



National Guidance Manual Guidance Circular

National Marine
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NATIONAL GUIDANCE CIRCULAR 07-1

Technical Interpretation of Buoyancy Performance of Recreational Boats in Relation to the ABP Standard

Background and Scope

In August 2007 the NMSC decided that a Technical Advisory Panel (TAP) would be convened to review a request for an interpretation of the provisions of the National Standard for the Australian Builders Plate (ABP). The origin of the request for interpretation related to an aluminium boat under 6m in length that utilised ISO 12217-3 to determine the information on the ABP and relied upon a single air compartment for its source of buoyancy.

In response, the TAP developed the following technical interpretation and guidance which were endorsed by NMSC in November 2007.

Interpretation No.1 of National Standard for the Australian Builders Plate (Edition 3, November 2005)

Question: Is it acceptable to rely upon a single air compartment to provide the required buoyancy performance for a boat under 6m in length for the purpose of compliance with the ABP standard?

Answer: No. Where air compartments are used as a source of buoyancy, regardless of which technical standard is employed, the buoyancy shall be assessed with the two largest compartments vented at their high and low points.

National Guidance

The following guidance has been endorsed by NMSC to assist in the implementation of the ABP standard.

- The *Implementation Package* associated with the ABP standard requires that the information to go onto the ABP be assessed by a *competent person*, which implies that such a person would apply a degree of expert technical judgement when implementing the requirements in the ABP standard itself and the referenced technical standards, especially whenever there are multiple options



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available. This National Guidance is aimed at ensuring a level of consistency in the application of that expert technical judgement.

- In Clause 9.5, the ABP standard references those elements of the listed technical standards that relate to assessing buoyancy performance, ie whether basic flotation or level flotation has been achieved, including any associated requirements regarding the qualifications placed on the use of flotation materials and flotation elements. For the purpose of the ABP standard, whether or not the technical standard itself would recommend or permit either basic flotation or level flotation for the boat design in question is not relevant as it is only the assessment method that has been referenced. In the case of ISO 12217-3, Options 2,3,4 and 5 in Table 3 are not suitable to be used to provide information for the ABP, because they do not include an assessment of basic or level flotation.
- In order to provide valid information for the ABP, the method of assessment of buoyancy performance needs to be applied strictly in accordance with the relevant technical standard, including any pre-conditioning (such as flooding the boat for 18 hours prior to testing in the case of ABYC). In the case of ISO 12217-3, this includes meeting all of the requirements for flotation materials and elements set out in Annex C; for example, if air compartments are used, each air compartment in each boat produced would need to be subjected to the air tightness test, have a draining facility for the compartment and have the required labelling.
- A guiding consideration to be borne in mind by the *competent person* is that one of the objectives of the ABP standard is to enhance the safety of persons on a recreational boat by providing information on the buoyancy characteristics of the boat so that persons may make informed decisions regarding its purchase and use (see Clause 2 of the ABP standard).
- The *Introduction* to the ABP standard recognises certification under the NMMA or CE systems as potentially delivering an equivalent outcome to the ABP standard. However, as explained above, the ABP standard selectively references only a few requirements within the technical standards used as the basis for those overseas certification systems; and in certain circumstances there is a potential to distort the way the technical standard would be applied under those certification systems, thereby delivering an inferior safety outcome.
- It has been suggested that ISO 12217-3 permits basic or level flotation to be achieved using a single air compartment integral with the hull, something that is



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not permitted under either AS 1799.1 or the ABYC Standards and Technical Information Reports for Small Craft. However, such a design is not be consistent with the objectives of the ABP.

- There have been a number of boating incidents in Australia involving flooding of the boat where an integral buoyancy compartment has developed a leak in service as a result of a commonly occurring factor, such as minor cracking, minor damage caused by normal wear and tear or fasteners drilled into the air compartment after the boat has left the factory to secure additional fittings or fixtures.
- In order to meet the objective of enhancing safety through implementation of the ABP, regardless of which technical standard is chosen, the use of air compartments as a source of buoyancy should take account of their propensity to develop leaks in normal service. Therefore, where air compartments are used as a source of buoyancy, the buoyancy shall be assessed with the two largest compartments vented at their high and low points.
- As well, air entrapped by void spaces in the capsized or swamped hull that do not qualify as air compartments under the technical standard should not be relied upon to provide basic or level flotation. Such void spaces shall be vented when assessing buoyancy if the entrapped air has a significant effect on the outcome of the assessment of buoyancy performance.