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मानक

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IS 5391 (1992): Adjustable metal chairs for use of typists and operators in telephone exchanges-Specification [CED 35: Furniture]



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भारतीय मानक

लिपिक और दूरभाष आपरेटरों के उपयोग के लिए धातु की  
समायोज्य कुर्सियाँ — विशिष्ट

( दूसरा पुनरोक्षण )

*Indian Standard*

ADJUSTABLE METAL CHAIRS FOR USE OF  
TYPISTS AND OPERATORS IN TELEPHONE  
EXCHANGES — SPECIFICATION

( *Second Revision* )

UDC 684.434.044-182.7 : 621.395.007.2

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

## FOREWORD

This Indian Standard ( Second Revision ) was adopted by the Bureau of Indian Standards, after the draft finalized by the Furniture Sectional Committee had been approved by the Civil Engineering Division Council.

The operation and equipment in the telephone exchanges all over the country have undergone revolutionary changes during recent years. The effort to make the system of communication more efficient has been gaining popularity among agencies responsible for maintenance of equipment; so also the outlook with regard to the work of typists, stenographers and reporters in the administrative offices. The importance of an adjustable seat for the operators working in the various telephone exchanges and the typists in the administrative offices has been observed from the point of view of user comfort and its suitability for persons of varying heights.

This standard was first published in 1969 and subsequently revised in 1981. This second revision has been taken up to include test for metal chairs and performance requirements of finish have been excluded as these requirements have been included in the specification of the paints.

This standard contains 7.5 which permits the purchaser to use his option for selection of finish in colour to suit his requirements.

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 '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.

*Indian Standard***ADJUSTABLE METAL CHAIRS FOR USE OF  
TYPISTS AND OPERATORS IN TELEPHONE  
EXCHANGES — SPECIFICATION***( Second Revision )***1 SCOPE**

This standard lays down requirements of materials, construction and dimensions for chairs for use of telephone operators and the typists.

**2 REFERENCES**

The Indian Standard listed in Annex A are necessary adjuncts to this standard.

**3 MATERIALS****3.1 Aluminium Sheets**

Aluminium sheets shall conform to alloy designation 31000, 52000 or 40800 in H2 condition of IS 737 : 1986.

**3.2 Aluminium Tubes**

Aluminium tubes shall conform to IS designation 62400, 63400 or 65032 of IS 1285 : 1975.

**3.3 Electrodes and Filler Rods**

The welding electrodes and filler rods for gas, arc and spot welding shall conform to IS 1278 : 1972, IS 814 ( Part 1 ) : 1974, IS 814 ( Part 2 ) : 1974 and IS 4972 : 1968.

**3.4 French Polish**

French polish shall conform to IS 348 : 1968.

**3.5 Mild Steel Sheets**

Mild steel sheets shall conform to IS 513 : 1986 or IS 1079 : 1988.

**3.6 Steel Tubes**

Steel tubes shall conform to IS 7138 : 1973.

**4 FABRICATION**

**4.0** Metal chairs for the operators shall be assembled from the components given in **4.1** to **4.3**.

**4.1 Tubular or Suitable Section for Frame**

The frame shall have not less than three legs of suitable design to avoid overturning in any direction and shall be made from mild steel tubular pipe with a wall thickness of not less than 1.25 mm or from aluminium tubular pipe with a wall thickness of not less than 2 mm and 25 mm outside diameter or mild steel flats of thickness not less than 5 mm. The aluminium tubular pipe may be square in cross-section of the same dimensions.

**4.1.1 Ends of Tubes/Sections**

The bottom ends of chair legs shall be provided with caps made of metal, plastic rubber, or other resilient material which will not spoil the floor and is resistant to sliding. The caps or shoes and the ends of the tubes shall be so fabricated that cutting or shearing during usage of the chair will be held to minimum.

**4.2 Seat**

The seat shall be fabricated from single piece of mild steel sheet not less than 1 mm thick or from aluminium sheet not less than 1.6 mm thick and shall be formed in such a manner to provide strength and rigidity and to eliminate sharp edges. The seat may also be padded, canned or fabricated out of suitable plastics, timber and suitable timber products.

**4.2.1** Swivelling types of chairs shall have a fitting with a vertical axle for swivelling. This fitting shall be capable of supporting a load of 1 500 N placed in the seat without any wobbling when the seat is rotated.

**4.3 Backrest**

The backrest shall not be less than 100 mm high and fabricated from single piece of mild steel sheet not less than 1 mm thick or from aluminium sheet not less than 1.6 mm thick, to a comfortable form fitting shape. All edges shall be formed to provide maximum strength

to the back. The backrest may also be padded, canned or fabricated out of suitable plastics, timber and suitable timber products.

**5 ASSEMBLY**

**5.1 Design**

Structural design of the chair shall be such that any sustained or impact load will be uniformly distributed on all supporting parts without excessive strain on any one of the supporting parts under normal usage. The chair shall not overturn due to sudden shift in the weight of the user.

**5.2** The various components shall be assembled by means of riveting bolting or welding.

**5.3** The method of gas welding, arc welding or spot welding shall conform to IS 1323 : 1982, IS 816 : 1969 and IS 819 : 1957 respectively.

**5.3.1** Welding of aluminium parts shall be in accordance with IS 2812 : 1964.

**6 DIMENSIONS**

**6.1** The dimensions of the chair shall be as given in 6.1.1 to 6.1.3 ( see Fig. 1 ).

**6.1.1 Seat Height**

The height of the seat of the chair from the floor shall be adjustable within a range of 400 to 480 mm.

NOTE — The recommended fixed height for chairs for general office purposes as given in IS 3663 : 1991 is  $435 \pm 5$  mm.

**6.1.2 Seat Width**

The minimum width of seat shall be 400 mm measured at a point midway along the effective depth of the seat.

**6.1.3 Effective Depth of the Seat**

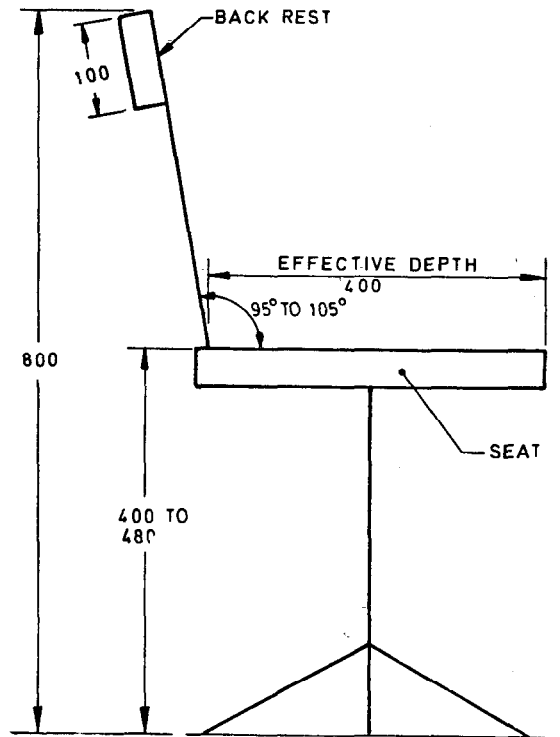
The minimum effective depth of the seat shall be 400 mm. This shall be measured at the middle of the seat and from the front edge to the back.

**6.1.4 Seat Slope**

The seat shall be either horizontal or sloping downwards between 20 and 30 from front to back.

**6.1.5 Slope of the Back Rest**

The angle between the vertical plane of the back rest and the horizontal plane of the seat shall be 95 to 105°.



All dimensions in millimetres.

FIG. 1 SCHEMATIC SKETCH OF ADJUSTABLE METAL CHAIR

**6.2** The overall dimensions of the operator's chair shall be as given below:

Overall Height ( measured at maximum up position )	800 mm, <i>Min</i>
Clear Width	450 mm, <i>Min</i>

**7 FINISH**

**7.1** All dents, burrs and sharp edges shall be removed from the various components. The components shall be individually pickled, scrubbed and rinsed to remove grease, rust, scale or any other foreign element.

**7.2** Immediately after pickling, all the mild steel parts shall be given phosphating treatment conforming to Class C of IS 3618 : 1966. The process for application of phosphate coating shall be in accordance with IS 6005 : 1970.

NOTE — Putty shall be applied to all the surfaces requiring filling and shall conform to IS 110 : 1983. Aluminium primer shall conform to IS 2074 : 1979.

7.3 Coat/coats of enamel paint shall then be applied as follows:

- a) Finish coat with enamels conforming to IS 151 : 1985, IS 2932 : 1974 or IS 2933 : 1975; and
- b) In the case of stoving enamel the components shall thereafter be baked at a specified temperature in an oven heated uniformly. The finish shall be smooth and uniform with a hard and tough film of enamel strongly adhering to the surface. The finish shall be free from all visible defects and shall not chip when tapped lightly with a dull pointed instrument.

7.4 Aluminium parts in the chair shall be anodized.

7.5 All components shall be finished in colour as agreed to between the purchaser and the manufacturer.

## 8 TEST FOR CHAIR

### 8.1 Strength Requirements

The chair shall be tested for strength in accordance with IS 5416 ( Part 1 ) : 1988.

### 8.2 Stability Requirements

The chair shall be tested for stability in accordance with IS 5416 ( Part 2 ) : 1988.

## 9 PACKING

All the component parts shall be packed in such a way that no damage is caused to them during transit.

## 10 MARKING

10.1 Chairs shall be marked with a suitable mark identifying the manufacturers.

10.1.1 The chairs may also be marked with the Standard Mark.

## ANNEX A

( Clause 2 )

### LIST OF REFERRED INDIAN STANDARDS

IS No.	Title	IS No.	Title
110 : 1983	Ready mixed paint, brushing, grey fillers, for enamels for use over primers ( <i>first revision</i> )	814 ( Part 2 ) : 1974	Covered electrodes for metal arc welding for structural steels: Part 2 For welding sheets ( <i>fourth revision</i> )
151 : 1985	Ready mixed paint, sparying, finishing, stoving, enamel, for general purposes, colour as required ( <i>first revision</i> )	816 : 1969	Code of practice for use of metal arc welding for general construction in mild steel ( <i>first revision</i> )
348 : 1968	French polish ( <i>first revision</i> )	819 : 1957	Code of practice for resistance spot welding for light assemblies in mild steel
513 : 1986	Cold rolled low carbon steel sheets and strips ( <i>third revision</i> )	1079 : 1988	Hot rolled carbon steel sheet and strip ( <i>fourth revision</i> )
737 : 1986	Wrought aluminium and aluminium alloy sheet and strip for general engineering purposes ( <i>third revision</i> )	1278 : 1972	Filler rods and wires for gas welding ( <i>second revision</i> )
814 ( Part 1 ) : 1974	Covered electrodes for metal arc welding of structural steels: Part 1 For welding products other than sheets ( <i>fourth revision</i> )	1285 : 1975	Wrought aluminium and aluminium alloy extruded round tube and hollow sections ( for general engineering purposes ) ( <i>second revision</i> )

## IS 5391 : 1992

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
1323 : 1982	Code of practice for oxyacetylene welding for structural work in mild steels ( <i>second revision</i> )	3663 : 1991	Dimensions of tables and chairs for general office purposes ( <i>first revision</i> )
2074 : 1979	Ready mixed paint, air drying red oxide, zinc chrome, priming ( <i>first revision</i> )	4972 : 1968	Resistance spot welding electrodes
2812 : 1964	Recommendations for manual tungston inret gas arc welding for aluminium alloys	5416 (Part 1) : 1988	Methods of test for strength and stability of chairs and stools; Part 1 Strength
2392 : 1974	Enamel, synthetic, exterior (a) undercoating, (b) finishing ( <i>first revision</i> )	5416 (Part 2) : 1988	Methods of test for strength and stability of chairs and stools; Part 2 Stability
2933 : 1975	Enamel exterior (a) undercoating, (b) finishing ( <i>first revision</i> )	6005 : 1970	Code of pratice for phosphating of iron and steel
3618 : 1966	Phosphate treatment of iron and steel for protection and corrosion	7138 : 1973	Steel tubes for furniture purposes

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