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RECOMMENDATION OF DRESSING OF NATURAL BUILDING STONES

(First Revision)

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

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(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 25 June 1972, after the draft finalized by the Stones Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 Due to the abundance of building stones practically in all parts of the country, stone has been used extensively in building construction. Decoration of these stones has been developed in various parts of the country with a great degree of skill.

0.3 Dressing of stones is an ancient art of this country. Dressing is done either by hand or by machine to different degrees, depending upon the stone, the degree of skill and the purpose for which the stone is required. In describing the dressing of stones, different terms have been used in various parts of this country and the techniques have also been differently expressed. These differences have tended to cause, over a period of time, certain amount of confusion in the description of stone masonry work. With a view to clarifying the terms and also the techniques, this standard has been prepared describing different methods and degrees of dressing of stones.

0.4 The standard was first published in 1959. After the publication of this standard a number of more Indian Standards on stone masonry have been formulated. This revision has been prepared so that to keep its provision in line with these latest standards.

0.5 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.

0.6 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.

*Rules for rounding off numerical values (*revised*).

1. SCOPE

1.1 This standard lays down the recommendation for the requirements of various types of hand dressing of natural building stones.

2. TYPES

2.1 Pitched Faced Dressing — The edges of a pitched faced dressed stone shall be level and shall be in the same plane being absolutely square with the bed of the stone. Superfluous stone on the face shall be allowed to remain there and left raised in the form of a natural rounded cobble stone. The minimum width of pitched faced dressing round the four edges of the face of the stone shall be 25 mm. The appearance of pitched face stone is as shown in Fig. 1.

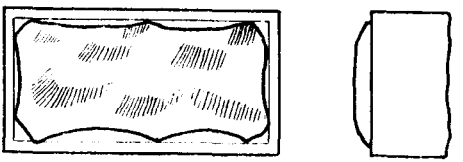

FIG. 1 PITCHED FACED DRESSING SURFACE

2.2 Hammer Dressing — A hammer dressed stone shall have no sharp and irregular corners and shall have a comparatively even surface so as to fit well in masonry. Hammer dressed stone is also known as hammer faced, quarry faced and rustic faced. The appearance of hammer dressed stone is as shown in Fig. 2. The bushing on the face shall not be more than 40 mm on an exposed face.

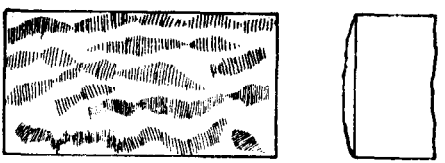

FIG. 2 HAMMER DRESSED STONE SURFACE

2.3 Rock Facing — A stone which has been dressed in this manner shall have a minimum of 25 mm wide fine chisel marks at the four edges, all the edges being at the same plane. Stones of this type are used in buildings as quoin stones in the corners of brick masonry or rubble masonry and in plinth to give an appearance of strength and solidity. The appearance of rock faced stone surface is as shown in Fig. 3.

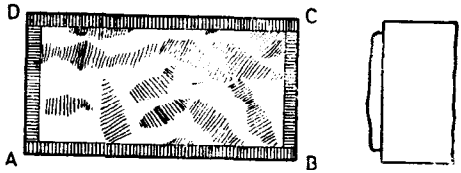

FIG. 3 ROCK FACED STONE SURFACE

2.4 Rough Tooling — A rough tooled surface shall have series of bands, 4 to 5 cm wide, more or less parallel to tool marks all over the surface. These marks may be either horizontal, vertical or at an angle of 45° as required (*see* Fig. 4). The edges and corners shall be rendered square and true. The dressed stone may have depressions on the surface. The depth of gap between the surface and a straight edge held against the surface shall not be more than 3 mm. Rough tooled stones are used where fairly regular plane faces are required for masonry work.

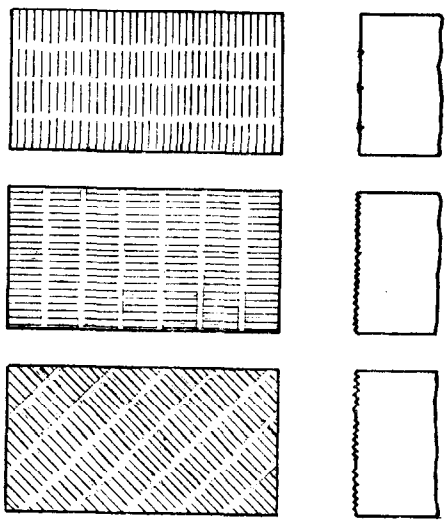

FIG. 4 ROUGH TOOLED STONE SURFACE

2.5 Punched Dressing — A rough tooled surface is further dressed to show series of parallel ridges. Chisel marks shall be left all over the surface. The depth of gap between the surface and a straight edge held against the surface shall not exceed 3 mm. Punched dressed stones are used where even surfaces are required. (*see* Fig. 5).

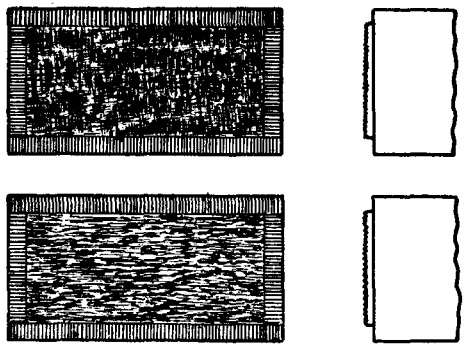

FIG. 5 PUNCHED STONE SURFACE (CHISEL DRAFTED)

2.6 Closed Picked Dressing — A punched stone is further dressed so as to obtain a finer surface, ridges or chisel marks left over being very tiny. The depth of gap between the surface and a straight edge kept over the surface shall not exceed 1·5 mm (*see* Fig. 6).

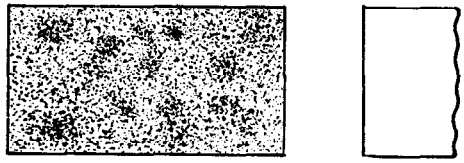

FIG. 6 CLOSED PICKED STONE SURFACE

2.7 Fine Tooling — Closed picked surface is further dressed so that all the projections are removed and a fairly smooth surface is obtained. The surface shall have 3 to 4 lines per centimetre width depending on the degree of hardness of stone and degree of fineness required. This type of dressing is very commonly adopted for ashlar work. A sketch of fine tooled surface is shown in Fig. 7.

3. PROCEDURE

3.1 Pitched Faced Dressing — When the stone is received from the quarry face, it shall be dressed along all the edges of its face by means of a mason's hammer or club hammer and the pitching tool so as to obtain the finish described in **2.1.**

3.2 Hammer Dressing — All the sharp and irregular corners of the stone obtained by blasting or splitting shall be knocked off by using the

flat face of a scabbling or spalling hammer. With the pointed end of the hammer the surface shall be then dressed.

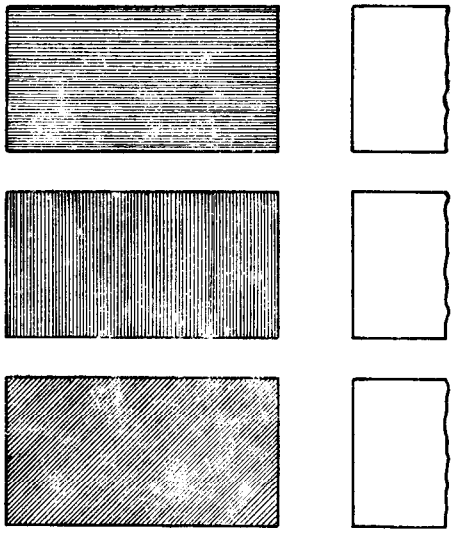

FIG. 7 FINE TOOLED STONE SURFACE

3.3 Rock Facing — All the sharp and irregular corners of the stone shall be knocked off by using the flat face of a scabbling hammer. The exposed faces shall be then dressed as described in **3.3.1**.

3.3.1 The superfluous stone along one edge *AB* (*see* Fig. 3) shall be knocked off with a drafting chisel and a hammer until it coincides with a straight edge throughout its whole length. This is known as chisel draft. Further chisel drafts shall now be made along *BC*, *CD* and *DA*, so that the four corners are at the same level. Diagonal drafts along *BD* and *AC* may be resorted to in the case of large stones to suit requirements. Some of the superfluous stone in the centre which is left raised and rough to immitate a rock like surface shall be removed with the pitching tool or the scabbling hammer.

3.4 Rough Tooling — The stone received from the quarry is hammer dressed. Then the surface of the stone shall be dressed removing the top layer of about 0·3 cm thick by means of a plane chisel or a boaster and a mason's or club hammer, by forming a series of 4 to 5 cm wide bands of more or less parallel tool marks which covers the whole surface. These marks may be either horizontal, vertical or at an angle of 45° as required, and in making them the boaster or chisel shall be moved in the direction

of the band at each stroke. The surface shall be tested now and then with a mason's square for the requirements given in **2.4**.

3.5 Punched Dressing — Depressions are formed on the rough surface of the stone in rough tooling with a punch chisel and a mason's or club hammer at close intervals and to a depth of about another 3 mm to form a series of parallel ridges. The stone shall be checked with a straight edge for the requirement given in **2.5**.

3.6 Closed Picked Dressing — A punched stone is further dressed with a pointed chisel and mason's or club hammer by forming small pits of about 3 mm depth to obtain a finer surface, the ridges or chisel marks left over being tiny. The stone shall be checked with a straight edge for the requirement given in **2.6**.

3.7 Fine Tooling — The stone received from the quarry shall be closed picked and then fine tooled with a serrated or claw chisel and a mason's or club hammer. By this operation all the projections caused in the earlier stages shall be removed and a fairly smooth surface obtained. The finish shall conform with the description given in **2.7**.

4. FINISHING

4.1 Dragging or Combing — After the surface of the stone has been brought to the required level by means of a dummy and soft stone chisel, the coarse drag is dragged backwards and forwards until the tool marks are eliminated. This may be followed by second drag and fine drag according to the degree of evenness required.

4.2 Polishing

a) Polishing of stones shall be done by rubbing them with a suitable abrasive, wetting the surface, where necessary, with water.

b) Alternatively, polishing of stones shall be done by holding them firmly on the top of a revolving table to which some abrasive material like sand or corborundum is fed. The final polishing shall be performed by rubber or felt, using oxide of lime called by trade as ' putty powder ', as a polishing medium.

BUREAU OF INDIAN STANDARDS

Headquarters:
Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002
Telephones: 323 0131, 323 3375, 323 9402
Fax : 91 11 3234062, 91 11 3239399, 91 11 3239382

Telegrams : Manaksanstha
(Common to all Offices)

	Telephone
Central Laboratory:	
Plot No. 20/9, Site IV, Sahibabad Industrial Area, Sahibabad 201010	8-77 00 32
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