



Consultation Feedback Report

National Standard for Commercial Vessels (NSCV), Part C: Design and construction, Section 2 – Watertight and Weathertight Integrity – Edition 1

Outline

The Australian Maritime Safety Authority (AMSA) developed a new National Standard for Commercial Vessels (NSCV) - Part C: Design and construction, Section 2 – Watertight and Weathertight Integrity. The planned commencement date of the new standard is 1 July 2022.

The new standard proposes the following changes and key updates:

- New freeboard mark required for vessels ≥ 12 metres.
- Loading capacity placard may be used for vessels < 12 metres,
- Alignment with international standards for windows and portlights, marking of doors, doors and hatches, valves, and through-hull fittings and drain plugs. While retaining a simplified design approach for < 24 m vessels that don't require access to ISO standards.
- Rapid drainage requirements, including a new simplified approach and a very simplified approach for < 12 m vessels.
- An improved and simplified approach to flush hatches.
- Clarification and standardisation for the assessment of watertight and weathertight components, to ensure consistency across the industry.
- Clarification and standardisation for installation testing and verification of watertight and weathertight components, to ensure consistency across the industry.
- Clarification of material standards for seacocks and drain plugs for vessels < 24 metres. Also allows the use of modern materials like polymer in certain places when manufactured to ISO 9093.

Consultation Feedback

A copy of the draft standard was placed on the AMSA website for public consultation from 18 January for 10 weeks (until 28 March 2021). A webinar was also held on 9 March 2021 with 130 registered stakeholders. Feedback was supplied by accredited marine surveyors, classification societies, vessel operating companies, naval architects and designers, government departments and agencies.

AMSA received 32 submissions in total against 6 proposed questions. AMSA received an additional 8 submissions received separately from the online submission questions on the AMSA website. AMSA also conducted two webinars, the first on 1 March and the second on 9 March 2021. The webinars had a total of 127 registered stakeholders. Throughout the webinars, AMSA developed a frequently asked questions page with answers; [Webinar recording March 2021 \(amsa.gov.au\)](#). A summary of the key changes made in response to consultation feedback has been summarised at the end of this document.

NSCV Part C2 – Feedback

Question 1 - Should fishing vessels >12m have a sliding door in the wheelhouse?

Of the 32 submissions received, question 1 received 24 responses. 12 indicated they supported fishing vessels >12m having a sliding door in the wheelhouse, and 12 indicated they didn't support sliding doors in the wheelhouse. The following submissions were received.

Question 1	Should fishing vessels >12m have a sliding door in the wheelhouse?
Submissions	<p>The requirement for a sliding Weathertight door in the aft superstructure of Class 3 vessels of >12 metres is problematic.</p> <p>(1) Whilst I understand the thinking behind the requirement surely the risk of capsize of a fishing vessel and subsequent inability of crew to escape through a hinged wheelhouse door can be better controlled by other means (i.e. compliance with existing provisions of NSCV, e.g. stability, snagged nets conditions, requirement to confirm lightship, etc.).</p> <p>(2) As an example a GA drawing of a 30-metre NSCV fishing vessel that we presently have under construction under construction is attached (this vessel could be 24m length and as such Chapter 4 would be applicable.).</p> <p>A sliding Weathertight door on the aft end of the wheelhouse may assist the person on watch in the wheelhouse to escape in the event of a capsize. Other personnel who may be sleeping on the main deck level would be required to transit 2 stairways to access this door. This vessel, whilst a fishing vessel, does not undertake any operations (i.e. trawling, towing etc.) which would make it any more likely to capsize than a comparable class 1 or 2 vessel.</p> <p>(3) Sliding weathertight doors with certification iaw one of the standards listed in 4.6 (5) are difficult to procure.</p> <p>(4) Why would this requirement not be applicable to a vessel that was towing, i.e. tug, which could be considered to have an equal or greater chance of capsize as some fishing vessels?</p>
	Presumably this is so they can be opened under water. Need performance standards to ensure this is the case, can't assume the pressure acting on a sliding door won't make it size up anyway.
	it is not always practical to arrange the free space required to fir and operate a sliding door, alternative solutions could be used include - ie provision of an adequately sized wind and glass breaker for emergency escape
	Unless the wheelhouse is in upper deck and not connected below deck through hatch or internal stairs. Having a sliding door will or may allow the water ingress below deck and that could be detrimental. Those vessels work in very harsh conditions and it's not wise idea in my opinion.
	Unnecessary. The purpose is to provide employment for people in unending and extremely expensive searches resulting in further costs for everyone and ever increasing bureaucracy.
	It should be up to the designer not the regulator. It should have the appropriate sill height and weathertight/watertight closure and whether it is hinged or sliding should be the decision of the designer.
	Given the available clear areas on most of these vessels, may be difficult to obtain the space required to fit a sliding door. Sliding doors are also subject to jamming if items fall against the back or across the track of the door. Perhaps an alternative escape possibly through wheelhouse top may be more functional on smaller vessels or knock out windows.

	Sliding door work well in tight walkways.
	Inherently dangerous on smaller ships and boats. Unless automatic, and inherently not watertight.
	Given that 12m is still relatively small for fishing vessels, I think that they should be allowed up to 24m. How many sliding doors have stuck, does AMSA have any records of incidents with sliding doors.
	This should be an option and if not fitted then another means of escape should be provided
	For new vessels, yes, but not for existing vessels (too costly to change from conventional door to sliding). Sliding door would be easier to open if vessel submerged
	We have a slide door fitted to the back of our 15m vessel, if we were to fit a hatch door it would impede access in and out of the cabin. One to open the door my crew would have to step back to open it and that put them up against the pot winch not practical and would impede the master at the same time while he is driving from the outside station.
	Easy to escape if vessel is sinking
	On a lot of vessels it's impractical
	After a little wear they have a tendency to jam
	Much easier to use and control any flooding
	Don't see a huge issue with the implementation of this standard circa Dec 2022.
	They can have swinging doors. who's to say a slider is watertight or not.
	It is not a practicable arrangement in many cases. Many vessels like to have a watertight (rather than weathertight) style door fitted. A watertight sliding door is prohibitively expensive.
	Can be mentioned in NSCV C2. If the sliding door requirement isn't related to the watertight and weathertight integrity of vessels it should be better placed in NSCV C1.
AMSA's response	Thank you for your feedback, AMSA has taken out the proposed requirements for sliding wheelhouse doors within the NSCV C2 standard. AMSA considers sliding doors in wheelhouses one of many options that can assist escape from a vessel in certain circumstances. AMSA is currently reviewing NSCV C1: Arrangement, accommodation, and personal safety and will consider adding sliding doors as an option to assist escape from wheelhouses and deckhouses to complement the other options available.

Question 2 - Are the freeboard mark options for vessels <12 metres clear?

Of the 32 submissions received, question 2 received 23 responses. 16 indicated the freeboard mark options for vessels <12 metres are clear, and 7 indicated the freeboard mark options were not clear. The following submissions were received.

Question 2	Are the freeboard mark options for vessels <12 metres clear?
Submissions	I believe it's a good idea, the more important mark should be "lightship freeboard Mark" on such size vessels. The problem with these vessels is not only overloading but also their lightship as changes are done equipment added, but stability book have not been updated and so the lightship, and the most owners

	<p>will not admit because they don't see the problem of 1kg here and 1 kg there but when you add it up it may come to half a tone and on small size vessels every addition of weight is really important for stability. Stability books and lightship should be checked every 5 years and the validity of the Stability books should be only 5 years I. Order to make sure that there is no change in lightship condition. Another issue that I have encountered is most of the stability books don't have hydrostatic tables and displacement tables, so how are the captains or skippers of these vessels supposed to work out the stability for their different loading conditions. These are done by many Naval Architects so that another company cannot use the stability book that they have develop to find out if there is any difference just by lightship check and perform new calculations without the use of the 3D hull modelling which I the most appropriate way without the heavy cost but just using the information that it should be there in the first place. Most of it it's done because they don't want their client to go to someone else and these days it's called intellectual property but the lines plane and stability book are not intellectual property and they belong to the vessels as they are the most basic and important information every vessels should have. This is not right and the point of Trim and Stability book is to have all of the required information provided to the captain for him/her to make the necessary calculations when it comes to loading conditions, because we just give them the most basic conditions that are required so we know that their vessels it's safe, but the rest has to be done by them including they should be able to read the draft and see if their lightship it's still as per Tristan and Stability book, and look at the stability book and work out the rest.</p>
	<p>Has the requirement for freeboard marks been considered for open vessels where the deck line is at or below waterline and freeboards are measured to the top of the sides?</p>
	<p>Need simplification. (Why an option!)</p>
	<p>clear simple guidance for people operating these boats, should not be painted but a permanent mark either a positive mark or a negative mark on the boat.</p>
	<p>Makes sense.</p>
	<p>Very hard to find.</p>
	<p>Yes, 7.5m <lm< 12m require freeboard mark (unless can't be marked/seen) , mark height determined in accordance with Annex A and 4.19 of the draft C2.</p>
	<p>Tried to insert image but not accepted.</p>
<p>AMSA's response</p>	<p>An example has been added to chapter 4 which helps to clarify 4.20 (2) (b) for open vessels less than 12 m in length. Minor rewording of 4.19 (a) to assist in defining the freeboard of open vessels. Annex A, the load line and freeboard diagrams received minor improvements.</p>

Question 3 - Are the freeboard mark options for vessels <12 metres practical?

Of the 32 submissions received, question 3 received 23 responses. 14 indicated the freeboard mark options for vessels <12 metres are practical, and 9 indicated the freeboard mark options were not practical. The following submissions were received.

Question 3	Are the freeboard mark options for vessels <12 metres practical?
Submissions	<p>simple and not far removed from current practice of stability notices for chapter 7b practical stability.</p> <p>It would be if followed and enforced in all vessels without exception whether the vessels is under survey or it's a new vessel, they all should be under one rule when it comes to stability.</p> <p>It is recommended further consideration be given to vessels that operate without cargo/catch loadings such as : Passenger vessels, pilot boats, police and fire boats, fisheries etc. These boats do not carry load other that their fuel, water and personnel and effects. A freeboard mark provides no benefit to safety of these vessels and just provides additional regulatory burden. It is recommended the requirement for a freeboard mark should be based around deadweight carrying not the length of the vessel.</p> <p>now providing a visual reference for crew and others for overloading of vessel.</p> <p>Can be simplified.(why an option?)</p> <p>yes, should not be painted but a permanent mark either a positive mark or a negative mark on the boat</p> <p>Especially a load chart on the dashboard is an excellent idea and should probably be extended to all vessels as most operators don't use a stability book and don't look at draught marks but may think about it if there is a sign Infront of them.</p> <p>Makes sense & particularly practical if numerous skippers involved - seeing in "black & white" various stability items of interest makes lots of sense. Survey certificates & stability books not always looked at.</p> <p>Cannot read at sea and you move from one side to the other side to get a visual not very accurate</p> <p>Possible marking options given for Steel, Aluminium, FRP and timber vessels. And a placard may be used if the mark cannot be seen or practically marked.</p> <p>Because you rely on tonnage for displacement not kilos</p> <p>The boat may be smaller</p> <p>As naval architects we often recalculate loading conditions for vessels. This often includes increasing the maximum displacement. Requiring a permanent mark at the waterline of maximum allowable displacement means this would need to be relocated every time stability documentation is produced and presumably surveyed to ensure it is in the correct position. Load line is practical load line vessels as they are often not stability limited and rarely undergo changes.</p>
	<p>Further clarifications will be required for some cases such as: - dumb barge under 7.5m without a helm to display placard, or - how to locate the LCF on a small vessel to position the freeboard mark.</p>
AMSA's response	<p>A vessel that has a subdivision load line does not require a freeboard mark, the notes throughout the standard have been slightly strengthened to make this clearer. Note added to 4.20 (1) to clarify the placement of the stability placard on vessels without a helm/operating compartment. Minor note addition at Annex A to support an option for the freeboard mark application without hot work. The freeboard mark is only for vessels entering service for the first time.</p>

Question 4 - Are you aware of any additional costs the new standard will impose on NEW vessels?

Of the 32 submissions received, question 4 received 22 responses. 12 indicated they were aware of additional costs the new standard would impose on NEW vessels and, 10 indicated they were not aware. The following submissions were received.

Question 4	Are you aware of any additional costs the new standard will impose on NEW vessels?
Submissions	No significant changes to current best practice.
	this is not a yes or no question! Costs of obtaining suitably certified doors are testing may preclude many established suppliers and shipyard practices. Cost of fitting may increase significantly.
	There is not that hard to put a simple Mark of a lightship on a small vessel. You don't need the whole load line larks but just the most basic lightship mark as these vessels are small.
	Please explain the question - it makes no sense. If you are asking if this will cost more, the answer is yes. If you add in the time involved in creating new legislation plus the additions of next few years employment justifying regulation changes - the costs are crippling, aside from the inevitable enormous burden of policing etc. it's plain stupid and only someone with extreme self interest in pushing such an agenda would consider it important.
	There will be an increase cost with the freeboard mark.
	Some requirements have reduced, some increased so net result is similar.
	The welding of load marks, load cards for smaller vessel
	No I have not researched this, but the current five yearly regime (only practical for ocean going shipping) seem great for avoiding compliance, so "happy days"...
	All new laws cost, as a designer i will take longer, as a surveyor i also will take longer. Time=money
	I need to do a bit of "digging".
	The new cost on a new build in nothing but to change it on an older vessel is huge not practical.
	They will be passed on to the consumer.
	The ship yards will have to lay out a 12 mt vessel the same as a ship this is never done all designs will need to be re done to comply
	Costs of surveyor determining marking position, stability notice or placard, and cost of actual marking. Sliding door construction if implemented and > than that of door otherwise.
	Seems like lots of the costs for the marks, assessment, survey and doors are not reflective of the market costs. I think they will be much higher than your estimate.
I think so.	
Especially for small manufacturers the cost of acquiring competency or getting a competent person to do final installation testing. The cost difference for a manufacturer to replace acrylic for toughened glass on skylights.	

AMSA's response	<p>Thank you for your comments. The freeboard mark was fully costed and provided at public consultation as were all likely cost impacts on business as a result of the introduction of the NSCV C2 standard. AMSA is confident based on the feedback supplied by businesses that we have considered all likely cost impacts.</p> <p>AMSA will provide guidance material on the NSCV C2 landing page around how doors can be manufactured to the standards referenced within NSCV C2 in Australian shipyards.</p>
-----------------	--

Question 5 - Should the new freeboard mark required under NSCV section C2 apply to transitional vessels?

Of the 32 submissions received, question 5 received 23 responses. 14 indicated the new freeboard mark required under NSCV section C2 should apply to transitional vessels and, 9 indicated it shouldn't apply. The following submissions were received.

Question 5	Should the new freeboard mark required under NSCV section C2 apply to transitional vessels?
Submissions	This would require a lines plan, structural approval at a known maximum displacement, and new stability testing. All of which would be very onerous for a vessel that has become transitional due to some minor change.
	Where the freeboard mark is placed in conjunction with existing load limits established through stability calculations there should be no issue. Alternative method of marking on transition or modified vessels should be considered for metal hulls - hot work welding adjacent to interior outfitting can be problematic. punched and painted marks should be allowed where hot work is not appropriate.
	You do want to include the exiting vessels as they are the majority of the vessels and they are already probably have exuded their lightship or LCB and LCG. It should be all the same for all vessels and applied to all vessels. I believe we are talking safety here and this is why this change its proposed so it has to be done properly or it will not work as the owners will find a way to not apply it to their vessels.
	There should be no new legislation.
	I do not recommend that it applies to existing vessels because: 1. Some older vessel may have low freeboards and may not physically be able to meet the 200mm minimum in clause 6.14 because of the hull shape. 2. It would require assessment of the hull scantlings to the NSCV Part C3 as per clause 6.14. 3. It would require assessment of hull scantlings if the original assessment is not available.
	Now most transitional vessels do not have draft marks fitted, so mostly need to be retrofitted. As baselines etc. are verified to do this to add a freeboard mark is not much extra work given the additional safety outcome.
	It will remove the confusion and keep it standard over 2c vessel.
	Why not? If new standards are deemed to be necessary, Why differentiate? Are you putting a cost restriction on safety? Does AMSA have a cost code for fishermen's lives?

	the risk of overloading is not only on new boats but all boats. We need to get these old boats safe.
	A transitional vessel is required to have a stability book so the extra required to determine a load line position should not really be an issue.
	Possible high costs to comply with & may prevent modifications; upgrades etc to proceed.
	Marks are easy to deal with but to go and replace slide doors are not.
	Can't understand why everything changes when there's no occurrence, s
	It would mean a re-design of an existing vessel and I point out most boats were built from 1/2 models.
	The determining of freeboard mark position and physical placement of vessel does not seem impracticable nor overly onerous task.
	They would be hard to read on small vessels as you need another boat to look at them.
	I think the marks should apply at least. Maybe not all the other things that would require rebuilding the boat.
	It should only be a problem if it is damaged and unsafe
	If it is to apply (which I don't believe it should) it should apply to all vessels including transitional and existing.
	Agree but only if it is clear that the remaining of the C2 requirements will not apply to the transitional vessel e.g. max displacement only based on structure or stability or USL freeboard requirements.
AMSA's response	Thank you for your comments and mixed and varied views on this topic. While most supported applying the freeboard mark to transitional vessels, several complexities have also been raised. AMSA has considered the complexities and costs around applying some of the requirements within NSCV C2 to transitional vessels and has concluded that NSCV C2 will not apply to transitional vessels at the commencement of the standard.

Question 6 - Do you have any additional suggestions or changes to the proposed standard that would help to keep it up to date with current and evolving technology?

Of the 32 submissions received, question 6 received 23 responses. 12 provided additional suggestions or changes to the proposed standard and, 11 provided no additional suggestions. The following submissions were received.

Question 6	Do you have any additional suggestions or changes to the proposed standard that would help to keep it up to date with current and evolving technology?
Submissions	4.7.7 – Clarify FWD hinging requirement for hatches in the forward quarter that are neither escape, nor lead to below deck spaces. It is common on small vessels to use the foredeck hatch for ventilation under suitable conditions, and to access the anchor locker, in doing so, it must hinge on the aft edge. Suggest that flush hatches in the forward quarter that are not normally opened at sea, and are not for escape, do not need to be hinged on the forward side.

	<p>Table 2, 3, 4 & 5 – What does “sea” mean in the context of “normally closed at sea”? E.g. is a sheltered water boat ever at sea?</p> <p>4.10 – Air pipes, need exemption for closing device for small pipes < 32 mm.</p> <p>4.11 – Suggest some guidance on transducers. Common practise on small boats where the hull is a sealed void is to lead a welded/FRP tube from transducer mounting to deck, therefore flooding of the transducer does not compromise the hull. Larger vessels will simply seal the cable through a penetration tube with flexible sealant.</p> <p>Table 13</p> <ul style="list-style-type: none"> • General comment that in my experience hose testing of hatches rarely finds issues. More often than not they leak over time from water sitting in the hatch gutter. Realistically, small slow leaks are almost ubiquitous, and don’t endanger a vessel as long as compartments are inspected occasionally and have bilge alarms. • Hose test of watertight door not practical, as they are often installed late in fit out. Chalk test is the accepted norm. • Hose test of weathertight doors and sliding windows will always show some leakage, this is acceptable depending on the location. • In lieu of hose test of skin fittings, some small boat builders simply fill the finished hull with water to check for leaks, this should also be acceptable. Likewise, after launch, a leak will be apparent in skin fittings, suggest inspection after launch be accepted in lieu. • Skin fittings, typo in testing requirements, mentions “joints between seal and door”.
	<p>Please explain your answer and provide a reference to the clause or section you are referring to.</p> <p>The requirements on number and type of watertight door should be removed from stability requirements and added to section C2. The limits on number and type of watertight doors should be re-considered. The requirements are frequently impractical and contrary to common practice is class approved vessels. Boat builders and equipment manufacturers should be directly consulted on the new requirements for standards of doors, window glass etc. The application of class approval or European based standards may eliminate the Australian made products commonly used across the boat building industry in Australia. Driving up cost, reducing Australian content, and harming quality Australian manufacturers. Many shipyards manufacture their own weather-tight and watertight hatches and doors - the code should ensure that the testing and certification requirements for these items are not prohibitive. Specific worked examples should be considered as part of the consultation process.</p>
	<p>Stop creating more bureaucracy for the purpose of creating more bureaucracy.</p>
	<p>1.3 Reference documents</p> <p>There are 20 ISO standards referenced in this standard. This will provide a financial burden on boat builders, designers and surveyors. To purchase these standards would cost approximately \$2000. Why not write the requirements into the standard where possible? In reality designers do not purchase the standards and compliance is left to verification by the surveyor and not during the design and procurement stage when it should be.</p> <p>3.3 Watertight and weathertight doors</p> <p>Has there been consideration the requirements for watertight doors already in the NSCV Part C6B chapter 9? The rules referenced here (ISO) need to be purchased and place a financial burden on boat builders, designers and surveyors. Why not have this written into the standard.</p> <p>3.4 Side scuttles, windows and skylights</p>

The rules referenced here (ISO) need to be purchased and place a financial burden on boat builders, designers and surveyors. Why not have this written into the standard.

4.3 Recesses

Acceptance of drainage here refer to the National Regulator. This should refer to the surveyor as they are the one who engages with the boat builder, witnesses and accepts the test. The National Regulator only sees the result in a survey report and the test is often long completed before then.

(2) (a) This makes reference to rapid drainage within in 2 minutes. The NSCV Part C6B 4.4.3 provides a 4.3 Recesses calculation of the volume of water and then drainage within 3 minutes. Given each standard are trying to achieve the same outcome cannot a consistent rule be applied.

4.7 Hatches and coamings

(7) The rules referenced here for hatches (ISO & ABYC) need to be purchased and place a financial burden on boat builders, designers and surveyors. Why not have this written into the standard.

4.11 Materials for seacocks, through-hull fittings, valves and associated piping systems

This is covered in NSCV C5A, why repeat this here?

4.12 Bungs, drain plugs and docking plugs

The rules referenced here (ISO & ABYC) need to be purchased and place a financial burden on boat builders, designers and surveyors. Why not have this written into the standard. The requirements for bungs do not need to be overly complicated.

(3) Bungs are common on vessels but do not have a second means of retention unless a rubber gasket would satisfy this?

4.14 Skylights and skylight hatches

(3) and (6) The requirement for deadlights or blanks on skylights should be re-considered. These are often fitted in the roofs of wheelhouses to provide for ventilations. They are fitted with closures and in most cases provide strength equivalent to windows. If this is the case why require deadlights/blanks when these are not required for windows?

Table 7 Simplified rapid drainage assessment method for vessels where the recess bottom has only one level and the recess ratio is less than 0.5

Note (4) There are vessels with recesses where the deck level is below the waterline and these vessels can be treated as open vessel as per this note.

However, the note only makes reference to bilge pump requirements in C5A. On a small vessel this may only be a manual bilge pump. On C class open vessel's it is recommended these are fitted with pumps similar to the NSCV Part C6B section 4.4.

4.20 Freeboard Mark

Has the requirement for freeboard marks been considered for open vessels where the deck line is at or below waterline and freeboards are measured to the top of the sides?

It is recommended further consideration be given to vessels that operate without loadings such as : Passenger vessels, pilot boats, police and fire boats, fisheries etc. These boats do not carry load other that their fuel, water and personnel and effects. A freeboard mark provides no benefit to safety of these vessels and just provides additional regulatory burden. It is recommended the requirement for a freeboard mark should be based around deadweight carrying not the length of the vessel.

6.5 Watertight and weathertight doors

Has there been consideration the requirements for watertight doors already in the NSCV Part C6B chapter 9? The rules referenced here (ISO) need to be

	<p>purchased and place a financial burden on boat builders, designers and surveyors. Why not have this written into the standard.</p>
	<p>Chapter 7, table 13 references hose testing only. This should also allow for more modern technology, i.e. ultrasonic hatch testing which is much more efficient and accurate.</p>
	<p>More clarification on the electrical code for vessels under 32vdc. I believe these vessel should only be wired by a qualified electrician.</p>
	<p>For Industry informed feedback of the new watertight and weathertight integrity standard really requires some commentary within the draft standard on how the reference group came to their position and resolutions on the issues. Without some comment on each of the section proposals leaves those providing feedback to second guess what the reference group thinking was. Possibly new proposals may be off the back of other standards or jurisdictions, the USL?, ILLC?, but without knowing this it makes it had to give informed feedback. What also stands out at this stage for me is what are the alternatives where a vessel does not comply? has there been some analysis for vessel types and classes that cannot meet the new standard requirements. For example is a yacht required to meet minimum height requirements for air pipes, vent heights, hatches, sills etc? I would recommend that there is some commentary around the No direct access leading below and the Normally closed at Sea is provided to avoid those giving feedback not understanding the meaning or definition of these important terms. I don't fully understand these as one could say all hatches are normally closed at sea?</p>
	<p>New technology refers to autonomous vessels (like the Tesla / google car) not exactly rocket science there. The laws of physics remain and has not changed since beginning of time as we know it, regardless of location (Queensland or WA or the moon) same as the physical properties of materials. Please feel free to publish.</p>
	<p>I still see lots of modified vessels that have geared up and redeployed with no over sight you cannot run the cost from the office/computer we need boots on the ground and thanks for the opportunity to comment</p>
	<p>Could you put out plain English guidance to me and for my surveyor so we know what to do.</p>
	<p>It depends</p>
	<p>Section 4.4 only refers to flush deck barges in the title but seems in the text to refer to any flush deck vessel. The requirements of Table 1 are not suitable for a number of USL or NSCV vessels. What is the definition of a barge? GES 2014/02 also covers some of the issues found with existing vessels USL code allowed for the coaming to be at the access to the lower deck rather than at the door 4.6(4) Apply this to all vessels 4.7(2) Talks about doors in the hatches section Increase commonality of requirements for Table 2&3 and 4&5 – for the sake of 50-100mm, a lot of differences could be eliminated which reduces costs when a vessel owner decides to upgrade their survey class. 4.11(2) are these easily accessible to industry? 4.17 – vessels >12m should also have a volume based method 4.20 – Freeboard mark As a naval architect, we are often reviewing the stability of vessels. Part of this means that the maximum allowable displacement is modified. This would mean</p>

each time the stability is reviewed a new freeboard mark would be required. Typically after a lightship measurement we find a vessel has changed more than 4% and so a new stability book is needed. This would change the height of the freeboard mark

What happens for vessels with simplified stability? Their load line mark would change every time a practical stability test is completed.

Load line marks work on larger vessels as they often are able to have a load line stability condition which is often significantly greater than their typical operating displacement. This ensures a good margin before the mark would ever need to be moved. They are often do not also have intact stability which is close to the limits.

Depending on the loading of the vessel, it is often the case that the condition of minimum displacement has the least margin for stability. Therefore, a freeboard mark will give a false sense of security to the master.

Installing a new permanent freeboard mark would mean the vessel needs to be removed from the water, the area behind the shell plate cleared of flammable hazards and new mark attached and then the location of the mark would presumably have to be verified by a surveyor. Each of these task is of significant cost.

In general, requirements for minimum freeboard should be placed in the intact stability criteria, not in the watertight integrity standard.

Table 1 and Table 8.1 contradict each other

6.4(2) – ensure that testing of hatches is easily able to be completed by the yard and surveyors

7.3 – this seems to be impractical for equipment typically seen on vessels <24m
Typical equipment bought at the local chandlery is not going to have the required information available.

Pg54 Table 13 – A hose test for doors installed below deck is not practical

Table 14 – Use I instead of 1 in line with ILCC

Is freeboard the lowest W.T. point on deck or the average freeboard

Freeboard for small vessels <150mm as per GES

Combine C6B subdivision mark and C2 mark

Chapter 1

1.1 (1) Add (e) down flooding prevention

1.2 Note 1 Typo: load lines certificate

1.3 Reference documents: SOLAS not included

Definitions : Pound board (two words or one?) change definition ...located by fixed or portable stanchions to ...defined by fixed or portable stanchions

Recess: amend bounded to bound

Side scuttles: after the word opening add on the vessel's hull or superstructure

Include definition for non-load line vessel

Proposal to include figures of additional type of vessels showing position 1 and 2.

Chapter 3

3.3 Can boat builders manufacture their own doors? Will they need to get ISO certification?

3.4 Can one use Australian standard toughened glass?

Chapter 4

Title Chapter 3 applies to vsl > than 24m LLL, but this chapter is for <24m Lm (this could be confusing)

4.1 See above comment (confusing)

4.3 (2) Will an EMOC Application be required for AMSA approval?

4.6 See comment 3.3. above

4.7 (5) Clarification on a suitable blank is needed. Also fixed or portable?

4.9 (e) Same as in AMSA781 GES but is this realistic? Might only work for multihulls.

4.13 Can one use AS toughened glass?
Table 6 Limitations on application are different for class C and B vessels to those given in NSCV C3. Could this be confusing?

4.14 (2) Allowance for acrylic hatches should be made if the skylight has ISO 12216 certification.
(4) reword to skylight hatches
(5) reword to a skylight hatch
(5) (f) how will this impact the industry e.g. CE vessels changing the location of the hinge?
(6) include except for skylights as in (3) above.

4.18 (4) A reference to the requirements of 5A chapter 5 should be made.

4.20 (3) Note Clarification if both freeboard mark and subdivision load line are required on a vessel Particularly if freeboard mark is at LCF (not amidships).

Chapter 6
Relevant comments from chapter 4 above (for hatches, skylights and glass) apply here too

6.6 (3)(b) and (c) Recommend referring to smaller sized vessels such as 45m limit.
6.6 (6) Typo: In last sentence delete word 'to' before 'apply'

6.8 Change to Casings of a strength equivalent to the adjacent "structure" not superstructure

6.9 (4) Are closing appliances for vessels of 45 m or more relevant to this standard? Wouldn't they just follow Class requirements .

6.13 (2) Last sentence to include except for drains from sanitary spaces.

Table 9 Is min sill height 600mm correct for other hatches in Pos 1? Table 11 shows 300mm.

Chapter 7
7.2 (c) Could the manufacturer be the boat builder? Recommend adding further clarification on this or guidance should be provided whether boat builders can construct doors and portholes based on the ISO requirements and then assess and test based on Table 13.
Table 13 Reword third column for skin fittings testing as it mentions doors. Rephrasing required.

Annex A
A2 Specifically mention that the top line of the freeboard mark to be visible on a vessel with compliant loading.
A3 (2)(c) Is midships more suitable than LCF? Easier to locate.
Figure 8 Deck line text to be added above deck line figure
Figure 10 Align summer load line with plimsoll mark line to avoid confusion
Which markings should be placed on the plimsoll mark if not through a RO?

Please note this is a suggestion based on experience with the design of small recreational vessels regards to evolving technology and may not have direct relevance.

In the relatively recent past innovation has often been pioneered with the design of small recreational craft. The acceptance and adoption of multihull vessels is one example. An appropriate response to evolving environmental factors would suggest that it would be of potential value for this process to continue. All mariners of both commercial and recreational vessels should ethically be entitled to the same level of safety. At present there does not seem to be a clear pathway for dialogue between these two sectors. Could this be improved in any way?

<p>AMSA's response</p>	<p>Thank you for your comments and feedback. This question was primarily aimed at trying to “future proof” the standard and to consider future technologies and the varied and diverse size of vessels and operations within the domestic commercial vessel fleet.</p> <p>Based on your feedback AMSA considers the standard adequately accounts for current technologies and has sufficient flexible options for most future technologies within the watertight and weathertight domain. Several changes or amendments to the proposed standard have been recommended and adopted, a summary of adopted key amendments;</p> <ul style="list-style-type: none"> • Rewording of the section 4.7 Hatches and coaming to clarify the requirements for hatches to be forward hinged in some circumstances. • The term “normally closed at sea” has been defined within the definitions. A note has been added to supply the context of what is considered “sea” in the above term. • Air pipes have multiple performance and risk-based options. • Clause 4.11 (2) added to cover requirements for transducers. • Table 13 has been updated to include additional options for testing many of the closing devices/components listed and some typos corrected. • As part of the implementation of the NSCV standard, AMSA will provide guidance material to support Australian manufactures and shipyards on the landing page. • Annex C –A simplified method for glass window design requirements has been added to assist in reducing reliance on International standards for low complexity less than 24 m domestic commercial vessels. • 4.3 Recesses have been amended based on feedback. • A modernising of the requirements for hatches, particularly for smaller vessels with flush hatches. • The title of clause 4.4 has been amended • The watertight and weathertight component tables have had a note added to allow greater flexibility for the position of sills. • Table 8.1 updated. • Table 14 updated to replace 1 for I. • SOLAS added as a reference document. • Pound board definition amended. • The definition of portholes and side scuttles was amended. • 4.1 amended to emphasise that chapter 4 is for vessels 24 m or more in load line length. • 4.7 (5) updated to clarify a portable blank. • 4.9 (e) example added to assist in clarifying the requirement. • 4.13 (10) amended to safety glass and definition of safety glass added. • 4.14 (2) amended to allow increased flexibility. • 4.14 (4) & (5) reworded to skylight hatches. • 4.14 (6) deleted. • 4.18 (4) deleted and replaced by 4.18 (3). • 4.20 (3) noted, amended to clarify a vessel with a subdivision load lines does not require a freeboard mark. • 6.6 (6) amended. • 6.8 and 6.13 suggestions adopted. • Table 11 other hatches amended to 600 mm. • Annex A A2 was updated to specifically mention the top line of the freeboard mark must be visible in smooth waters. • Figure 8 suggestion adopted.
------------------------	--

	<ul style="list-style-type: none"> • The freeboard and deck line diagrams have been updated to clearly articulate the deck line. • The load line mark in Figure A6 has been updated to align the summer load line with the plimsoll mark. <p>The NSCV is a standard developed for domestic commercial vessels operating up to 200 nautical miles off the coast of Australia. AMSA primarily regulates, domestic commercial vessels, regulated Australian vessels, and international ships when in Australian waters. The primary regulators for recreational vessels may use some parts of the NSCV C2 standard to inform and develop their regulations and standards once the standard has commenced.</p>
--	--

Submissions received separately to the online submission form and questions

AMSA received eight submissions separately from the online submission form. The submissions have been summarised and condensed.

Additional feedback themes received not covered by the consultation questions – Submission 1
Raised some issues with sliding weathertight doors and their applicability to different classes of vessels.
4.8 (2) Note to (2) discusses watertight closing for ventilators when other parts of (1) and (2) discuss weathertight closing.
4.9 (e) Not clear what this clause means.
Recommend adding standards for bottom plug design for steel vessels, ISO 5483 and JIS-F-3005.
Chapter 4 currently preclude the use of a standard window, portlight designs for larger vessel (i.e. ISO 1751 or ISO 3903) referenced in chapter 3 and 6 without an equivalent solution.
Provided an example drawing of Scupper and Drain arrangement on a 30-metre NSCV vessel which is presently under construction. This vessel could be 24m length and as such Chapter 4 would be applicable. Is 4.18 (1) appropriate? Example: (1) SC-1 (2 x 76.2mm OD x 6.35mm WT scupper drainpipes fitted to aft end of wheelhouse top). Area is approx. 50.8m ² leading to requirement for 35,560 mm ² of scupper area. This equates to 12 of the nominated 76.2 mm ² scuppers which seems excessive.
Freeing ports and scuppers, the included Note to 4.18(1) is not clear. Surely if a freeing port iaw 4.17 is fitted then this removes the need for a scupper to be fitted. If the freeing port can remove large quantities, then surely it can remove rain/spray. Why the requirement to add both requirements together.
Is an AMSA accredited surveyor a competent person under this Clause 7.2(a)? What other National/State authority accreditation would be acceptable?
Table 13 Skin fittings - Test Duration and Other Requirements refers to seal and door. Not applicable to Skin fittings.

Submission 2
Page 20 of the draft, Clause 4.4 is titled Flush Decked Barges. Looking at the contents of this Clause I believe this should read Flush Deck vessels.
I would ask that devices such as ultrasonic detectors be added to Table 13 and the adjoining notes. I have used such devices and they are a very “tidy” way of getting a more reliable test compared to water and chalk
Table 7 on page 33 refers to Simplified Rapid Drainage Assessment methods. In the vessel lengths column it has an entry for vessels < 7.5 metres with an associated Operational Area Category of A, B extended and B. Surely AMSA does not allow vessels of this size to go to sea to 200 M. I believe the comments above should also be applicable to the next range of vessel size
Where does the requirement for Clause 4.17 Freeing Ports Paragraph a. come from? What basis has this been determined?

Submission 3
For Industry informed feedback of the new watertight and weathertight integrity standard really requires some commentary within the draft standard on how the reference group came to their position and resolutions on the issues.
Without some comment on each of the section proposals leaves those providing feedback to second guess what the reference group thinking was. Possibly new proposals may be off the back of other standards or jurisdictions, the USL? ILLC?, but without knowing this it makes it had to give informed feedback.
What also stands out at this stage for me is what are the alternatives where a vessel does not comply? has there been some analysis for vessel types and classes that cannot meet the new standard requirements. For example, is a yacht required to meet minimum height requirements for air pipes, vent heights, hatches, sills etc?
I would recommend that there is some commentary around the No direct access leading below and the Normally closed at Sea is provided to avoid those giving feedback not understanding the meaning or definition of these important terms. I don't fully understand these as one could say all hatches are normally closed at sea
What are the examples of “other hatches” in position 1?

Submission 4
4.1 Note 1 Vague.
Why can't stability prove if the vessel is still seaworthy without self-draining? this will cause huge problems to fleet, especially as many fishing boats have tanks or recess to put catch in.
4.4 Are these barges or vessels? heading 4.4 says barge but table says vessels.
Not all abalone boats in Tasmania have fixed hatches, some are over 2 square meters and don't work as hinged.
4.9 (d) Need definition of general operations, or is it a surveyors judgment call on the day?
4.10.2 all sizes need closing devices, what about small 10mm pipes?

Submission 5

There is an over reliance on ISO standards. ISO standards should only be referenced as an alternative deemed to satisfy solution to aid the acceptance of CE certified vessels. The partial use of ISO standards on a DCV often leads to ambiguous compliance as ISO standards typically cross reference other ISO standards for other parts of the vessel. The NSCV should have a standalone pathway for compliance which does not compel users to invest in costly alternative standards which were never intended to be applied to commercial craft

With the inclusion of freeing ports and drainage in Part C2, NSCV Part C6B chapter 4 should be removed to avoid confusion. 6B chapter 4 contains rapid drainage requirements for a subset of vessels and has no place in the damaged stability section. If left C6B and C2 will contain contradictory requirements.

There is perhaps an omission from the formula at chapter 6.12. coefficient h for height of bulwarks is defined yet does not appear in the formula. i.e. A "0.07 x 0.7LM" if this is correct, why not just "0.049LM".

It appears the formula is derived from Load Line freeing port requirements however the formula as written would only result in an area for a vessel with "standard sheer" and no allowance made for "zero sheer" vessels which would be 150% of the above(USL Sec 7-22.8). The vast majority of contemporary vessels will have zero sheer and therefore C2 as written represents a significant relaxation of the current standard.

Chapter 6.14 is poorly written as it refers to the lesser of three values, two of which are displacement values and one of which is conversely a freeboard value. Also C6 has multiple minimum freeboard values including 75mm from 6B in a damaged condition.

suggest as follows "The maximum displacement for any vessel shall be the lesser of any of the following: (a) The displacement equating to the upright freeboard to the weather deck (or the gunwale in the case of an open boat), used to determine the applicable intact stability criteria in accordance with NSCV Part C6A; or, (b) The displacement used to determine the hull scantlings in accordance with NSCV Part C3; or, (c) The displacement equating to 200mm of freeboard at normal trim.

Freeboard marks are not sufficient to meet the objectives stated in A2. The freeboard mark does not consider a loading condition that lies within the maximum displacement but exceeds the VCG or windage considered in stability assessment. It results in a false sense of security for the operator unless the complete stability characteristics are given the same emphasis. Conversely, for vessels that have relatively low carrying capacity because of the nature of their operations will have a freeboard mark significantly lower than a position which represents the limiting freeboard to comply with structural and stability requirements which would be a poor metric to use in determining if a vessel was being operated unsafely.

Load line marks are derived from empirical values based on typical vessel dimensions and configurations of the early to mid-20th century. As contemporary vessel design departs further from those norms, the load line marks become more and more arbitrary. Freeboard marks and load line marks are less useful in this day and age. Greater attention should be paid in developing user friendly stability and structural standards that assist operators to understand a vessels capability as should the competency training for masters.

The Definition of Side Scuttles as an "opening with an area not exceeding 0.16m²" is a fundamental misunderstanding of the purpose of side scuttles. Side scuttles are an opening in the vessels side which may be located below the weather deck, they are intended for loading of cargo or passengers directly onto tween deck spaces. The drafter's definition effectively treats side scuttles as an alternative name for port holes. 0.16m² is insufficient area to load through. The USL code as do class rules permit such openings in the vessels side with suitable safety measures. e.g. a scuttle door could be a rectangular opening large enough to house the end of a gangway. The strength of the door and frame must be commensurate with the surrounding

structure. It would have a smaller port light fitted in the larger door to enable a crew member to ensure there are no obstructions before opening the door. They typically have alarms fitted to closing devices alerting the bridge to the doors status.

This draft of C2 effectively disallows such doors and is also silent on bow/stern doors and ramps falling well short of expectations for a contemporary standard

AMSA's claim for why we need a new standard is utter nonsense. The USL code was a single technical standard with multiple sections. It was first released as a complete paperback book for purchase at government bookshops. Later editions being sold as either a complete book or individual sections so that users need only purchase the relevant sections for their own requirements at little more than a few dollars per section. It is simply wrong to suggest you are merging three standards into one. In fact you are doing quite the opposite by compelling users to purchase a multitude of ISO standards running into thousands of dollars when the three sections of the USL code are currently available online at no cost.

The suggestion that "a number of fatal incidents over the last 40 years have highlighted a need to change" infers that the USL Code was at fault. This claim is not supported by documented research on said incidents which distinguish between contributing factors relating to deficient standards and those relating to non-conformance to required standards, poor maintenance or operator error.

If AMSA wishes to be a respected organisation, then it should be more transparent in its justification for enacting change.

Submission 6

6) Pg. 47: 6.17: Flooding of fish holds

It seems that the 20 deg is irrelevant - might want to relook into that. Having 20 deg to flooding would mean stability criteria is not required to be met?

Holds or ballast tanks if cannot be closed and fails stability criteria (heeled) with them filled (in some particular cases certain tanks might need to be empty (or not full) depending on loading characteristics and also based on vessel configuration and number or tanks etc), might need to be looked at differently even if they have up to 20 deg before immersion (which can be too low). Also there might be other conditions regarding load or state of other tanks before one particular tank maybe fully filled etc.

Simply leaving this at any holds or tanks to stability criteria compliance would be better? unless have missed something (just not sure of the 20 deg).

It may be good to have the option to use many ISO standards and Class, however would have been better to have some simplified guidance as part of NSCV for windows, doors, watertight & weathertight test etc that would be deemed as acceptable to start with (noted table 13 already).

Do vessels having LF; have any impact on coaming heights etc - especially on small vessels with no real under deck space? As per position 1, even hatches on foredeck and cabin roof might need coaming still, as they lead to potentially enclosed spaces?

Table 2 – for small vessels that have negligible volume below deck; say inside fore cabin below deck, do still need to meet minimum door sill heights otherwise even if foam filled or meets subdivision req's? Is there a recess volume to hull intact volume ratio consideration given before anything applies like sills or hatches (recess comes in to play)?

Is there a connection between NSCV C6B not to have freeing ports depending on flotation given consideration?

4.13 – Why only ISO/CLASS is an option. Can't use something similar to USL as well that has been proven and people have been familiar with or added as an option with some mods/corrections for cabin windows etc.

4.13 – (10) – why can't laminated safety glass be used, also Perspex on some vessels depending on strength (if proven) or location as was looked at in previous C2 draft? Some sailing vessels due to shape of cockpit is hard to fit toughened glass

Table 7 might be too confusing for most – suggest publishing more educative material and background of where these came from.

Submission 7

We are happy that this work has been done but believe that some areas are overly restrictive/prescriptive, and that if the aim of this is to make regulatory compliance more intuitive and simpler it needs to be re-worked,

We are of a view that if this goes ahead as it is written there will be a significant increase in cost and complication both for new builds and, one would assume, for vessels that might become transitional.

Critically we question the cost to builders of the volume of ISO standards that are called up, and the modifications that seem to be being made to clearly articulated requirements in the ISO standards by this standard. These costs do not seem to have been captured or accounted for in the RIS...and modifying internationally agreed requirements in these ISO standards we just don't understand.

Anyway, we are happy to assist to get this right and understand the development process that these need to go through intimately. Yell out if you need any further input or assistance.

Bruny Island is nowhere near the location you have it on the chart let. Error carried forward from USL code...

NSCV C1 Clause 4.8.1(b) states a minimum headroom of 1.9m. This exceeds the given standard height of superstructure. Increase the standard height of superstructure in accordance with NSCV C1.

Heel angle of 15° may see deck edge immersed in some boats, scupper discharge positioned above or below deck level would then not work in its self-draining capacity. Arrangement should be effective till angle of deck edge immersion.

ABYC rules are meant for recreational craft and not suitable for workboats. Exclude the use of ABYC H-3.

Can the toughened safety glass be replaced by laminated glass, polycarbonate or acrylic glazing? Far too prescriptive. Provide guidance on the use of laminated glass, polycarbonate and acrylic glazing.

Definition for depth of open boat is not given in this draft of NSCV C2, nor in NSCV part B.

Submission 8

In Figure 3, position 1 and position 2 in 0.25LLL from the forward perpendicular are incorrectly illustrated. The position marked with the red rectangle as shown below is to be illustrated with position 2.

P28, Part C Sec.2 Ch4 4.10. It is noticed that "the sounding pipe(s)" is not mentioned in the heading of this clause "4.10 Air Pipes", while it is included in subparagraph (4) " ... Air and

sounding pipes must ...” . It is suggested that the heading and subparagraph is harmonized with each other	
P35, Part C Sec.2 Ch4 4.18. It is noticed that “inlet(s)” is not mentioned in the heading of this clause “4.18 Scuppers and discharges”, while it is included in subparagraph (3) ” ... The number of inlets ...” and (5) ” ... Inlet and discharge pipes ...” . It is suggested that the heading and subparagraphs are harmonized with each other.	
AMSA’s response	AMSA appreciates the time and effort made by all stakeholders who submitted feedback. The feedback provided has been taken on board in determining the changes that should be made in response to feedback received during the consultation. A summary of the key changes made in response to consultation feedback has been summarised below.

Key changes made in response to feedback	
Issue	Changes made
Wheelhouse sliding doors for class 3 vessels 12 m or more in measured length.	We have removed the sliding door requirement from the NSCV C2 standard. This issue is mainly an escape related issue and as such due consideration will be given to escape options within NSCV C1: Arrangement, accommodation and personal safety.
The use of ISO standards.	A new Annex C – Simplified methods for glass window design requirements has been developed for <24 m vessels. This provides a simplified pathway for <24 m vessels without the need to use an ISO standard. At the request of the industry, some additional International standards have been referenced, for example, that cover bottom plugs.
How will the new NSCV C2 standard be applied to existing and transitional vessels.	The new NSCV C2 standard only applies to vessels entering service for the first time once the standard commences.
Important terms defined.	The terms “normally closed at sea” and “no direct access leading below the weather deck” are now defined. Also, the definition of Portlight and side scuttles has been amended.
No requirements for transducers.	Clause 4.11 (2) requirement for transducers added.
Additional testing procedures recommended for Table 13 - Closing and component	Table 13 has been updated to include additional options for testing many of the closing devices and components.

installation testing requirements.	
Appropriate drainage requirements at clause 4.3 were prescriptive for heel and trim.	4.3 (3) updated to be less prescriptive and some clear example of what different types of vessels anticipated operating conditions might be to provide context.
Requirements of toughened glass to prescriptive throughout the standard.	The toughened glass was replaced with safety glass and safety glass was defined to be more performance based.
Air pipes and ventilation.	Air pipes and ventilation sections are updated to allow for additional performance outcomes based on risk. For example, air pipes less than 15 mm diameter do not require a closing device and air pipes up to 150 mm may not need a closing device if a down flooding assessment is performed as detailed in the standard.
Freeing ports and clarifying if scuppers are needed.	Scupper clause 4.18 amended and figure 5 developed with a worked example of when scuppers are required.
Do subdivision load line vessels require a freeboard mark.	No, notes throughout the standard have been strengthened to help make this clearer. As most passenger vessels require a subdivision load line this negates the need for most passenger vessels to have a freeboard mark.
6.12 Freeing ports equation.	6.12 Freeing ports equation amended.
Load line and plimsoll mark not aligned to the summer mark.	Figure A6 Load line and plimsoll summer mark aligned.