

NSCV part C subsection 7D — Anchoring		
NSCV reference	Topic	Comment
Forward of Part C7D	To be read in conjunction with part A, Safety Obligation To be read in conjunction with part B, General Requirements To be read in conjunction with part E, Operational Practices	Section 41 of the <i>Transport Operations (Marine Safety) Act 1994</i> (the Act) — General Safety Obligation, (3) Vessel to be appropriately equipped and crewed to meet the ordinary perils of the voyage. Section 43 of the Act — General Obligation on Persons to Operate Safely (2) (a) causes a marine incident. Examples: <ul style="list-style-type: none"> <li>• drag anchor/ground</li> <li>• collision as a result from dragging.</li> </ul>
Chapter 1	<b>Preliminary</b>	The anchoring systems specified in this subsection are suitable only for use in reasonably sheltered conditions or in emergencies such as equipment failure.
1.1	<b>Minimum requirements for design, selection and testing</b>	NSCV part C subsection 7D should be read in conjunction with part B (General Requirements) and part E (Operational Practices).
1.3	<b>The anchoring systems specified in this subsection are suitable only for use in reasonably sheltered waters or in emergencies such as equipment failure.</b> Note — adjacent at right	Note — where a vessel is to anchor frequently or in extreme conditions, anchoring systems of greater holding power, robustness and performance may need to be provided to fulfil the broader safety obligations specified in part A of this Standard.
1.4	Brings up documents referenced-NSCV part B (General Requirements) and NSCV part E (Operational Practices) and the Australian standards	This section references the Australian standards in relation to chain, steel wire ropes fibre ropes and the methods of testing fibre ropes.
1.5	<b>Definitions</b> Super high holding power.	Gives the minimum holding ratio of high holding power anchor, super high holding power anchor and standard anchor. Not mentioned in the Uniform Shipping Laws Code. (USL Code)
1.6	<b>Minimum requirements for anchoring equipment</b>	a) Distance in nautical miles (nm) from a safe haven. b) Size of vessel regarding displacement, beam, length, frontal area and profile area. c) Maximum speed at full load displacement. d) Significant wave height of intended area. e) Maximum wind speed in which the vessel intends to operate. f) Type or types of seabed in the area of operation.
Chapter 2	<b>Outcomes and Solutions</b>	2.2.1 Type and quantity 2.2.2 Performance 2.2.3 Availability 2.2.4 Reliability 2.2.5 Operating Instructions
2.2.1	<b>Type and quantity</b>	Vessel must be provided with an anchoring system.
2.2.2	<b>Performance</b>	Anchoring systems must be designed and arranged for survival of persons in the event of an incident.
2.2.3	<b>Availability</b>	Must be readily able to deploy.
2.3.2	<b>Type and quantity</b>	A vessel shall carry anchoring systems of type and quantity appropriate to the category of service.

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2.3.3.2	<b>Assessment and verification</b>	Shall be assessed and verified as per the list and the note: a) tested and specifically listed in Australia b) certified by JAS-ANZ c) type approved by Class d) certified by the Australian Maritime Safety Authority (AMSA).
2.4	<b>Equivalent Solutions</b> Assessment methods for equivalent solutions applicable to anchoring solutions shall comply with part B	Equivalent solutions shall be verified in a manner appropriate to the risk that would arise should the safety system fail to perform at the time of the need.
Chapter 3	<b>Deemed-to-satisfy solutions for anchoring system</b>	a) Applying the values specified in tables 3.1 to 3.4, for vessels up to 24 metres (m) length only, or b) calculating the mass from the equipment number as specified in clause 3.2.
3.1.1	<b>Vessels more than 24 m determined by calculating the equipment number as per clause 3.2</b>	Formula has been modified to take into account other types of vessels such as trimarans and catamarans. The formula can be used for all lengths of vessels.
3.1.2	<b>Vessels less than 24 m shall be the lesser value from (a) or (b)</b>	
3.2	<b>Equipment number is a function of displacement, frontal area and profile area — gives the calculation formula</b>	NSCV has a new formula for (EN calculation) below what is required by the USL Code.
3.3 3.4 3.5 3.6	<b>Holding power</b> <b>Anchor mass</b> <b>Cable length and diameter</b> <b>Light Craft</b>	NSCV has provided formula for calculating, holding power, anchor mass, cable length and diameter and light craft.
3.7	<b>Determining mass of anchors by tables</b> Next higher anchor size should be selected.	In the event of the non-availability of an anchor not having the calculated mass, the next higher size anchor should be selected.
3.8	<b>The number of anchors to be carried by a vessel shall depend on its operating profile.</b> Where a vessel is required to carry two anchors, each anchor shall be capable to provide the required holding power. The primary anchoring system shall be ready at all times. All vessels shall carry two anchors if their equipment number is more than 10 or they are located below the double line in tables 3.1 to 3.4.	Unless carrying dangerous goods, a vessel shall be allowed to carry one anchor if any of the risk mitigating measures are in place. a) Twin screw and separate engine support systems. b) 30 nm radius from safe haven. c) Communication equipment per NSCV part C section 7 — Safety Management Plan per part E and procedures in case of breakdown. Class D and C vessels less than 24 m operating in sheltered waters, not carrying dangerous goods are not required to carry a second anchor.
NSCV Tables 3.1 3.2 3.3 3.4	Anchor mass (kg) for Class A and B vessels Anchor mass for Class C vessels Anchor mass for Class D vessels Anchor mass for Class E vessels	Tables are same as USL Code (double lines for two anchors are in the same positions on the tables).
3.9	<b>Materials</b> General requirements	a) Anchor to withstand design loads. b) Materials protected from corrosion. c) Method of construction to minimise variation in strength of anchors The components of an anchor may be cast, forged or fabricated from plate materials.  Anchors shall be tested in accordance with annex A to ensure they are capable of providing a specified holding power when deployed.

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Chapter 4	<b>Requirements for components</b>	
4.1	Shackles	Anchor cable shall be stud link chain, short link chain, wire rope or fibre rope.
4.2.1	Cables — type	
4.2.2	Design requisite	
4.2.3	Steel chain	Length of cable is dependant on area of operation of the vessel.
4.2.4	Steel wire ropes	
4.2.5	Fibre ropes	
Table 4.1	<b>Dimensions of anchor cables-in relation to anchor mass</b>	Listed cable materials from table 4.1 are of chain, manilla rope, poly-propelene rope, nylon rope or poly-ethylene rope.
4.2.6	<b>Windless, capstan or winch</b>	For anchor mass of les than 50 kilograms (kg) the windlass or capstan may be hand operated. For 50 kg and above a power operated windlass or capstan is necessary. Mechanical lifting devices shall be fitted if the combined mass of anchor and one third of the cable exceeds the local occupational health and safety requirements for manual lifting. Means shall be provided to secure cable at required length. Bitter end of cable to be permanently secured.
Chapter 5	<b>Sea anchor</b>	General requirements and testing in accordance with annex B For Class B and C vessels of measured length up to 10 m unless the vessel is capable of anchoring in deep water.
Annex A	<b>Anchor testing</b>	A5 — testing ‘loads’ A6 — anchor testing-structural A6.2 — test conditions A6.3 — test procedure A6.4 — proof load A7 — conformity assessment  In-depth requirements regarding loads, test conditions, test procedures to ensure anchor does not fail in service. Accurate records of tests and conditions of testing are to be recorded and signed by the representative of the assessment body.
Annex B	<b>Tests for sea anchors</b>	A10 — required outcome A11 — testing B4.1 — deployment B4.2 — towing B4.3 — strength B4.4 — porosity More in depth than the USL Code — test methods are specified.