

Specification for

Pressed steel sectional rectangular tanks

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Foreword

This British Standard was prepared under the authority of the Mechanical Engineering Industry Standards Committee and was first published in 1949. The present revision 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 1949 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 4 880 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.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This British 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 1 220 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. The plates of type 1 tanks are hot pressed complete.

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 cold pressed as 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 Table 1 to Table 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.

2 References

The titles of the British Standards referred to in this standard are listed on the inside back cover.

3 Information to be supplied with the enquiry and order

The following information, as appropriate, should be supplied by the purchaser with his enquiry or order.

- a) Type of tank required (clause 1), type of cover (if any), number and position and type of manhole(s), number of divisions if required.
- b) Capacity required in litres or dimensions in millimetres in multiples of 1 220 mm and whether any provision is to be made for future extension and if any level indicators are required.

c) Limiting conditions, if any, as to space and accessibility for erection, and whether the tank will be erected in a building or exposed to the weather, and the height above ground level it is to be installed.

d) Nature and density of liquid for which the tank is required. If corrosive, particulars to be given. If water, state whether hard or soft. The rate of filling and emptying the tank, head fluctuations and cycles per day.

e) Maximum and minimum temperatures and approximate rate of fluctuation and position of heating elements.

f) Any special requirements as to jointing material and as to internal and external coating or lagging.

NOTE 1 In the absence of any special requirements one coat of a suitable priming paint will be applied to protect the tank during delivery and erection. A minimum of two further coats should be applied after erection.

NOTE 2 Attention is drawn to the recommendations given in BS 5493.

g) Particulars of connections and drilling required and precise location on tank with dimensioned sketches, having regard to possible future requirements.

h) Whether external access ladders are required and, if so, particulars to be given.

i) Details of any existing or proposed supporting structure and height of bottom of tank above ground level so that the necessary scaffolding arrangements can be made to comply with statutory safety regulations.

j) Whether transverse supporting bearers are required and, if so, particulars as to span and end support to be given.

k) Whether the tank is to be used for other than a stationary application.

l) Whether inspection will be made by the representative of the purchaser at the works of the manufacturer.

m) Whether erection is to be carried out by the manufacturer at site; if so, information as to site conditions and accessibility to be given by the purchaser.

4 Working temperatures

For the purposes of this standard cold liquids are defined as those having a temperature not exceeding 38 °C and hot liquids are defined as those having a temperature exceeding 38 °C but less than 100 °C.