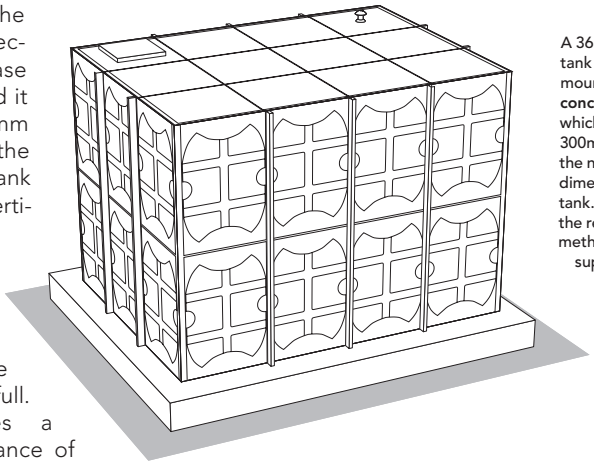
IFB

INTERNALLY FLANGED BASE (IFB) SECTIONAL TANK

ACCESS AND SUPPORT REQUIREMENTS

OVERVIEW

Brimar GRP Internally Flanged Base (IFB) Sectional Tanks are designed to be installed in situations where there is sufficient access to the sides of the installation to allow fixing of the panels from outside the tank, but where a headroom restriction may exist. A clearance space of a minimum of 500mm is required on all sides to allow the installer an access space to the flanges. The base panels are fastened together from within the tank. Consequently the tank can be sited on a solid slab or, if preferred, raised on RSJs and 25mm marine plyboard sheets. If the latter **steel support** is to be used, the RSJs must run directly beneath the base flanges which join the tank panels together. The supports run in one direction only. Whichever base support structure is used it must be at least 300mm longer and wider than the plan dimensions of the tank to support the external vertical flanges on each side. The final base support system must be flat and level and strong enough to support the weight of the tank when full. The manway requires a desired minimum clearance of 750mm from the top of the tank to allow reasonable access.



A 36,000 litre IFB tank shown mounted on a **concrete slab base** which is more than 300mm longer than the nominal plan dimensions of the tank. This is one of the recommended methods of tank support structure suitable for IFB tanks.

METHODS OF SUPPORT

The most commonly recommended methods of support for Brimar IFB tanks are **concrete slab base** and **steel support**, the design and construction being the responsibility of the contractor. Both methods are equally suitable as long as they are constructed to within the required tolerances (see BASE SUPPORT TOLERANCES below).

When constructing a **concrete slab base**, the slab must be built to a high degree of accuracy. It must be flat and level in all directions and should be completely free of any local protrusions.

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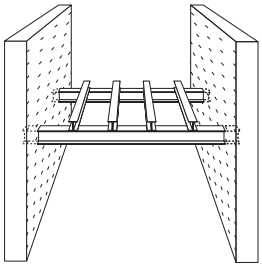
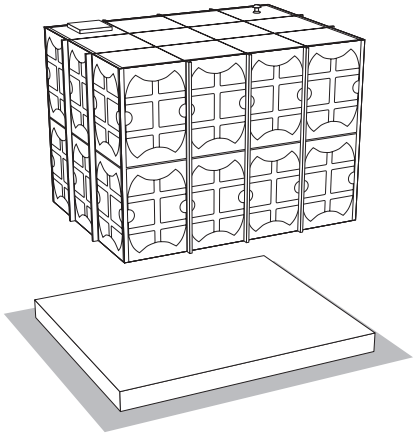
METHODS OF SUPPORT continued

Steel support systems also usually require a concrete slab as the main foundation for the tank. The major difference is that steel RSJs are loosely placed on top of the slab and these in turn are covered with 25mm marine plyboard sheeting, any joins in the plyboard being directly supported by an RSJ steel. It is this structure which directly supports the tank. The advantage is that the slab does not need to be built to such strict accuracy as any minor inaccuracies in level can be overcome by the use of shims.The disadvantages of this method are the additional costs involved and the marginal increase in the overall height of the completed structure.

A **concrete slab base**, built to the required tolerances, is simpler and less costly than a **steel support system** and is therefore the **recommended method** for supporting Brimar IFB tanks.

Note:
On no account should an IFB tank be installed on a concrete plinth (directly or on steels) which is protected by an asphalt membrane. Subsequent inherent irregular settlement of a filled tank into the asphalt may lead to tank joint weepage in the medium to long term.

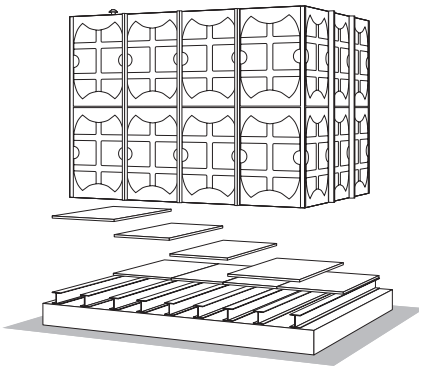




Above: Concrete slab base.

Below Right: steel support structure mounted on a concrete plinth. Note that RSJs are 300mm longer than the nominal tank dimension to provide support for side flanges and are required to support the centre of the base panels as well as the base flanges. The plyboard sheeting is cut so that all joins are directly supported by steels (in one direction only).

Below Left: steel support structure secured into two walls above an internal corridor for example.



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ACCESS AND SUPPORT REQUIREMENTS

BASE SUPPORT TOLERANCES AND DIMENSIONS

Steel Support Bases

The base structure for IFB tanks must be flat and level to the following tolerances:

2mm in any metre.

6mm in any 6 metres.

Maximum beam deflection - 1:500.

Supports are required in one direction only and should be covered with 25mm marine plyboard sheeting. The length of the supports to be a minimum of 300mm longer than the nominal dimension of the tank.

METRIC TANKS

Steel supports to be spaced at 500mm centres and should support both end flanges as well as intermediate flanges (e.g. a tank 3 metres long on cross steels would require seven RSJs).

IMPERIAL TANKS

Steel supports to be spaced at 610mm centres for all tanks. The steels should support both end flanges as well as intermediate flanges (e.g. a tank 3660mm long on cross steels would require seven RSJs).

BASE SUPPORT TOLERANCES AND DIMENSIONS

Slab Bases

The base slab for IFB tanks must be flat and level to the following tolerances:

2mm in any metre.

6mm in any 6 metres.

Maximum slab deflection 1 : 500

Free from any local protrusions.

The size of the slab to be not less than 300mm greater than the nominal plan dimensions of the tank.

CLEARANCE/ACCESS REQUIREMENTS

All IFB tanks require a minimum of 500mm clearance around all sides. A clearance space of 750mm is desired for the manway at the top of the tank to obtain reasonable access. However with the adoption of a special "lift off" manway design, this clearance space can be reduced to 500mm.