PAMPHLET ON DISTEMPERING

The main objective of applying distemper to plastered surfaces is to provide a smooth protective cover of the desired colour, with improved aesthetic appearance of the structure's interior. Distempers are water paints, washable or non-washable type, depending upon the medium used. Washable distempers are oil paints in which the drying oil is so treated that it mixes with water. As the water dries, oil makes a hard layer, which is washable and durable. Washable distemper provides a non-chalking, non-flaking smooth finish, and is widely used.

Process of Distempering:

I. **Surface preparation:** the process of making the surface fit for distemper application.

- The surface to receive the distemper should be smooth, free of surface imperfections and thoroughly clean of all dust & dirt. *The important facts to be kept in mind are:*

(A) General Attention: On entire surface

(i) For New work: Duly cured newly plastered surfaces (preferably after application of lime wash coat) should be kept exposed for a period of two months or so to ensure thorough drying of plaster.

- Thoroughly dried surface shall be brushed and sand papered to give a smooth and even surface. Any unevenness shall be made good by applying putty/POP on the entire surface including filling up the undulation and the sand papering the same, after it is dry.

(ii) For old work: If distemper is to be applied on existing distempered surfaces, old walls should be stripped of loose plasters and dust particles by brushing and sanded lightly. Previous coatings of lime wash, colour wash and dry distemper must be scraped off completely by washing and scrubbing.

- Earlier coatings of washable distemper need not be removed if in sound condition. Their sheen, however, should be removed by sanding. If old distemper coating is cracked or flaked, it should be completely scrapped off.
- If the old surface is scrapped completely, any unevenness shall be made good by applying putty/POP on the entire surface including filling up the undulation and the sand papering the same, after it is dry.

(B) Special Attention: At affected patches/locations of new/old work.

(i) *All efflorescence patches* shall be wiped out by clean cloth. Cause of dampness/seepage should be identified and rectified at source.

- If the effected patch is large with deteriorated plaster condition, re-plastering should be done. After drying, it shall be brushed and sanded to give smooth and even surface. For old work, a patch-coat of distemper shall be applied over it.

(ii) *All irregularities* such as cracks, holes, etc should be rectified.

(a) *Large Irregularities*; i.e. wide cracks, broken plaster etc. shall be re-plastered. After drying, it shall be brushed and sanded to give smooth and even surface.

(b) *Small Irregularities*; i.e. narrow cracks, holes etc. these shall be filled by putty/POP or cracks filler and allowed to become hard. After setting, the surface shall be sand-papered to make it smooth.

(c) *Rectification process for small irregularities*

*Small holes***:** Fill putty/POP or commercially available cracks filler, into the holes using a narrow filling knife. Level off the patch with the surrounding surface with the filling knife.

*Large holes***:** Place patching tape over the cleaned hole. Fill putty/POP or cracks filler with the filling knife. Remove excess compound with downward strokes of the filling knife.

*Cracks***:** Clean out the loose debris with a utility knife. Scrape out a thin bottom layer of undamaged material with a filling knife.

Dampen the under cut crack using a small brush and minimal amount of water. Fill the crack with putty/POP or cracks filler using the filling knife. Remove excess compound with downward strokes of the filling knife along the crack.

(d) For rectifying irregularities in old surface, it is desirable to mix distemper/strainer with putty/POP. After setting/drying and sand-papering a coat of distemper shall be applied over the rectified patches.

II. Primer coating: applied to provide adhesion between surface and distemper with making surface smooth less absorbent with increase spreading capacity of distemper.

For new work, the primer coat shall be applied over the prepared surface of distemper primer/ cement primer or as recommended by distemper manufacturers. Normally, when plaster has not completely dried, cement primer shall be applied but in case the wall surface is dried completely, distemper primer shall be applied.
One or two coats of primer is applied depending upon surface condition i.e. porosity or as recommended by distemper manufacturers.

For old work *normally no primer coat is necessary.* If the old coatings are completely scrapped off, one or two coats of primer may be applied or as recommended by distemper manufacturers.

III. Application of distemper: the steps/sequence to be followed for providing the final film on the surface:

A) Preparation of mix:

For application, distemper mix shall be prepared by thinning the commercially available washable distemper by slowly adding potable/drinking water, while stirring. *Normally 500 to 700-ml of water are required for 1 kg of distemper*.

- If colour is imparted by use of stainer with white distemper, tinting must be carried out before thinning.

B) Distemper Coats:

(i) New work: After the primer coat has dried for at least 48 hrs., the surface shall be lightly sand-papered to make it smooth for receiving the distemper, care being taken not to rub out the priming coat. All loose particles shall be dusted off after rubbing. *Two coats of distemper* shall be applied over the priming coat to give even colour.

(ii) Old work: One or more coats of distemper shall be applied till the surface attains an even colour.

C) Process of coat application:

- The distemper shall only be applied with proper distemper brushes. The application of each coat consists of coating the entire surface with the mix, with horizontal strokes of brush followed immediately by vertical ones.
- The subsequent coats shall be applied only after the previous coat has dried. A time interval of at least 8 hrs. (or as recommended by manufacturers) shall be allowed between consecutive coats to permit of the proper drying of the preceding coat.
- The finished surface shall be even and uniform and shall show no brush marks.

General Precautions:

- Distempering should be done preferably in dry weather for better results.
- Distemper/primer used should be of reputed brand confirming to IS-Specifications.
- Shelf life of distemper is 3 years from date of manufacture in original tightly closed container kept away from direct sunlight and excessive heat. Distemper older than shelf life shall not be used.
- Distemper mix should not be over-thinned. *Normal surface coverage of commercially available washable distemper is 140-160 sq.ft. per kg per coat.*
- Use best quality synthetic brushes made of specially conditioned Dupont Tynex and Orel filament. The brush should be of tapered filament, properly 'tipped' and 'flagged' at ends. Width of brush shall be 10-15 cms.
  Hog bristle brushes are not preferred, as on absorbing the water, bristles become limp and the brush looses consistency and uniformity of application.
- Before commencing distempering, use masking tape and newspaper to protect switch plates, light fittings, etc. and drop clothes to protect furniture, electronic appliances and surfaces that could be accidentally damaged or splattered by the distemper.
- When distempering an entire room always work on the ceiling first. The advantage of this is that any distemper that splatters on the walls can be cleaned up easily or distempered over.
- After each day's work, the brushes shall be washed in hot water and hung down to dry. Old brushes, which are dirty or caked with distemper, shall not be used.

OUR OBJECTIVE

To upgrade Maintenance Technologies and Methodologies and achieve improvement in productivity and performance of all Railway assets and manpower which inter-alia would cover Reliability, Availability, and Utilisation.

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GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS

DISTEMPERING

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