

Lifeline Materials

Special Regulations, Part 2, Section 3, Fixed Equipment

Australian Sailing recognises that the implementation date of any change to policy, rule or regulations is subject to clubs' capacity to restart sailing operations and club house activities as COVID-19 restrictions lift. All proposals and implementation dates are subject to change or delay around this important consideration.

1. Issue

The Special Regulations require for certain race categories that boats be equipped with a system of lifelines designed to form an effective continuous barrier around a working deck with the aim of minimising the risk of people falling overboard.

The SRs prescribe the use of uncoated stranded stainless-steel wire of a certain diameter for lifeline materials and go on to recommend the use of 316 grade wire. The SRs permit a taut lanyard of synthetic rope to secure lifelines and prescribe that the lanyard be replaced annually.

Over the last decade, High Modulus Polyethylene (HMPE) rope has become a proven and tested alternate for wire in various industries, certain sporting applications, and has become more relevant in the marine industry as a suitable replacement for wire.

ISO 15085:2003 specifies the design and strength requirements for safety devices intended to minimise the risk of falling overboard and does not prohibit the use of HMPE rope. The use of HMPE lifelines relates to commercial, recreational, and competitive sailing globally. There are no reported incidents that make recommendations to prohibit the use HMPE rope lifelines.

World Sailing commissioned an extensive report into the use of HMPE lifelines leading to the [Offshore Special Regulations](#) (OSR) permitting their use for certain race categories.

It is apparent that only qualified suppliers and installers (riggers) should be responsible for the fitting of covered braided synthetic lifeline systems so that all material, design, and maintenance considerations are accounted for:

- Material - correct grade of braided UHMWPE-HMPE (Dyneema® / Spectra®). Correct cover.
- Design - Correct terminations and splices. Correct stanchion ferrule geometry and smoothness. Chafe UHMWPE-HMPE sleeves or tubes may also be considered as an additional precaution.
- Maintenance - should consider routine inspection at regular intervals by the installer or rigger. Mandatory replacement of all lifeline materials after a set period should be considered to address any UV or salt damage, metal work-hardening (stainless steel wire) as well as chafe. ISO 15085 also addresses these points.

See report:

https://www.dropbox.com/s/eihzndlwrlqmegr/Lifeline%20WP%20Report_David%20Lyons_Rev20151108_01.pdf?dl=0

Permitting the use of synthetic rope in lifelines is timely and appropriate but not simplistic. The material technology and the fitting expertise exist in industry, but specific knowledge and processes are required.

See report:

<https://www.dropbox.com/s/49ycaasakgi2f25/130409%20Yachting%20Australia%20SR%20synthetic%20lifelines%20Rev021.pdf?dl=0>

National Safety Committee

See test videos:

<https://www.dropbox.com/s/juw8y3posh15gfo/2015-11-09%2001.46.00.mp4?dl=0>

<https://www.dropbox.com/s/4f6e72gle31zul3/2015-11-09%2002.34.03.mp4?dl=0>

<https://www.dropbox.com/s/55u8z53m7oji7ph/2015-11-10%2002.43.42.mp4?dl=0>

<https://www.dropbox.com/s/roqnagdp75fd940/2015-11-10%2002.46.19.mp4?dl=0>

<https://www.dropbox.com/s/oqxkmmqvipk7ff7/2015-11-10%2003.00.10.mp4?dl=0>

<https://www.dropbox.com/s/9b2adjrb9b515jl/2015-11-10%2003.21.31.mp4?dl=0>

2. Recommendation

The National Safety Committee seeks public comment from boat owners and interested clubs on a recommendation to amend the Special Regulations by permitting the use of HMPE rope as a lifeline material bringing them into line with ISO 15085:2003, World Sailing's OSR and general recreational sailing applications.

3. Reasons

The reason for the proposal is to allow materials that provide for the same safety outcome.

National Safety Committee

AUSTRALIAN SAILING CHANGES TO Australian Sailing 2017-2021 Special Regulations

Issued on [date] as Amendment no. [#]
Effective from [date]

SPECIAL REGULATIONS

PART 2, SECTION 3 FIXED EQUIPMENT

Regulation 3.12.6

Delete the text that has been ~~struck-out~~ and insert the text that has been underlined.

3.12.6 Lifeline minimum diameters, required materials, specifications

- (a) Where lifelines are fitted, they shall be either:
- i. ~~stranded stainless steel wire. of minimum diameter specified in the table below.~~ Steel lifelines shall be uncoated and used without close-fitting sleeving.
 - ii. HMPE rope
of a minimum diameter as specified in the table below.
- (b) Notwithstanding 3.12.6 (a)(i) above, the term "uncoated" means that the wire must not be coated with any product that is moulded to the wire. The application of a loose sleeve to uncoated wire is permitted provided that air can circulate along the length of the wire between stanchions, it is regularly removed for inspection and the wire remains in good condition.
- (c) *Grade 316 stainless wire is recommended.*
- (d) A taut lanyard of synthetic rope may be used to secure lifelines provided the gap it closes does not exceed 100 mm. This lanyard shall be replaced at least annually.

1 2 3 4 5 6 7

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National Safety Committee

(e) All wire, fittings, anchorage points, fixtures and lanyards shall comprise a lifeline enclosure system which has at all points at least the breaking strength of the required lifeline wire.

1 2 3 4 5 6 7

(f) [When HMPE is used, it shall be protected from chafe and spliced in accordance with the manufacturer's recommended procedures](#)

1 2 3 4 5 6 7

LH	Wire	HMPE Rope (single braid)	HMPE Rope (braid on braid)	
Under 8.5 m	3 mm (1/8 in)	4mm (5/32")	4mm (5/32")	1 2 3 4 5 6 7
8.5 m – 13 m	4 mm (5/32 in)	5mm (3/16")	5mm (3/16")	1 2 3 4 5 6 7
over 13 m	5 mm (3/16 in)	5mm (3/16")	5mm (3/16")	1 2 3 4 5 6 7