ASTM Committee D27
Electrical Insulating Liquids and Gases
Liaison Report

Ed Casserly

IEEE/PES Transformers Committee

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Denver

Committee D27 on Electrical Insulating Liquids and Gases

ASTM Committee D27 on Electrical Insulating Liquids and Gases was formed in 1959. D27 meets twice each year, in May and November, with about 30 members participating in 12 meetings over two days. The Committee, with a membership of approximately 120 members, currently has jurisdiction of over 50 approved standards that are published in the Annual Book of ASTM Standards, Volume 10.03.

Committee Officers

Chairman: Lance Lewand
Vice-chairman: Edward Casserly
Secretary: Michael Bonn

Meetings

Last Meeting: Nov 11-12, 2024
Orlando, FL

Next Meeting: May 5-6, 2025
Toronto, CA

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IEEE PES 1918 2018 100 YEARS TRANSFORMERS COMMITTEE

D27 Committee Membership

Classification	Official	Non-Official	Total
Producer (Liquid/Gas)	22	15	37
User (OEM/Utilities)	**13**	**1**	**14**
General Interest (Labs)	44	23	67
Total	79	39	118

- Organized by company, organization, or individual
- **1 official vote per company, organization, or individual**
- **Unanimous approvals** – all negatives must be resolved, even from non-voting members

- **Need the voice of transformer OEMs and utilities**

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ASTM D27 Mineral Insulating Liquids

D27.01 - Mineral Oils, Griffin Burk:

1. **ASTM D8180-23** - **Specification for Re-refined Mineral Insulating Liquid** Used in Electrical Apparatus, **approved Jan 1, 2023**.

2. **ASTM D5222-23** – Specification for Less Flammable High Molecular Weight Hydrocarbon Mineral Electrical Insulating Liquids, **approved January 1, 2023**.
   - **New title**, previously, “High Fire Point Mineral Electrical Insulating Oils”

3. **ASTM D3487-24** – **Specification for Mineral Insulating Oil** Used in Electrical Apparatus, **approved June 1, 2024.**

ASTM D27 Ester Insulating Liquids

D27.02 - Gases and Non-Mineral Oil Liquids, Todd Felton:

1. **ASTM D8240-22** Specification for Less-Flammable Synthetic Ester Liquids Used in Electrical Apparatus (IEC 61099), **approved August, 2022**.
   - **Requires disclosure of additives.**

2. **ASTM D6871-17** Specification for Natural (Vegetable Oil) Ester Fluids Used in Electrical Apparatus.
   - **Currently under revision, WK81903**
   - **Expected to include disclosure requirement consistent with D8240 and IEC Standards**

ASTM D27 Analysis of Additives

D27.03 - Analytical Tests, Claude Beauchemin:

1. **WK81449** New Standard For the determination of additives in insulating liquids - Part 1 - Determination of phenolic antioxidants using liquid chromatography (LC)
   - (Technical Contact: Casserly, Edward W)

2. Work is on-going. Part 1 is on the determination of phenolic antioxidants using liquid chromatography (LC) and a draft has been issued.
   - **Concurrent with IEC TC10 MT43 revision of 60666.**

ASTM D27 Corrosive Sulfur

D27.06 – Chemical Tests, Lance Lewand:

1. **ASTM D1275-24** Corrosive Sulfur in Electrical Insulating Liquids
   - (Technical Contact: Lewand, Lance)
   - **Will be reopened to address Silver Corrosion concerns**

ASTM D27 Future Work

D27.15 - Planning, Resources and Development, Kevin Wirtz:

1. WK68133 – Oxidation Stability of Natural and Synthetic Ester Liquids using OIT by DSC – submitted for development to D27.06 SC. Current draft to be posted to collaboration site is v11.

2. Oxidation of Natural Ester Liquids using Non-DSC Methods – L. Lewand Working on use of D2112 to assess.

3. Partial Discharge – Dominique Bolliger (in cooperation with IEC TC10 MT30)

4. Relative Saturation of Water in Insulating Liquids – Lance Lewand