



OIL, ENGINE, SAE 10W-40, INITIAL AND SERVICE FILL

WSS-M2C215-A1

1. SCOPE

This material specification defines the minimum acceptable performance requirements and physical/chemical properties of engine oils to be used by Ford Otosan in its worldwide engine/vehicle manufacturing operations.

2. APPLICATION

This specification will be released for initial fill engine oils used for lubrication of heavy-duty compression ignition engines using diesel fuels. The specification will also be used to define engine oils for servicing Ford heavy-duty engines where applicable.

3. REQUIREMENTS

3.1 APPROVED SOURCES

This specification requires the use of approved sources. Only the sources identified on the Ford Approved Source List (ASL) can be used when this specification is listed on the drawing, CAD file, or other documents. The list of approved sources is located within Ford at www.mats.ford.com or available externally through a Ford Materials Engineer.

3.2 CONDITIONING AND TEST CONDITIONS

All test values are based on material conditioned for not less than 24 h prior to testing in a controlled environment of 23 +/- 2 °C and 50 +/- 5% relative humidity. Testing of the material should occur in the conditioning environment or soon after removal.

3.3 PERFORMANCE

Shall meet all the requirements of "ACEA European Oil Sequences **E6-12 & E9-12**" and shall meet the performance requirements of Ford Otosan in-house bench and engine tests. Where applicable, the required engine tests shall be conducted in accordance with the most recently approved procedures as described in ASTM Special Technical Publications 315 and the applicable ASTM Standards, Research Reports and Information Letters and with the ACEA sequences.

All tests under surveillance by ASTM must be conducted using test equipment monitored by and calibrated to the requirements of the ASTM Test Monitoring Center.

All engine performance testing used to support a claim of compliance with the ACEA sequences must be generated according to the EELQMS. Suppliers must demonstrate commitment to comply with the ATIEL Code of Practice.

3.4 VISCOSITY GRADE

Shall meet all the requirements of the applicable SAE viscosity grade as defined in SAE Standard J300 (latest revision), "Engine Oil Viscosity Classification".

Date	Action	Revisions	Rev. 0
2015 07 31	Released		



Documents

E. Celebi, EU

Document Sharing Hub



3.5 PHYSICAL/CHEMICAL PROPERTIES

3.5.1 Physical Appearance and Odor

Shall be clear and bright with no objectionable odor.

3.5.2 Contaminants

Shall be free of carcinogens, toxins, metals not removed in refining or from previous use.

3.6 "READ ACROSS" GUIDELINES

All performance tests must be conducted on the final oil formulations. Exceptions may be permitted with supporting supplementary data on similar formulations to allow for approval in the absence of complete testing.

3.7 QUALIFICATION PROCEDURE

3.7.1 Documentation

Supplier must furnish to the affected Materials Engineering activity a completed and certified copy of the attached Supplement A, test reports demonstrating full compliance with all the requirements of this specification and a copy of the final American Chemistry Council (ACC – formerly CMA) and ERC Summaries if available. The need for ACC and ATIEL registration of tests will be determined by the affected Materials Engineering Activity. The copy of the ACC and ERC Summaries should be sent directly from Registration Systems Inc. and ERC to the Materials Engineering Activity unless specifically instructed by that activity.

The test reports must include results on both the candidate oil and the appropriate reference oils. The standard photographs of the test components are considered an essential part of the required test documentation. The oil sample code used for identification in each test document must be consistent. Any deviation in sample code uniformity must be explained and shown on the cover of each test report.

All tests must be certified by a qualified and authorized representative of the test facility.

The supplier shall identify all the formulation changes and modifications that occurred in the test program that coincide with the tests listed in the ACC and ERC Summaries. Individual formulations should be listed in Supplement A, and for registered tests, identified by the line item number and the formulation code.

3.7.2 Verification

The affected Materials Engineering activity reserves the right to conduct verification testing. If the test results do not support the originally submitted data, the supplier must re-test the product in coordination with the affected Materials Engineering activity. This re-test must be conducted and certified by a mutually agreed upon test facility.

3.7.3 Chemical and Physical Properties

Supplier shall furnish appropriate chemical and physical properties as required on Supplement A along with the manufacturing limits that apply to the material upon which approval is requested.



3.7.4 Performance Requirements

Conformance to the engine test requirements listed in Supplement A will be determined by using Multiple Test Acceptance Criteria (MTAC), where applicable. All data and reports from the tests used for MTAC must be provided by the supplier. On Supplement A identify the engine tests that have been used to determine the MTAC results by the corresponding line item number on the ACC Summary. The affected Materials Engineering activity reserves the right to use all tests when averaging in place of MTAC.

3.7.5 Quality Control

Upon engineering approval, supplier and affected Materials Engineering activity shall establish mutually agreed upon quality control limits, to be listed on Supplement B, and will be used for ongoing product verifications at mutually agreed upon frequencies. The infrared absorption spectra of the approved material shall constitute the reference standard and shall be kept on file. All samples shall produce infrared spectra that correspond to the reference standard when tested under the same conditions as those specified on the master spectra.

3.8 FLEET TESTING

Materials which, in the opinion of the affected Materials Engineering activity, constitute a significant departure from conventional formulations, whether in base stocks, refining processes or additive packages, must be fleet tested, in addition to the requirements outlined herein. These tests must include the type(s) of service judged to be affected by the difference in formulation technology. The affected Materials Engineering activity should be consulted prior to testing.

4. GENERAL INFORMATION

The information given below is provided for clarification and assistance in meeting the requirements of this specification. Contact gmfs@ford.com for questions concerning Engineering Material Specifications.

4.1 APPROVAL OF MATERIALS

Suppliers desiring approval of their materials shall first obtain an expression of interest from Purchasing, Design or Product Development, and Materials Engineering. The supplier shall submit a completed copy of their laboratory test reports, signed by a qualified and authorized representative of the test facility, demonstrating full compliance with all the requirements of the Material Specification. Tested material samples must be available for review upon request and kept for a minimum of one year. Upon request, the supplier will review the associated quality control documents (Process Failure Mode and Effects Analysis, Control Plans, Certification testing) with Ford.

4.2 SUPPLIER'S ONGOING RESPONSIBILITY

All materials must be equivalent in all characteristics to the material upon which approval was originally granted.

Prior to making any changes to the material originally approved, whether or not such changes affect the material's ability to meet the specification requirements, the supplier shall notify the affected Supplier Technical Assistance (STA), Purchasing, and Materials Engineering activities of the proposed changes (with reasons) by submission of a completed Suppliers Request for Engineering Approval, SREA.

For parts and components using Ford Engineering Material Specifications, all samples tested to the specifications for Design Verification (DV), Production Verification (PV) and Production Part Approval Process (PPAP) sign off must be kept until Job 1.





4.3 RESTRICTED SUBSTANCE MANAGEMENT STANDARD

Substance restrictions imposed by regulations or Company direction applies to the materials addressed by this document. The restrictions are identified in the Restricted Substance Management Standard WSS-M99P9999-A1 which is updated yearly. It is the supplier's responsibility to comply with this standard on a continuing basis through IMDS and or GMAP reporting.