CI/SfB
(53.1) Xn8

BALMORAL SECTIONAL TANKS LTD

M100 SECTIONAL TANK STANDARD SPECIFICATION

BALMORAL

1 General

1.1 The manufacture and design of Balmoral (Hot Press Moulded GRP Sectional Water Storage Tanks) shall be to the quality standard requirements of (BS EN ISO 9001) and shall comply with (BS7491:Part 3:1994) glassfibre reinforced plastic cisterns for cold water storage.

2 Process Requirements

2.1 Cisterns shall be manufactured by the Hot Press Moulded method, glass reinforced plastic, moulded at temperatures up to 150°C using isophthalic unsaturated polyester resins, UV stabilised and 'E' glassfibre reinforcement, colour grey.

2.2 The cistern design shall incorporate 1.00m x 1.00m pillow panels to the walls of cisterns with provision for flat panels for connections and fittings. Purpose made cover panels 1.00m x 1.00m and 1.00m x 0.50m flat panels positioned to give free draining channels.

2.3 Base panels available internally flanged (IFB) with 1.00m x 1.00m flat panels, fasteners internal, or externally flanged (EFB) with 1.00m x 1.00m flat panels and one pillow sump panel, fasteners external.

2.4 All surfaces of the panels shall be smooth and crevice free to provide hygienic finish and be dimensionally accurate with sharply defined profiles.

2.5 Float valve chambers to be provided with central hinged or lift off lockable ABS lid, with options of 180mm, 300mm and 500mm depth, where appropriate provision for Type A air gap in compliance with BS6281:Part 1:1992.

2.6 Man access 600mm dia either screwed or hinged and lockable.

2.7 All tanks deeper than 1.50m shall be fitted to client requirements with internal 316 stainless or GRP and external standard duty galvanised steel access ladders: to BS4211 with hooped safety cage as necessary.

2.8 Handrailing to BS5395:Part 3 is offered as an option and should be considered to meet particular contract needs.

3 Steelwork

3.1 Panels to be rigidly supported by a combination of 316 stainless steel tie rods internally and galvanised box section externally.

3.2 Steelwork designed to BS5950. Internal stainless steel 316/A4 grade and external mild steel galvanised to BS729. Cisterns to incorporate external wall bracing on depths 1.50m and greater and tie rods 2.00m and greater.

4 Insulation (Encapsulated)

4.1 Panels shall be factory insulated either on the top, sides and base as required, using the 40mm thick low density polyurethane (CFC free) BALCOOL system.

4.2 Panels to be insulated within a profiled face covering the maximum surface area and to be encapsulated with an external weather skin made from ultraviolet stabilised material providing total protection against weathering.

4.3 Connections to be fitted on flat insulated panels, and all holes shall be sealed with a recessed plastic section from the outer surface of the insulation skin to the cistern panel.

5 Foundation

5.1 All cisterns to be installed on either flat continuous foundation, close centre beams, pier walls or bearer beams conforming to manufacturer's specification of flatness and deflection and to be provided by the client.

6 Partitions

6.1 Where partitions are required, they will be full height using standard panels. Each

compartment will be capable of supporting water on either side with one side empty.

6.2 Where tank walls require external reinforcement, then partition walls shall be similarly reinforced in grade 316 stainless steel.

7 Connections

7.1 All connections to be supplied and installed by tank manufacturer.

7.2 Connections 54mm and below, plain/BSP threaded, 67mm and above flanged to PN16 unless otherwise stated.

7.3 Standard flanged connections as Balmoral 'BSTL' range, spool piece with internal support flange, external stub flange with loose galvanised ring.

7.4 All connections to be installed in accordance with Byelaw 30. Tank manufacturer should carry WRC approval for Byelaw 30 installations.

8 Installation

8.1 To be carried out by Balmoral approved installers.

8.2 BALSEAL extruded rubber sealing strip to be used covering full width of panel flange providing a watertight seal.

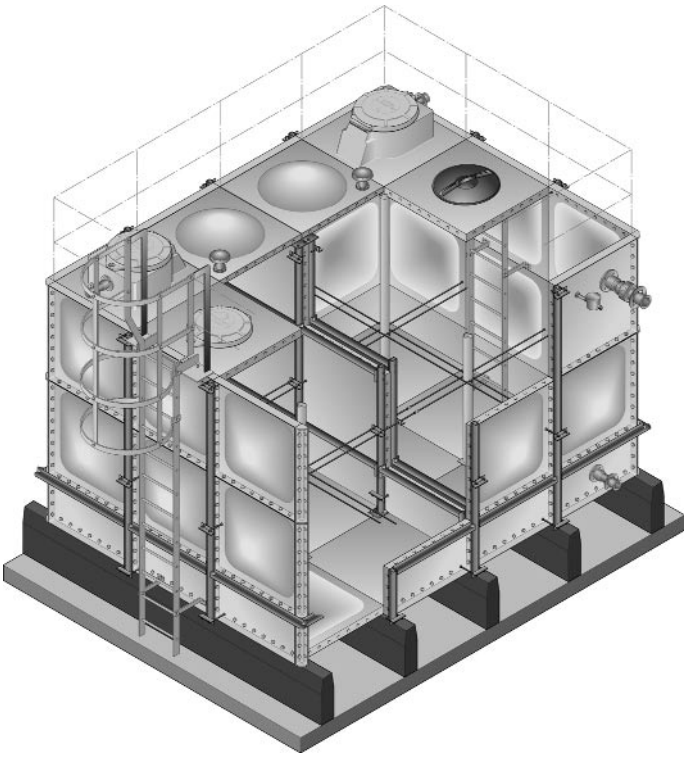
9 Commissioning and Testing

9.1 Testing shall be carried out on completion of installation by a mechanical contractor and should be completed within ten working days of assembly.

9.2 The testing of panels and sealant shall be as listed by Water Research Centre conforming to Water Fittings Byelaws Scheme and water regulations.

10 Mechanical Properties

Mechanical properties/description	Performance value
Method of manufacture	Hot Press Moulded
Specific gravity	1.8
Tensile strength	100 Mpa
Flexural strength	220 Mpa
Flexural modulus	12 Gpa
Impact strength	180 Kj/m^2
Shore hardness	D90
Shear strength	94.1 Mpa
Glass content %	>30%
Thermal expansion	2.0 x 10^{-5}/°C
Thermal conductivity	0.2 Kcal/m hr°C
Overall heat transmission	0.6 W/m^2 K
Water absorption %	< 0.2%
Light transmission	Zero
Insulation thickness	40mm PUF
Insulation cover	ABS



11 Approvals

- M100 WRc approved, capacities to 4.00m deep - Listing 0107069.
- M100-B30 WRc approved, capacities to 4.00m deep - Listing 0107070.
- MEW Approval – Qatar
- Khalifa Committee Approval – UAE
- LPCB Approval – 445a

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