

Buoyancy Foam Claimed To Be Considerably Better Long Term, Than Air Tanks . . .

Doubtless one of the most controversial issues in the boating world - and especially with plate aluminium craft, concerns the complex issue of floatation - either by the use of properly constructed air tanks - or properly installed buoyancy foam. Here's an interesting summary of the options.

Report by Rodney Dredge, from Specmar Australia

Australian boat builders have the choice of buoyancy they can use depending on the Standard used for their ABP or Survey requirements.

The general rule is all power boats under 6 m LOA require buoyancy in the form of Air Tanks or Buoyancy Foam.

Air Tanks

Air tanks are popular and are still used both in the commercial sector and recreational vessels.

There are special requirements under all codes to ensure air tanks meet an acceptable level and can be maintained as airtight compartments.

Extract below from the AS 1799 .2009

2.5.6 Air compartments

Wherever practicable, integral void air compartments should be avoided as a means of providing reserve buoyancy. Where such compartments are used, the construction shall be equivalent to that of

the surrounding hull structure. Stress raisers shall be avoided, and all compartment-to-hull seams shall be positioned to allow inspection. Where air chambers or compartments are used to provide reserve buoyancy, the requirements of Clauses 2.5.1 and 2.5.4 shall be met excluding the two largest compartments or air chambers.

Each air compartment used to provide reserve buoyancy shall be—

(a) Provided with a drain plug complying with Clause 3.2.3 at its lowest point; and

(b) Permanently marked with the following words or their equivalent:

'CAUTION: This air compartment is essential to the floatation of the boat. Do not puncture or attach fittings.'

These requirements apply to all of the air compartments used to provide reserve buoyancy, including the two

largest air compartments.

This no doubt sends a strong message as to the integrity of air tanks where fitted and the need for maintaining their integrity over the life of the vessel.

Buoyancy Foam

(Polystyrene, Polyurethanes and Polyethylene)

Both Polystyrene / Polyurethanes are acceptable under the AS 1799.2009 Standard, however their location is limited to areas where they are unlikely to come in contact with petroleum products or other chemicals - see extract below:

2.5.2 Use of floatation materials

Floatation materials shall comply with Clause 2.5.3, unless they are located in a position where it is unlikely that they will come into contact with petroleum products or other chemicals used in the construction or operation of the boat, such as within an elevated thwart on an aluminium dinghy.

Due to the higher acceptance by Australian boat builders to now use polyethylene, the cost has decreased to a point that polyethylene (especially those listed on the NMSC National Register of Compliant Equipment) are by far the better options in most cases.

Given air tanks require to be constructed to be equivalent to that of the surrounding hull structure and their further requirement to be maintained for the life of the vessel, has almost ruled them out as a viable, cost efficient, alternative to foam.

Safe boating!
Specmar Australia,
Agent for Foam Design Buoyancy Foam



Polyethylene foam being fitted to a 4.3m dinghy for Basic Floatation.

TBM