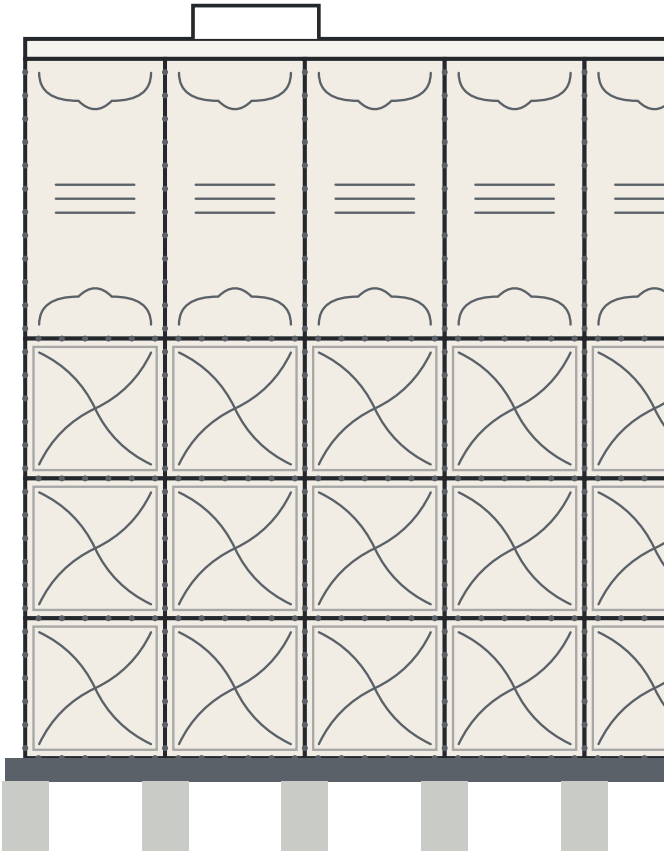
ELSAFA ESTABLISHMENT
WHERE YOU CAN TRUST

Technical datasheet

GRP Sectional Water Tanks

Hot-pressed glass-reinforced panels, bolted together on site into drinking-water and fire-water tanks of almost any size and shape.

1 m	panel module in plan; height from 1 to 6 m in 0.5 m steps
WRAS	approved panel material for drinking water up to 50 °C
50 years	expected life, with no painting or relining



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Product

Panels pressed, not laid up

Every panel is compression-moulded from glass-fibre sheet moulding compound in a heated steel die under high pressure. The result is dense, repeatable and smooth on both faces, which is why the same panel can carry the WRAS approval for drinking water.

Material properties

Tensile strength	99.5 MPa
Flexural strength	165 MPa
Elastic modulus	13,800 MPa
Glass content	25 to 33 %
Barcol hardness	over 30
Water absorption	0.01 %
Water temperature	up to 50 °C
Expected life	about 50 years

Approvals and standards

WRAS	approved material for contact with drinking water
EN 13280	glass-fibre reinforced cisterns of sectional construction
CE, TSE	product conformity marks

Heat through the wall

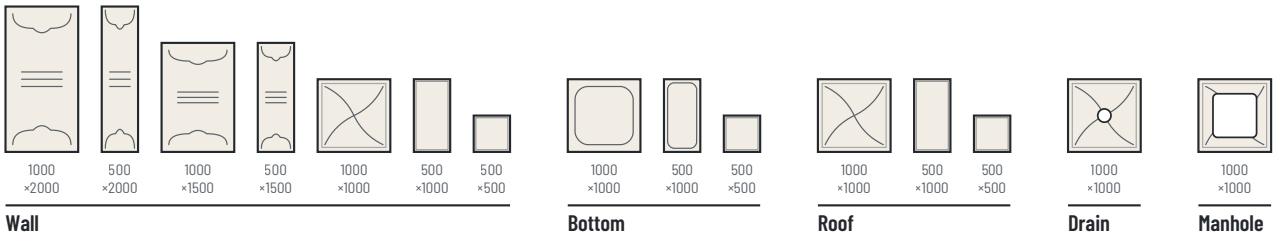
Wall	W/m·K	kcal/m·h·°C
Steel panel	43	37
GRP panel	**0.19**	0.16
GRP panel with PU insulation	**0.020**	0.017

Insulated panels have a CFC- and HCFC-free polyurethane foam layer, for roof-top tanks in hot climates and for outdoor tanks where freezing is a risk.

What that means on site

- No corrosion, no painting, no internal lining
- Opaque, UV-resistant panels keep light out, so algae cannot grow
- Light panels carried by hand; no crane for most tanks
- Non-conductive and non-magnetic
- Tanks can be enlarged, relocated or split into compartments later

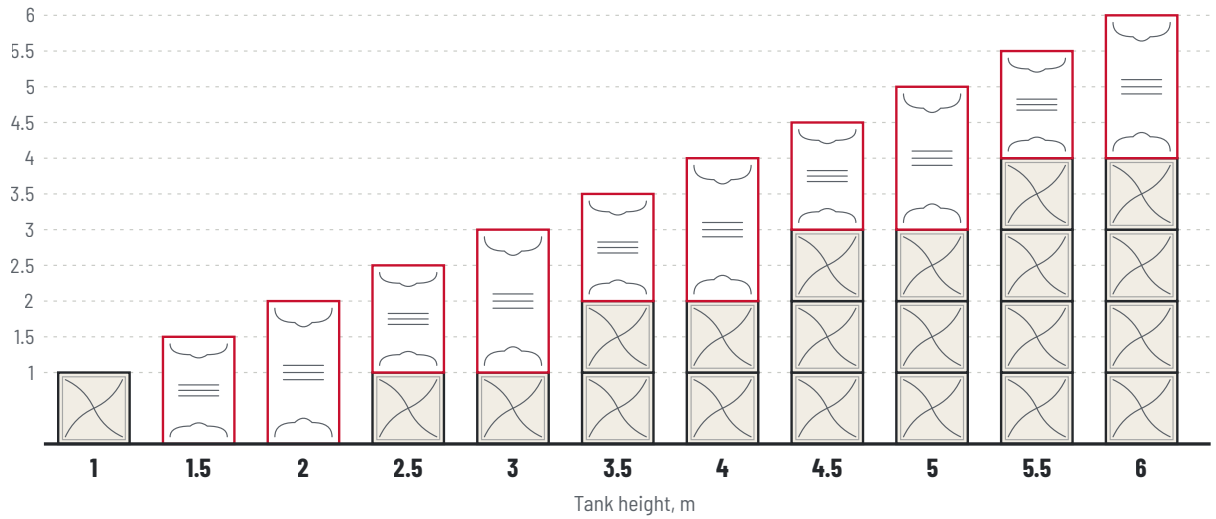
Panel sizes and how tanks are stacked



Standard panels, drawn to one scale. Dimensions in mm. Half panels close odd lengths; the 1,000 × 2,000 roof panel is two roof modules moulded together.

Composition by height

Any height from 1 m to 6 m in 0.5 m steps is built from 1 m square panels, topped by one tall panel of 1.5 m or 2 m (outlined in red) to finish the height.

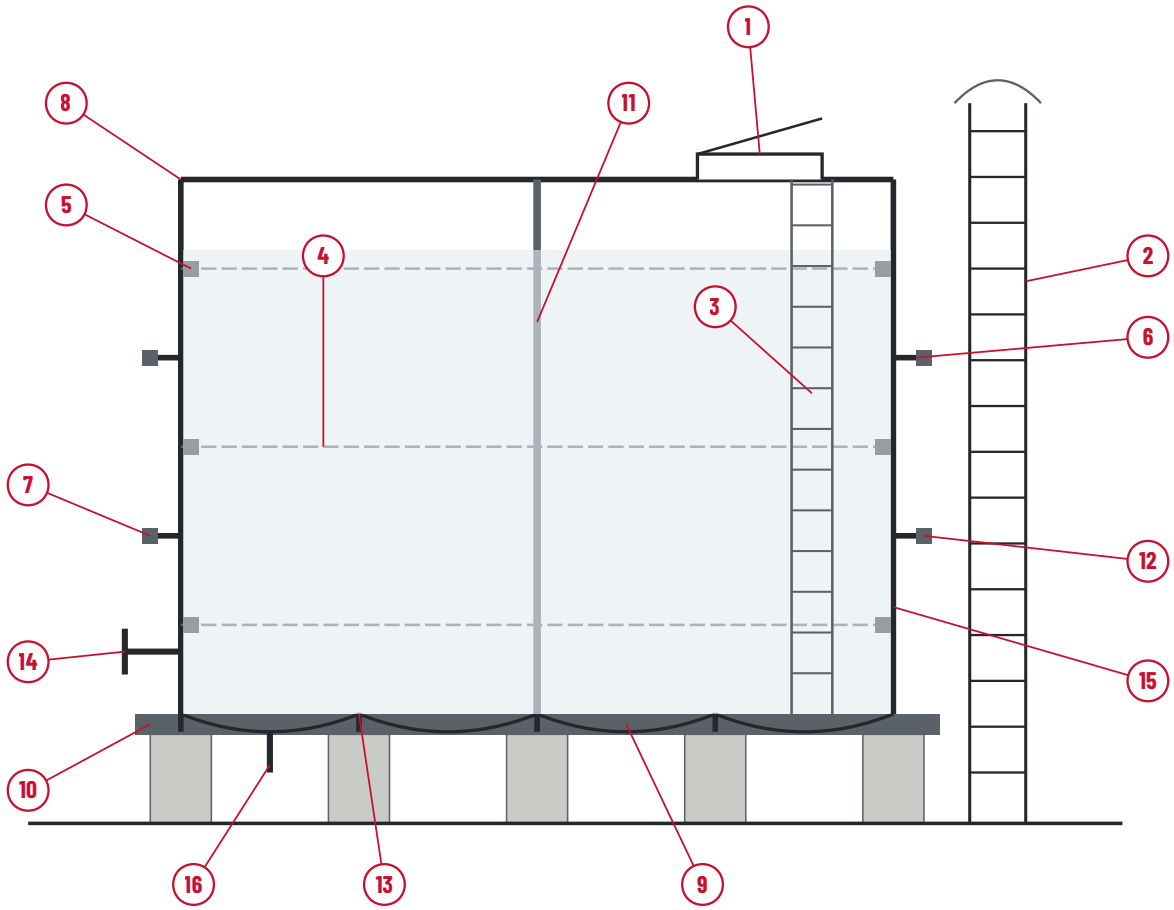


Wall thickness and the number of tie-rod levels increase with height; both are set by the manufacturer's structural design for each tank.

Construction

Inside the tank

Section through a typical 4 m wide, 3 m high externally flanged tank.

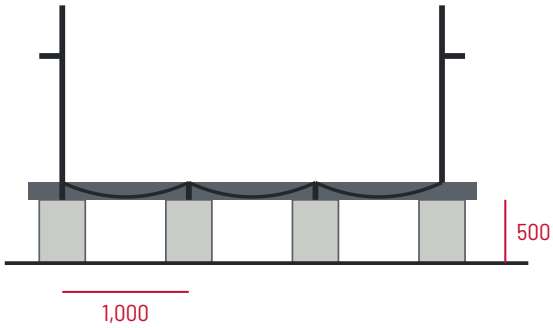


1	Manhole panel	5	Internal bracket (SS)	9	Lower chassis (HDG)	13	Sealing tape
2	External ladder	6	External pair frame	10	Corner chassis	14	Connection flange
3	Internal ladder	7	External bracket	11	Roof support carrier	15	Wall panel
4	Tie rod (SS)	8	Corner bracket	12	Bolts and nuts	16	Drain panel

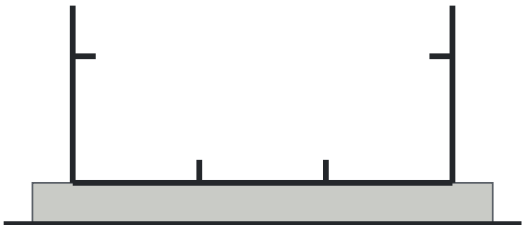
SS stainless steel; HDG hot-dip galvanised. Stainless steel tie rods brace the walls from inside. Where the tank must stay clear inside, for example to house treatment equipment, walls are braced from outside instead.

Installation

Bases and layouts



Externally flanged
curved bottom on a steel base over plinths



Internally flanged
flat bottom directly on a level slab

Base types. Dimensions in mm.

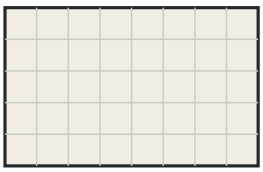
Externally flanged

The standard for ground-level tanks. The tank sits on a galvanised steel base frame over concrete plinths about 500 mm high at 1,000 mm centres. Air moves under the whole floor, every joint can be inspected, and a concave drain panel lets the tank empty completely.

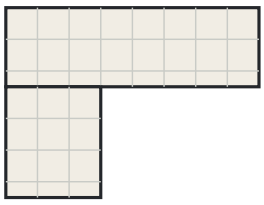
Internally flanged

Flanges on the inside and a flat bottom that sits straight on a level concrete slab. Used in plant rooms and basements where the tank must stand close to walls or where headroom is short.

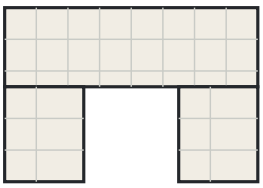
Layouts



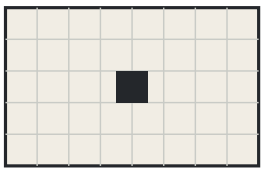
Rectangular



L-shaped



U-shaped



Around a column

Because the tank is built on a 1 m grid, it can follow the room: L and U shapes, around a column, or split into two compartments by an internal partition so one side can be cleaned while the other stays in service.

Installation

From plinths to handover

A typical ground-level installation. Panels are bolted by hand, so even large tanks go up without heavy lifting.



1 Concrete plinths cast at 1 m centres.



2 Galvanised steel base and bottom panels laid.



3 Wall panels bolted up, tie rods fitted inside.



4 Roof panels closed and sealed.



5 Tank piped up, filled and leak-tested before handover.

Sizing

Capacity

Nominal volume = length × width × height, all in whole or half metres.

Plan L × W, m	Floor m²	H 1 m	H 1.5 m	H 2 m	H 2.5 m	H 3 m	H 3.5 m	H 4 m
2 × 2	4	4	6	8	10	**12**	14	16
3 × 2	6	6	9	12	15	**18**	21	24
3 × 3	9	9	14	18	22	**27**	32	36
4 × 3	12	12	18	24	30	**36**	42	48
4 × 4	16	16	24	32	40	**48**	56	64
5 × 4	20	20	30	40	50	**60**	70	80
6 × 4	24	24	36	48	60	**72**	84	96
5 × 5	25	25	38	50	62	**75**	88	100
6 × 5	30	30	45	60	75	**90**	105	120
6 × 6	36	36	54	72	90	**108**	126	144
8 × 6	48	48	72	96	120	**144**	168	192
8 × 8	64	64	96	128	160	**192**	224	256
10 × 8	80	80	120	160	200	**240**	280	320
10 × 10	100	100	150	200	250	**300**	350	400
12 × 10	120	120	180	240	300	**360**	420	480
15 × 10	150	150	225	300	375	**450**	525	600

Nominal gross volume in m³. Working capacity is lower by the freeboard below the roof and any volume below the outlet. Any other plan size on the 1 m grid, including half-metre modules, is available.

Other panel materials

Stainless steel	AISI 304 or 316L pressed panels
Galvanised steel	hot-dip galvanised ST-37 pressed panels
Use	where the specification calls for metal tanks; same modular layout

Worked example

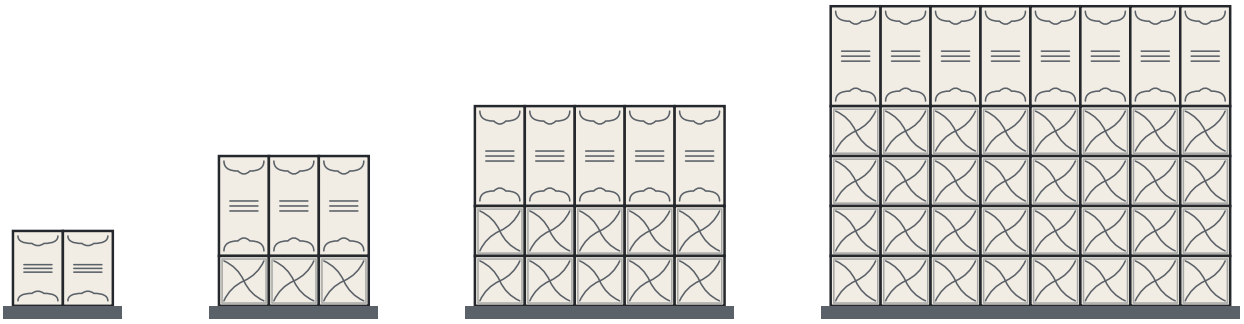
A building needs 60 m³ of domestic water and has a plant room 7 m by 5 m with 3.5 m clear height. Allowing for access, a 5 × 4 m tank at 3 m high gives **60 m³**, built from 1 m panels with a 2 m panel on top.

For a quotation, send	required capacity; space available (length, width, clear height); indoor or outdoor, insulated or not; ground or roof mounted; number of compartments; nozzle sizes and positions; ladders and access; delivery location.

Contact

Talk to an engineer

Send the data above and we will return a tank layout, a panel schedule and a price for supply and installation.



From a 6 m³ header tank to a 1,000 m³ reserve: the same panels on the same grid.

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