

Equipment Rules of Sailing

H.5.4 Extended as Necessary

A submission from the Equipment Committee, Classes
Committee and 420 Class

Purpose or Objective

To clarify the conditions for extending sail edges to find a corner point and to remove a method which is in contradiction to the principles shown in the various ERS diagrams for corner points.

Proposal

H.5.4 Extended as Necessary

~~If~~ When there is ~~local curvature and/or irregularity~~ a cut-out or rounded corner in the **sail edges** at the **clew, tack, peak, throat, spinnaker head** or an **aft head point**, ~~the leading into a~~ the corner point the extension of the **sail edge** shall be found by extending the sail edges as necessary to bridge the cut-out or rounded corner.

(a) A uniform thickness batten may be used for that purpose, placed along each **sail edge** and bent in a way to match the curve of the **sail edge** up to the start of the cut-out or the rounded corner. ~~as follows using a batten as specified in H.5.4(c):~~

~~(a) Hold the batten at its very ends with one end approximately where the corner point will be and the other end touching the sail edge being extended.~~

~~(b) Apply compression only to the batten to produce a uniform curve when required.~~

~~(c) If the batten does not replicate the sail edge shape exactly, move the end of the batten at the corner away from sail until the longest possible length of the batten touches the sail edge.~~

~~(b)~~ When this technique does not provide a repeatable corner point, the cut-out is not clearly defined and a repeatable **corner point** cannot be found, ERS H.1.2 shall apply. The certification control may be suspended until the sail cut-out is made clear to the satisfaction of the certification measurer.

~~(c)~~ Batten specifications shall may be of a specification approved by World Sailing unless otherwise specified prescribed in class rules.

~~(d)~~ Class Rules may vary ERS H.5.4

Current Position

As above

Reasons

1. Current ERS H.5.4 has introduced a set of limitations to the design of sail edges, especially near the tack and clew corners, which are not specified in this way by the ERS definitions for the respective corner points. Specifically, the method requires the use of a tool in the form of a batten which has a specific size, 1m as per WS specification and which is to be applied in a very specific way.

- A 1m long section of the sail edge will be used for the extension at all times, regardless of the size of the sail edge (the ERS do not prescribe any particular length or percentage of the sail edge to be considered for extensions).
- The batten must be bent by compression which gives always a circular shape. The ERS diagrams or text do not prescribe or even imply that a sail edge must be made with a specific shape, circular or other.
- The batten must always touch the sail edge at the inboard starting point 1 meter away from the corner and bent with different amounts of compression so the final position is where the batten is in contact with the sail for the longest possible length. In this way it is possible that the extension found is not the one shown at the various ERS diagrams (the extension is following the last part of the sail edge) but the extension of another part further inboard from the corner. Such an extension may not start from the actual starting point of the cut-out but from a totally different position towards the middle part of the edge and further away from the corner.

To comply with the batten bending system, sailmakers are forced to design a sail edge in a shape that is matched by the 1 meter bent batten, which means in practice a circular or almost straight line shape. The batten is used in a similar sense as a hull section template. This is nowhere to be found at the ERS because the sail design is (and should be) optional. Any measurement tool should be used to match the sail edge shape, not the opposite.

2. The method gives a false sense of repeatability and consistency because it assumes that the bending way is always the same and that the amount of bend depends solely on the sail shape and not on the measurer. However, it contradicts the ERS principle of free sail design in order to achieve this “consistency”. In addition, as an unwanted side effect, this method seems to be controlling the sail edge shape as well at the same time, when the ERS have specific tools like the foot irregularity and the foot median to perform that control.
 3. The proposal brings back the concept of extending a sail edge to find a corner point only when there is a cut-out in the corner area, and then by continuing the shape of the last part of the sail edge up to that cut-out starting point, whatever that may be.
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