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SINGAPORE STANDARD

Specification for pressed steel sectional rectangular tanks

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This Singapore Standard having been approved by the Building and Construction Industry Standards Committee was endorsed by the Standards Council on 30 March 1979.

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SPECIFICATION FOR PRESSED STEEL SECTIONAL RECTANGULAR TANKS

FOREWORD

This Singapore Standard was prepared by the Technical Committee on Pressed Steel Sectional Rectangular Tanks under the authority of the Building and Construction Industry Standards Committee.

This Standard was originally based on BS 1564 : 1949 and was first published in 1970. The present revision based on BS 1564 : 1975 (revised) was undertaken to provide tank sizes in metric units and to cater in particular for plates which are now being supplied in metric thicknesses. It is pointed out however, that the sectional dimensions in this revision are interchangeable with the imperial dimensions in the 1970 edition of the standard.

Sectional tanks provide a convenient means for the bulk storage of a variety of liquids not subject to pressure other than static head. As with all sectional assemblies, the components are readily transportable and, subject to unit multiples, can be erected to give varying proportions of length to breadth and depth. It is also possible, by arrangement between the purchaser and the manufacturer at the time of the enquiry and order, to make provision for future extension in capacity by increase in floor area or (within limits) depth.

Tanks with internal flanges to the bottom are suitable for use where they are to be erected on a solid level floor or with internal flanges throughout where access to the exterior for erection is precluded by reasons of space inside a building.

Tanks with external flanges are suitable for use where a plain internal surface is necessary, or where there are no restrictions as to external access or where the exterior of the tank is to be lagged.

Pressed steel tanks are not recommended for a depth greater than 4880 mm.

It is recommended that all pressed steel sectional tanks should be inspected inside and outside at intervals not greater than 12 months. At such periodical inspection, care should be taken to examine the stays, stay cleats, through bolts and nuts, ladders and the surfaces of the plates. Where there is excessive corrosion apparent the component affected should be replaced.

Water and other liquids vary in their corrosive action on the inside of the tank. Corrosive action on the outside of the tank varies according to location and climatic and other conditions. It has not therefore been found practicable to specify appropriate internal or external coatings; these should be the subject of mutual arrangement between the purchaser and the manufacturer at the time of the enquiry and order, who may refer to BS 5493 for details on use of relevant protective coatings.

Attention is drawn to the possibility that some of the elements of this Singapore Standard may be the subject of patent rights. Enterprise Singapore shall not be held responsible for identifying any or all of such patent rights.

NOTE

1. *Singapore Standards (SSs) and Technical References (TRs) are reviewed periodically to keep abreast of technical changes, technological developments and industry practices. The changes are documented through the issue of either amendments or revisions.*
2. *An SS or TR is voluntary in nature except when it is made mandatory by a regulatory authority. It can also be cited in contracts making its application a business necessity. Users are advised to assess and determine whether the SS or TR is suitable for their intended use or purpose. If required, they should refer to the relevant professionals or experts for advice on the use of the document. Enterprise Singapore shall not be liable for any damages whether directly or indirectly suffered by anyone or any organisation as a result of the use of any SS or TR.*
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1. SCOPE

This Singapore Standard specifies requirements for pressed steel sectional rectangular tanks, working under a pressure not greater than the static head corresponding to the depth of the tank, built up of pressed steel plates 1220 mm square used to contain cold water, hot water, potable liquids, certain oils and chemicals. Tanks may be constructed as follows:

(a) with external flanges.

(b) with internal bottom flanges, external side and end flanges.

Two types are specified:

Type 1. With a combined double flange at an angle of 45° and 90° to the plane of the plate on all four sides as illustrated in Figure 1, with the flange corners welded.

Type 2. With a single flange at an angle of 90° to the plane of the plate on each of two, three or four sides, depending on its position in the tank. Type 2 tanks are illustrated in Figure 2, with the flange corners welded.

This standard does not provide for tanks subject to earth or other external pressure other than wind pressure.

NOTE. For an illustration of a typical tank with external flanges see Figure 8. For approximate weights and full nominal capacities (without freeboard) of open top tanks see Tables 1 to 4.

Tanks can also be assembled with all flanges internal with the addition of other components, but because of the difficulty of assembling and maintaining this type of tank they are not preferred.

All tanks can be supplied with open or closed top.

Information on erection and supports is also included.