UDC 624.21.097

CKS 230-1970

CENTRAL STANDARDIZATION COMMITTEE

SPECIFICATION

FOR

BARRIERS FOR BRIDGES (TRAFFIC AND PEDESTRIAN)

Approved by the

CENTRAL STANDARDIZATION COMMITTEE

July 1970

Published by the

SOUTH AFRICAN BUREAU OF STANDARDS

ISBN 0-626-01290-2

Gr 5

NOTICE

This specification has been approved by the Central Standardization Committee, a Committee appointed to promote the standardization and co-ordination of purchases by Government Departments and Semi-Government Organizations in the Republic of South Africa.

Except for purposes of tender or contract no person may claim or create the impression that commodities comply with this specification.

Obtainable from the S A Bureau of Standards
Private Bag X191
PRETORIA
sabs pta

SPECIFICATION

for

BARRIERS FOR BRIDGES (TRAFFIC AND PEDESTRIANS)

SECTION 0. APPLICABLE STANDARDS

0.1 The latest issues of the following standards form a part of this specification:

BS 1471	Drawn tube
BS 1472	Forging stock and forgings
BS 1473	Rivet, bolt and screw stock
BS 1474	Extruded round tube and sections
BS 3987	Anodized wrought aluminium
CKS 149	Steel guard rail for highways
SABS 61	Black bolts and nuts (hexagon and square)
SABS 679	Zinc chromate primers for steel
SABS 763	Hot-dip (galvanized) zinc coatings (other than on sheet and wire)

SECTION 1. SCOPE

1.1 This specification covers steel, aluminium, and concrete barriers for the protection of traffic and/or pedestrians on highway bridges.

NOTE: The attention of users of this specification is drawn to the following requirements that must be specified in tender invitations and in the order or contract:

a) Material (see 3.1.1)

b) Type (see 3.2)

c) Design (see 3.3)

d) Finish and, in the case of an anodized coating on aluminium and when relevant, the colour (see 3.6)

ISBN 0-626-01290-2

SECTION 2. DEFINITIONS

2.1 For the purposes of this specification the following definitions shall apply:

Acceptable. Acceptable to the purchaser.

Combined traffic-pedestrian barrier. A barrier designed for the protection of traffic and pedestrians.

Panel. An area of the roadway or the walkway (as relevant) face of a barrier that is limited longitudinally by adjacent rail supports.

Pedestrian barrier. A barrier designed for the protection of pedestrians only.

Traffic barrier. A barrier designed for the protection of traffic only.

SECTION 3. REQUIREMENTS

3.1 MATERIALS

3.1.1 Barriers. Barriers shall be made of one of the following materials, as specified by the purchaser:

a) Steel. Steel shall be of Type A or, if a steel containing copper[1] is required by the purchaser, Type B. The composition of the steel shall comply with the relevant requirements given in Table 1. The steel shall have a yield stress of at least 350 MN/m^2, an ultimate tensile stress of at least 500 MN/m^2 [2], and an elongation (over a gauge length of 50 mm) of at least 22 per cent.

TABLE 1 - STEEL COMPOSITION

1	2	3
Property	Requirement, per cent	
	Type A	Type B
Copper content, min.	-	0.25
max.	-	0.55
Carbon content, max.	0.22	0.12
Manganese content, max.	1.25	0.50
Sulphur content, max.	0.05	0.05

---

[1] Copper-bearing steel is, in normal atmospheres, corrosion resistant, but for use in atmospheres with a high content of corrosive substances the purchaser should, before specifying this material, consult the manufacturer.

[2] Manufacturers of barriers should take into consideration the fact that the yield stress and the ultimate tensile stress of hot rolled steel required in the annealed or normalized condition or in coils will be approximately 35 MN/m^2 less than the corresponding figures specified in 3.1.1(a).

b) Aluminium. An aluminium alloy that complies with the relevant requirements of BS 1471, 1472, or 1474.

c) Concrete. Concrete of acceptable quality.

3.1.2 Bolts and Nuts. Bolts and nuts shall be of a material that complies with, in the case of those made of steel, SABS 61, and in the case of those made of aluminium, BS 1473.

3.1.3 Washers. Washers shall be of steel or aluminium of good commercial quality.

3.2 TYPES. The barriers shall be of one of the following types, as specified by the purchaser (see Figure 1):

a) Type 1: Traffic barriers

b) Type 2: Pedestrian barriers

c) Type 3: Combined traffic-pedestrian barriers

d) Type 4: Combined traffic-pedestrian barriers for bridges over railway tracks only.

3.3 DESIGN AND HEIGHTS. The design of the barriers shall be as specified by the purchaser[3]. The overall height (including that of the parapet wall, if any) from the top of the roadway, walkway, or kerb, as relevant, to the top of the barrier shall be as follows:

Type	Overall height, mm, min.
1	700
2	1100
3	1100
4	1450

3.4 WELDING. Welds in steel barriers may be carried out by any acceptable process. Welds in aluminium barriers shall be carried out by the argon-arc process. The profiles of a weld shall merge smoothly into the adjacent surfaces of the parent metal without excessive undercut or overlap. Weld faces shall be reasonably uniform and shall be free from excessive porosity, cavities, and trapped slag. The weld metal, the heat affected zone, and the adjacent parent metal shall be free from cracks.

---

[3] The designs given in CKS 149 may, in the case of traffic barriers, be useful.