

SINGAPORE STANDARD

**Specification for glass reinforced
polyester sectional water tanks**



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sectional water tanks**

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Housing & Development Board

Institution of Engineers Singapore

J-EMS Enterprise Pte Ltd

Polyline Pte Ltd

PUB, the National Water Agency

SETSCO Services Pte Ltd

TUV SUD PSB Pte Ltd

Contents

| | Page |
|---|-------------|
| Foreword _____ | 7 |
| 1 Scope _____ | 8 |
| 2 Normative references _____ | 8 |
| 3 Terms and definitions _____ | 8 |
| 4 Construction of tank _____ | 10 |
| 5 Dimensions _____ | 11 |
| 6 Service requirements _____ | 11 |
| 7 Composition of panels _____ | 11 |
| 8 Fabrication _____ | 12 |
| 9 Components of GRP sectional water tanks _____ | 16 |
| 10 Test requirements _____ | 17 |
| 11 Skid base _____ | 19 |
| 12 Marking _____ | 19 |

Annexes

| | |
|---|----|
| A Permanent compressive strain test _____ | 21 |
| B Tensile strength _____ | 23 |
| C Flexural properties _____ | 26 |
| D Glass content of glass-reinforced laminates _____ | 29 |
| E Barcol hardness _____ | 31 |
| F Water absorption _____ | 33 |
| G Hydrostatic test _____ | 35 |
| H Leakage test _____ | 37 |
| I Deflection test _____ | 38 |
| J Luminous transmittance test _____ | 40 |

Tables

| | |
|--|----|
| 1 Visual defects _____ | 18 |
| 2 Physical properties of GRP panels _____ | 18 |
| E.1 Sample size for Barcol hardness test _____ | 32 |

Figures

| | |
|---|----|
| 1 Flange joints – Type 1 tank _____ | 13 |
| 2 Flange joints – Type 2 tank _____ | 14 |
| 3 Configuration of base panels _____ | 14 |
| 4a Layout of external system for supporting panels _____ | 15 |
| 4b Layout of internal stay bar system for supporting panels _____ | 15 |

| | Page |
|-----|--|
| 5 | Examples of unacceptable plinth construction _____ 16 |
| 6 | Concrete plinth / steel foundation _____ 20 |
| B.1 | Test piece _____ 24 |
| B.2 | Preparation of test pieces from a sheet of material _____ 25 |
| C.1 | Position of test piece in relation to length and width of sheet _____ 28 |
| C.2 | Position of test piece during test _____ 28 |
| E.1 | Diagram of Barcol impressor _____ 32 |
| G.1 | The hydrostatic tester _____ 36 |
| I.1 | Foundation _____ 38 |
| I.2 | Deflection test _____ 39 |
| J.1 | Positions for measuring horizontal luminous intensity in the tank _____ 40 |

Foreword

This Singapore Standard was prepared by a Working Group appointed by the Technical Committee on Building Maintenance and Management which is under the purview of the Building and Construction Standard Committee. It is a revision of SS 245 : 1995 – ‘Specification for glass reinforced polyester sectional water tanks’.

This revision brings the standard up-to-date and comprehensive by incorporating recommendations made in the latest relevant overseas standards as well as ensure relevance to the local regulations and good practices. The main revisions are:

- a) Better coverage of terms and definitions;
- b) New improved illustrations;
- c) Updated test methods;
- d) Language used has been simplified to enable easy understanding.

In preparing this specification, reference was made to the following overseas publications:

- 1) BS 2782-3 Method 335A : 1978 Methods of testing plastics – Mechanical properties - Determination of flexural properties of rigid plastics
- 2) BS 2782-10 : Method 1001 : 1977 Methods of testing plastics – Glass reinforced plastics – Measurement of hardness by means of a Barcol impressor
- 3) BS 2782-10 : Method 1002 : 1977 Methods of testing plastics – Glass reinforced plastics – Determination of loss on ignition
- 4) BS 2782-10 : Method 1005 : 1977 Methods of testing plastics – Glass reinforced plastics – Determination of flexural properties – Three point method
- 5) BS 4549-1 : 1997 Guide to quality control requirements for reinforced plastics mouldings – Guide to the preparation of a scheme to control the quality of glass reinforced polyester mouldings
- 6) BS EN 13121-3 : 2008 GRP tanks and vessels for use above ground – Design and workmanship
- 7) BS EN 13280 : 2001 Specification for glass fibre reinforced cisterns of one-piece and sectional construction, for the storage, above ground, of cold water
- 8) BS EN 13923 : 2005 Filament-wound FRP pressure vessels. Materials, design, manufacturing and testing

Acknowledgement is made for the use of the above references.

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.*
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Specification for glass reinforced polyester sectional water tanks

1 Scope

This Singapore Standard specifies the requirements for glass reinforced polyester (GRP) sectional tanks, with nominal capacity of at least 500 litres for above ground storage of water.

NOTE – GRP is also termed as fibre-glass reinforced polyester (FRP) in this standard.

2 Normative references

The following referenced documents are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

| | |
|-------------------|--|
| BS 21 | Pipe threads for tubes and fittings where pressure-tight joints are made on the threads |
| BS 3532 | Method of specifying unsaturated polyester resin systems |
| BS EN 1092 series | Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, PN designated |
| ISO 898-1 | Mechanical properties of fasteners made of carbon steel and alloy steel - Bolts, screws and studs with specified property classes. Coarse thread and fine pitch thread |
| ISO 898-2 | Mechanical properties of fasteners made of carbon steel and alloy steel - Nuts with specified property classes. Coarse thread |
| ISO 1460 | Metallic coatings - Hot dip galvanized coatings on ferrous materials - Gravimetric determination of the mass per unit area |
| ISO 1461 | Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods |
| JIS B 7516 | Metal rules |
| JIS C 1609-1 | Illuminance meters - Part 1: General measuring instruments |
| JIS C 1609-2 | Illuminance meters Part 2: Measuring instruments used in transaction or certification |
| SS 375 series | Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water |
| SS CP 48 | Water services |