

CHALLENGER OF RECORD & DEFENDER

AMERICA'S CUP 36

AC75 Interpretation 006

of

AC75 Class Rule Version 1.1 issued 29 June 2018

Rule References:

- 7.2 Applied temperatures and compaction pressures of **FRP** material shall not exceed the following values at any stage during construction, or after construction:

Category	Maximum Temperature (°C)	Maximum Compaction Pressure (bar)
FRP material in hulls	135	1.1
FRP material in sail skins	Unlimited	Unlimited
Thermoplastic FRP material	450	Unlimited
Uncontrolled components	Unlimited	Unlimited
FRP material not listed above	135	7.0

8.7 **Uncontrolled components:**

- (a) are restricted to a maximum combined mass of 150 kg on each **AC75 Class Yacht**;
- (b) shall make up no more than 15.0 kg of a **hull**;
- (c) shall not be used in a **foil arm fairing, foil wing, foil flap** or **rudder**; and
- (d) if **FRP**, must be sourced as pre-consolidated and cured solid laminates in standard shapes (e.g. plate, bar, rod, tube, but not honeycomb) or standard products (e.g. a winch body).

35.103 **Uncontrolled component**

A **commercial product** that is not subject to elastic modulus, construction temperature or construction pressure constraints. Examples include, but are not limited to, pre-consolidated **FRP** plate, a winch, a block, a traveller track and a hydraulic valve.

Questions:

1. Are **FRP uncontrolled components** that comprise part of a **hull** restricted to a maximum temperature of 135°C and 1.1 bar applied compaction pressure at any stage during construction or after construction?
2. Are thermoplastic **FRP** materials that comprise part of a **hull** restricted to a maximum temperature of 135°C and 1.1 bar applied compaction pressure at any stage during construction or after construction?

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Interpretation:

- a) Within Rule 35.40, the term **FRP** includes thermoplastics and thermosets by using the term "Polymer".
- b) Thermoplastic **FRP** materials and **FRP uncontrolled components** by themselves are subordinates of "**FRP** Materials in **Hulls**"; and thus, by Rule 32.5(c), the specific permissions and limitations of rule 8.7 (for **FRP uncontrolled components**) and rule 7.3 (for Thermoplastic **FRP** material) take precedence over the more general limitations of Rule 7.2.

Answers:

1. There are no limits on applied temperature and compaction pressure for the construction process of an **FRP uncontrolled component**.

Once the manufacturing process for that **uncontrolled component** is complete, it is thereafter subject to the superordinate limits of Rule 7.2 for "**FRP** material in **hull**" during and after its incorporation into the hull.

2. Thermoplastic **FRP** materials, such as pre-consolidated solid plates in standard shapes (as per rule 7.3 (c) (i)), are subject to temperature limits as specified in rule 7.2 during their construction process.

Thereafter, they are subject to the superordinate limits of Rule 7.2 for "**FRP** material in **hull**", during and after their incorporation into the hull.

If thermoplastic **FRP** material, such as a pre-preg tape or cloth (as per rule 7.3 (c) (ii)), will be used as constituent material of the hull laminate, the construction of this material underlies the superordinate limits for "**FRP** materials in **hulls**" as specified in rule 7.2.