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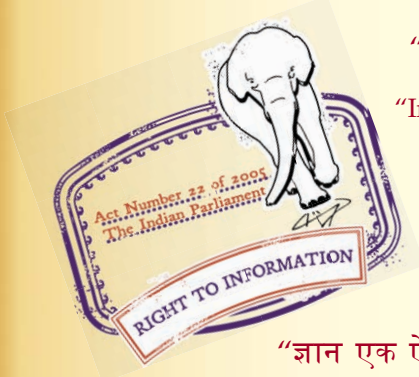
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IS 5961 (1970): cast iron gratings for drainage purposes
[CED 3: Sanitary Appliances and Water Fittings]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Indian Standard
SPECIFICATION FOR CAST IRON
GRATINGS FOR DRAINAGE PURPOSES

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Indian Standard

SPECIFICATION FOR CAST IRON GRATINGS FOR DRAINAGE PURPOSES

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Indian Standard

SPECIFICATION FOR CAST IRON GRATINGS FOR DRAINAGE PURPOSES

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 19 December 1970, after the draft finalized by the Sanitary Appliances and Water Fittings Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 Cast iron gratings are commonly used on the curbs of roads and foot paths for draining away surface water to the drains. They should be sufficiently robust and of proper construction so that they ensure long service and also provide safety for pedestrians and vehicular traffic. It is hoped that this standard will give guidance to the manufacturers and users.

0.3 In the preparation of this standard, assistance has been derived from the experience gained by the major municipal corporations in India in the use of cast iron gratings.

0.4 This standard contains clause 4.1 which calls for agreement between the purchaser and the supplier.

0.5 This standard contains clause 8.1.1 which permits the purchaser to use his option for selection to suit his requirements.

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.

1. SCOPE

1.1 This standard covers the requirements for cast iron gratings intended for use in drainage works.

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

2. MATERIALS

2.1 The frame and cover shall be of grey cast iron conforming to Grade 15 of IS : 210-1962*.

2.2 Hinge pins shall be made of mild-steel wire of $\frac{1}{2}$ hard condition specified in IS : 280-1962† unless otherwise specified by the purchaser.

3. MANUFACTURE AND WORKMANSHIP

3.1 The frame and the cover shall be cleanly cast and they shall be free from air and sand holes, cold shuts and warping which are likely to impair the utility of castings.

4. CONSTRUCTION

4.1 The cast iron gratings shall be made in accordance with the details shown in Fig. 1. These may be made for dimensions other than those shown in Fig. 1 where so agreed to between the manufacturer and the purchaser.

4.2 **Locking Devices** — Internal locking devices, such as galvanized chain or lock or a combination of both may be provided if required by the purchaser.

5. DIMENSIONS AND TOLERANCES

5.1 **Dimensions** — The dimensions shall conform to those specified in Fig. 1.

5.2 **Tolerances** — In order to provide interchangeability of cover and frames internal dimensions of the top of the frame shall not vary more than ± 2 mm from the dimensions specified for the same.

6. WEIGHT

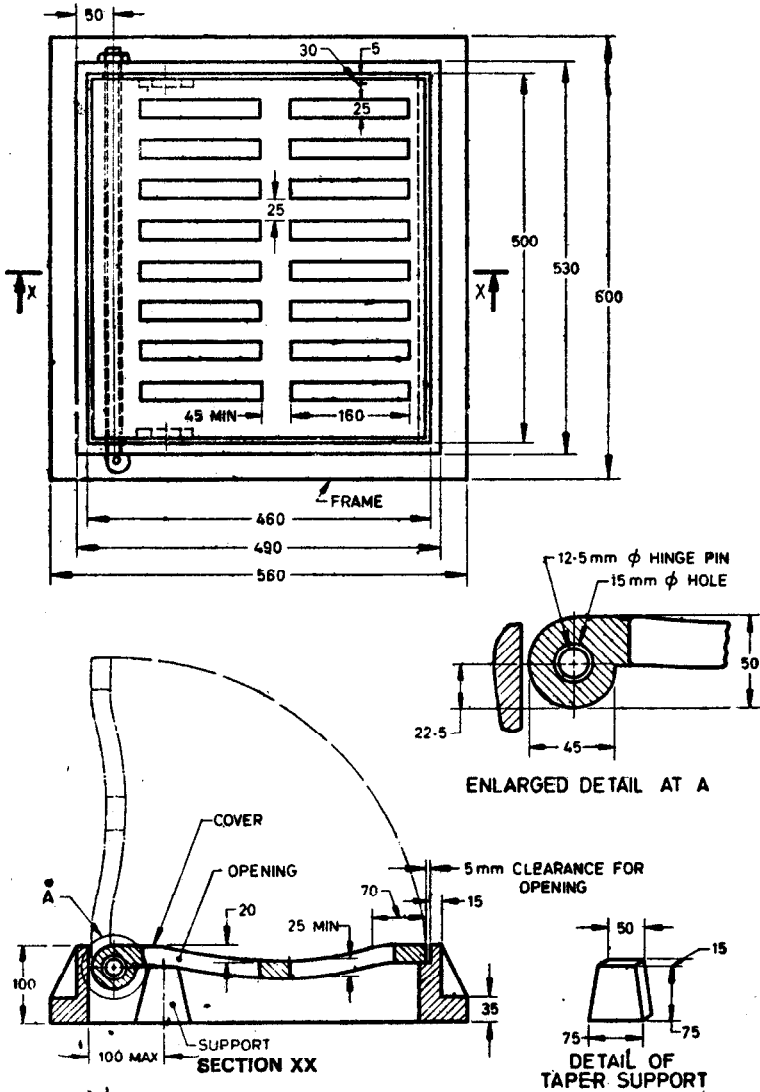
6.1 The minimum weight of cast iron gratings shall be 75 kg.

7. COATING

7.1 The drainage cover and frame shall be coated with a material having tar base with a black bituminous composition after the surface is rendered smooth by chipping the projections, if any; surface shall also be clean, dry and free from any rust before coating. The coating shall be smooth and tenacious which will not flow when exposed to a temperature of 63°C and shall not be so brittle as to chip off at temperature of 0°C.

*Specification for grey iron castings (*revised*). (Since revised).

†Specification for mild steel wire for general engineering purposes (*revised*). (Since revised)



All dimensions in millimetres.

FIG. 1 TYPICAL ILLUSTRATION OF CAST IRON GRATING FOR DRAINAGE PURPOSES

8. TESTS

8.1 Samples for Load Test — The number of samples to be tested shall be one for every lot of 25 or part thereof. In the event of any one of the articles tested failing to meet the requirements of this standard, the articles in the batch shall be deemed not to comply with the requirements of this standard unless individually tested. The manufacturer shall keep the records of all tests and shall make these available to the purchaser on request.

8.1.1 If the purchaser requires additional tests to be carried out, this shall be stated in the enquiry and order. The manufacturer shall provide every facility for the purchaser to select such samples as he may require from a consignment prior to delivery and the tests shall be carried out in the presence of the manufacturer and the purchaser, or his representative, if he so desires.

The cost of each additional tests shall be borne:

- a) by the purchaser in the event of the result meeting the requirements of this standard, and
- b) by the manufacturer in the event of the result not meeting the requirements of this standard.

8.2 Testing Procedure and Requirements — The gratings shall withstand without fracture a load of 35 t for a minimum period of 30 s when subjected to loading test described in IS : 1726-1967*.

9. INSPECTION

9.1 The purchaser or his authorized representative shall have free access to the works of the manufacturer at all reasonable times for carrying out inspection during the course of manufacture. Should the purchaser or his authorized representative desire to witness the test specified in 8.2, he shall inform the manufacturer who shall give reasonable notice of the date or dates on which the test will be carried out. The purchaser or his authorized representative shall, if he so desires, be enabled to carry out inspection of covers and frames prior to the application of coating.

10. MANUFACTURER'S GUARANTEE

10.1 When so requested by the purchaser, the manufacturer shall supply, free of cost, a certificate stating that each lot or part thereof of gratings has been subjected to the requirements laid down in 8.2 and conform in all respects to this specification.

*Specification for cast iron manhole covers and frames intended for use in drainage works (*first revision*). (Since revised).

11. MARKING

11.1 Each cast iron gratings shall have cast on the covers the information regarding manufacturer's name or trade-mark.

11.1.1 Each grating 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, and the Rules and Regulations made thereunder. Presence of this mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard, under a well-defined system of inspection, testing and quality control during production. This system, which is devised and supervised by ISI and operated by the producer, has the further safeguard that the products as actually marketed are continuously checked by ISI for conformity to the standard. 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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