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Indian Standard

SPECIFICATION FOR REINFORCED CONCRETE DUST BINS

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Indian Standard
SPECIFICATION FOR REINFORCED CONCRETE DUST BINS

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 7 September 1962, after the draft finalized by the Cement and Concrete Sectional Committee had been approved by the Building Division Council.

0.2 Refuse collection and disposal is becoming more and more important with the industrial development and the consequent urbanisation in the country. With the expansion of existing towns and the springing up of new towns, sanitation and hygiene have naturally become the primary duties of civic bodies and such other organizations. Hygienic requirements necessitate the collection of refuse in well designed containers located at predetermined places for its subsequent disposal. The container or the bin should be such that the collected refuse does not leak through or is carried away by wind; it should also be such that it does not get damaged in any manner under the conditions normally met with in actual practice. Various municipalities and other organizations are already using dust bins on a large scale but there is no uniformity yet either in size or in construction. This standard has, therefore, been prepared with a view to unifying the existing practices and guiding manufacturers with regard to sizes and constructional details for reinforced concrete dust bins.

0.3 The Sectional Committee responsible for the preparation of this standard has taken into consideration the views of producers, consumers and technologists and has related the standard to the manufacturing and trade practices followed in the country in this field.

0.4 Wherever a reference to any Indian Standard appears in this specification, it shall be taken as a reference to the latest version of the standard.

0.5 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, shall be rounded off in accordance with IS : 2 - 1960 Rules for Rounding Off Numerical Values (*Revised*). The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

0.6 This standard is intended chiefly to cover the technical provisions relating to reinforced concrete dust bins, and it does not include all the necessary provisions of a contract.

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1 SCOPE

1.1 This standard covers both cast-*in-situ* and precast reinforced concrete dust bins.

2. MATERIALS

2.1 Cement — The cement used in the manufacture of dust bins shall comply with the provisions of IS : 269 - 1958 Specification for Ordinary, Rapid-Hardening and Low Heat Portland Cement (*Revised*).

2.2 Aggregates — The aggregates shall be clear and free from deleterious substances and shall comply with the requirements of IS : 383 - 1952 Specification for Coarse and Fine Aggregates from Natural Sources for Concrete. Air cooled blast furnace slag may also be used as coarse aggregate.

2.3 Water — The water shall be clear and free from deleterious matter either in suspension or in solution.

2.4 Reinforcement — The reinforcement shall comply with the requirements of IS : 432 - 1960 Specification for Mild Steel and Medium Tensile Steel Bars and Hard-Drawn Steel Wire for Concrete Reinforcement (*Revised*).

2.5 Admixtures — Admixtures are not generally recommended. They may be used only with the previous approval of the purchaser.

2.6 Concrete — The concrete shall comply with the requirements specified in IS : 456 - 1957 Code of Practice for Plain and Reinforced Concrete for General Building Construction (*Revised*). Unless otherwise specified, a nominal mix of 1 : 2 : 4 as specified in IS : 456 - 1957 or its equivalent shall be used. The concrete shall be consolidated by spinning, vibrating, spinning combined with vibration, or other appropriate mechanical means.

3. SHAPES, DIMENSIONS AND REINFORCEMENT

3.1 Unless otherwise specified, the bins shall be circular or square in plan. Bins of other shapes, such as hexagonal or octagonal shapes, may also be supplied by agreement between the purchaser

and the supplier. In such cases, the dimensions of these special shapes shall be such that a square or circle drawn circumscribing the extreme outer edges of the dust bin shall conform to the dimensions specified for square or cylindrical dust bins, respectively.

3.2 The dimensions shall be as given in Tables I and II for cylindrical and square bins, respectively.

TABLE I DIMENSIONS OF CYLINDRICAL DUST BINS

Designation	Internal Diameter	Height
	mm	mm
C_1	500	750
C_2	800	1 000
C_3	1 000	1 000
C_4	1 200	1 000

TABLE II DIMENSIONS OF SQUARE DUST BINS

Designation	Sides of Bin (Internal)	Height
	mm	mm
S_1	500	750
S_2	800	1 000
S_3	1 000	1 000
S_4	1 200	1 000

3.3 The minimum thickness and reinforcement used therein shall be as specified in Tables III and IV for cylindrical and square bins, respectively.

3.4 The dust bins may be supplied with or without reinforced concrete bottoms as desired by the purchaser. Where bottoms are provided, the dimensions of all such bottoms shall conform to those specified in Table V.

3.5 Sharp corners shall not be allowed either inside or outside the bins. All corners shall bear a radius. Vertical corners should have a radius of not less than 25 mm.

4. OPENINGS AND FIXTURES

4.1 Door — Every dust bin shall be provided with a door at its bottom. The door shall be so fitted that when closed, it shall not allow any gap to permit leakage of refuse from the bin. Further, the frame of the door shall be so fitted that it does not project above the bottom slab of the dust bin where bottom slabs are provided. Where bottom slabs are not provided, the bottom rim for the frame shall not be provided.

4.1.1 The floors of the dust bins shall have sufficient slope towards the door to enable proper cleaning. The size of the door for designations C_1, C_2, S_1 and S_2 shall be 300 mm in height × 250 mm in width and for designations C_3, C_4, S_3 and S_4 shall be 400 mm in height × 350 mm in width.

TABLE III THICKNESS AND REINFORCEMENT FOR CYLINDRICAL DUST BINS

(Clause 3.3)

Designation	Thickness of Concrete Shell	Reinforcement	
	mm	Hoop	Vertical
C_1	35	6 mm round bars at 200 mm c-to-c	6 mm round bars at 200 mm c-to-c
C_2	45	6 mm round bars at 200 mm c-to-c	6 mm round bars at 200 mm c-to-c
C_3	55	6 mm round bars at 100 mm c-to-c	6 mm round bars at 200 mm c-to-c
C_4	65	6 mm round bars at 100 mm c-to-c	6 mm round bars at 200 mm c-to-c

TABLE IV THICKNESS AND REINFORCEMENT FOR SQUARE DUST BINS

(Clause 3.3)

Designation	Thickness of Concrete Shell	Reinforcement	
	mm	Horizontal	Vertical
S_1	35	6 mm round bars at 200 mm c-to-c	6 mm round bars at 100 mm c-to-c
S_2	45	6 mm round bars at 200 mm c-to-c	6 mm round bars at 100 mm c-to-c
S_3	55	6 mm round bars at 100 mm c-to-c	6 mm round bars at 100 mm c-to-c
S_4	65	6 mm round bars at 100 mm c-to-c	6 mm round bars at 100 mm c-to-c

TABLE V THICKNESS AND REINFORCEMENT FOR DUST BIN BOTTOMS

(*Clause* 3.4)

DESIGNATION	THICKNESS OF BOTTOM SLAB mm	REINFORCEMENT
C_1 and S_1	35	6 mm round bars at 100 mm c-to-c both ways
C_2 and S_2	45	6 mm round bars at 100 mm c-to-c both ways
C_3 and S_3	55	6 mm round bars at 100 mm c-to-c both ways
C_4 and S_4	65	6 mm round bars at 100 mm c-to-c both ways

4.2 Bins may be either closed or open at top. If a closed type of bin is desired it shall have a lid with a lever which could be operated by foot for opening and closing. No part of the lever shall project beyond 100 mm from the outer face of the dust bin.

4.3 Suitable fittings such as eyes may be provided to facilitate the handling of bins. No such fittings shall, however, extend beyond 100 mm from the outer face of the bin.

4.4 Where so desired by the purchaser, drainage holes may also be provided at the bottom of the bins.

5. FINISH

5.1 The inside of the dust bins shall be smooth and free from sharp corners or other obstructions for easy cleaning.

6. MARKING

6.1 Each bin shall be clearly and permanently marked with the following information:

a) Manufacturer's name and trade-mark;

b) Designation of bin; and

c) Year of manufacture, if required by the purchaser.

6.1.1 The bins may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act, 1952 and the Rules and Regulations made thereunder. Details of conditions, under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

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