



SURFACE VEHICLE RECOMMENDED PRACTICE

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Standardized Fluid for Hydraulic Component Tests

RATIONALE

Clarify viscosity classifications required based on test temperature and split into a two-part standard. Part 1 to reference testing up to and including 100 °C, and Part 2 for test temperatures above 100 °C. Updated reference section. Changed 3.1 to allow additives for improved oil and test stand life. Changed 3.2 to identify fluid viscosity and viscosity index recommendations.

1. SCOPE

This SAE Recommended Practice establishes a uniform fluid specification for reference usage in specific documents, such as fluid power component test procedures, where a fluid designation is required.

1.1 Purpose

Establish a uniform fluid specification for use in various hydraulic component qualification tests where the governing qualification standards require hydraulic test fluid temperatures up to and including 100 °C.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM D445 Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and Calculation of Dynamic Viscosity)

ASTM D2270 Standard Practice for Calculating Viscosity Index From Kinematic Viscosity at 40 and 100 °C

ASTM D6158 Standard Specification for Mineral Hydraulic Oils

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Documents



Standard Sharing Hub

2.1.2 ISO Publications

Copies of these documents are available online at <https://webstore.ansi.org/>.

ISO 3448	Industrial liquid lubricants - ISO viscosity classification
ISO 6743-4	Lubricants, industrial oils and related products (class L) - Classification - Part 4: Family H - (Hydraulic systems)
ISO 11158	Lubricants, industrial oils and related products (class L) - Family H (hydraulic systems) -Specifications for categories HH, HL, HM, HV and HG

3. FLUID

3.1 Type

General hydraulic fluid classified as ISO-L-HM in accordance with ISO 6743-4 and ISO 11158 shall be used. No polymeric materials or viscosity index improvers are to be used. To enhance fluid durability and extend the service life of the fluid and test stand components, antioxidant, anti-corrosion, and anti-wear additives are allowed.

3.2 Viscosity

ISO viscosity grade ISO VG 32, 46, or 68 shall be used for test fluid temperatures up to and including 100 °C. Viscosity grade shall be identified. Kinematic viscosity shall be verified or measured in accordance with ASTM D445 and the viscosity index (V.I.) calculated per ASTM D2270. The minimum viscosity index (V.I.) shall be 90 per ASTM D6158.

3.2.1 Viscosity Range

Allowable viscosity range for each viscosity grade shall be in accordance with ISO 3448.

4. NOTES

4.1 Revision Indicator

A change bar (|) located in the left margin is for the convenience of the user in locating areas where technical revisions, not editorial changes, have been made to the previous issue of this document. An (R) symbol to the left of the document title indicates a complete revision of the document, including technical revisions. Change bars and (R) are not used in original publications, nor in documents that contain editorial changes only.

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