

FINAL DRAFT UGANDA STANDARD

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Furniture — Metal chairs for office purposes — Part. 1: Specification for non-revolving and non-tilting chairs



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The Executive Director
Uganda National Bureau of Standards
P.O. Box 6329
Kampala
Uganda
Tel: +256 417 333 250/1/2
Fax: +256 414 286 123
E-mail: info@unbs.go.ug
Web: www.unbs.go.ug

Foreword

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The committee responsible for this document is Technical Committee UNBS/TC 12, *Furniture*.

Furniture — Metal chairs for office purposes — Part 1: Specification for non-revolving and non-tilting chairs

1 Scope

This Final Draft Uganda Standard covers requirements for materials, construction, dimensions and finish of non-revolving and non-tilting metal chairs for office purposes.

2 Normative references

The following referenced documents referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies

ISO 1520, *Paints and varnishes -- Cupping test*

ISO 2009, *Slotted countersunk flat head screws -- Product grade A*

ISO 4624, *Paints and varnishes -- Pull-off test for adhesion*

ISO 4950-1, *High yield strength flat steel products -- Part 1: General requirements (sheets)*

US ISO 6361-1, *Wrought aluminium and aluminium alloys — Sheets, strips and plates — Part 1: Technical conditions for inspection and delivery*

US ISO 6362-1, *Wrought aluminium and aluminium alloys — Extruded rods/ bars, tubes and profiles — Part 1: Technical conditions for inspection and delivery*

ISO 6860, *Paints and varnishes -- Bend test (conical mandrel)*

ISO 9692-3, *Welding and allied processes — Types of joint preparation — Part 3: Metal inert gas welding and tungsten inert gas welding of aluminium and its alloys*

ISO 11503, *Paints and varnishes -- Determination of resistance to humidity (intermittent condensation)*

ISO 12633-1, *Hot-finished structural hollow sections of non-alloy and fine grain steels — Part 1: Technical delivery conditions*

ISO 15184, *Paints and varnishes -- Determination of film hardness by pencil test*

ISO 16143-3, Stainless steels for general purposes -- Part 3: Wire

ISO 16925, *Paints and varnishes -- Determination of the resistance of coatings to pressure water-jetting*

US 1633, Cold rolled low carbon steel flat products for cold forming — Technical delivery conditions

3 Types

Different types of metal chairs shall be classified as given below:

- a) chairs with and without arms; and
- b) chairs with different types of seats and backs.

4 Materials requirements

4.1 Aluminum sheets shall conform to alloy designation NS3, NS4 or 315CO in H conditions of US ISO 6361-1.

4.2 Wax polish shall conform to US 573.

4.3 Mild steel sheets shall conform to ISO 4950-1.

4.4 Mild steel tubes shall conform to ISO 12633-1.

4.5 Aluminium tubes shall conform to US ISO 6362-1. Aluminium tubes with the following mechanical properties may also be used:

- Minimum tensile strength: 26 kg f/mm²; and
- Minimum elongation on 50 mm: 16 % gauge length.

4.6 Screws shall conform to ISO 2009.

4.7 The wood suitable for furniture shall be used.

5 Dimensions

The dimensions of metal chairs shall conform to FDUS 1903.

6 Fabrication

6.1 Components

Metal chairs shall be assembled from the components given in 6.1 to 6.3.

6.2 Tubular frame

6.2.1 Aluminum tubular frame

The aluminium tubular frame shall be made from tubular pipes with a wall thickness not less than 1.60 mm. The tubular pipe shall be either round or square in section. The outside diameter of round tubular pipe shall be not less than 25 mm and in the case of square section the side of the square shall be not less than 20 mm.

6.2.2 Mild steel tubular frame

The mild steel tubular frame shall be made from tubular pipes with a wall thickness not less than 1.25 mm and outside diameter as 25 mm.

6.2.3 Frame

The frame shall be in one piece or may be jointed at one place by inserting a piece of tubular pipe in the joint with outer diameter equal to inside diameter of the tubular frame; then the joint shall be secured. At every change of direction, the tube shall be curved to the minimum radius possible without causing any cracks, unevenness or other defects in the bend. In the case of cantilever type of chairs bends where necessary shall be stiffened by inserting a piece of tubular pipe having outside diameter equal to the inside diameter of the tubular pipe used for frame.

6.3 Seat and backrest

The seat and backrest shall be fabricated from a single piece of mild steel sheet not less than 1.0 mm thick or from aluminium sheet not less than 1.6 mm to form a comfortable fitting shape and there shall be no sharp exposed edges. The seat and backrest may also be padded, caned and fabricated out of mould plywood or moulded wood.

6.4 Armrest

Armrests shall be made from wood suitable for furniture. Armrest may also be padded. These armrests shall be shaped to ensure comfort to the users. The armrests should be fixed to, the tubular arms securely with screws from the under-side.

6.5 Studs

Studs for chairs shall be made either from rubber or suitable material.

7 Assembly

The components shall be assembled by means of welding or bolting and welding of aluminium parts shall be in accordance with ISO 9692-3:2016

8 Finish

8.1 Metal components

8.1.1 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.

8.1.2 Immediately after pickling, all the mild steel parts shall be given phosphating treatment conforming to ISO 9567.

8.1.3 Putty shall be applied to all the surfaces requiring filling.

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

- a) finish coat with enamels conforming to ISO 28762; and
- b) in case of stoving enamel the components shall thereafter be baked at a specified temperature in an oven heated uniformly.

8.1.5 The finish shall be free from all visible defects and shall not chip when tapped lightly with a dull pointed instrument.

8.2 Wooden arms

The wooden arms shall be polished either with wax polish or a transparent glossy French polish, or stained dark and polished or lacquered as desired by the purchaser.

9 Performance requirements of finish

9.1 Scratch hardness test

Use ISO 15184.

9.2 Pull off adhesion test

Use ISO 4624.

9.3 Resistance of coating to pressure water jetting test

Use ISO 16925.

9.4 Resistance to humidity (intermittent condensation) test

Use ISO 11503.

9.5 Bend test

Use ISO 6860.

9.6 Cupping test

Use ISO 1520.

10 Packing

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

11 Information to be supplied by the purchaser

The purchaser shall supply the following information to the supplier along with the order:

- a) type required;
- b) color and finish; and
- c) where alternative methods of construction and finish are specified, they shall be clearly stated in the order.

12 Marking.

All metal chairs shall be legibly and indelibly marked with

- a) name, address/trade mark of the manufacturer;

- b) name of the product; and
- c) country of origin.

Bibliography

IS 3499-1, *Metal chairs for office purposes — Part 1: Non revolving and non-tilting — Specification.*

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