# AFRICAN STANDARD

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## Mobile medicine (utility drug) cabinet — Specification

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## Foreword

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This African Standard was prepared by ARSO TC 78, Medical devices and equipment.



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# Mobile medicine (utility drug) cabinet — Specification

## 1 Scope

This Draft African Standard covers the material, dimensional and constructional requirements for mobile medicine (utility drug) cabinets intended for use in health facilities.

## 2 Normative references

The following documents are 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 1456, *Metallic coatings — Electrodeposited coatings of nickel plus chromium and of copper plus nickel plus chromium*.

SANS 417, *Stainless steelware for medical and catering services in institutions.*

ISO 22883, Castors and wheels — Requirements for applications up to 1,1 m/s (4 km/h)

ARS 2061, Patients' trolleys — Specification.

SANS 1274, *Coatings applied by the powder-coating process.*

## 3 Terms and definitions

For the purpose of this standard the following definitions apply.

**3.1**
**acceptable**
recognized to the relevant authority administering this specification, or to the parties concluding the purchase contract, as relevant

**3.2**
**utility drug**
(to be supplied)

## 4 Requirements

### 4.1 Materials and components

#### 4.1.1 Rolled steel sections and plate

Rolled steel sections and plate shall be of good quality mild steel and shall be free from cracks, fins, laminations, and other defects.

Steel tubes

Mild steel tubes shall comply with the relevant requirements in Table 1.



 

**Table 1: Grade and Mechanical properties for tube**

| Grade | Minimum yield strength, ($R_{eH}$), MPa | Minimum ultimate tensile strength, MPa |
|---|---|---|
| 275 | 275 | 410 |
| 355 | 350 | 450 |

#### 4.1.2 Stainless steel

Stainless steel shall be an 18/8 (AISI type 304) stainless steel or other acceptable austenitic stainless steel of weldable quality.

NOTE Attention is drawn to the advisability of using one of the low carbon grades to avoid carbide precipitation.

#### 4.1.3 Welding electrodes and filler rods

Welding electrodes and filler rods used in fusion welding and braze welding shall be such that they will produce joints having mechanical properties and corrosion resistance of at least the same order as those of the parent metal.

#### 4.1.4 Paints

Paint(s) shall be an enamel or a system comprising a primer and an enamel.

#### 4.1.5 Powder (for powder coatings)

A powder consisting of a thermo-setting resin that is such as to enable a coating to comply with the relevant requirements given in 4.6.

#### 4.1.6 Castors

Castors shall comply with the relevant requirements of ISO 22883.

### 4.2 Fusion and braze-welded joints

Parts joined by fusion welding or by braze welding shall be close-fitting and in correct alignment. Weld faces shall be smooth, clean, and free from porosity, cavities, spatter, and trapped slag, and shall merge smoothly into the surface of the parent metal without overlap or undue undercut. The weld metal, heat-affected zone, and adjacent parent metal shall be free from cracks

### 4.3 Spot-welded joints

Spot-welded joints shall be close-fitting and in correct alignment. Spot welds shall be resistance spot welds, and the spacing of the spots shall be such as to provide strong acceptable joints. There shall be proper fusion between the parts welded, and any indentation at a weld shall be minimal.

### 4.4 Design and overall dimensions

a) The general design and dimensions shall conform to those given in figure 1, subject to the following tolerances:

   i) On shelf depths and heights: ± 1,0 mm.
   ii) On other dimensions: ± 3,0 mm.

b) The medicine cabinet shall comprise the following two (separate) components:

   i) a tubular frame mounted on four 125 mm castors, a loose stainless steel shelf, and a support for a stainless steel tray or a stainless steel bowl, as relevant (see 4.5.6); and



 

ii) Cabinet with hinged doors and containing a set of stepped shelves and a stainless steel work top.

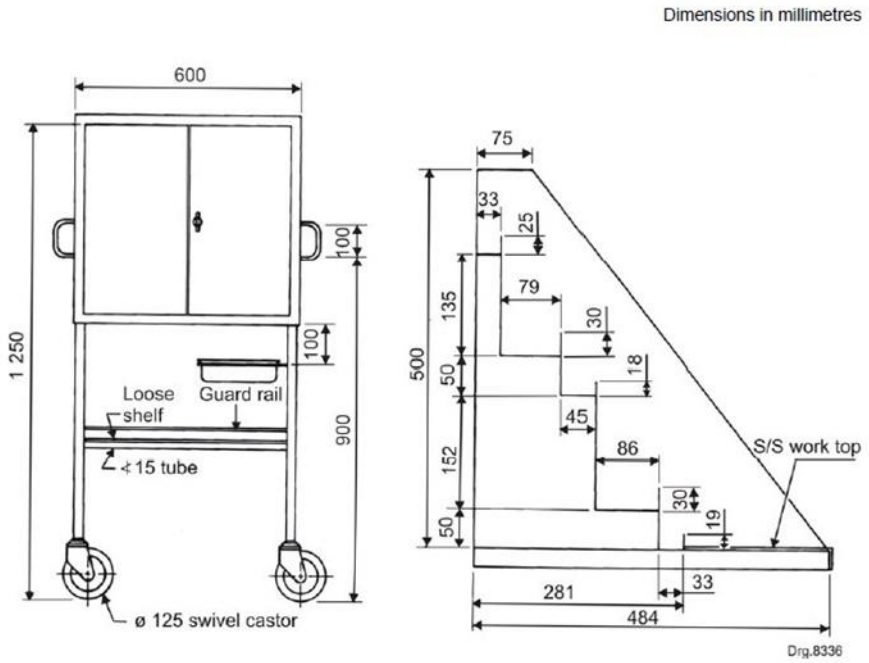


**Figure 1(a) — Medicine/utility drug cabinet**

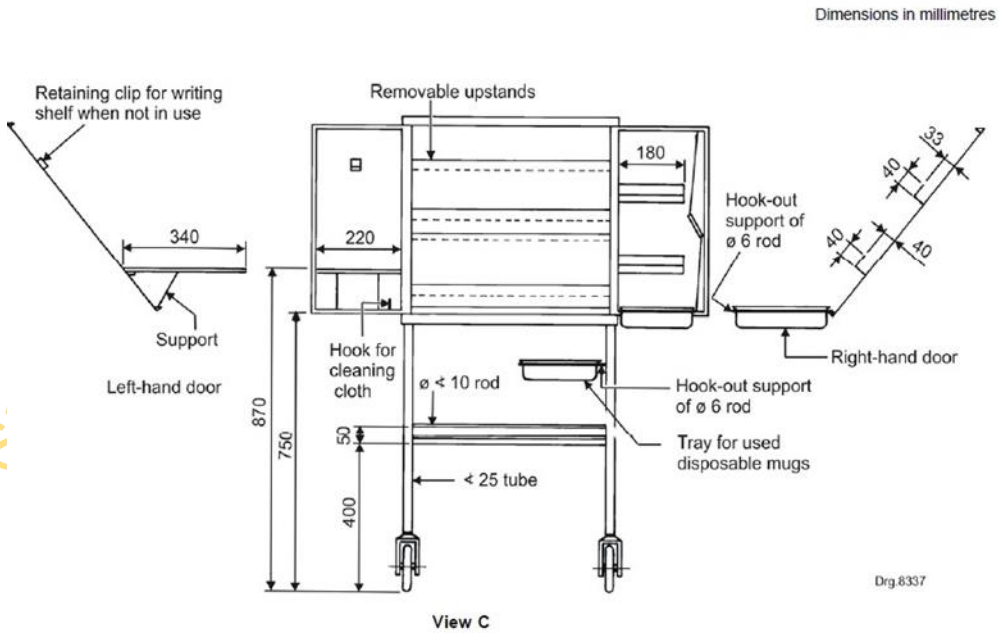


**Figure 1(b) — Medicine/utility drug cabinet**

# 5 Construction

## 5.1 Tubular frame

a) The vertical members of the frame shall be of round or square mild steel tubes having a nominal outside diameter or length of side (as relevant) of at least 25 mm, and a nominal wall thickness of at least 1,60 mm. Two sets (one at the top and the other about midway down the legs) of four horizontal members of round or square tubes having a nominal outside diameter or length of side (as relevant) of at least 15 mm and a nominal wall thickness of at least 1,60 mm shall be joined to the vertical members by fusion welding or braze welding.

b) Above the supports for the loose shelf and positioned as shown in figure 1(b) there shall be, on all four sides, a guard rail of nominal diameter at least 10 mm, and made from stainless steel rod or mild steel rod that is chromium-plated after being shaped. The rail shall be attached to the frame, in an acceptable manner, around the outside of the legs and in a position such as to allow the loose shelf to be easily removed.

c) Each leg (vertical member) of the frame shall be equipped with a castor, of nominal size 125 mm, that complies with the relevant requirements of ISO 22883.

d) When so specified, buffer wheels shall be fitted to the legs of the cabinet and located just above the castor fittings. The rims of the buffer wheels shall be of solid, smooth non marking hard rubber or plastics material.

## 5.2 Cabinet

a) The top, bottom, back, and sides of the cabinet shall be integral (i.e. cut in one piece) and shall be of cold rolled mild steel plate of nominal thickness at least 1,20 mm. The front edges shall each have a flange of width 30 ± 3 mm, and the cut edges shall be so folded in as to form a neat, smooth edge. Two handles, that serve also as door stops (see view A of figure 1(a)), of mild steel rod of nominal diameter 12 mm, shall be fusion-welded to the sides of the cabinet.

b) The work top (see view B of figure 1(a)) shall be of stainless steel of nominal thickness at least 1,20 mm, and its front edge shall be flanged downwards. The work top shall be attached to the bottom of the cabinet by pop rivets or other acceptable means

## 5.3 Doors

The double doors shall be of the same material as the cabinet and shall be so flanged along the sides and ends as to provide acceptable stiffness. The right-hand door shall be equipped with a turn-handle that is fitted with an acceptable three-lever lock that operates top and bottom barrel bolts. The left-hand door shall be fitted with a lip that will ensure that it is held closed by the right-hand door. The doors shall fit neatly within the flanged opening of the cabinet and shall be suspended by means of piano-type hinges.

A mild steel lock-away folding type writing shelf of acceptable design shall be fitted to the left-hand or right-hand door, as specified by the purchaser, and two additional shelves for the storage of encapsulated tablets in cardboard boxes shall be fitted to the inside of the other door (see view C of figure 1(b)). The door to which the writing shelf is fitted shall also be equipped with a hook for a cleaning cloth (see view C of figure 1(b)).

### 5.4 Stepped shelves

The stepped shelves (see view B of figure 1(a)) shall be of mild steel plate of nominal thickness at least 1,20 mm and shall be securely attached to the casing by spot welding or other acceptable means. Removable upstands, as shown in view C of figure 1(b), shall be fitted to the front of each shelf and along the back of the work top (see view B of figure 1(a)). The top edges of the removable fronts shall be folded over to ensure rigidity.

### 5.5 Shelf

The loose shelf in the tubular frame shall be of stainless steel of nominal thickness at least 1,20 mm and shall be easily removable. The corners of the shelf shall be suitably cut to enable the shelf to fit between the vertical members of the frame. The shelf shall be held in position in the frame by U-section channels that are positioned centrally on, and securely welded to the lower surface of the shelf along each of its edges. The cross-section of the channels shall be such as to fit neatly over the lower set of horizontal members (see 4.5.1(a)), and the length of each channel shall be 150 mm less than the distance between the appropriate pair of legs.

### 5.6 Trays and bowls

Each cabinet shall be supplied with one or two bowls or one or two trays (as specified by the purchaser) that comply with the requirements of SANS 417 for size 2 mixing and pudding bowls or for size 2 dressing trays, as relevant.

### 5.7 Supports

A support made of stainless steel rod or of mild steel rod of nominal diameter at least 6 mm, suitably shaped to accommodate the bowl or the tray (as relevant) and fixed capable of swivelling, as specified by the purchaser, in the horizontal plane, shall be attached to a front vertical member of the tubular frame in the position shown in view C of figure 1(b). A similar support shall be attached to the flange at the lower edge of the door that has the additional shelves (see 4.5.3). A swivel of the support shall consist of a pin, of nominal diameter at least 8 mm that operates in a socket of length at least 25 mm, or shall be of another acceptable type. Mild steel supports shall be chromium plated.

### 5.8 Finish

a) All surfaces (including welds) shall be free from pits, deep scratches, scale, crimps, buckles, and other defects. Except where stainless steel or chromium plating is used, all steel surfaces shall have a smooth paint or powder-coated finish of the colour specified by the purchaser.
b) A paint coating shall consist of a primer and enamel system that complies with the relevant requirements of ARS 2061 . A powder coating shall comply with the requirements for type 1 thermo-setting coatings of SANS 1274.
c) Stainless steel surfaces shall have a medium directional satin or bright polished finish, as specified by the purchaser.
d) Chromium plating shall comply with the requirements for severe service conditions of ISO 1456



 

## Bibliography

CKS 556:2009 Mobile medicine (utility drug) cabinet