



# QUALITY ASSURANCE SPECIFICATIONS™

SFI SPECIFICATION 36.1

DISCONTINUED: JUNE 5, 2019\*

PRODUCT: Drag Boat Capsule Shell Material

## 1.0 GENERAL INFORMATION

- 1.1 This SFI Specification establishes uniform test procedures and minimum standards for evaluating and determining performance capabilities for Drag Boat Capsule Shell Material used by individuals engaged in competitive motorsports.
- 1.2 The procedures, test evaluations and standards contained herein, are intended only as minimum guidelines for construction and evaluation of products. Certification that products meet such minimum standards is made by the product manufacturer and products are not certified, endorsed or approved by SFI under this program.
- 1.3 Use of the "This Manufacturer Certifies That This Product Meets SFI Specification 36.1" logo/designation, the authorized artwork style, or conventional lettering by a manufacturer, on a subject product, is intended only to indicate that the manufacturer of the product has represented that they have submitted the product to the recommended tests, with positive results, in compliance with the standards established herein.
- 1.4 This SFI Specification requires a demonstration that the product of a manufacturer meets or exceeds the requirements when the manufacturer enters the program; and on a periodic basis thereafter. Any manufacturer may participate in the program by providing Drag Boat Capsule Shell Material that meets or exceeds the SFI Specification 36.1 test standards, by complying with the requirements of the SFI Specification 36.1 program, and by signing a licensing agreement with the SFI Foundation, Inc.

- 1.5 Compliance with this specification is entirely voluntary. However, when a manufacturer provides Drag Boat Capsule Shell Material in compliance with all requirements of the SFI Specification 36.1 and enters into the licensing agreement with the SFI Foundation, Inc., they may certify that compliance with such standards is in accordance with the guidelines established herein.
- 1.6 Manufacturers wishing to participate in the program, in addition to the other requirements of this specification, must label each of their products with the manufacturer's name, trademark or symbol as well as the date of manufacture of the product.
- 1.7 No manufacturer may display the SFI logo/designation on their product unless the manufacturer has signed a licensing agreement with SFI and has successfully complied with all the requirements of this specification and the self-certification program.

## 2.0 DEFINITIONS

- 2.1 Shell: The portion of a Drag Boat Capsule fabricated from a composite of cloth and resin. Combined with the canopy, the shell will completely enclose the driver, controls, instrumentation, flotation material, roll cage, seat belts, etc., and completely detach from the boat hull such that hull damage or destruction can allow the capsule to remain intact as a separate unit. The shell must be equipped with a channel for sealing around the canopy.
- 2.2 Drag Boat Capsule Shells shall be inspected every two (2) years by the certifying manufacturer for re-certification. When a unit is determined to be acceptable for continued service, a new conformance label marked with the inspection date shall be used. When the certifying manufacturer of the Drag Boat Capsule Shell is no longer in business, and no viable replacement manufacturer exists, then the governing drag boat race sanctioning body may inspect the Drag Boat Capsule Shell for re-certification. When a unit is determined to be acceptable for continued service, the sanctioning body may affix a new conformance label marked with the inspection date.

## 3.0 CONSTRUCTION

Drag Boat Capsule Shell Material can be constructed of any composite of cloth and resin that can meet the requirements of this specification. The Drag Boat Capsule Shell Material must be a minimum thickness of 1/2". This minimum thickness applies to relatively flat shapes or curved panels with radius of curvature greater than 36 inches. For corners and panels with radius of curvature less than 36 inches the minimum wall thickness shall be 3/8".

## 4.0 MODEL CLASSIFICATION

The major factors for model determination are materials, material thickness and construction process. A variation of any of these parameters is considered a model change and must be tested to initial design requirements.

## 5.0 TESTING

The test samples shall be fully processed new Drag Boat Capsule Shell Material which is representative of Drag Boat Capsule Shell Material currently produced or to be produced.

### 5.1 FLEXURAL STRENGTH - SHELL MATERIAL

Test in accordance with ASTM D790-91, Test Method II, Procedure B except for the variations stated below.

#### 5.1.1 SAMPLES

The sample size is determined by using ASTM D790-91, Table 2, L/d = 16 to 1, entire 3/4" specimen depth line items for dimensions except the actual depth of the specimen will be as received.

#### 5.1.2 APPARATUS

A properly calibrated testing machine that can be operated at constant rates of crosshead motion over the range indicated and in which the error in the load measuring system shall not exceed  $\pm 1\%$  of the maximum load expected to be measured. It shall be equipped with a deflection measuring device.

#### 5.1.3 CALIBRATION

The accuracy of the testing machine shall be verified in accordance with ASTM Practices E 4, Practices for Load Verification of Testing Machines.

#### 5.1.4 PROCEDURE

Each sample shall be tested in accordance with paragraphs 3.2, 5.1, 5.2, 6.2.1, 7.1, 8.1, 8.2, all of sections 9.3, 10 and paragraphs 11.3, 11.6 and 11.12 of ASTM D790-91.

#### 5.1.5 INTERPRET RESULTS

Calculate the average minimum fiber stress as instructed in paragraph 11.3 of ASTM D790-91.

## 6.0 PROOF OF COMPLIANCE

Drag Boat Capsule Shell Material manufacturers are required to provide the following information to enroll in this program:

### 6.1 FLEXURAL STRENGTH - SHELL MATERIAL

Material shall demonstrate minimum fiber stress before failure of 5,000 psi. The test report must include a load deflection curve plotting the total work measured by the area under the load deflection curve (See paragraph 9.2.5 of D790-91).

## 7.0 TEST REPORTS

A separate test report, or set of test reports if required, shall be submitted for each product model. If more than one test facility is required to complete all necessary tests, then a separate test report shall be submitted from each one. A test report shall be submitted for each component, if tested separately. The test facility shall assign a unique number to each test report. This number along with the report date and page number shall appear on each page. Each test report shall include:

### 7.1 RELEVANT INFORMATION

- 7.1.1 Manufacturer's name, contact name, address and telephone number.
- 7.1.2 Name, address and telephone number of the test facility.
- 7.1.3 Name and signature of the responsible test supervisor.
- 7.1.4 Actual date of the test.
- 7.1.5 Specification number and effective date.
- 7.1.6 Product name, description and model designation.
- 7.1.7 Component name and description.

### 7.2 TESTS

Each test conducted shall be listed showing the test name, apparatus used, procedure used and test results obtained along with any other appropriate information.

### 7.3 AUTHENTICATION

Test reports shall be authenticated and stamped by a Professional Engineer who is registered in the state in which the testing is conducted. If necessary, SFI may allow an equivalent entity to provide authentication.

### 8.0 INITIAL DESIGN VALIDATION

To receive initial recognition from SFI as a participant in the SFI Specification 36.1 Program, the manufacturer must submit to SFI all information delineated in the Proof of Compliance section. This information shall be provided for each model of Drag Boat Capsule Shell Material offered by the applicant that is to be included in the program. Any change in design, materials and/or methods of manufacturing not specifically excluded is considered a model change and, therefore, requires initial design validation.

### 9.0 PERIODIC REVALIDATION

Test reports with successful test results must be submitted to SFI at least once every 24 month period following the date of the initial design validation test for each model of Drag Boat Capsule Shell Material manufactured by the participant. If multiple test reports are required to obtain all test results, then the earliest test date shall be used to determine when the periodic revalidation reports are due.

### 10.0 CERTIFICATION OF COMPLIANCE

Upon demonstration of successful compliance with all the requirements of the specification and the self-certification program and upon entering the licensing agreement with SFI, the manufacturer may advertise, present and offer Drag Boat Capsule Shell Material for sale with the representation that their product meets the SFI Specification 36.1. Continuing certification is contingent upon the following additional considerations: (1) the product shall be resubmitted for testing following any change in design, materials and/or methods of manufacturing not specifically excluded, and (2) periodic revalidation test reports are submitted when due to SFI.

### 11.0 CONFORMANCE LABELS

The conformance label is a sticker. The serial number should appear on the customer invoice to aid in identification and tracking.

## 12.0 DECERTIFICATION

Participating manufacturers are subject to decertification when not in compliance with the requirements of this program or when their products are not in compliance with the requirements of this specification. Decertification will provide SFI the right to effect any and all remedies which are available to SFI in the licensing agreement.

## 13.0 APPEAL PROCEDURE

In the event of decertification, the manufacturer is entitled to an appeal of the decision of SFI. Requests for appeal must be received by SFI no later than thirty days following receipt of the notice of decertification. Appeals of such decisions will be heard at the next meeting of the Board of Directors of SFI.

## 14.0 STATEMENT OF LIMITATIONS

Testing procedures and/or standards contained in this specification are intended for use only as a guide in determining compliance with the minimum performance requirements as defined herein. The granting and assignment of the "This Manufacturer Certifies That This Product Meets SFI Specification 36.1" logo/designation is in no way an endorsement or certification of product performance or reliability by SFI. SFI, its officers, directors and/or members assume no responsibility, legal or otherwise, for failure or malfunctions of a product under this program.

## 15.0 COSTS

All costs involved in this program will be absorbed by the submitting manufacturer.

## 16.0 COMPLIANCE PERIOD

As this specification is revised to reflect changes in technology and/or field conditions, to remain current, participating manufacturers in the SFI Specification 36.1, Drag Boat Capsule Shell Material, Program, must demonstrate full compliance with the requirements of this specification within ninety (90) days of the latest effective date.

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