Sri Lanka Standard

SPECIFICATION FOR CERAMIC PEDESTAL WASHDOWN WATER CLOSET PANS AND TRAPS

SRI LANKA STANDARDS INSTITUTION

DRAFTING COMMITTEE ON SANITARY APPLIANCES

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FOREWORD

This Sri Lanka Standard was authorized for adoption and publication by the Council of the Sri Lanka Standards Institution on ...87-09-26 after the draft finalised by the Drafting Committee on Sanitary appliances was approved by the Civil Engineering Divisional Committee.

In Sri Lanka, pedestal washdown water closet pans and traps are manufactured mostly from vitreous china and, this standard covers the specific requirements for ceramic pedestal washdown water closet pans. General requirements for sanitaryware are covered in SLS 229.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or observation shall be rounded off in accordance with CS 102. The number of figures to be retained in the rounded off value shall be the same as that of the specified value in this standard.

In the preparation of this standard considerable assistance obtained from the publications of the British Standards Institution is gratefully acknowledged.

1 SCOPE

This specification lays down the requirements on sizes, construction, dimensional tolerances and finish in ceramic pedestal washdown water closet pans to be used with independent cisterns.

2 REFERENCES

This specification makes reference to the following Sri Lanka Standards

CS 102 Presentation of numerical values

CS 124 Test sieves

SLS 229 General requirements for sanitaryware

3 DEFINITIONS

For the purpose of this specification the following definitions shall apply.

3.1 water closet pans : A sanitary appliance, for the reception and flushing away of human solid and liquid excrement, consisting of a bowl with an inlet for flushing water and a trapped outlet.

3.2 pedestal water closet pan : A water closet pan which has an integral supporting base.

3.3 washdown water closet pan : A water closet pan in which the excrement falls into the water in the trap and is subsequently removed by the momentum of the flushing water.

3.4 flushing cistern : A cistern provided with a manually operated mechanism for the rapid discharge of the contained water to a sanitary appliance for purposes of cleaning the same and carrying away its contents to a discharge pipe work system.

3.5 connector : A straight or bent pipe for connecting the water closet to a discharge pipe work system.

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3.6 trap : A part of the appliance to retain water to prevent the passage of foul air.

3.7 water seal : The water in the trap which acts as a barrier to the passage of foul air through the trap.

4 REQUIREMENTS

4.1 Material

The material used in the manufacture of pedestal washdown water closet pans, traps and connectors shall conform to the requirements specified in SLS 229.

4.2 General requirements

General requirements specified in SLS 229 shall be applicable to pedestal washdown water closet pans and connectors.

4.3 Specific requirements

4.3.1 Each water closet shall have an integral P-type or S-type trap or have provision to connect a suitable bend as the case may be. [illegible] suitable bend are given in Figure 2.

4.3.2 Each water closet shall be provided with not less than two floor fixing holes having a minimum diameter of 6.5 mm, placed symmetrically about a centre line. It shall have provision for self drainage and shall give ready access of air to the flush pipe at the end of the flush. The pan shall have an inlet or a supply horn at the level of the flushing rim, for connecting the flush pipe.

4.3.3 Where required by the sanitation authority having jurisdiction over the area of installation, each pedestal water closet shall have an antisyphonage vent horn on the outlet side of the connector and on either right or left hand or backward, set out at a suitable angle and with invert of vent horn not below the centre line of the outlet.

4.4 Dimensions and tolerances

4.4.1 The dimensions of water closet pans shall conform to those given in Fig. 1 and Tables 1 and 2. The dimensions of the bend shall conform to those given in Fig. 2.

4.4.2 It is not intended to limit the designs and shapes of the water closet to the illustrations shown in this specification, but the limiting dimensions specified are binding.

4.5 Finish

All surfaces shall be uniformly finished. The surfaces of the pan, trap and connector shall be glazed smooth. The serrated exterior of the spigot at the discharge end of the trap shall not be glazed.

5 FLUSHING TESTS

5.1 Pedestal washdown water closet pans shall satisfy the requirements of the tests given under 5.2.1, 5.2.2 and 5.2.3.

5.2 Tests No. 1 and No.2 given below shall be conducted by connecting the water closet to a low level cistern. A cistern of capacity not less than 9 litres shall be fixed such that the height between the top of water closet pan and bottom of cistern shall be 450 mm and the water closet pan shall be connected with the cistern by a 35 mm nominal diameter flush pipe.

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5.2.1 Test No. 1 : The water closet shall be filled with water to its normal water seal level and charged with six pieces of usual toilet paper or polythene sheet of 0.05 mm thickness approximately 150 mm x 115 mm in size and losely crumpled. It shall then be flushed. This test shall be repeated four times and the pan shall discharge the full charge of paper at least thrice out of four times.

5.2.2 Test No. 2 : The whole of the interior surface of the water closet pans to 40 mm below the flushing rim shall be sprinkled evenly and uniformly with a substance such as powdered quartz or lamp black. If the material used is quartz it should be screened using a test sieve of aperture size 1.18 mm conforming to CS 124. It shall then be flushed, the water closet pan being observed closely during the flush; immediately after the flush there shall be no residue remaining on the pan..

5.2.3 Test No. 3 : The water closet when sealed at the bottom of the trap in line with the back plate, shall be capable of holding not less than 9 litres of water between the normal water level and the highest possible water level of the closet as installed.

6 MARKING

The pedestal washdown water closet pans shall be clearly and indelibly marked at a prominent place visible even after the water closet pans are installed with the name or trade-mark of the manufacturer; connectors shall also be clearly and indelibly marked at a prominent place with the name or trade mark of the manufacturer.

7 SAMPLING AND CRITERIA FOR CONFORMITY

7.1 Lot

All pedestal washodown water closet pans manufactured under same conditions of manufacture shall constitute a lot.

7.2 Scale of sampling

7.2.1 Samples shall be tested from each lot separately to ascertain the conformity of the pans to the requirements of this specification.

7.2.2 Number of pans to be selected from a lot shall be in accordance with Table 3 of SLS 229.

7.2.3 The pans shall be selected at random. In order to ensure randomness of selection random number tables as given in ALA 428 shall be used.

7.3 Number of tests

7.3.1 General requirements

Pans shall be tested in accordance with 14 of SLS 229.

7.3.2 Specific requirements

Five pans shall be selected at random and inspected for requirements given in 4.3, 4.4 and 4.5 of this specification.

7.3.3 Flushing test

Each pan selected as in 7.3.2 shall be subjected to the flushing test as given in 5 of this specification.

7.4 Criteria for conformity

A lot shall be declared as conforming to the requirements of this specification if the following are satisfied;

7.4.1 Pans and test pieces satisfy the requirements given in 14 of SLS 229.

7.4.2 Each pan tested as in 7.3.2 and 7.3.3 satisfies the relevant requirements.

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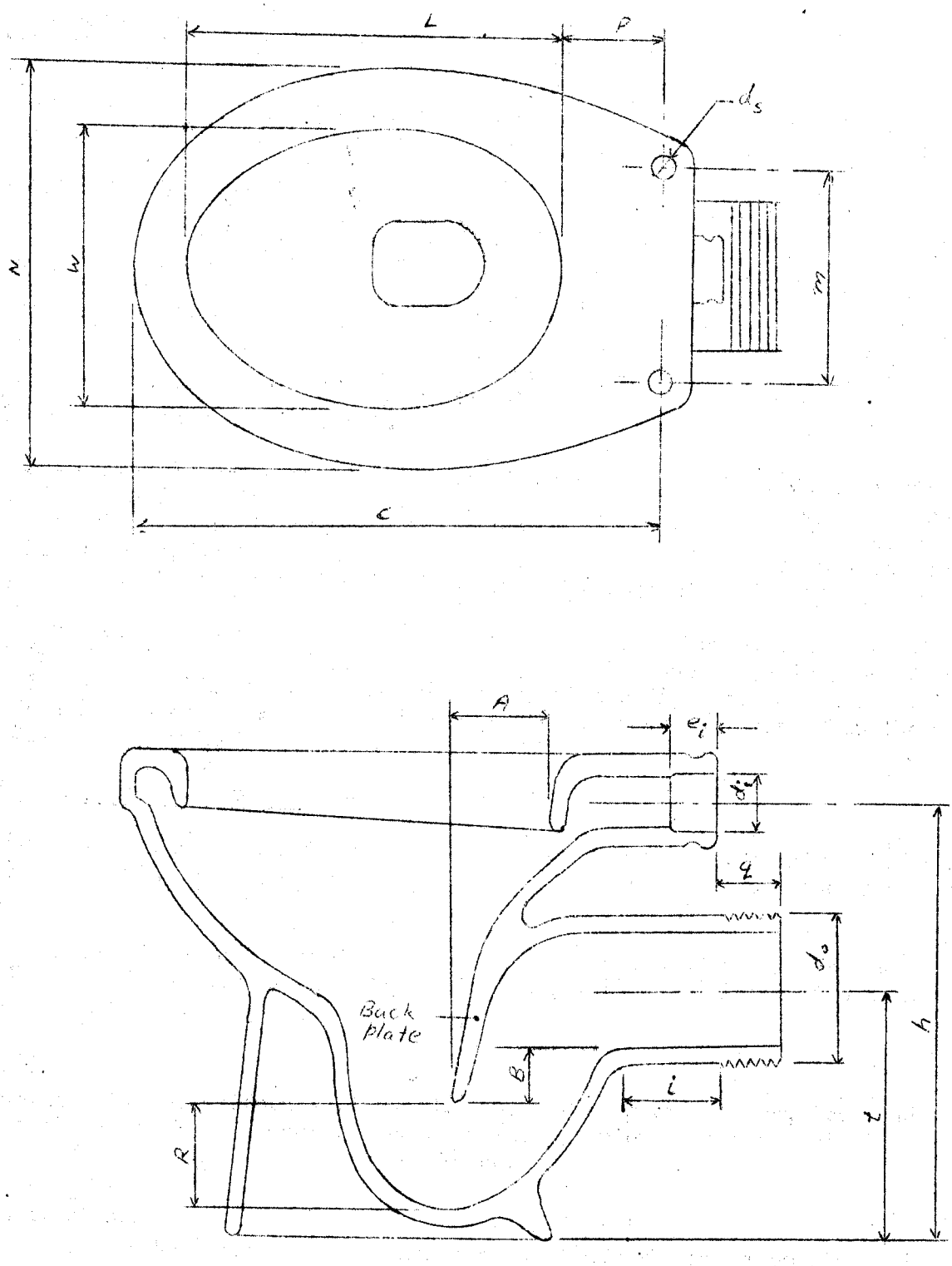

FIGURE 1 - Functional dimensions and connecting dimensions of water closet pans.

Table 1 : Connecting dimensions

(unit : mm)

Description	Reference on figure	Dimensions (see fig. 1)
Internal diameter of inlet	d_i	50 ± 2
Internal diameter of outlet	d_e	102 ± 5
Depth of inlet socket	e_i	25 Min.
Height of centre line of inlet from floor level	h	350 ± 10
Length of straight part of outlet glazed and without [illegible]s	i	40 Min.
Dimension between centres of seat bolt holes	m	168 ± 10
Diameter of seat bolt holes	ds	13 ± 2
Distance between vertical plane of outlet opening and inlet opening	q	0 to 20
Height of centre line of outlet from floor level	t	180 ± 110

Table 2 : Functional dimensions other than connecting dimensions

(unit : mm)

Description	Reference on figure	Dimension (see fig. 1)
Distance between a vertical line from tip of back plate to inside face of flush rim at back	A	95 Max.
Depth of water seal	B	50 Man.
Length from seat bolt hole to front of pan	C	420 to 445
Width of opening	V	250 Min.
Length of opening	L	290 Min.
Width of pan	N	360 ± 10
Distance from centre of seat bolt holes to inside face of flush rim at back	P	85 Max.
Clearance below tip of back plate	R	75 Min.

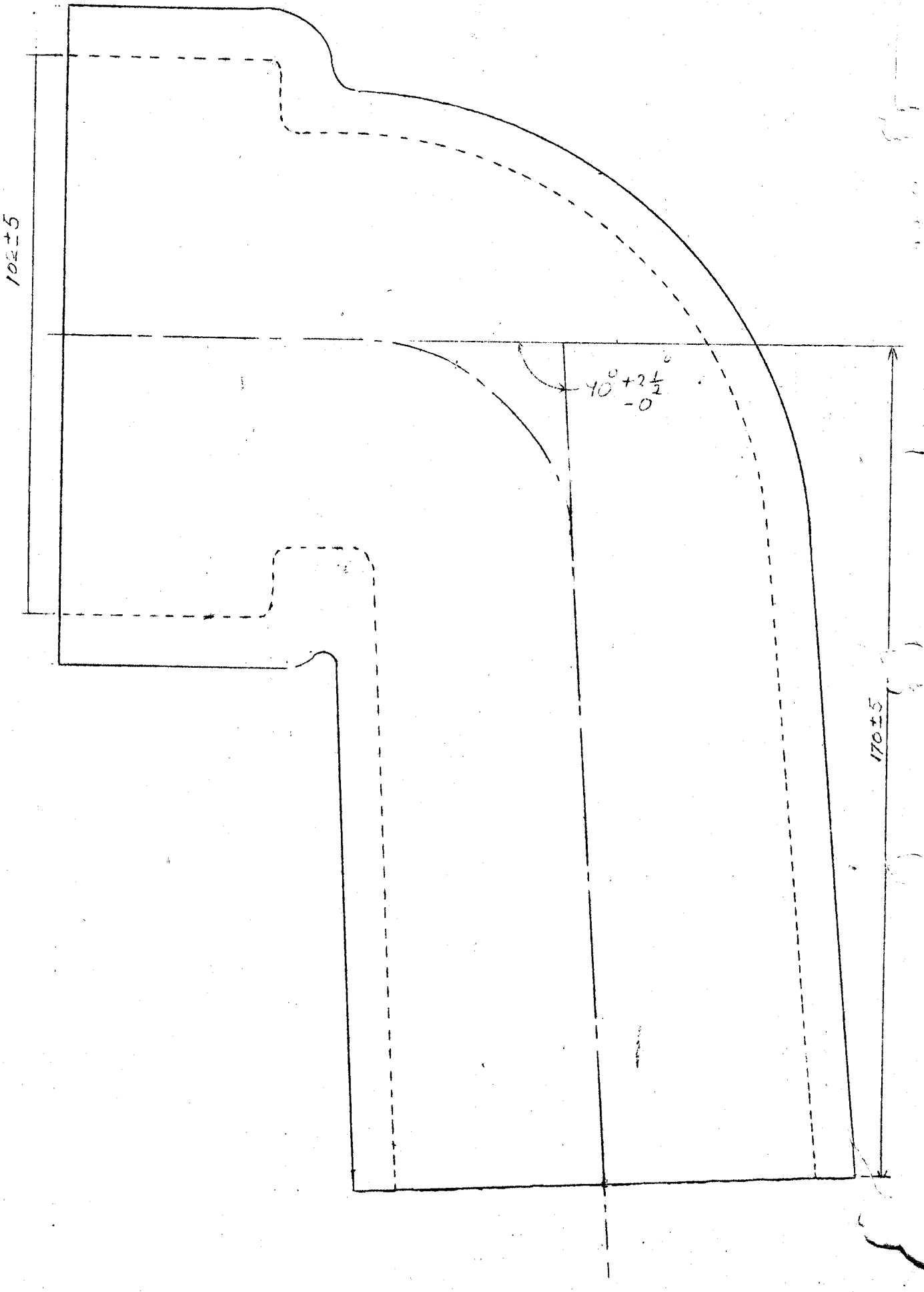

FIGURE 2 - Dimensions of bend