

ASTM Section D02.B0.03 Update
to
SAE Technical Committee 3

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Chairman, ASTM Section D02.B0.03

ASTM Section D02.B0.03

- Scope
 - This Section is responsible for the promotion of knowledge of, and specifications, test methods and terminology for automotive gear lubricants and fluids. This includes gear lubricants used in rear drive axles, power dividers, and fluids used in manual and automatic transmissions of wheeled or track laying vehicles such as passenger cars, recreation vehicles, taxicabs, trailers, trucks, buses, tractors, construction and farm vehicles.
- Objectives
 - Keep existing performance tests operational, at historic severity and precision levels.
 - Ensure that performance test parts and reference oils are available in adequate supply and of a consistent quality.
 - Develop and maintain performance tests for gear lubricant and transmission fluid categories.
 - Maintain surveillance of test procedures under Section jurisdiction.
 - Work to improve test precision and correlation with field service.
 - Maintain active liaison with related organizations (CEC, SAE, API, etc.)

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Test Procedures Under the Jurisdiction of Section D02.B0.03

Common Designation	ASTM Designation	Purpose of Test
L-33-1	D 7038	To evaluate the rust and corrosion-inhibiting properties of a water-contaminated lubricant
L-37	D 6121	To evaluate the load-carrying, wear, and extreme pressure properties of a lubricant under low-speed, high-torque conditions
L-42	D 7452	To determine the anti-scoring properties of a lubricant subjected to high-speed and shock conditions
L-60-1	D 5704	To evaluate the thermal and oxidative stability of a lubricant
Cyclic Durability	D 5579	To evaluate the thermal stability of a lubricant in a cyclic durability test
Oil Seal Compatibility	D 5662	To determine the compatibility of a lubricant with specific polyacrylate, fluoroelastomer, and nitrile seal materials
SS&C	D 7603	To insure that lubricants maintain their integrity during storage, and that they are compatible with other lubricants intended for use in similar applications

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- Tests under the jurisdiction of the Section are used to evaluate lubricants under the following performance categories:
 - ASTM D 7450
 - Lubricants for automotive axles
 - Update of API Category GL-5
 - ASTM D 5760
 - Lubricants for non-synchronized manual transmissions in buses and heavy-duty trucks
 - Also known as API Category MT-1
 - SAE J2360
 - Multipurpose gear-lubricating oils
 - Technical equivalent of the MIL-PRF-2105E Specification
 - Canceled on February 16, 2005
 - Proposed Category PM-2
 - Lubricants for commercial vehicle synchromesh manual transmissions and transaxles
 - Detailed discussion to follow

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- Update on Test Procedures
 - All tests under the jurisdiction of the Section are available for use
 - No issues or problems to report for the L-33-1, L-42, L-60-1, Cyclic Durability, Oil Seal Compatibility, and SS&C tests
 - Shortage of lubrified hardware for the L-37 test continues to be a problem
 - Details on following slide

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- Update on Test Procedures, continued
 - Two types of hardware are used in the L-37 test
 - Non-lubrited hardware required for API Category GL-5 and SAE J2360
 - Lubrited hardware required for SAE J2360 (but not API Category GL-5)
 - Recently approved a new batch of non-lubrited hardware
 - Required test procedure be modified to compensate for severe results
 - Have not been able to obtain/approve a new batch of lubrited hardware
 - Several pilot batches have produced unacceptable (severe) results on good reference oils
 - Modification of test procedure was not an effective solution
 - Production of a new/optimized pilot batch is underway
 - Results of initial evaluation should be available in December
 - If results look promising, will proceed with manufacture of a large batch
 - » Should be available in early/mid CY 2011

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- Update on Proposed Category PM-2
 - New performance category to define lubricants for commercial vehicle synchromesh manual transmissions and transaxles
 - Service fill applications
 - Work on the development of this category has been suspended
 - ASTM Task Force unable to identify a commonly-accepted pitting test
 - Also unable to identify oils with known acceptable and unacceptable performance in the field
 - Both of above essential to develop performance category and identify meaningful acceptance criteria
 - Intense competition for limited industry resources has inhibited progress

Proposed Category PM-2 Tests and Requirements

Performance Property	Proposed Test Method	Proposed Requirements
Viscometrics	ASTM D 445 & ASTM D 2983	SAE J306 Limits
Shear Stability	CEC L-45-A-99 (20-hour KRL)	SAE J306 Limits
Anti-Foaming Performance	ASTM D 892	ASTM D 5760 (API Category MT-1) Limits
Storage Stability and Compatibility	Federal Standard 791C, Method 3440.1 Federal Standard 791C, Method 3430.2	Stable in storage Compatible with other oils which meet the requirements of the specification
Corrosion Protection - Ferrous	ASTM D 7038 (L-33-1)	SAE J2360 Limits
Corrosion Protection - Non-ferrous	ASTM D 130	ASTM D 5760 (API Category MT-1) Limits
Thermal/Oxidative Stability	ASTM D 5704 (L-60-1)	ASTM D 5760 (API Category MT-1) Limits
Elastomer Compatibility	ASTM D 5662	ASTM D 5760 (API Category MT-1) Limits
High-Speed Shock-Load (scuffing) Protection	CEC L-084-02 (1/2 tooth FZG)	To Be Determined
Synchromesh Durability	CEC L-066-01 (SSP-180)	To Be Determined
High-Torque Low-Speed (wear) Protection	CRC L-20 or ASTM D 4998 (FZG)	To Be Determined
Pitting Resistance	To Be Determined	To Be Determined

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- Update on Proposed Category PM-2, continued
 - Task Force has questioned if interest in and/or need for category still exists
 - Response to industry requests for support/assistance has been minimal
 - Needs of industry may have changed since request was initiated (in 1998)
 - Task Force and ASTM Section D02.B0.03 request that SAE Technical Committee 3 revalidate industry's interest in and/or need for this performance category
 - Task Force will suspend any additional work on this activity pending input from SAE Technical Committee 3