
Medical trolleys (dressing/medicine; instrument; anaesthetists' dressing) -Specification



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Introduction

<Text indicating rationale for the development/harmonization of the standard>

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Medical trolleys (dressing/medicine; instrument; anaesthetists' dressing) - Specification

1 Scope

This standard covers dimensional and constructional requirements for six types of trolleys: types 1 and 4 for dressings and medicines; type 2 for instruments; types 3 and 5 for anaesthetists' use; type 6 for dressings. The standard does not cover patients' trolley.

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.

- 2.1 CD-ARS 2061, Patients' trolleys — Specification
- 2.2 ISO 1456, *Metallic coatings and other inorganic coatings – Electrodeposited coatings of nickel, nickel plus chromium, copper plus nickel and of copper plus nickel plus chromium.*
- 2.3 ISO 22883, Castors and wheels — Requirements for applications up to 1,1 m/s (4 km/h)
- 2.4 SANS 343, *Steel bedside lockers. (ADOPT or replace with international standard if available)*
- 2.5 SANS 778 (ADOPT or replace with international standard if available)
- 2.6 SANS 10142-1, *The wiring of premises – Part 1: Low-voltage installations. (ADOPT or replace with international standard if available)*

3 Terms and definitions

For the purpose of this standard the following definitions apply.

3.1

acceptable

recognised to the relevant authority administering this standard, or to the parties concluding the purchase contract, as relevant

3.2

bright polished finish

bright reflective finish obtained by polishing the surface without complete obliteration of previously existing grinding marks or other surface texture

3.3

defective

medical trolley (dressing/medicine; instrument; anaesthetists') that fails in one or more respects to comply with the appropriate requirements of the standard

3.4

directional satin finish

finish obtained by so grinding the surface with fine abrasives (without subsequent polishing) as to leave a silky appearance with the abrasive marks running in the same general direction

3.5

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lot

not more than 200 dressing/medicine, instrument, or anaesthetists' trolleys of the same size and type, from the same manufacturer, submitted at any one time for inspection and testing

4 Types and dimensions

4.1 Types

The trolleys shall be of the following types:

- a) **Type 1. Dressing/medicine trolley.** The trolley is open and has two removable stainless steel shelves. The top has a continuous guard rail along the sides and back.
- b) **Type 2. Instrument trolley.** Similar to type 1, except that it has no rail around the top.
- c) **Type 3. Anaesthetists' trolley.** The upper part is enclosed to contain a drawer opening to the front and the top has a continuous guard rail along the sides and back and a removable stainless steel tray. The lower part of the trolley is open and has a removable stainless steel shelf.
- d) **Type 4. Dressing/medicine trolley.** Similar to type 1 except that a continuous rail is fitted around the bottom, above the bottom shelf.
- e) **Type 5. Anaesthetists' trolley.** Similar to type 3 except that it has no rail around the top but has a continuous rail around the bottom, above the bottom shelf.
- f) **Type 6. Dressing trolley.** Similar to type 4 except that the top guard rail is continuous around four sides and the longitudinal frame members are extended at one end of the trolley to form two circular brackets to accommodate dressing bowls.

4.2 Dimensions

4.2.1 Type 1. The general design and overall dimensions of type 1 trolleys shall be as given in figure 1 and table 1.

4.2.2 Type 2. The general design and overall dimensions of type 2 trolleys shall be as given in figure 1 and table 1 but the trolley shall have no guard rail.

4.2.3 Type 3. The general design and overall dimensions of type 3 trolleys shall be as given in figure 2 and table 2.

4.2.4 Type 4. The general design and overall dimensions of type 4 trolleys shall be as given in figure 3 and table 1.

4.2.5 Type 5. The general design and overall dimensions of type 5 trolleys shall be as given in figure 4 and table 2.

4.2.6 Type 6. The general design and overall dimensions of type 6 trolleys shall be as given in figure 5.

Table 1 — Dimensions for type 1, type 2, and type 4 trolleys
(See figure 1)

1	2	3
Size	Overall length A mm	Overall width B mm
a	915 ± 5	455 ± 5
b	610 ± 5	455 ± 5
c	455 ± 5	455 ± 5

Table 2 — Dimensions for type 3 and type 5 trolleys
(See figure 2)

1	2	3	4		
Size	Overall length A mm	Overall length B mm	Inside dimensions of drawers		
			Width W mm	Depth D mm	Height H mm
b	610 ± 5	455 ± 5	305 ± 5	420 ± 5	100 ± 3
c	455 ± 5	455 ± 5	305 ± 5	420 ± 5	100 ± 3

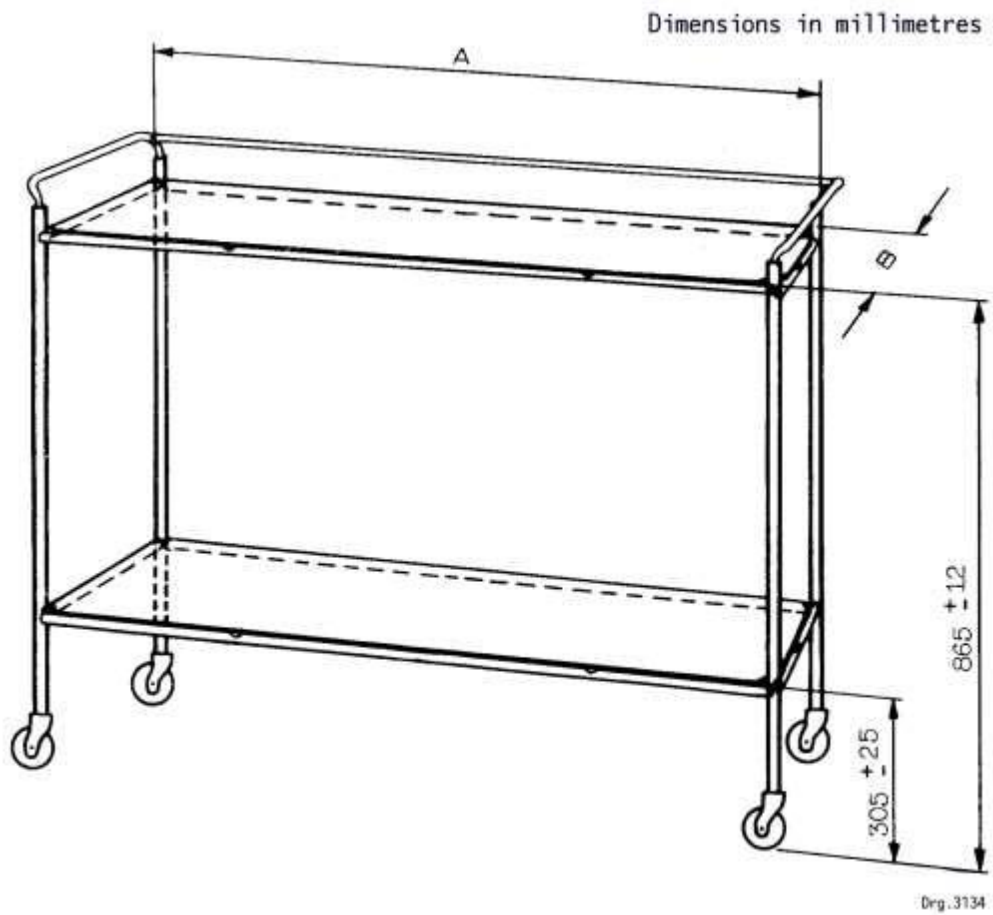


Figure 1 — Dressing/medicine trolley

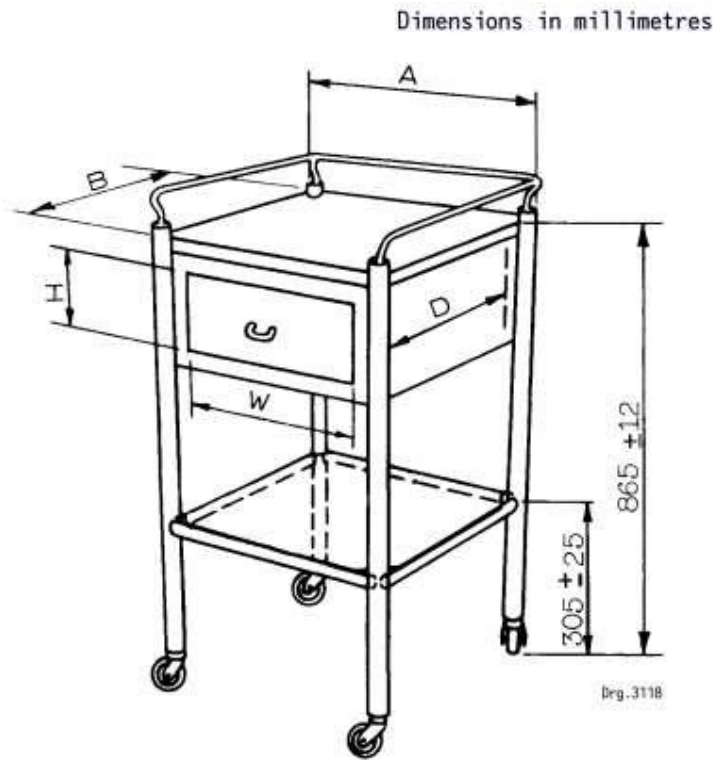


Figure 2 — Anaesthetists' trolley

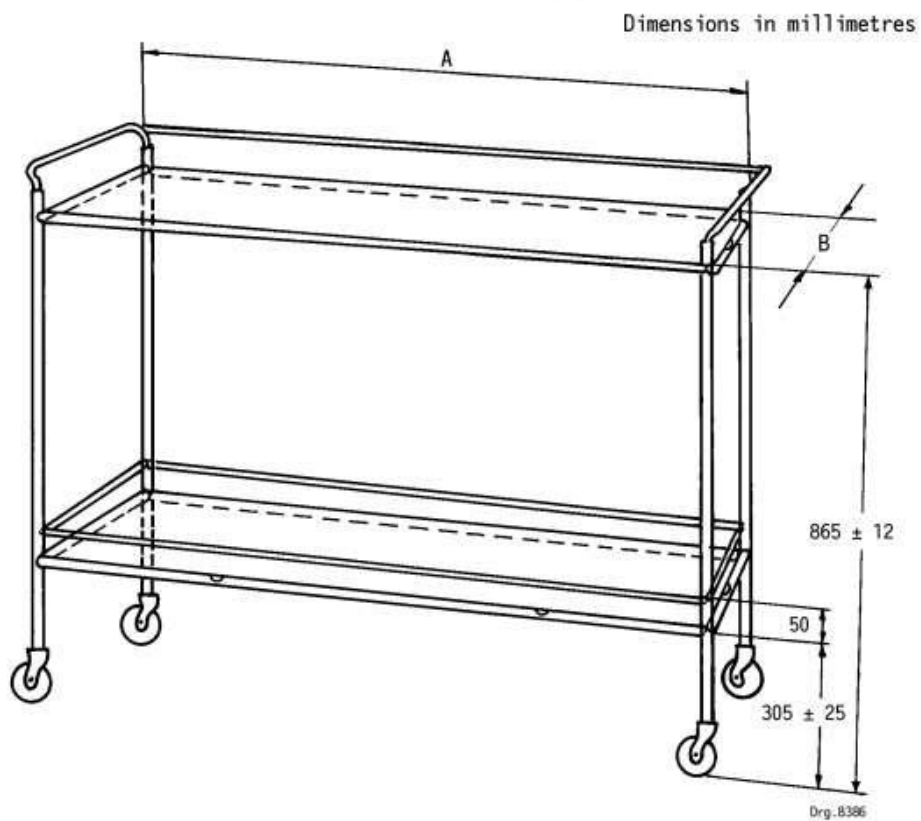


Figure 3 — Type 4 dressing/medicine trolley

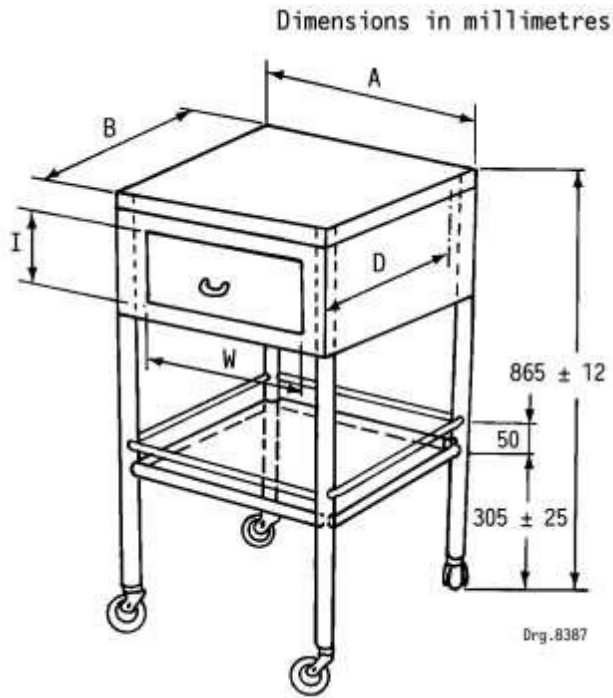


Figure 4 — Type 5 anaesthetists' trolley

Dimensions in millimetres

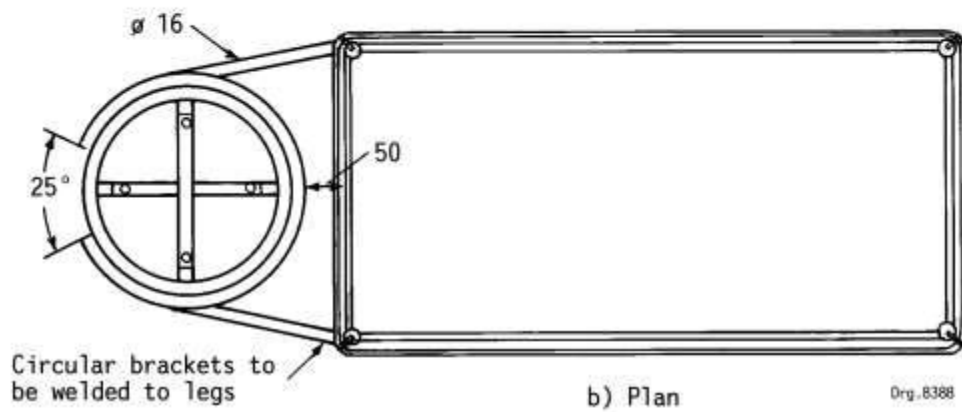
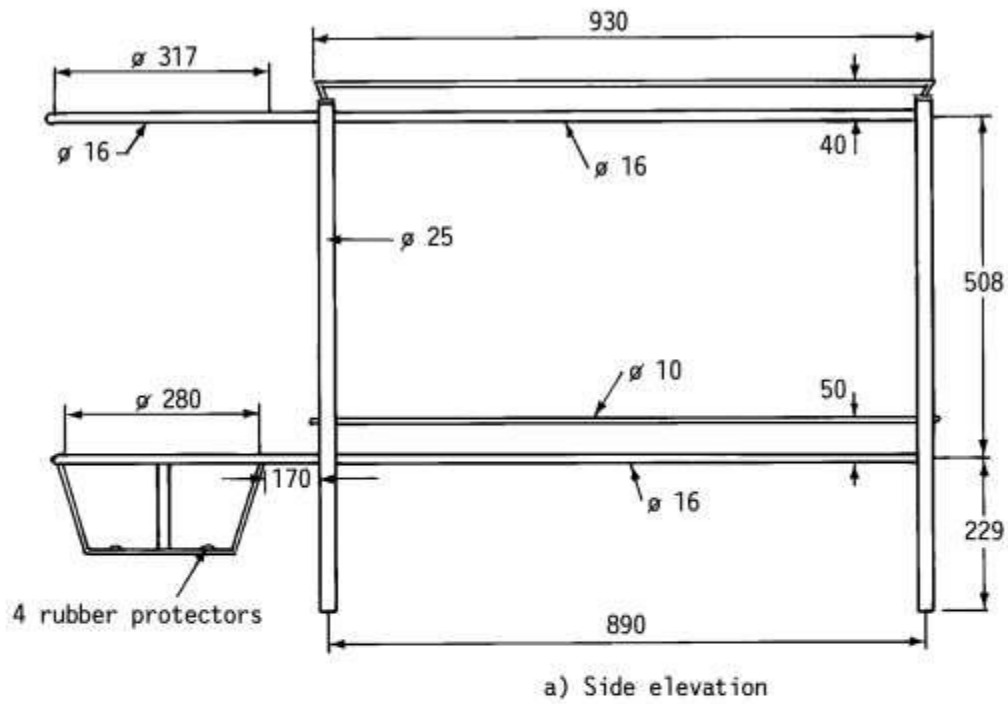


Figure 5 — Type 6 dressing trolley

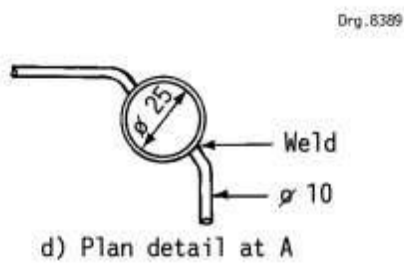
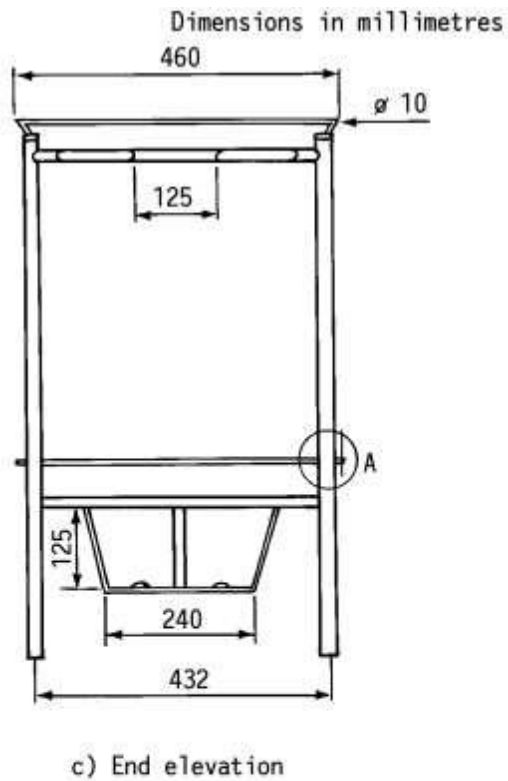


Figure 5 (concluded) — Type 6 dressing trolley

5 Requirements

5.1.1 General

The material used shall be smooth and free from pits, deep scratches, laps, crimps, buckles, and other surface defects.

5.1.2 Mild steel

5.1.2.1 Mild steel tubes

Mild steel tubes shall comply with the relevant requirements in Table 3.

Table 3: Grade and Mechanical properties for tube

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

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5.1.2.2 Other mild steel components

Mild steel components shall be of good quality mild steel free from cracks, fins, laminations, and other defects.

5.1.3 Stainless steel

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

5.1.4 Paint

The paint shall be an enamel or a system comprising a primer and an enamel.

5.1.5 Epoxy-powder coatings

Epoxy-powder coatings shall be based on a compounded epoxy resin suitable for application by a fluidized-bed process or an aerostatic spray process.

5.1.6 Welding electrodes and filler rods

Filler metal used in fusion welding and braze welding shall be such as will produce a joint complying with the relevant requirements of 5.3.1.

5.2 Castors

The castors fitted to the trolleys shall be swivel castors of diameter 7,5 mm that comply with the requirements of ISO 22883.

5.3 Welded joints

5.3.1 Fusion-welded and braze-welded joints

Parts joined by fusion welding and braze welding shall be close fitting and in correct alignment and the whole of the joint shall be welded. Weld faces shall be smooth, clean, and free from porosity, cavities, and trapped slag. The weld faces 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. Where welding is done from one side only, there shall be full penetration of the joint. Where relevant, all surfaces shall be smoothed and cleaned of flux, slag, and spatter.

5.3.2 Spot-welded joints

Parts joined by spot-welding shall be close fitting and in correct alignment. Any spot-welding used shall be resistance spot-welding and there shall be proper fusion between the parts welded. The distance between spots shall be such as to provide a strong and acceptable joint.

5.4 Frame

5.4.1 General

The frame shall be constructed of stainless steel or mild steel tubes, as specified by the purchaser, of wall thickness at least 1,60 mm. The nominal outside diameter of the tubes of vertical members shall be at least 25 mm. The nominal outside diameter of the tubes of horizontal members shall be at least 15 mm and the wall thickness at least 1,60 mm. Any flattening or reduction in diameter of the tubes during fabrication shall not exceed 4 % of the actual outside diameter of the tubes. When the completed frame is placed on its castors on a flat horizontal surface, each vertical member shall not be more than 3 mm out of plumb and each horizontal member shall not be more than 3 mm out of level.

5.4.2 Type 3 and type 5 trolleys

The casing that forms the back, sides, and front of the upper portion of the trolley shall be so formed from a single sheet of mild steel or stainless steel (as relevant) that the top, the bottom, and the centre part of the front are open. The top and bottom shall be closed with sheets of the same material as the casing, flanged for not less than 25 mm and securely spot-welded to the casing. The top shall overlap the casing and the bottom shall fit into the casing. The casing shall be securely welded to the frame. The drawer (see 5.8) shall be fitted into the opening in the front of the casing.

5.5 Shelves

Both shelves shall be of 1,20 mm stainless steel and having corners cut away as illustrated in figure 6.

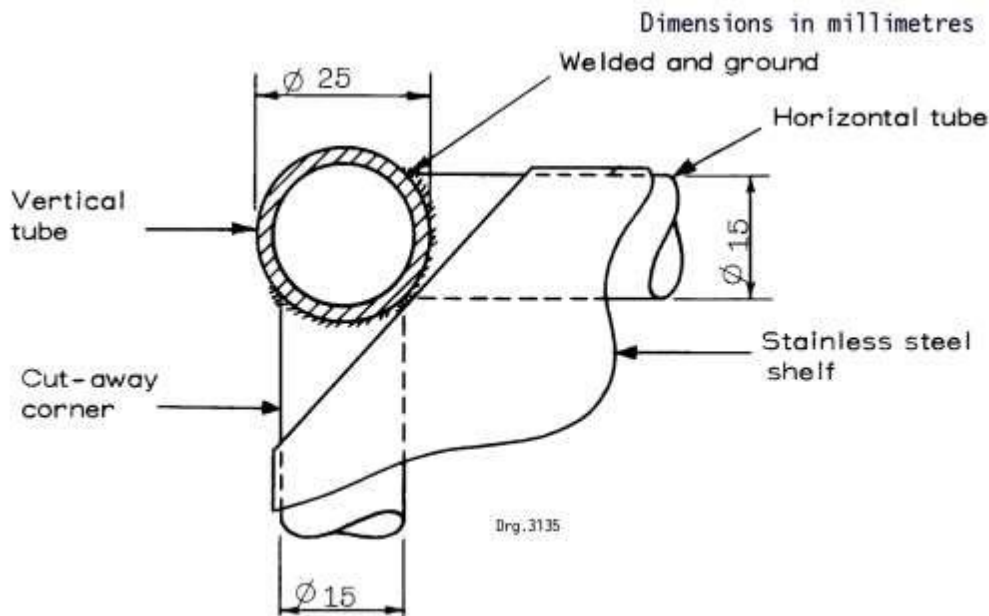


Figure 6 — Showing cut-away corner

5.6 Guard rail

A continuous guard rail of stainless steel or nickel-chromium plated mild steel rod, as specified by the purchaser, of at least 10 mm nominal diameter shall run along the back and both sides of, and 40 ± 3 mm above the top of, type 1, type 3 and type 4 trolleys and, in the case of type 6 trolleys, the guard rail shall extend around all four sides of the top. The rail shall be splayed approximately 25 mm in an outward direction and its supports shall be welded to the lower (concealed) end of the plugs (see 5.7) in the vertical members of the frame. A continuous guard rail, of the same material as above, shall be fitted around and 50 mm above the bottom shelf in the case of type 4, type 5 and type 6 trolleys.

5.7 Plugs

The top of each vertical member of the frame shall have a close-fitting stainless steel plug, securely attached to the frame. When relevant, the plugs shall be drilled to accommodate the free ends of the rail supports.

5.8 Drawers

The drawers shall be manufactured from mild steel sheet and shall have one or more compartments as specified by the purchaser. The construction of the drawers shall comply with the requirements for drawers specified in SANS 343. Handles for drawers shall be of metal with a bright nickel-chromium plated finish.

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If the plated handles have screwed fixings, the screw threads shall also be plated.

5.9 Supports for shelves

The manufacturer shall fit the stainless steel shelves to the trolleys in an acceptable manner that does not cause noise in use.

5.10 Electrical conductivity

Conductivity between the shelves and the frame and between the frame and the floor shall comply with the relevant safety requirements of SANS 10142-1.

5.11 Finish

5.11.1 General

All surfaces shall be clean, smooth, and free from pits, buckles, deep scratches, and other defects. All sharp edges and corners shall be smoothed.

5.11.2 Stainless steel

Stainless steel surfaces shall have a medium directional satin finish of acceptable quality or a bright polished finish.

5.11.3 Nickel-chromium plating

The nickel-chromium plated surfaces shall be bright, smooth, and free from cloudy patches. The plating shall be uniform in thickness and shall adhere firmly to the base metal. The plating system used, the thickness of the relevant electrodeposited layers, and all other requirements shall be as laid down for service condition 3 (severe service condition) in ISO 1456.

5.11.4 Enamel or epoxy-powder coating finishes

Unplated mild steel surfaces shall have an enamel finish or an epoxy-powder coating finish, as specified by the purchaser, complying with the relevant requirements of SANS 778 and of the colour specified by the purchaser.

5.12 Buffer wheels

When so specified by the purchaser, buffer wheels shall be fitted to the legs of the trolley and located just above the castor fittings. The rims of the buffer wheels shall be of solid, smooth nonmarking hard rubber or plastics material.

6 Mark

6.1 The manufacturer's name or trade name or registered trademark shall be legibly and indelibly marked on every trolley.

6.2 Language of marking shall be that of the official language of the member state

6.3 Lot or batch number

6.4 The marking, which shall be not less than 500 mm² in area, shall be embossed or stamped on the frame tubing or shall be applied by means of an indelible transfer. It shall not be applied to a detachable plate.

7 Sampling and compliance

7.1 Sampling

The following sampling procedure shall be applied in determining whether a lot submitted for inspection and testing complies with the relevant requirements of the standard. The samples so taken shall be deemed to represent the lot.

7.1.1 Sample for inspection

From the lot take (when relevant, at random) the number of trolleys shown in column 2 relative to the appropriate lot size shown in column 1 of table 3.

7.1.2 Sample for test

After inspection of the sample taken in accordance with 7.1.1, take from it (when relevant, at random) the number of trolleys shown in column 3 relative to the appropriate lot size shown in column 1 of table 3.

7.2 Compliance with the standard

The lot shall be deemed to comply with all the requirements of the standard if after inspection and testing of the samples taken in accordance with 7.1 no defective is found.

8 Inspection and methods of test

8.1 Inspection

Visually examine, and check the dimensions of the unit(s) of the sample taken in accordance with 7.1.1 for compliance with the relevant requirements of sections 4, 5, and 6 that are not tested in terms of 8.2.

8.2 Methods of test

Test, in accordance with the relevant methods given in SANS 10142-1 and CD-ARS 2061 Patient's Trolley, each unit in the sample taken in accordance with 7.1.2 for compliance with the requirements of 5.10, 5.11.3, and 5.11.4.

Bibliography

SANS 726:, Medical trolleys (dressing/medicine; instrument; anaesthetists' dressing)

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