



# QUALITY ASSURANCE SPECIFICATIONS™

SFI SPECIFICATION 9.1

EFFECTIVE: DECEMBER 6, 2002\*

PRODUCT: Sport Compact Bellhousing Blanket

## 1.0 GENERAL INFORMATION

- 1.1 This SFI Specification establishes uniform test procedures and minimum standards for evaluating and determining performance capabilities for Sport Compact Bellhousing Blankets 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 are 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 9.1" 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 Sport Compact Bellhousing Blankets that meet or exceed SFI Specification 9.1 test standards, by complying with the requirements of the SFI Specification 9.1 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 Sport Compact Bellhousing Blankets in compliance with all requirements of SFI Specification 9.1 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 Sport Compact Bellhousing Blankets can be in the form of a one piece flexible type that wraps around the bellhousing.
- 2.2 Sport Compact Bellhousing Blankets are used to deflect radial explosion fragments from a flywheel/clutch assembly failure and shall cover the area directly over the location of the flywheel for 360°.
- 2.3 The Sport Compact Bellhousing Blankets shall be inspected for modification and deterioration every two years. If it is acceptable, it may be recertified by the manufacturer. If the blanket is not acceptable, it must be replaced. When a unit is determined to be acceptable for continued service, a new conformance label marked with the inspection date shall be used.
- 2.4 Any shield pertaining to this specification shall remain as constructed by the original manufacturer and not modified.

## 3.0 CONSTRUCTION

Sport Compact Bellhousing Blankets may be constructed by any method or may use any material that can meet the performance requirements of the specification.

## 4.0 MODEL CLASSIFICATION

The major factors for model determination are materials, material thickness and mounting configuration. A variation of any of these parameters is considered a model change.

## 5.0 TESTING

Test samples shall be fully processed new Sport Compact Bellhousing Blankets which are representative of Sport Compact Bellhousing Blankets currently produced or to be produced. All necessary mounting hardware along with mounting instructions shall be supplied by the certifying manufacturer with the Sport Compact Bellhousing Blanket submitted for testing.

### 5.1 PENETRATION RESISTANCE/EXPLOSION CONTAINMENT

#### 5.1.1 SAMPLES

For a given model, the version with the largest diameter or length shall be tested.

#### 5.1.2 APPARATUS

The test fixture shall provide mounting surface and attachment points similar to the rear portion of an engine block. A suitable containment chamber shall be provided to protect test personnel. The fixture shall incorporate the following features:

- A. A tachometer with an accuracy of  $\pm 2\%$  at 10,500 revolutions per minute (rpm).
- B. A 12 inch (30.48cm) diameter, 17.6 pound (8kg) or equivalent flywheel, with ring gear, shall be used. The flywheel shall be modified to burst (in six {6} pieces of approximate equal size) between 9,000 and 10,000 rpm.
- C. A spindle that can be driven to a rotational speed of 10,500 rpm and allow attachment of the tachometer. The spindle shall accept the flywheel in a manner similar to actual use and allow it to be attached rigidly and concentrically.
- D. A bellhousing compatible with the shield and flywheel.

#### 5.1.3 PROCEDURE

- A. Mount the modified flywheel to the spindle and attach the tachometer.
- B. Mount the bellhousing to the fixture with the axis of the bellhousing concentric with the axis of the spindle.

- C. Install the Sport Compact Bellhousing Blanket to the bellhousing and fixture per the certifying manufacturer's installation instructions. The appropriate mounting points shall be added to the fixture to simulate the mounting points as required in the installation instructions. The hardware supplied by the certifying manufacturer shall be used to mount the Sport Compact Bellhousing Blanket.
- D. The modified flywheel shall be driven to a rotational speed between 9,000 and 10,000 rpm and maintained at that level until it bursts.

## 6.0 PROOF OF COMPLIANCE

The Sport Compact Bellhousing Blanket manufacturers are required to provide the following information to enroll in this program:

### 6.1 TEST RESULTS

Test results shall be documented in a test report.

#### 6.1.1 PENETRATION RESISTANCE/EXPLOSION CONTAINMENT

The Sport Compact Bellhousing Blankets shall be considered acceptable if it contains all of the explosion fragments and remains attached to the wall of the test fixture. Any fragments that escape through dust holes shall not be cause for failure.

## 7.0 TEST REPORTS

A separate test report, or set of test reports if required, shall be submitted for each product type and 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.

7.1.8 Accompanied by "Before" and "After" photos.

## 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 9.1 Program, the manufacturer must submit to SFI all information delineated in the Proof of Compliance section. This information shall be provided for each Sport Compact Bellhousing Blanket 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.

Note: A model certification is based on a successful test of the largest diameter or length shield in the same classification. A shield variation shall not be considered certified under this model if it is later produced in a larger size unless it is also successfully tested.

## 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 Sport Compact Bellhousing Blanket 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 the Sport Compact Bellhousing Blanket for sale with the representation that their product meets SFI Specification 9.1. 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 for the Sport Compact Bellhousing Blankets is a sew-on patch. The label shall be marked with the month and year the part is manufactured and placed on the outside surface of the Sport Compact Bellhousing Blankets. For periodic inspection, the old label shall be removed and the foregoing procedure shall be followed using a new label. The serial number for each type 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 that 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 9.1" 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 9.1, Sport Compact Bellhousing Blankets, Program, must demonstrate full compliance with the requirements of this specification within ninety (90) days of the latest effective date.

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