ASTM Liaison Report
IEEE PES Transformer Committee

March 11, 2024– Spring Meeting, Vancouver, BC

Ed Casserly

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 110 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 R. Lewand
Vice-chairman: Edward W. Casserly
Secretary: Michael Bonn

Meetings

Last Meeting: Dec 6 – 7, 2023
Washington, DC.
Next Meeting: July 10-11, 2024
Philadelphia, PA

D27 Committee Membership

Classification	Official	Non-Official	Total
Producer	20	13	33
User	10	3	13
Consumer	0	0	0
General Interest	44	26	70
Total	74	42	116

- 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

ASTM D27 Mineral Insulating Liquids

D27.01 - Mineral Oils, Griffin Burk:

1. **ASTM D8180-23** - **New standard**: 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 D3487-16** – Specification for Mineral Insulating Oil Used in Electrical Apparatus
   - **Currently under revision, WK83455; subcommittee vote.**

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**.
   - **New standard; 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 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 – Tom Prevost

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