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Indian Standard
CODE OF PRACTICE FOR
WHITEWASHING AND COLOUR-WASHING

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Indian Standard

CODE OF PRACTICE FOR WHITEWASHING AND COLOUR-WASHING

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Indian Standard

CODE OF PRACTICE FOR WHITEWASHING AND COLOUR-WASHING

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 27 October 1971, after the draft finalized by the Flooring and Plastering Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 Whitewashing and colour-washing of surfaces of buildings is necessary on both hygienic and aesthetic reasons. In order to obtain a clean, neat and uniform finish, it is necessary to adopt standard method for both preparation of the surfaces to receive whitewash or colour-wash and for application of whitewash or colour-wash. This standard gives the details of preparatory treatment and the mode of application of whitewash and colour-wash.

0.3 In the formulation of this standard due weightage has been given to international co-ordination among the standards and practices prevailing in different countries in addition to relating it to the practices in the field in this country.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard lays down the method of preparation of surfaces and application of whitewash and colour-wash over concrete, masonry and plaster surfaces in buildings.

*Rules for rounding off numerical values (revised).

2. MATERIALS

2.1 Lime — Lime used for whitewashing shall be freshly burnt class 'C' lime (fat lime) and white in colour conforming to IS : 712-1964*.

2.2 Water — Water shall be clear, free from all organic and suspended impurities. Potable water is most suitable for the purpose.

2.3 Gum or Glue

2.4 Sodium Chloride — shall conform to either IS : 253-1964† or Grade II of IS : 797-1967‡.

2.5 Ultramarine Blue or Indigo — shall conform to IS : 55-1950§.

2.6 Pigments

2.6.1 Yellow and Red-Ochre — The ochres shall conform to IS : 47-1950||. The solid lump shall be crushed to powder.

2.6.2 Blue Vitriol — Fresh crystals of hydrous copper sulphate (blue vitriol) shall conform to IS : 261-1966¶ and shall be grounded to fine powder.

3. SCAFFOLDING

3.1 Wherever scaffolding is necessary, it shall be erected in such a way that as far as possible no part of scaffolding shall rest against the surface to be white or colour-washed. A properly secured and well tied suspended platform (*JHoola*) may also be used for whitewashing and colour-washing. Where ladders are used, pieces of old gunny bags shall be tied at top and bottom to prevent scratches to the walls and floors. For white-washing of ceilings, proper stage scaffolding may be erected, where necessary.

4. PREPARATION OF SURFACES

4.1 New Surface — The surface shall be thoroughly cleaned of all dirt, dust, mortar drops and other foreign matter before whitewash is to be applied.

4.2 Old Surface

4.2.1 Surfaces, Where the Same Colour-Wash is to be Repeated — Old surfaces already whitewashed or colour-washed shall be broomed to remove all

*Specification for building limes (*revised*). (Since revised).

†Specification for edible common salt (*revised*). (Since revised).

‡Specification for common salt for chemical industries (*first revision*).

§Specification for ultramarine blue for paints. (Since revised).

||Specification for ochre for paints. [Since superseded by IS : 44-1969 Specification for iron oxide pigments for paints (*first revision*)].

¶Specification for copper sulphate (*first revision*).

dust and dirt. All loose scales of lime wash and other foreign matter shall also be removed. Where heavy scaling has taken place the entire surface shall be scraped clean. This will also apply, where a colour wash has to be given on an already whitewashed surface.

4.2.2 Surfaces, Where Different Colour-Wash is to be Applied — Old colour-wash on surfaces shall be entirely removed before whitewash or different colour-wash is applied. The surface shall be prepared by brushing or by scraping or by other suitable means to produce clean surface and shall be broomed to remove dust, dirt, etc.

4.2.3 Old Surfaces Spoiled by Smoke Soot — The surface shall be scraped with steel wire-brushes or steel scrapers. The surface shall then be broomed to remove all dust and dirt and shall be washed with clean water.

4.2.4 Oil and Grease Spots — Oil and grease spots shall be removed by a suitable chemical and smooth surfaces shall be rubbed with wire-brushes.

4.2.5 All unsound portions of the surface plaster shall be removed to full depth of plaster in rectangular patches and plastered again after raking the masonry joints properly. Such portions shall be wetted and allowed to dry. They shall then be given one coat of whitewash.

4.2.5.1 All unnecessary nails shall be removed; the holes and cracks filled with lime putty or plaster of Paris to make the surface smooth.

4.2.6 When whitewashing old surfaces, if the surface was found to be infected with mould growth, it shall be treated in accordance with **4.2.6.1**.

4.2.6.1 Any growth of moulds moss shall be removed by scraping with steel scraper and ammoniacal copper solution consisting of 15 g of copper carbonate dissolved in 60 ml of liquor ammonia in 500 ml water, shall be applied to the surface and allowed to dry thoroughly before applying whitewash or colour-wash. An alternative to ammoniacal copper solution treatment may consist of 2 percent sodium pentachlorophenate solution in water.

4.2.7 Local areas affected by efflorescence, shall be initially treated in accordance with the method described in **C-3** of IS : 2395 (Part I) - 1966* and then applied with whitewash or colour-wash.

5. PREPARATION OF WHITEWASH AND COLOUR-WASH

5.1 Preparation of Whitewash — Whitewash shall be prepared from fat lime conforming to IS : 712 - 1964†. The lime shall be slaked at site and

*Code of practice for painting concrete, masonry and plaster surfaces: Part I Operations and workmanship.

†Specification for building limes (revised).

shall be mixed and stirred with about five litres of water for 1 kg of unslaked lime to make a thin cream. This shall be allowed to stand for a period of 24 hours and this shall be screened through a clean coarse cloth. Add 1 kg of gum dissolved in hot water to each m³ of lime cream. About 1.3 kg of sodium chloride dissolved in hot water may be added for every 10 kg of lime. Small quantity of ultra-marine blue (up to 3 g per kg of lime) shall also be added to the last two coats of whitewash solution and the whole solution shall be stirred thoroughly before use.

NOTE 1 — The addition of sodium chloride (common salt) to lime-wash helps in quick carbonation of calcium hydroxide making the coating hard and rub-resistant.

NOTE 2 — For exterior work the whitewash or colour-wash that will adhere well to stone and masonry surfaces may also be prepared by scattering one part by weight of tallow in small lumps over 12 parts of quick lime, slaking it with only just sufficient water to form a thick paste, stirring occasionally to assist in dispersing the tallow, and allowing it to stand until cool. The resultant paste shall then be let down to thin wash, which is strained through a coarse cloth. If tallow is not obtainable, then linseed oil or castor-oil about 10 percent by weight of dry lime may be used. If the oil does not sponify and incorporate with lime, it should be heated up until the oil disappears. The oil forms with lime an insoluble soap, which when once dry, will not wash off with heavy rain. In case of colour-wash, mineral colours, such as oxide of iron, red and yellow colours, based on chromium oxide and carbon black not affected by lime may be added. Use of linseed oil is likely to give slight yellow tinge to whitewash.

5.2 Preparation of Colour-Wash — Sufficient quantity of colour-wash enough for the complete job shall be prepared in one operation to avoid any difference in shade. The basic whitewash solution shall be prepared in accordance with 5.1. Mineral colours not affected by lime shall be added to the whitewash solution as prepared in 5.1.

6. APPLICATION OF WHITEWASH AND COLOUR-WASH

6.1 Application of Whitewash — Whitewash shall be applied with 'MOONJ' brush or other brush to the specified number of coats. The operation for each coat shall consist of a stroke of the brush given from the top downwards, another from the bottom upwards over the first stroke, and similarly one stroke horizontally from the right and another from the left before it dries. Each coat shall be allowed to dry before the next coat is applied. No portion of the surface shall be left out initially to be patched up later on. The brush shall be dipped in whitewash pressed lightly against the wall of the container, and then applied by lightly pressing against the surface with full swing of hand.

6.1.1 The whitewashing on ceiling should be done prior to that on walls.

6.1.2 For new work, minimum two coats shall be applied so that the surface presents a smooth and uniform finish through which the plaster

does not show. The finished dry surface shall not show any signs of cracking and peeling and the whitewash shall not come off readily on the hand, when rubbed.

6.1.3 For old work, after the surface has been prepared as in **4.2**, a coat of whitewash shall be applied over the patches and repairs. Then one, or two or more coats of whitewash shall be applied over the entire surface. The whitewashed surface shall present a uniform finish through which the plaster patches do not show.

6.2 Application of Colour-Wash — The colour-wash shall be applied in accordance with the procedure given in **6.1**. For colour-washing on new works, after the surface has been prepared as in **4.1**, the first primary coat shall be of whitewash and the subsequent coats (minimum two) shall be of colour-wash; and the entire surface shall present a smooth and uniform finish. To start with 0.1 m² of the prepared surface shall be colour-washed with the first coat of whitewash and subsequent coats of colour-wash solution in full number of coats and the shade so obtained shall be examined before the entire work of colour-washing is taken up in hand. It shall be noted that small areas of colour-wash will appear lighter in shade than when the same shades are applied to large surfaces.

6.2.1 For colour-washing an old work, after the surface has been prepared as in **4.2**, a coat of colour-wash shall be applied for the patches and repairs. Then the specified number of coats of colour-wash shall be applied over the entire surface. The colour-wash surface shall present a uniform colour shade. No primary coat is needed for old surface bearing colour of the same shade.

6.2.2 On surfaces requiring a change of colour, after the surface has been prepared as in **4.2.2**, two coats of whitewash shall be applied before application of specified number (minimum two) of coats of colour-wash of the new shade.

7. PROTECTIVE MEASURES

7.1 Surfaces of doors, windows, floors, articles of furniture, etc, and such other parts of the building not to be whitewashed or colour-washed shall be protected from being splashed upon. Such surfaces shall be cleaned of whitewash or colour-wash splashes, if any.