

Section D02.B0.03 Status Report
to
Subcommittee D02.B0

June 24, 2015

J. L.Gropp

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.)

ASTM Section D02.B0.03

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

Common Designation	ASTM Designation	Purpose of Test
L-33-1	D7038	To evaluate the rust and corrosion-inhibiting properties of a water-contaminated lubricant
L-37	D6121	To evaluate the load-carrying, wear, and extreme pressure properties of a lubricant under low-speed, high-torque conditions
L-42	D7452	To evaluate the anti-scoring properties of a lubricant subjected to high-speed and shock-loading conditions
L-60-1	D5704	To evaluate the thermal and oxidative stability of a lubricant
High Temperature Cyclic Durability	D5579	To evaluate the thermal stability of a lubricant in a high-temperature, cyclic durability test
Oil Seal Compatibility	D5662	To evaluate the compatibility of a lubricant with specific polyacrylate, fluoroelastomer, and nitrile seal materials
Storage Stability & Compatibility	D7603	To insure that lubricants maintain their integrity during storage, and that they are compatible with other lubricants intended for use in similar applications

ASTM Section D02.B0.03

- Tests under the jurisdiction of the Section are used to evaluate lubricants against the requirements of the following performance specifications:
 - ASTM D7450
 - “Standard Specification for Performance of Rear Axle Gear Lubricants Intended for API Category GL-5 Service”
 - Details tests and acceptance criteria for API Category GL-5
 - ASTM D5760
 - “Standard Specification for Performance of Manual Transmission Gear Lubricants”
 - Lubricants for non-synchronized manual transmissions in buses and heavy-duty trucks
 - Details tests and acceptance criteria for API Category MT-1
 - SAE J2360 Standard
 - “Automotive Gear Lubricants for Commercial and Military Use”
 - Details tests and acceptance criteria for hypoid gear lubricants which exceed the performance of API Category GL-5

ASTM Section D02.B0.03

- Update on Test Procedures
 - All tests under the jurisdiction of the Section are available for use
 - ASTM D7038 (L-33-1) test
 - No test stand or hardware problems to report
 - » Supplies of hardware diminishing
 - Surveillance Panel continuing work on replacement for current test
 - » Uses American Axle K2XX axle
 - » Testing on pilot batch of hardware showed good discrimination between good and poor reference oils
 - » Testing on large batch of hardware is in progress
 - » Replacement test should be available in 3rd/4th quarter of CY 2015

ASTM Section D02.B0.03

- Update on Test Procedures, continued
 - ASTM D6121 (L-37) test
 - No test stand or hardware problems to report
 - » Inventory of supplier-built axles diminishing
 - » Process in place for test labs to build axles in-house using pinions and rings from approved batch of hardware
 - Surveillance Panel continuing work on replacement for current test
 - » Uses L-37-type hardware manufactured by Gleason
 - » Testing on pilot batch of hardware looked promising
 - » Large batch of hardware ordered and received in late CY 2014
 - » Lab visits and axle-build workshop have been completed
 - » Testing on large batch of hardware nearing completion
 - » Targeting 4th quarter of CY 2015 or 1st quarter of CY 2016 for finalization/approval of test procedure

ASTM Section D02.B0.03

- Update on Test Procedures, continued
 - ASTM D7452 (L-42) test
 - No test stand or hardware problems to report
 - Hardware shortage has been addressed
 - » New batch approved earlier this year
 - ASTM D5704 (L-60-1) test
 - No test stand or hardware problems to report
 - Surveillance Panel has been asked to focus more attention on the ongoing trend in test severity
 - » Concern that test may not be operating at its historic level of severity

ASTM Section D02.B0.03

- Update on Test Procedures, continued
 - ASTM D5579 (High Temperature Cyclic Durability) test
 - No test stand or hardware problems to report
 - Continues to be only one test stand available within the industry
 - » Available stand has been able to meet the industry's needs
 - ASTM D5662 (Oil Seal Compatibility) test
 - No test stand (bath) or hardware (elastomer) problems to report
 - ASTM D7603 (Storage Stability & Compatibility) test
 - No problems to report