IS 8348 (1977): Code of practice for stacking and packing of stone slabs for transportation [CED 6: Stones]

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IS : 8348 - 1977
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Indian Standard

CODE OF PRACTICE FOR STACKING AND PACKING OF STONE SLABS FOR TRANSPORTATION

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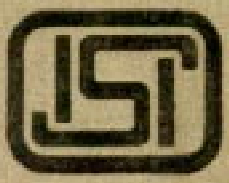

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CODE OF PRACTICE FOR STACKING AND PACKING OF STONE SLABS FOR TRANSPORTATION

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Indian Standard

CODE OF PRACTICE FOR STACKING AND PACKING OF STONE SLABS FOR TRANSPORTATION

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 17 February 1977, after the draft finalized by the Stones Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 Slabs of limestone, sandstone and marble are quarried abundantly in various parts of this country and are transported to various destinations either in railway wagons or in trucks. For minimum breakage in the transportation of such slabs, certain norms are followed by the various stone suppliers. This code of practice has, therefore, been framed to give guidance in the packing of such stone slabs for transportation in railway wagons or trucks and is based on the practice being followed in Rajasthan State.

0.3 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 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 covers the method of stacking and packing stone slabs and marble slabs in railway wagons or trucks for transportation.

2. STACKING AND PACKING IN WAGONS

2.1 The stacking of the slabs is done vertically either widthwise or lengthwise as mentioned in **2.1.1** to **2.1.3**.

2.1.1 When slabs of a small length say up to 2·0 m are despatched, these are stacked on width.

2.1.2 The slabs having length more than 2·0 m are stacked vertically on their lengths.

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

2.1.3 The convention mentioned in **2.1.1** is followed as far as possible but slabs of length less than 2·0 m are stacked on their length so as to reduce the gap between the rows in the middle which will happen due to weight restriction.

2.2 Each row is laid parallel to the width of the wagon starting from the sides of the wagon and ending in the centre where packing is applied.

2.3 Rows are started simultaneously from the ends of the wagon and finished in the centre.

2.4 The central rows are laid with the stones laid vertically on length irrespective of the length limitation so that there is not much gap between the adjacent rows.

NOTE — This is done so that weight of slabs remains within loading capacity.

2.5 There could be more than one layer of the rows depending upon the loading capacity and the sizes of the stone slabs in each layer.

2.5.1 However, wagons should be loaded by selecting such combination of longer and small pieces so that in one layer itself the requisite loading capacity is met with.

2.5.2 Each row of stone slabs is so chosen that first it consists of longer pieces and then smaller pieces. In no case the vertical difference is more than 30 cm.

2.6 Stone slabs are never laid flat in the wagon except that pieces of more than 2·5 m length can be laid flat in the subsequent layer.

2.7 The space between adjacent rows is kept as less as possible so as to utilize the maximum capacity of the wagon.

2.8 Each row is laid as given in **2.8.1.**

2.8.1 The slabs are kept vertically starting from the sides of the wagon and continued to the centre. The first slab is kept slightly slanting (top resting with the side of the wagon and bottom little away) and resting on the suitable packing. The central gap is filled with the stone slab which is fixed in the row in the middle with the help of an iron bar so as to remove the voids between stone slabs in the row. When no slab can be inserted a piece of stone of sufficient thickness and at least 20 cm height be inserted so as to make the row tight. In case of lime stone slabs wooden wedges should be used in place of stone. In case of marble slabs gunny bags are inserted in the centre so as to make the rows tight.

3. STACKING AND PACKING IN TRUCKS

3.1 The stacking in the truck is done in the same way as in the wagon with the exceptions given in **3.2.**

3.2 The rows are laid starting from the cabin side of the truck and towards the end of the truck. If the capacity of the truck is more, the slabs are also laid flat. This is generally done towards the end side of the truck.

4. MASS OF STONE SLABS

4.1 The following is the approximate mass of the various types of the stone slabs per m^2 which should be used in arriving at the number of stone slabs which could be laid on the wagon or truck, depending upon the capacity. For the marble slabs the values should be increased by 25 percent:

Thickness mm	*Mass* kg/m^2	*Thickness* mm	*Mass* kg/m^2
15	35	55	135
25	60	65	155
35	85	75	180
45	110	95	230

INDIAN STANDARDS

ON

STONES

IS:

1121 Methods of test for determination of strength properties of natural building stones:

1121 (Part I)-1974 Compressive strength

1121 (Part II)-1974 Transverse strength

1121 (Part III)-1974 Tensile strength

1121 (Part IV)-1974 Shear strength

1122-1974 Method of test for determination of petrographical examination of natural building stones (*first revision*)

1123-1975 Method of identification of natural building stones (*first revision*)

1124-1974 Method of test for determination of water absorption apparent specific gravity and porosity of natural building stones (*first revision*)

1125-1974 Method of test for determination of weathering of natural building stones (*first revision*)

1126-1974 Method of test for determination of durability of natural building stones (*first revision*)

1127-1970 Recommendations for dimensions and workmanship of natural building stones (*first revision*)

1128-1974 Lime stone slabs (*first revision*)

1129-1972 Recommendations for dressing of natural building stones (*first revision*)

1130-1969 Marble (blocks, slabs and tiles)

1706-1972 Method for determination of resistance to wear by abrasion of natural building stones (*first revision*)

1805-1973 Glossary of terms relating to stones, quarrying and dressing (*first revision*)

3316-1974 Structural granite (*first revision*)

3620-1966 Laterite stone block for masonry

3622-1966 Sand stone slabs for use in flooring

4121-1967 Method of test for determination of water transmission rate by capillary action through natural building stones

4122-1967 Method of test for surface softening of natural building stones by exposure to acidic atmosphere

4348-1973 Methods of test for determination of permeability of natural building stones (*first revision*)

5218-1969 Method of test for toughness of natural building stones

5640-1970 Method of test for determining the aggregates impact value of soft coarse aggregate

6241-1971 Method of test for determination of stripping value of road aggregates

6250-1971 Roofing slate tiles

6579-1972 Coarse aggregate for water bound macadam surfaces

7779 (Part I/Sec 1)-1975 Schedule for properties and availability of stones for construction purposes: Part I Gujarat State, Section 1 Availability of stones

7779 (Part I/Sec 2)-1975 Schedule for properties and availability of stones for construction purposes: Part I Gujarat State, Section 2 Engineering properties of building stones

7779 (Part I/Sec 3)-1975 Schedule for properties and availability of stones for construction purposes: Part I Gujarat State, Section 3 Engineering properties of stone aggregates