag and spatter. All dust and dirt shall be thoroughly wiped off the surface.

Where specified other methods of cleaning like flame cleaning with oxy-acetylene or butane gas, blast cleaning and chemical cleaning followed by brushing shall be carried out to the instructions of the officer-in-charge.

In the case of surfaces which have already been primed, defects in the primer, rust and loose scales shall be removed to expose the bare metal and the patches priced to match the existing primed surface. If the primed surface is satisfactory, dirt and grease shall be removed and the surface given a light rubbing.

14.9.3.2 APPLICATION

a) Application of primer

The prepared steel work shall be approved by the officer-in-charge, before commencing painting.

To the bright, clean, rust free surfaces a coat of rust inhibitive primer like approved zinc/phosphate oil base or red lead to B.S. 2523 or red oxide/zinc chromate shall be applied immediately after the preparation is completed. A second priming coats shall be applied to the arrises as paint tends to run away from the arrises. In corrosive conditions and external situations a second priming coat shall be given.

Primers shall be applied manually using brushes unless otherwise specified. In the case of flame cleaned surfaces, primers shall be applied while the metal is warm if the formulations permit such a procedure.

b) Finishing coats

Unless otherwise specified, two coats of ready mixed paint (the base of which shall consist of not less than 60% carbonate of lead and 40% of zinc pigmented to approved tints) shall be used. The material shall be touch dry in not less than 4 hours and dry dry in not more than 12 hours. The finish coats shall be glossy; the first coat shall be of a lighter shade than the final coat.

14.9.4 REPAINTING OLD IRON/STEEL WORK

14.9.4.1 PREPARATION OF SURFACE

In the old paint is sound and firm and its removed is considered unnecessary, it shall be rubbed with wire brushes to remove any loose paint. All dust shall then be thoroughly wiped away. This surface shall be wiped finally with mineral turpentine to remove grease and then allowed to dry.

Corroded areas shall be cleaned to baremetal by wire brushing and or abrasion and wiped clean with white spirit, followed as quickly as feasible by spot-priming. The primer shall be an approved zinc phosphate/oil based red or lead to BS 2523 or red oxide/zinc chromate. The first protective coat shall be applied as soon as the primer is hard dry.

14.9.4.2 APPLICATION

Painting including priming shall be as for new work. See clause 14.9 and 14.9.3
14.9.5 PAINTING OF NEW PLASTERED SURFACES
Plastered surfaces shall not be painted until completely dry. Trail patches of primer shall be laid on and checked for drying before commencing painting.

14.9.5.1 PREPARATION OF SURFACE
Plaster and mortar splashes shall be carefully scraped off. If it is necessary to rub down irregularities, care shall be taken to avoid causing variation in porosity leading to variations in the sheet of the paint.

Dust and efflorescence shall be cleaned off; efflorescence shall not be washed off. defective areas shall be made good and stopped using the same plaster as used for the surface as a whole. Holes and undulations shall be filled up with plaster of paris and rubbed down.

14.9.5.2 APPLICATION
a) Primer

For all plastered surfaces one or two coats of an alkali resisting primer like cement primer shall be used before applying paints containing oil.

b) Finishing coats

Finishing coats as specified shall be applied match with sample areas.

All other clauses of 14.9 – General shall be applicable in so far as they relate to this work.

14.9.6 REPAINTING OF OLD PLASTERED SURFACES

14.9.6.1 PREPARATION OF SURFACES
If surfaces are damp, the cause of dampness shall be removed. Mould or mildew causing discolouration shall be stripped and mould inhibitor shall be applied. Unsound plaster shall be removed and made good.

Cracks and holes shall be filled with new plaster of the same type and finish as the old plaster and spot primed with suitable paint or alkali resisting primer as directed and shall be brought forward with suitable paint.

Old paint shall be washed off if water soluble and the surface allowed to dry. other paints shall be rubbed scraped dry and the surface treated with a primer.

14.9.6.2 APPLICATION
Shall be as per 14.9 & 14.9.5

14.10 VARNISHING OF NEW SURFACES

14.10.1 MATERIALS
The varnish shall be of an approved make with sufficient drying oils incorporated in the manufacture shall be touch dry in eight hours and hard dry in twelve hours.

14.10.2 PREPARATION OF SURFACES
Surface penetration shall conform to clause 14.9.1.1 the surface shall be perfectly dry, smooth and free from dust. If knots are present in the wood, these shall be treated with Shellac knotting as
specified under painting. Where so directed, knots shall be cut to a slight depth and filled in with wood putty. Cracks and holes shall be cleaned of dust and shall be filled in with wood putty made as follows:-

On a piece of wood say 200 x 150 mm face and on the side where cross grains appear, a small quantity of glue size shall be poured and the surface scraped with the edge of a fine carpenter’s chisel. The very fine wood powder scraped off shall be mixed with the glue and the stiff paste thus formed shall be used for the filling.

The fillings when dry shall be rubbed down with a carpenter’s file; the entire surface shall then be rubbed down perfectly smooth with medium grained and find sand papers and wiped with a dry clean cloth so that if presents a uniform presence.

Sand papering across the grains shall be avoided.

a) Undercoat of flatting varnish when varnishing without straining.

Where so specified, the surface shall be treated with an undercoat of flatting varnish thinned down with white spirit before applying the finishing coats of varnish. This undercoat shall be dry, hard and brittle, so that when cut and rubbed down it shall produce a smooth surface which shall enhance the gloss of the finishing varnish.

b) Staining

Where staining is specified the stain shall be composed of suitable dyes in oil free from varnish. Two coats shall be brushed on with bristle brushes to approved depth of colour, the second coat applied after an interval of not less than six hours, and these shall dry free from gloss.

**14.10.3 APPLICATION**

The number of coats to be applied shall be as specified. The top coat shall be given with an approved brand of finishing varnish.

The varnish shall be applied liberally with a full brush and spread evenly with short light streaks to avoid frothing. If the work is vertical the varnish shall be crossed and recrossed and then laid off, the latter being finished on the upstroke so that the varnish as it sets, flows down and obscures the brush marks. The above process will constitute one coat. If the surface is horizontal, the varnish shall be worked in every direction with light quick strokes, and finished in one definite direction so that it will set without showing brush marks. In handling and applying varnish, care shall be taken to avoid forming froth or air bubbles. Rubbing down and flatting the surface with fine sand paper shall be done after each coat except the final coat.

While drying, the work shall not be exposed to draughts and damp air.

The finished surface shall then present a uniform appearance with a fine glossy surface free from streaks, blisters etc.

Note: Any varnish left over in the small container shall not be poured back into the stock tin, it will render the latter unfit for use.
14.11 VARNISHING OLD SURFACES

14.11.1 PREPARATION OF SURFACES
If the old varnished surface is firm and sound it shall be cleaned of grease and dirt with turpentine and then clean rubbed with water and sand paper until the surface is clean and smooth. It shall dried and wiped clean with a soft cloth. Knots, holes and cracks shall be stopped as specified in 14.10.2 The entire surface shall then be rubbed smooth with sand paper and wiped clean.

If the old varnished surface is peeled or cracked then it will be necessary to remove the entire varnish. See Clause 14.16. Varnishing shall be then applied as for new work.

14.12 FRENCH POLISHING OF NEW SURFACES

14.12.1 MATERIALS
Pure shellac varying from pale orange to lemon yellow colour, shall be dissolved in mehylated spirit at the rate of 140 gm of shellac to 1 litre of spirit. Suitable pigment shall be added to get the required shade.

14.12.2 PREPARATION OF SURFACES
The surface shall be cleaned. All unevenness shall be rubbed smooth with sand paper and the surface well dusted. Knots if visible shall be covered with preparation of red lead and glue size laid on while hot. Holes and indentations on the surface shall be stopped with glazier’s putty. The surface shall then be given a coat of wood filler made by mixing whiting (ground chalk) in methylated spirit at the rate of 1.5 kg of whiting per litre of spirit and coloured to match colour of the wood. The surface shall again be rubbed perfectly smooth with glass paper and wiped clean.

14.12.3 APPLICATION
Unless otherwise specified, three coats of polish shall be applied.

A pad of woollen cloth covered by a fine cloth shall be used to apply the polish. The pad shall be moisten with the polish and rubbed hard on the wood in a series of over lapping circles, applying the mixture sparingly but uniformly over the entire area to give an even level surface.

A trace of linseed oil on the face of the pad facilitates this operation. The surface shall be allowed to dry and the remaining coats applied in the same way. To finish off, the pad shall be covered with a fresh piece of clean fine cotton cloth slightly dampened with methylated spirit and rubbed lightly and quickly with circular motion. The finished surface shall have a high gloss and clear finish showing off the natural grains.

14.13 FRENCH POLISHING OLD SURFACES

14.13.1 PREPARATION OF SURFACE
The old polished surface shall be cleaned of grease and dirt by rubbing with turpentine and then rubbed with fine and sand paper.

If the old polished surface is much soiled then it will be necessary to remove the entire polish; this shall be done as described in 14.16. French polish shall then be applied as for new work.
14.14 WAX POLISHING OF NEW SURFACES

14.14.1 MATERIALS
Proprietary wax polish or wax polish prepared as follows:

Pure bees wax free from paraffin or stearine adulterants shall be used. Its specific gravity shall be 0.965 and melting point shall be 63°C. The polish shall be prepared from a mixture of bees wax, linseed oil, turpentine and varnish in the ratio of 2: 1 ½ : 1: ½ by weight.

The bees wax and boiled linseed oil shall heated over a slow fire. When the wax is completely dissolved the mixture shall be cooled till it is just warm and turpentine and varnish added to it in the required proportions and the mixture shall be well stirred.

14.14.2 PREPARATION OF SURFACES
Preparation of surfaces shall be as described in clause 14.12.3 with the exception that knotting, holes and cracks shall be stopped with a mixture of fine saw dust formed of the wood being treated, beaten with sufficient bees wax to give it cohesion.

14.14.3 APPLICATION
The polish shall be applied evenly with a clean soft pad of cotton cloth in such a way that the surface is completely and fully covered. The wax shall be allowed to remain overnight so as to soak into the pores of the wood. The next day the superfluous wax shall be wiped off and the surface rubbed with soft flannel to a fine polish.

14.15 WAXING OLD SURFACES
The wood work shall be cleaned of all grease by washing with lime water. The surfaces shall then be washed with soap and completely dried. Then it shall be prepared smooth as specified in clause 14.14.2.

The polish shall be applied in the manner specified in clause 14.14.3

14.16 REMOVING OLD PAINT

14.16.1 WITH PATENT PAINT REMOVER
Solvent paint and varnish remove- this shall be applied by brush, to soften the paint or varnish film, to facilitate its removal by scraper. Several applications of the remover may be made, allowing sufficient time for the paint or varnish to soften right through. The surface shall then be cleaned with white spirit.

14.16.2 BURNING OFF
This may be allowed for painted wood work where the heat of the flame will not affect the supporting surface and where the paint coating is not itself highly inflammable. Fire extinguishing equipment shall be at hand when using this method. Suitable precautions shall be taken when burning off lead paint.

14.16.3 FLAME CLEANING
Flame cleaning with oxyacetylene (flame may be used on steel which is thick enough not to distort)
14.16.4 SCRAPING, ABRASION OR GRIT BLASITING MAY BE ADOPTED AS DIRECTED

14.17 PAINTING CAST IRON RAIN WATER AND SOIL PIPE

14.17.1 MATERIALS
Short oil varnish, Red oxide paint, anti-corrosive paint (aluminium or bitumastic paint)

14.17.2 APPLICATION
Areas treated with Dr. Angen Smiths Solution shall be given a priming coat of short oil varnish. Over this priming coat shall be applied one coat of red oxide paint and two coats of anti-corrosive bitumastic or Aluminium paint as specified.