SFI FOUNDATION INC.™

QUALITY ASSURANCE SPECIFICATIONS™

SFI SPECIFICATION 55.1 EFFECTIVE: March 24, 2009*

PRODUCT: Tethers

1.0 GENERAL INFORMATION

1.1 This SFI Specification establishes uniform test procedures and minimum standards for evaluating and determining performance capabilities for Tethers 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 55.1" 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 Tethers that meet or exceed the SFI Specification 55.1 test standards, by complying with the requirements of the SFI Specification 55.1 program, and by signing a licensing agreement with the SFI Foundation, Inc.

Copyright © 2009 by the SFI Foundation, Inc. All rights reserved. Reproduction in any form without written permission of SFI is prohibited.

1.5 Compliance with this specification is entirely voluntary. However, when a manufacturer provides Tethers in compliance with all requirements of the SFI Specification 55.1 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 A Spindle Tether is a rope-type product attached between the wheel spindle and the race car structure to secure the wheel assembly from disconnecting from the car during a crash or other accident.

2.2 A Hood and Deck Tether is a rope-type product attached between the hood and deck body panels and the race car structure to secure the hood and deck body panels from disconnecting from the car during a crash or other accident.

2.3 A Wing Tether is a rope-type product attached between the COT Wing and the race car structure to secure the COT Wing from disconnecting from the car during a crash or other accident.

2.4 A Roof Flap Tether is a rope-type product attached between the roof flap and the race car structure to secure the roof flap from disconnecting from the car during a crash or other accident.

2.5 All tethers pertaining to this specification must be manufactured to be resistant to UV, environmental liquids and solids, operating temperatures of up to 400°F and external fire for at least 15 seconds. These requirements may be accomplished by external covering, coatings, etc. if required.

2.6 The NASCAR Spindle Tether shall be comprised of either two single or one dual length of material per wheel in accordance with Paragraph 3.0 below.

Copyright © 2009 by the SFI Foundation, Inc. All rights reserved. Reproduction in any form without written permission of SFI is prohibited.

2.7 Any tether pertaining to this specification shall remain as constructed by the original manufacturer and shall not be altered or modified by anyone else.

3.0 CONSTRUCTION

3.1 The Spindle Tether shall be fabricated from a single braid or dual braid rope type material with a length from loop end to the 1-inch diameter thimbled eye end of 15-18 inches.

3.2 The Hood and Deck Tethers shall be fabricated from single braid rope type material.

A. The Hood Tether length shall be 24-36 inches from loop end to the 5/16-inch thimbled eye end.

B. The Deck Tether length shall be 46-59 inches from loop end to the 5/16-inch thimbled eye end.

3.3 The COT Wing Tether shall be 57.5 inches long and shall be fabricated from a single braid rope type material with a 1-inch diameter eye on one end and a PVC coated 1-inch eye on the other.

3.4 The Roof Flap Tether shall be 13 inches long and shall be fabricated from a single braid rope type material with 1-inch diameter thimbled eyes on each end.

4.0 MODEL CLASSIFICATION

A change of material, diameter or construction method will constitute a model change.

5.0 TESTING

These tests are designed to produce tensile property data either before break or the required average values (Paragraph 6.1) for the tether assembly product to be qualified.

5.1 SAMPLES

Three complete sample tether products of approximately 18 inches long for all products in Paragraph 3.0 above including connecting hardware and securing arrangement shall be tested to failure or the load requirements of Paragraph 6.1 with the three loads of Paragraph 6.1 values being averaged to compare to the specific requirements of Paragraph 6.0 of this specification.

Copyright © 2009 by the SFI Foundation, Inc. All rights reserved. Reproduction in any form without written permission of SFI is prohibited.

5.2 CONDITIONING

Test samples must be conditioned for at least 12 hours at 70° ± 4°F and 50% ± 5% relative humidity before testing. Samples shall be tested within 1 hour after conditioning is complete.

5.3 APPARATUS

5.3.1 A standard tensile test machine capable of applying at least 1.25 times the required load to pass Paragraph 6.0 of this specification in accordance with the applicable paragraphs of ASTM E-4 for load verification. The test machine shall be in calibration and traceable to the National Institute of Standards and Technology (NIST).

5.3.2 The devices for loading both ends of the test tethers shall be similar in shape and size to the end restraints in the vehicle applications for the tethers.

5.3.3 Instrumentation shall be calibrated and capable of measuring and recording applied loads versus time within ± 1% of total load values reported in Paragraph 6.0 of this specification.

5.4 PROCEDURE

A. Load the first of three sample tethers into the tensile test machine using the requirements of paragraph 5.3 above.

B. Apply a tensile load at the rate of at least 2 in./min. continuously recording loads vs. time until a break occurs, the sample tether can no longer sustain tension, or the load requirements of Paragraph 6.1 are achieved.

C. Repeat A and B above and average the loads achieved for the three samples.

Copyright © 2009 by the SFI Foundation, Inc. All rights reserved. Reproduction in any form without written permission of SFI is prohibited.

6.0 PROOF OF COMPLIANCE

Manufacturers of tether products pertaining to this specification are required to provide the following information to enroll in this program:

6.1 TEST RESULTS

6.1.1 The average load achieved at load application or failure for all three samples of each product shall be a minimum of the following:

A. The minimum average load before break of the three Spindle Tethers – 16,000 lbs. single or 36,000 lbs. dual.

B. Hood and Deck Tethers average load before break – 9,000 lbs. min.

C. Wing Tether average load before break – 5.000 lbs. min.

D. Roof Flap Tether average load before break – 2,800 lbs. min.

6.1.2 If any of the loads achieved in any of the three samples for each tether product falls below 80% of the requirements above, the test shall be considered to have failed and six additional samples must then be tested to the 6.1.1 requirements.

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.

Copyright © 2009 by the SFI Foundation, Inc. All rights reserved. Reproduction in any form without written permission of SFI is prohibited.

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 55.1 Program, the manufacturer must submit to SFI all information delineated in the Proof of Compliance section. This information shall be provided for each Tether model 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 12 month period following the date of the initial design validation test for each model of Tethers 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. Also, SFI shall retain the option to conduct random audit reviews. SFI shall purchase the product on a commercial basis and test for compliance to the specification. The submitting manufacturer shall reimburse SFI for all audit costs.

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 the Tethers for sale with the representation that their product meets the SFI Specification 55.1. Continuing certification is contingent upon the following additional considerations: (1)

Copyright © 2009 by the SFI Foundation, Inc. All rights reserved. Reproduction in any form without written permission of SFI is prohibited.

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 serialized sticker purchased from SFI by the manufacturer, which shall be placed on each Tether. Besides placing the label on the component, the serial number of the label along with the date of manufacture shall be permanently marked on the tether. The serial number should appear on the customer invoice (if applicable) 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 55.1" 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.

Copyright © 2009 by the SFI Foundation, Inc. All rights reserved. Reproduction in any form without written permission of SFI is prohibited.

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 55.1 Tethers Program, must demonstrate full compliance with the requirements of this specification within ninety (90) days of the latest effective date.

---

* Original Issue: March 24, 2009
Edit: March 6, 2020

Copyright © 2009 by the SFI Foundation, Inc. All rights reserved. Reproduction in any form without written permission of SFI is prohibited.