Oil Seal Compatibility Surveillance Panel
Meeting Minutes
ASTM Meeting #139

2/7/06

D. Bell

Meeting Attendance:

B. Sullivan (ExMo)
D. Bell (Afton)
D. Bartlett (Lz)
J. Gropp (Lz)
D. Smith (Parc)
P. Kamp (Lz)
D. Misich-Korpi (Lz, phone)
B. Koehler (SWRI)
C. Koglin (Afton)
B. Grinfield (SWRI, phone)
D. Lind (TMC)
C. Schenkenberger (Lz)
Salvatore Rea (Infineum)

Approval of Prior Meeting Minutes

The OSCT Task Force teleconference minutes from 11/2/05 and 12/5/05 were unanimously approved with 5 in favor and 0 abstentions.

ASTM D5662 Revisions

A motion was made by J. Gropp and seconded by B. Sullivan to approve all ASTM D5662 revisions as proposed below with exception of the spacer revision in section 8.4 from 3.0-5.0 mm to 1.0-2.0 mm, which still needs to be resolved by D. Bell. The motion was approved unanimously with 5 in favor and 0 abstentions. Therefore, the following revisions to ASTM D5662 have been fully approved, so TMC (D. Lind) will issue an information letter to the procedure to document all changes to ASTM D5662. Reballoting is not necessary at this time.

Approved ASTM D5662 Revisions in Pages and Sections:

Page 1:

1. Scope are
   - 1.3 The values ~~stated~~ in ~~either~~ SI units ~~or inch pound units are to be regarded separately as standard. The values stated in each system are not exact equivalents, therefore, each system shall be used independently of the other.~~
2. Reference Documents
   - 2.1 (Add as per info. Letter 05-1) E29 Practices for Using Significant Digits in Test Data to Determine Conformance with Specifications.

(Add) SAE J2360 reference document
(Delete) old footnotes #3 and #4, renumber footnotes #5 and #6 to new footnotes #3 and #4.

5. Significance and Use

5.1 (Add to last sentence) This test method may be used as a requirement of a performance specification, such as Specification D5760 **and SAE J2360**.

Page 2:

Revise Table 1 to show only seal materials with test temperature, but delete the reference oils.

6. Apparatus

Incorporate newly revised Manual Extensometer Calibration Procedure.

7. Reagents and Materials

7.1 (Delete 2nd line) The oils used are labeled No. 160, No. 161, and No. 162, or current equivalent.
(Replacement in 4th line) The TMC is also responsible for managing a system that ensures the performance and ~~formulation~~ concerning reference oils. Integrity

7.3 (Change formula) Notation of the numbering system is established by the TMC as follows:
[Type]Y – X change to [Type]Y

Where: ~~Y = specific formulation of the elastomer type, and~~
Y ~~X~~ = batch number of the particular formulation

7.7 (Add) Qualifying Protocol for New Batches of Elastomer as updated recently by TMC.

8. Procedure

8.2 (Correct temp. variation in line 1)
From: 23 + 2C To: 23 +/- 2C

8.2.4 Table 2 Elastomer Specimens Required (Delete Table 2)

Page 3:

8.2.5 (Delete) ~~Use Table 2 as a guide to determine the number of Elastomer specimens required~~. (The change will require re-numbering of section 8 after this point to keep proper numbering sequence in section 8).

8.2.7 (Reword whole section to) Use the water displacement procedure in accordance with test method D471 to determine the initial volume measurement. Weigh the coupon in air (M1) to the nearest 1 mg. For the weight in water, immerse the coupon in a 1.0% wetting solution of aerosol OT, then place the coupon in the distilled water (M2) at ambient temperature. Make sure no air bubbles are clinging to the coupon surface before recording the weight. Weigh to the nearest 1 mg.

8.3.1 (Delete) ~~See Table 1 for combination of reference oils and seal materials required for testing. Test the non-reference oil using one or more of the three different seal elastomers.~~

8.4.3 (Delete) ~~See Table 1 for the combination of reference test oils and seal materials required for testing~~.

8.6 (Change wording to) Determine type A hardness testing, percent volume in air and water, and percent elongation as done in 8.2.7 and 8.2.8. Testing must be completed within 2 hours of removal from the test oil.

8.7.1.1 (Add as per info letter 05-2) When using a wire hanger to aid in the weighing of the test coupon, deduct the weight of the wire hanger from the gross weight to determine the actual weight of the test coupon. Record the actual weight of the test coupons in the test report and use the actual weights for the percent volume change calculations.

8.7.3 (New Equation)

$$\sigma = \sqrt{\frac{\sum\left(x_i - \bar{x}\right)^2}{n-1}}$$

where:

σ = sample standard deviation

n = number of data points in the set

x_i = individual data set value

$\bar{x}$ = mean of the data set

Page 4:

8.8 Excessive Data Variability (Delete) ~~Criteria for determining test validity consistent with accepted industry standards, are currently being developed by the task force in conjunction with the TMC.~~
(Add) All non-reference oil tests conducted against an invalid reference are deemed invalid.

9.1 (Remove last line) ~~Report the following information~~:
(Add) Data dictionary for final report forms is available from the TMC.
(Delete) 9.1.1 thru 9.1.6

9.2 (Delete~~) Report to the TMC the information identified in 9.1 for the reference oils only.~~

(Add) Report reference oil information to the TMC.

9.3 (Add as per info letter 05-1) Round test results according to Practice E29.

10.1 (Replace 10.1 and footnote 7 with section from info letter 05-1)
(Add new Table 3 as per info letter 05-1)

ANNEX:

A2. (Delete) Final Report

A3. (Delete) Data Dictionary