GL-5 Task Force Update
to
SAE Technical Committee 3

October 30, 2007

GL-5 Task Force Update

- ASTM Section D02.B0.03 formed a Task Force for the purpose of updating API Category GL-5 and writing it in the form of an ASTM Standard

- The purpose behind this activity is to identify and address any deficiencies in the existing document, and publish it in a format that will make it readily accessible to all interested parties

- The updated document is in the process of being forwarded to ASTM for balloting. Barring any unexpected problems, this ballot will be completed and the final document approved for publication in December, 2007.

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Issue / Concern		Resolution
It may be difficult to locate the performance requirements for API Category GL-5		These performance requirements will be available in the form of an ASTM Standard, which is readily available on a worldwide basis
No mechanism is in place to insure that API Category GL-5 will be reviewed and updated on a routine basis - The most recent update appears to have been in 1987		ASTM Standards are reviewed and updated not less than once every five years
API Category GL-5 references test procedures which are no longer available		The updated document references the L-33-1 test in place of the L-33 test, and the L-60-1 test in place of the L-60 test
API Category GL-5 does not require that testing be conducted in calibrated test stands		The updated document references ASTM Standard Test Methods which require that testing be conducted in calibrated test stands
API Category GL-5 does not require that (end-of-test) hardware be evaluated by a calibrated test rater		The updated document requires the use of ASTM Standard Test Methods which require that end-of-test ratings be conducted by a calibrated test rater
The L-37 performance requirements in API Category GL-5 are vague. The pass/fail criteria is identified as “no tooth disturbance such as rippling, ridging, …”		The updated document specifies ASTM merit rating values and uses the same pass/fail criteria as the SAE J2360 Standard
API Category GL-5 suggests/indicates that SAE 75W-xx grade lubricants need only be evaluated in the Canadian version of the L-37 and L-42 tests		The updated document requires that SAE 75W-xx grade lubricants be evaluated in both the Standard and Canadian versions of the L-37 and L-42 tests
API Category GL-5 was published prior to the most recent revision of SAE J306, and does not clearly identify performance test requirements for SAE 70W-xx, SAE xxW-110, and SAE xxW-190 grade lubricants		The updated document clearly identifies performance test requirements for all lubricants defined under the most recent version of SAE J306
The rust test (L-33) performance requirements shown in API Category GL-5 are no longer appropriate		The updated document requires the use of the L-33-1 test and identifies a minimum ASTM merit rating as the pass/fail criteria

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Tests and Acceptance Criteria

Test Item	Minimum	Maximum
L-42[A,B]	…	Equal to or better (lower) than the mean scoring value of the passing reference oil test results used to calibrate the stand
%Scoring, Pinion		
Drive Side		
Coast Side		
%Scoring, Ring		
Drive Side		
Coast Side		
Test Method D 6121 (formerly L-37) using non-lubrited hardware[B,C]		
Ridging, ASTM merit rating	8	…
Rippling, ASTM merit rating	8	…
Wear, ASTM merit rating	5	…
Pitting/Spalling, ASTM merit rating	9.3	…
Scoring, ASTM merit rating	10	…
Test Method D 7038[D] (formerly L-33-1)		
Final rust merit rating	9.0	…
Test Method D 5704[E] (formerly L-60-1) or L-60		
Viscosity Increase, percent	…	100
Pentane Insolubles, wt percent	…	3.0
Toluene Insolubles, wt percent	…	2.0
Test Method D 892, tendency		
Sequence I, mL	…	20
Sequence II, mL	…	50
Sequence III, mL	…	20
Test Method D 130[F]		
ASTM rating	…	3

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Testing Requirements by Viscosity Grade

Test Item	SAE 70W & SAE 75W	SAE 70W-XX[A] & SAE 75W-XX[A]	All Other SAE Viscosity Grades
Standard Version of L-42	Not Required	Required	Required
Canadian Version of L-42	Required	Required	Not Required
Standard Version of Test Method D 6121 (formerly L-37)	Not Required	Required	Required
Canadian Version of Test Method D 6121 (formerly L-37)	Required	Required	Not Required
Test Method D 7038 (formerly L-33-1) or L-33	Required	Required	Required
Test Method D 5704 (formerly L-60-1) or L-60	Required	Required	Required
Test Method D 892, tendency	Required	Required	Required
Test Method D 130	Required	Required	Required

[A] XX – May be 80, 85, 90, 110, 140, 190, or 250 as indicated in SAE J306.

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Tests and Acceptance Criteria

Test Item	Minimum	Maximum
L-42[A,B]	…	Equal to or better (lower) than the mean scoring value of the passing reference oil test results used to calibrate the stand
%Scoring, Pinion		
Drive Side		
Coast Side		
%Scoring, Ring		
Drive Side		
Coast Side		
Test Method D 6121 (formerly L-37) using non-lubrited hardware[B,C]		
Ridging, ASTM merit rating	8	…
Rippling, ASTM merit rating	8	
Wear, ASTM merit rating	5	…
Pitting/Spalling, ASTM merit rating	[illegible]	…
Scoring, ASTM merit rating	10	…
Test Method D 7038[D] (formerly L-33-1)		
Final rust merit rating	9.0	
		…
Test Method D 5704[E] (formerly L-60-1) or L-60		
Viscosity Increase, percent	…	100
Pentane Insolubles, wt percent	…	3.0
Toluene Insolubles, wt percent	…	2.0
Test Method D 892, tendency		
Sequence I, mL	…	20
Sequence II, mL	…	50
Sequence III, mL	…	20
Test Method D 130[F]		
ASTM rating	…	3

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Testing Requirements by Viscosity Grade

Test Item	SAE 70W & SAE 75W	SAE 70W-XX[A] & SAE 75W-XX[A]	All Other SAE Viscosity Grades
Standard Version of L-42	Not Required	Required	Required
Canadian Version of L-42	Required	Required	Not Required
Standard Version of Test Method D 6121 (formerly L-37)	Not Required	Required	Required
Canadian Version of Test Method D 6121 (formerly L-37)	Required	Required	Not Required
Test Method D 7038 (formerly L-33-1) or L-33	Required	Required	Required
Test Method D 5704 (formerly L-60-1) or L-60	Required	Required	Required
Test Method D 892, tendency	Required	Required	Required
Test Method D 130	Required	Required	Required

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