

IM24CA Class Rule Change Proposal — Protective Sleeve on 7x19 Jib Halyard

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Submission summary

Permit a bonded, non-structural protective sleeve over the sheave-bearing section of the original-system 7x19 stainless jib halyard, to cut the forestay failures the TC's own 2024 white paper calls a safety issue.

Item	Detail
Submitted by	Bora Gulari, USA 874, IM24CA Technical Committee member
Rules affected	F.7.1(b), H.2 (Running Rigging: Headsail Halyard s/s wire), C.9.7(a)(2)(a) cross-reference
Systems affected	Original 7x19 halyard system only. Fixed-forestay and HMPE halyard options unchanged
Cost to owners	Optional. Zero for teams that do not fit a sleeve
Requested effective date	On World Sailing approval, ahead of the 2027 season

The proposal keeps the 7x19 wire, its diameter limits, the Highfield lever system and the auto-rake behaviour exactly as designed. It adds one permitted item: a thin sleeve, bonded to the wire, over a limited length where the wire wraps the masthead sheave.

Current position

Nothing in the rules permits a sleeve on the original-system halyard, and the class is closed ("if these rules do not say you can, then you cannot"). Text below is from the [2021 edition](#); confirm numbering against the current 2026 edition before submission.

C.9.7(a)(2)(a) — The jib shall be hoisted by "the s/s wire jib halyard connected to the jib luff wire, through the original jib sheave and which shall be secured to the high field lever" (options (b) and (c) are HMPE halyards).

F.7.1(b) — "The jib halyard for the original system shall be 7x19 stainless steel wire."

H.2, Running Rigging — Headsail Halyard s/s wire: min 4.7 mm, max 5.1 mm, "Shall be 7x19 cable."

F.3.3(a) — Permitted mast fittings include "protective cloth sleeves". The TC has read this as applying to the spar, not the halyard, and ruled a laminated/covered halyard not legal for the 2026 Worlds.

C.7.2(a)(10) — "Protective covers may cover the shrouds, vang and recess for the furler drum." This is the existing precedent for non-structural covers on rigging; the forestay/halyard is not listed.

Relevant masthead geometry (F.3.4 / H.2): jib halyard sheave bearing diameter 72–78 mm (H.2; F.3.4 allows 48–80 mm), jib halyard height 8210–8230 mm.

Proposal

Amend F.7.1(b) and the H.2 halyard row as below. Additions in bold. Values in [brackets] are proposed limits to confirm against a measured sleeve before submission.

F.7.1(b) The jib halyard for the original system shall be 7x19 stainless steel wire. **A protective sleeve may be fitted to the halyard as follows:**

1. **Material: braided or woven HMPE, aramid or polyester, which may be bonded to the wire with adhesive.**
2. **Length: one continuous sleeve, not more than [600] mm, positioned to cover the portion of the halyard that bears on the jib halyard sheave when the jib is hoisted.**
3. **Overall diameter over the sleeve: not more than [6.5] mm.**
4. **The sleeve shall not be captured in, or pass through, any swage, terminal or splice, and shall end not less than [300] mm from any termination.**
5. **The sleeve shall be non-load-bearing: the halyard shall comply with F.7.1(b) and H.2 with the sleeve removed.**
6. **No metal, rod or other stiffening element shall be incorporated in the sleeve.**

H.2, Running Rigging — Headsail Halyard s/s wire (permitted modifications column): Shall be 7x19 cable. **Diameter measured on the unsleeved wire. A protective sleeve per F.7.1(b) is permitted.**

C.9.7(a)(2)(a) — no wording change; add a note: "See F.7.1(b) for a permitted protective sleeve."

Reasons

The class has already declared this a safety problem; this is the cheapest fix that keeps the original system intact.

Safety. The TC's [November 2024 white paper](#) describes 7x19 halyards failing from the inner core first, where routine inspection cannot see it. It reports a CAN 629 halyard nearly fully broken after 8 races on a new wire, and USA 420 losing its mast upwind at the same event. It concludes the situation is "quickly becoming untenable."

Cost. The same paper reports top teams at the 2024 San Francisco Worlds replacing halyards after a single day. Proposer's experience matches: at windy events a stock wire rarely survives more than two days.

Field evidence. USA 874 has sailed 30+ days on one sleeved 7x19 halyard with no failure. The sleeve was shown to the head measurer when first built and was used at the 2024 SF Worlds under Section 9 experimental approval.

One-design impact. None on performance by design (see Technical rationale). The wire, diameter, sheave, lever and rake behaviour are unchanged. The class already permits two different forestay systems and three hoist options, so a sleeve on one component is a far smaller departure.

Keeps the original system viable. The white paper notes many teams find the original system faster and easier, especially in breeze, and that converting pre-2009 masts to fixed forestay costs roughly \$800 plus about 3 hours of labour. This proposal avoids forcing that conversion.

Technical rationale

The wire fails where it wraps the sheave under combined bending and furling torsion; a bonded sleeve holds the strands in lay at exactly that spot without changing the halyard's load path or stretch.

Failure mode. The halyard wraps roughly 150° over a 72–78 mm sheave. With 4.7–5.1 mm wire that is a sheave-to-wire ratio of about 15:1, low for 7x19. Furling adds twist the white paper says 7x19 "does not respond well to." The result is strands unlaying, bird-caging and core breaks at the sheave.

How the sleeve helps. Bonded along its length, the sleeve constrains the outer strands radially so they cannot open up under twist. It also spreads bearing pressure on the sheave and reduces fretting between wires. It does not carry meaningful axial load.

Why [600] mm is enough. The wrap arc is only about 100 mm (75 mm sheave, 150°). While racing the halyard is locked at the Highfield lever, so the wire's position on the sheave moves only by its own stretch, on the order of 13 mm per the white paper. The proposed length leaves margin for differing hoist lengths between jibs.

Rake and stretch preserved. The original design uses 7x19 stretch to auto-rake the mast as shroud tension rises. The halyard's elastic length runs from the compression post up the mast and back down to the drum, roughly 16 m. Even if the sleeved section were perfectly rigid, it would remove under 4% of that length, and a braided sleeve is far from rigid. A simple load-stretch comparison, sleeved vs unsleeved, can confirm this before the AGM.

Sheave and exit fit. Overall diameter over the sleeve is capped at [6.5] mm so the halyard still runs freely through the sheave groove and exit slot during hoisting.

Measurement and enforcement

Every limit is checkable at the dock with a tape and calipers; no sleeve removal is needed.

Check	Tool	Limit
Wire construction and diameter, on unsleeved section	Calipers, visual	7x19, 4.7–5.1 mm
Sleeve length	Tape	≤ [600] mm, one piece
Overall diameter over sleeve	Calipers	≤ [6.5] mm
Clearance to nearest termination	Tape	≥ [300] mm
Sleeve material	Visual	Braided/woven HMPE, aramid or polyester; no metal or stiffeners

Where a measurer doubts that a sleeve is non-structural, the class may ask for a spare sleeved halyard to be cut open for inspection.

Anticipated objections

The inspection objection is the strongest and should be met head-on; the rest have short answers.

Objection	Response
The sleeve hides the most critical section of wire from inspection	Partly true, and the weakest point of this proposal. But the white paper already says visual inspection fails because the core breaks first. Mitigation: the class can publish a recommended replacement interval for sleeved halyards (e.g. per event or per [N] sailing days).
The class should just move everyone to the fixed forestay	That proposal was withdrawn in 2024 after member pushback. It costs pre-2009 owners about \$800 plus labour, needs zip-luff jibs few lofts build, and gives up the original system's handling in breeze. This proposal is compatible with either outcome.
It's a performance gain	No change to wire, diameter, sheave, rake mechanism or sail. The sleeve sits around the sheave at the jib halyard exit and adds a few grams aloft.
It opens the door to composite forestays	Items 5 and 6 require the wire alone to comply and ban stiffening elements. The steel remains the structure.
It was ruled illegal for the 2026 Worlds	That ruling was on the current wording, not on merit. This proposal is the proper route the TC pointed to.
Other synthetic options (Dyneema, 19x7) are being tested	Those change the halyard itself and, per the white paper, may lose auto-rake. This keeps the approved wire. They are not mutually exclusive.

Sources

- [IM24CA TC white paper: Systemic Forestay Issues related to the 7x19 Jib Halyard \(Nov 2024\)](#)
- [International Melges 24 Class Rules 2021](#)