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IS : 928 - 1984

*Indian Standard*  
SPECIFICATION FOR FIRE BELLS  
( *Second Revision* )

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

# *Indian Standard*

## SPECIFICATION FOR FIRE BELLS

### (Second Revision)

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***Indian Standard***  
**SPECIFICATION FOR FIRE BELLS**  
***( Second Revision )***

**0. FORE WORD**

**0.1** This Indian Standard ( Second Revision ) was adopted by the Indian Standards Institution on 24 February 1984, after the draft finalized by the Fire Fighting Sectional Committee had been approved by the Civil Engineering Division Council.

**0.2** Fire bells are mounted on fire appliances, such as fire engines, fire tenders, etc, and also installed in the appliance rooms of fire stations for raising alarms at the time of receipt of fire call.

**0.3** This standard was first published in 1958 and revised in 1964. This revision has been prepared so as its provisions in respect to materials are enlarged.

**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.

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**1. SCOPE**

**1.1** This standard lays down the requirements regarding materials, shape and dimensions, manufacture, workmanship and finish, and performance test of 250 mm diameter fire bell.

**2. MATERIALS**

**2.1** The bell metal used in the manufacture of the shell of the bell shall conform to IS : 306-1968† with the modification that percentage of the tin

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

†Specification for tin bronze ingots and castings ( second revision ).

shall be between 20 to 22 and copper 78 to 80. Alternatively brass conforming to IS : 292-1961\* may also be used.

2.2 The mild steel for bracket and other items shall conform to IS : 1977-1975†.

2.3 The steel wire used for the spring shall conform to Grade 1 of IS : 4454 ( Part 1 )-1975‡.

2.4 Leather used for the strap shall conform to IS : 581-1976§.

### 3. CONSTRUCTION

3.1 The shape and the dimension of the bell shall be as shown in Fig. 1. The tolerance shall be  $\pm 2$  mm.

### 4. MASS

4.1 The mass of the shell shall be  $10 \pm 1$  kg.

### 5. WORKMANSHIP AND FINISH

5.1 The casting shall be sound and free from sharp edges, pits, blowholes, scales and other imperfections and shall not be repaired or filled so as to hide casting defects. The unmachined surfaces shall be dressed and finished smooth. All sharp edges shall be removed. Mild steel fittings shall be given a suitable anticorrosive treatment.

### 6. PERFORMANCE TEST

6.1 The peak sound pressure level produced by each bell in an open ground ( see Note 1 ) or anechoic chamber ( see Note 2 ) when it is struck by a mild steel ball with a momentum of 100 000 g.cm/s ( 1 kg.m/s ) shall be not less than 100 dB at a distance of 5 m as measured on impact noise analyser set to time constant of 0.01 second. The frequency of the strike tone shall lie in the range between 600 to 1 000 Hz.

NOTE 1 — When the measurements are made in open ground, the ambient noise level shall be at least 10 dB below the output resulting from the applied acoustic signal; there shall be no obstacle within a radius of 12 m and there shall be no acoustical focussing effects or nearby parallel walls.

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\*Specification for brass ingots and castings ( revised ).

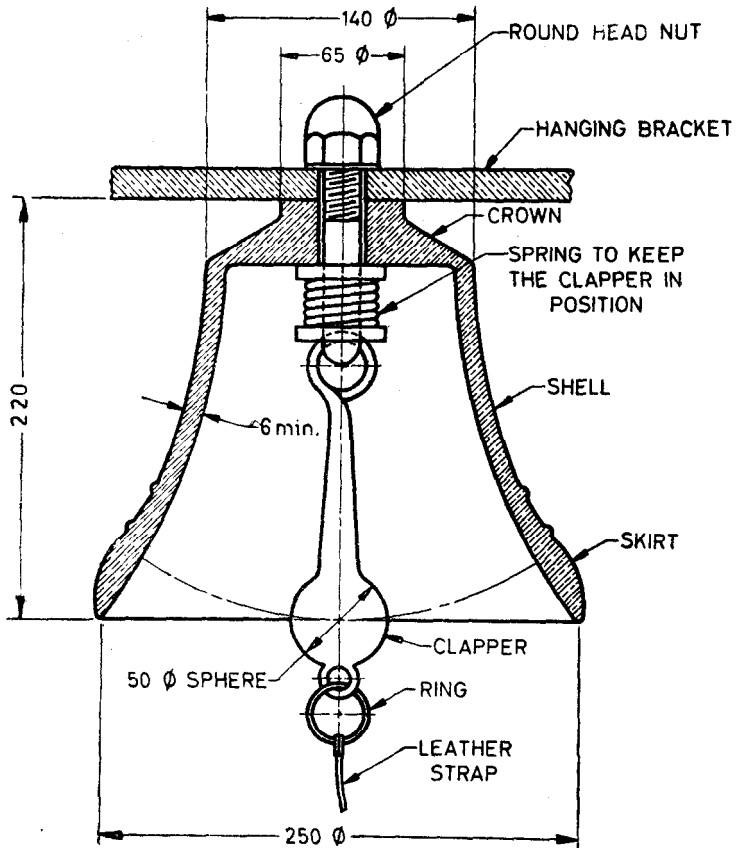
†Specification for structural steel ( ordinary quality ) ( second revision ).

‡Specification for steel wires for cold formed springs : Part 1 Patented and cold drawn steel wires — unalloyed ( first revision ).

§Specification for vegetable tanned hydraulic leather ( second revision ).

NOTE 2 — Anechoic chambers, in which the sound pressure variations, from the inverse law do not exceed  $\pm 1$  dB at the frequencies of measurement, are acceptable.

NOTE 3 — For the purpose of carrying out this test, the bell and microphone of the measuring instrument shall be mounted at a height of 1 m above the ground level.



All dimensions in millimetres.

FIG. 1 FIRE BELL

## **7. MARKING**

**7.1** Each fire bell shall be clearly and permanently marked with the following information :

- a) Manufacturer's name or trade-mark,
- b) Year of manufacture, and
- d) Type of materials.

**7.1.1** Fire bell 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. The ISI 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 which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. 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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