# APPENDIX D

Amendment No. 1 : October 1980

to

GUARD RAILS FOR HOSPITAL BEDS

Scope of Amendment. The NOTE to the scope and the requirements for mild steel tubes, frame, and mounting brackets have been amended.

Subsection 0.1. Amend the title of SABS 657 to read "Steel tubes for non-pressure purposes Part I: Steel tubes for scaffolding and structural and general engineering purposes".

Subsection 1.1. Renumber the existing NOTES (b) and (c) to read (d) and (e) and insert the following new NOTES (b) and (c) as follows:

b) When relevant, that the lower longitudinal member shall be square (see 3.4)
c) That only one fastening bracket is required instead of two (see 3.6)

Subsection 3.1.2. Amend the text to read as follows:

Mild steel tubes shall comply with the relevant requirements for Type ERW Grade 230 or Grade 250 tubes of SABS 657: Part I.

Subsection 3.4. Insert the following between the first and second sentences:

When so specified by the purchaser, the lower longitudinal member shall be made from stainless steel square tube of nominal outside dimensions at least 25 mm x 25 mm and nominal wall thickness at least 0,90 mm, or from mild steel square tube of nominal outside dimensions at least 25 mm x 25 mm and nominal wall thickness at least 1,20 mm, as relevant. The joints between the square and round tubes shall be fusion welded.

Subsection 3.5. In the NOTE substitute "outside dimension" for "diameter" and "dimension" for the second "diameter".

Subsection 3.6. In the second sentence delete "two" and substitute "one or two, as required by the purchaser".

SPECIFICATION

for

# GUARD RAILS FOR HOSPITAL BEDS
(Metric Units)

## 0. APPLICABLE STANDARDS

0. 1 The latest issues of the following standards form part of this specification:

SABS 657 Steel tubes for general engineering purposes
SABS 663 Primer and enamel paint for hospital furniture

## 1. SCOPE

1. 1 This specification covers the material, dimensional, and constructional requirements for removable guard rails intended for use on hospital beds.

NOTE: The following requirements must be specified in tender invitations and in the order or contract:

a) Whether stainless steel or mild steel guard rails are required (see 3. 3)
b) Whether an enamel finish or a powder coating finish is required (see 3. 7)
c) The colour of the finish (see 3. 7)

## 2. DEFINITIONS

2. 1 For the purposes of this specification the following definitions shall apply:

Acceptable. Acceptable to the purchaser.
Bright polished finish. A bright reflective finish obtained by polishing the surface without complete obliteration of grinding marks or other surface texture.
Directional satin finish. A finish obtained by so grinding the surface with fine abrasives (without subsequent polishing) as to leave a silky appearance, with the abrasion marks running in the same general direction.

3. REQUIREMENTS

3.1 MATERIAL

3.1.1 Rolled Steel Bar and Strip. Rolled steel bar and strip shall be of a good quality mild steel and shall be free from cracks, fins, laminations, and other defects.

3.1.2 Mild Steel Tubes. Mild steel tubes shall comply with the relevant requirements for Grade 56 or Grade 68 Class D2T2 Tubes of SABS 657.

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

3.1.4 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 3.2.

3.1.5 Paint. The paint used shall be an enamel, or a system comprising a primer and an enamel, complying with the relevant requirements for Type III (catalyst-hardened) paint of SABS 663.

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

3.2 FUSION-WELDED JOINTS. Parts joined by fusion welding shall be close fitting and in correct alignment, and the joint shall have mechanical properties and, when relevant, corrosion resistance of at least the same order as those of the parent metal. Fusion welding and braze welding shall be carried out by acceptable methods. Weld faces shall be smooth, clean, and free from porosity, cavities, spatter, and trapped slag. They 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. There shall be full penetration of the joint, even where welding is done from one side only.

3.3 DESIGN AND DIMENSIONS. The design shall be generally in accordance with that shown in Fig. 1. The dimensions shall conform to those given in Fig. 1 and in 3.4 - 3.6 inclusive. Except where otherwise indicated, the dimensions shall be subject to a tolerance of ± 5 mm. Normal mill tolerances shall apply.

The guard rails shall be of stainless steel or of mild steel, as required by the purchaser.

3.4 FRAME. The frame shall be made from stainless steel tube of nominal outside diameter at least 25 mm and nominal wall thickness at least 0,90 mm, or from mild steel tube of nominal outside diameter at least 25 mm and nominal wall thickness at least 1,20 mm, as relevant. The bends shall have an inside radius not exceeding 75 mm.

3.5 FILLING MEMBERS. The frame shall have three equally spaced longitudinal filling members made from stainless steel tube of nominal outside diameter at least 15 mm and nominal wall thickness at least 0,90 mm, or from mild steel tube of nominal outside diameter at least 15 mm and nominal wall thickness at least 1,20 mm, as relevant. The filling members shall be fusion welded to the frame.

NOTE: There shall be no wrinkling of the tubes, and any flattening or reduction in diameter shall not exceed 4 % of the actual outside diameter of the tube.

3.6 MOUNTING BRACKETS. One end of each frame shall have two acceptable brackets (made from round bar of diameter at least 12 mm) that are so welded, in the positions shown in Fig. 1, as to hook round the vertical side member of the head bow of a bed. The lower longitudinal member of the guard rail frame shall be fitted with two acceptable fastening brackets capable of being so adjusted longitudinally as to fit over the side rails of beds having different types of mattress seat. The brackets shall be of flat strip of section at least 35 x 6 mm, (or other equivalent section), shall have acceptable locking screws, and shall hook over the side rails of the bed. The brackets shall be so arranged as to produce pairs of guard rails (one right-handed and one left-handed for mounting on the right and left sides of a hospital ward bed respectively). The brackets shall be padded acceptably to prevent damage to the bed parts with which they come in contact.

3.7 FINISH. All visible surfaces shall be clean, smooth, and free from buckles, dents, pits, deep scratches, and other defects. All exposed edges shall be free from roughness and sharpness. Stainless steel surfaces shall have a fine directional satin finish or a bright polished finish. The quality of the finish shall be at least equal to that of the finish on the relevant reference sample held by the South African Bureau of Standards[1]. Mild steel surfaces shall have a smooth enamel finish or a smooth powder coating finish, as required by the purchaser, and in the colour specified by the purchaser. The thickness of enamel film shall be at least 35 µm and if a primer is used the thickness of the system shall be at least 60 µm. The thickness of a powder coating film shall be at least 60 µm.

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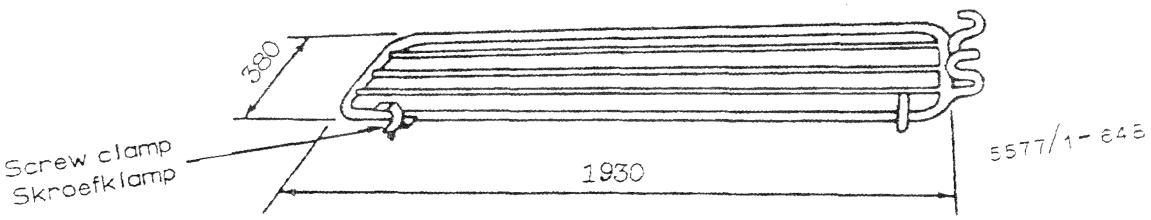
[1] Manufacturers may on application to the South African Bureau of Standards inspect the reference sample.




Dimensions in millimetres
Afmetings in millimeter

Fig. 1 — Guard Rail
Skutreling