



Facilities & Gases Joint North America TC Chapter

Meeting Summary and Minutes

NA Standards Winter Meetings 2025

Tuesday, February 25, 09:00–12:00 Noon Pacific (OVTCCM)

SEMI Global Headquarters, Milpitas, California, and via Official Virtual TC Chapter Meeting (OVTCCM)

TC Chapter Announcements

Next TC Chapter Meeting

SEMICON West Meetings 2025

Tuesday, October 7, 09:00 – 12:00 Pacific

Phoenix Convention Center, Phoenix, Arizona/USA

Table 1 Meeting Attendees

Italics indicate virtual participants

Facilities Co-Chairs: Michael Potts (Arcadis)

Gases Co-Chairs: Mohamed Saleem (ITW)

SEMI Staff: Laura Nguyen

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
Arcadis	Potts	Michael	<i>Maruichi Stainless Steel</i>	<i>Nagao</i>	<i>Mamoru</i>
Applied Materials	Chen	Yanli	Swagelok	Rice	Taylor
<i>Camenzind Solutions</i>	<i>Camenzind</i>	<i>Mark</i>	Swagelok	Slaven	Harry
Daido Steel	Sei	Naoki	<i>Swagelok</i>	<i>Wardeiner</i>	<i>Alan</i>
Daido Steel	Yoshiyuki	Otake	Swagelok	Zito	Dan
<i>Entegris</i>	<i>Vogt</i>	<i>Sarah</i>	<i>TEL</i>	<i>Mashiro</i>	<i>Supika</i>
<i>Festo</i>	<i>van den Berg</i>	<i>Max</i>	UCT	Milburn	Matt
<i>Ichor Systems</i>	<i>Findleton</i>	<i>Kevin</i>	<i>WIKA Instruments</i>	<i>Adair</i>	<i>Eric</i>
ITW/Brooks Instrument	Saleem	Mohamed			
<i>Maruichi Stainless Steel</i>	<i>Furuya</i>	<i>Kazuki</i>	SEMI	Nguyen	Laura

Table 2 Leadership Changes

None

Table 3 Committee Structure Changes

<i>Previous WG/TF/SC Name</i>	<i>New WG/TF/SC Name or Status Change</i>
<i>Facilities</i>	
None	
<i>Gases</i>	
Building Information Modeling (BIM) for Semiconductor Capital Equipment Task Force	Manufacturing Equipment Installation Task Force <i>[New]</i>



Table 4 Ballot Results

Document #	Document Title	Committee Action
<i>Facilities</i>		
None		
<i>Gases</i>		
7326	Revision to SEMI F43-0308 (Reapproved 0613), Test Method for Determination of Particle Contribution by Point-of-Use Gas Purifiers and Gas Filters	Failed
7327	Line-Item Revision to SEMI E56-0317, Test Method for Determining Accuracy, Linearity, Repeatability, Short-Term Reproducibility, Hysteresis, and Deadband of Thermal Mass Flow Controllers	
L1	Remove “thermal” throughout.	Failed

NOTE 1: **Passed** ballots and line items will be submitted to the ISC Audit & Review Subcommittee for procedural review.

NOTE 2: **Failed** ballots and line items were returned to the originating task forces for re-work and re-balloting or abandoning.

Table 5 Ratification Ballot Results

None

Table 6 Activities Approved by the GCS between meetings of the TC Chapter

#	Type	SC/TF/WG	Details
<i>Facilities</i>			
None			
<i>Gases</i>			
7325	Gases SNARF & Ballot Authorization	Filters & Purifiers TF	Revision to SEMI F28-1103 (Reapproved 0815), Test Method for Measuring Particle Generation from Process Panels – Approved by GCS on 01/06/2025
7326	Gases SNARF & Ballot Authorization	Materials of Construction of Gas Delivery Systems TF	Revision to SEMI F43-0308 (Reapproved 0613), Test Method for Determination of Particle Contribution by Point-of-Use Gas Purifiers and Gas Filters – Approved by GCS on 01/06/2025
7327	Gases SNARF & Ballot Authorization	Mass Flow Controllers TF	Line-Item Revision to SEMI E56-0317, Test Method for Determining Accuracy, Linearity, Repeatability, Short-Term Reproducibility, Hysteresis, and Deadband of Thermal Mass Flow Controllers – Approved by GCS on 01/06/2025
7328	Gases SNARF & Ballot Authorization	Filters & Purifiers TF	Revision to SEMI F28-1103 (Reapproved 0815), Test Method for Measuring Particle Generation from Process Panels – Approved by GCS on 01/06/2025

Table 7 Authorized Activities

Listing of all revised or new SNARF(s) and TFOF(s) approved by the Originating TC Chapter.

#	Type	SC/TF/WG	Details
<i>Facilities</i>			
	TFOF	Revise TF name	Approved the revised TFOF for Building Information Modeling (BIM) for Semiconductor Capital Equipment TF to Manufacturing Equipment Installation TF and updates to the charter and scope.
<i>Gases</i>			
None			

NOTE 1: SNARFs and TFOFs are available for review on the SEMI Web site at: <http://downloads.semi.org/web/wstdsbal.nsf/TFOFSNARF>

Table 8 Authorized Ballots

Listing of documents authorized by the Originating TC Chapter for Letter Ballot.

#	When	TF	Details
<i>Facilities</i>			
None			
<i>Gases</i>			
7153	Cycle 4, or 5-2025	Mass Flow Controllers TF	Line-Item Revision to SEMI E66-0611 (Reapproved 0517), Test Method for Determining Particle Contribution by Mass Flow Controllers
7326A	Cycle 4, 2025	Filters & Purifiers TF	Revision to SEMI F43-0308 (Reapproved 0613), Test Method for Determination of Particle Contribution by Point-of-Use Gas Purifiers and Gas Filters

Table 9 SNARF(s) Granted a One-Year Extension

#	TF	Title	Expiration Date
<i>Facilities</i>			
None			
<i>Gases</i>			
6612	Materials of Construction of Gas Delivery Systems TF	New Subordinate Standard: Test Method for the Determination of Conductance of Fluid Handling Components at Sub-atmospheric and Vacuum Pressure, to SEMI F32-0211, Test Method for Determination of Flow Coefficient for High Purity Shutoff Valves	Winter 2025

NOTE 1: If the Standards Document Development Project is found to be continuing, but cannot be completed within the current project period, the TC Chapter may grant a one-year extension at a time, as many times as necessary. [Regulations § 8.3]

Table 10 SNARF(s) Canceled

None

Table 11 Standard(s) to receive Inactive Status

None

Table 12 New Action Items

Item #	Assigned to	Details
2025Feb#01	Max van den Berg	Set up offline meeting for E49.8 activity. Completed.
2025Feb#02	Laura Nguyen, Taylor Rice	Laura and Taylor to work on a short survey for F69 (transportation). Ongoing.
2025Feb#03	Max van den Berg, Laura	Max to submit “call to action” Standards Watch article to create awareness for E49 instead of ISO 3. Ongoing.
2025Feb#04	Laura Nguyen	Laura to send Sarah all updates regarding ballot for F43. Completed.

Table 13 Previous Meeting Action Items

Item #	Assigned to	Details
2021Feb#03	Bill, Mohamed, Max, Matthew Milburn	Review SEMI F19. Ongoing.
2021July#01	Laura Nguyen	Mohamed to reach out to Steve about creating a new Task Force for the Reapproval Ballots that failed (SEMI E6, E76). Ongoing. Moved these activities to Manufacturing Equipment Installation TF. Completed.



Table 13 Previous Meeting Action Items

<i>Item #</i>	<i>Assigned to</i>	<i>Details</i>
2024Mar#02	Materials of Construction of Gas Delivery Systems TF	Identify potential leader for TFOF to address standards that fall under ‘component dimensions.’ Ongoing.
2024Nov#01	SEMI Staff	Author packet on what to look for when reviewing Standards for Five-Year. Ongoing

1 Welcome, Reminders, and Introductions

Mohamed Saleem (ITW/Brooks Instrument) called the meeting to order at 09:15. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.

Attachment: SEMI Standards Required Meetings Elements

2 Review of Previous Meeting Minutes

The TC Chapter reviewed the minutes of the previous meeting.

Motion: To accept the previous meeting minutes as written.

By / 2nd: By: Taylor Rice / Swagelok Company
Second: Yanli Chen / Applied Materials, Inc.

Discussion: None.

Vote: 13-0 in favor. Motion passed.

Attachment: [2024Fall] F&G NA TC Chapter Meeting Minutes

3 Liaison Reports

3.1 Gases & Facilities Joint Japan TC Chapter

Laura Nguyen (SEMI) reported for the Japan TC Chapter. Of note:

Meeting Information

- Last meeting: Thursday, October 24, 2024, via SEMI Japan office + OVTCCM (Hybrid)
- Next meeting: Friday, April 25, 2025, via SEMI Japan office + OVTCCM (Hybrid)

G&F Leadership

- Hiromichi Enami/ iZOOM (*GCS voting member*)
- Isao Suzuki/ Consultant (*GCS voting member*)
- Masafumi Kitano/ Fujikin

Organization Charts {Refer to Attachment}

Gases & Facilities Ballot Results: *None*

Gases & Facilities Authorized Activities: *None*

Gases & Facilities Five-Year Review: *None*

Gases Task Force Highlights: *None*

Facilities Authorized Ballots

- 7297: Revision to E137-0705 (Reapproved 0118), *Guide for Final Assembly, Packaging, Transportation, Unpacking, and Relocation of Semiconductor Manufacturing Equipment*
 - Planned for Cycle 2, 2025



Gases Task Force Highlights

F1 Revision TF

- Nothing specific to report.

5-year Review TF

- The following documents were submitted for Cycle 6, 2024 and passed the TC Chapter review on October 24.
 - Doc.#7205A, Line Item Revision to SEMI F44-0307 (Reapproved 0818), Specification for Machined Stainless Steel Weld Fittings
 - Doc.#7206A, Line Item Revision to SEMI F45-0307 (Reapproved 0818), Specification for Machined Stainless Steel Reducing Weld Ballot review results will be forwarded to the ISC A&R for procedural review.
- Both documents passed the procedural review by the ISC SC and are to be published soon.
- TF intends to make editorial change on F44 based on the Comment received during Cycle 6 voting.
 - TF will prepare the Publication Change Request (PCR) by the next TC Chapter meeting to address this issue as an editorial change outside of Letter Ballot.

E137 Revision TF

- Leader: Haruna Hayashi/ TEL
- Doc.#7297, Revision to E137-0705 (Reapproved 0118), Guide for Final Assembly, Packaging, Transportation, Unpacking, and Relocation of Semiconductor Manufacturing Equipment was submitted for Cycle 2, 2025.
- Points to be updated:
 - current SEMI E137 recommends only plywood and wood for crating/packaging material, but use of plywood and wood is getting controversial from the sustainability point of view.
 - Adding options to use non-wood material for crating and packaging can allow more environmentally friendly solution for shipping semiconductor manufacturing equipment.
- Voting result will be reviewed by the Japan TC Chapter at its next meeting in April.

Staff Contact: Akiko Yoshida (ayoshida@semi.org)

Attachment: G+F_JA TC Chapter Liaison Report_February 2025_R1_distr

3.2 Gase & Liquid Chemicals Europe TC Chapter

Laura Nguyen (SEMI) reported for the Europe TC Chapter. Of note:

Last meeting

- November 13, 2024
- SEMICON Europa
- Munich, Germany

Next meeting

- SEMICON Europa, 2025
- Munich, Germany

Organization Chart {refer to attachment for details}

- Changes:
 - Liquid Chemicals TFs discharged: Precursor Specifications TF and Solvents in Advanced Processes TF

Task Force Highlights

- All TFs are not active at this time.
- Will discuss at the next meeting for revitalization plans



Five-Year Review of Standards

- TC Chapter agreed to let all the below standards move to Inactive Status:
 - SEMI C81-0113 (Reapproved 0618), Guide for Tris(Dimethylamino) Silane (3DMAS)
 - SEMI C80-0214, Guide for Tetrakis(Dimethylamino) Silane (TDMAS)
 - SEMI C66-0317, Guide for Trimethylaluminum (TMAI), 99.5% Quality
 - SEMI C65-0317, Guide for Trimethylsilane (3MS), 99.995% Quality
 - SEMI C52-0301 (Reapproved 0618), Specification for the Shelf Life of a Specialty Gas
 - SEMI C3.57-0312 (Reapproved 0618), Specification for Carbon Dioxide, CO₂, Electronic Grade in Cylinders
 - SEMI C3.56-0312 (Reapproved 0618), Specification for Diborane Mixtures

Staff Contact: Kevin Nguyen (knguyen@semi.org)

Attachment: EU Gases & Liquid Chemicals Liaison Report Nov2024 v1

3.3 *Facilities Korea TC Chapter*

No update since SEMICON Korea 2024

3.4 *SEMI Staff Report*

Laura Nguyen (SEMI) gave the SEMI Staff Report. Of note:

SEMI Global 2025 Calendar of Events

- SEMICON China (March 26-28; Shanghai)
- SEMICON SEA (May 20-22; Singapore)
- SEMICON India (Sept 1-3; New Delhi, India)
- SEMICON Taiwan (Sept 10-12; Taipei, Taiwan)
- SEMCON West (Oct 7-9; Phoenix, Arizona)
- SEMICON Europa (Nov 18-21; Munich, Germany)
- SEMICON Japan (December 17-19; Tokyo, Japan)

SEMICON West 2025-2030 ← **NEW!**

- **2025—October 7-9 | Phoenix Convention Center | Phoenix, AZ**
- 2026—October 13-15 | Moscone Center | San Francisco, CA
- **2027—October 12-14 | Phoenix Convention Center | Phoenix, AZ**
- 2028—October 10-12 | Moscone Center | San Francisco, CA
- **2029—October 9-11 | Phoenix Convention Center | Phoenix, AZ**
- 2030—October 29-31 | Moscone Center | San Francisco, CA

Upcoming NA Meetings 2025

- NA Standards Summer Meetings: June 2-5, 2025, at SEMI HQ, Milpitas, California/USA
- SEMICON West: Oct 6-9, 2025, at Phoenix Convention Center, Phoenix, Arizona/USA

Critical Dates for SEMI Standards Ballots

- Cycle 2-2025: Ballot Submission Due: Jan 23/Voting Period: Feb 11 – Mar 13
- Cycle 3-2025: Ballot Submission Due: Mar 5/Voting Period: Mar 19 – Apr 18
- Cycle 4-2025: Ballot Submission Due: Mar 20/Voting Period: Apr 9 – May 9



- Cycle 5-2025: Ballot Submission Due: May 8/Voting Period: May 28 – June 27
- Cycle 6-2025: Ballot Submission Due: June 19/Voting Period: July 9 – Aug 8
- Cycle 7-2025: Ballot Submission Due: July 24/Voting Period: Aug 13 – Sep 12
- Cycle 8-2025: Ballot Submission Due: Sept 3/Voting Period: Sept 24 – Oct 24
- Cycle 9-2025: Ballot Submission Due: Oct 1/Voting Period: Oct 21 – Nov 20

<https://www.semi.org/en/collaborate/standards/ballots>

Standards Publications Report

<i>Cycle</i>	<i>New</i>	<i>Revised</i>	<i>Reapproved</i>	<i>Withdrawn</i>
November 2024	2	0	0	0
December 2024	0	11	6	0
January 2025	3	2	4	0

Total in portfolio – 1,098 (includes 356 Inactive Standards)

New Standards

<i>Cycle</i>	<i>Designation</i>	<i>Title</i>	<i>Committee</i>	<i>Region</i>
November 2024	SEMI E190	Specification for Equipment Data Publication (EDP)	Information & Control	NA
November 2024	SEMI E190.1	Specification for Common Data for Etch Components	Information & Control	NA
January 2025	SEMI E192	Guide for Equipment Adoption Criteria for GEM and GEM-related Standards	Information & Control	NA
January 2025	SEMI D87	Test Method for Response Time Evaluation of Displays with Variable Refresh Rate	FPD – Metrology	KO
January 2025	SEMI PV102	Guide for Tube PECVD Graphite Boat Materials for Solar Cell Production	Photovoltaic	CH

Connect@SEMI Communities for all SEMI Standards Task Forces {update}

- By Feb 2025, all Standards Task Forces shall use Connect@SEMI to host documents that are currently in development.
 - **The ISC Regulations SC recommends to postpone enforcement of implementation until next Regs/PM revision (which is currently aimed to become effective by NA Summer meeting in June)**
 - **Regs SC is working with SEMI to Update both Connect@SEMI and rules so that they are aligned each other**
- Each Standards Task Force will have its own Community Page on Connect@SEMI.
- All program members may log in at: <https://connect.semi.org> (username and password is same as program membership log-in)

Facilities Five-Year Review

- SEMI E51, Guide for Typical Facilities Services and Termination Matrix
- SEMI E6, Guide for Semiconductor Equipment Installation Documentation
- SEMI E76, Guide for 300 mm Process Equipment Points of Connection to Facility Services
- SEMI F51-0917, Guide for Elastometric Sealing Technology

Facilities: Open SNARFs

- 7196: Revision to SEMI F47-0706 (Reapproved 0812), Specification for Semiconductor Processing Equipment Voltage Sag Immunity

SNARF 3-Year Status:

Facilities: *None*

SNARF 3-Year Status:

Gases

- 6612: New Subordinate Standard: Test Method for the Determination of Conductance of Fluid Handling Components at Subatmospheric and Vacuum Pressure, to SEMI F32-0211, Test Method for Determination of Flow Coefficient for High Purity Shutoff Valves
 - SNARF expires Spring 2025

Gases Activities Approved via GCS between Meetings (on 01/06/2025)

- Filters & Purifiers TF, SNARF and Ballot Authorization for 7325: Revision to SEMI F28-1103 (Reapproved 0815), *Test Method for Measuring Particle Generation from Process Panels*
- Filters & Purifiers TF, SNARF and Ballot Authorization for 7326: Revision to SEMI F43-0308 (Reapproved 0613), *Test Method for Determination of Particle Contribution by Point-of-Use Gas Purifiers and Gas Filters*
- Mass Flow Controller TF, SNARF and Ballot Authorization for 7327: Line-Item Revision to SEMI E56-0317, *Test Method for Determining Accuracy, Linearity, Repeatability, Short-Term Reproducibility, Hysteresis, and Deadband of Thermal Mass Flow Controllers*
- Materials of Construction of Gas Delivery Systems TF, SNARF and Ballot Authorization for 7328: Revision to SEMI F69-1213E, *Test Method for Transport and Shock Testing of Gas Delivery Systems*

Gases: Open SNARFs

- Filters & Purifiers
 - 7199: Line-Item Revision to SEMI F59-0302 (Reapproved 0613), Test Method for Determination of Filter or Gas System Flow Pressure Drop Curves
 - 7200: Line-Item Revision to SEMI F67-1101 (Reapproved 0713), Test Method for Determining Inert Gas Purifier Capacity
 - 7201: Line-Item Revision to SEMI F68-1101 (Reapproved 0713), Test Method for Determining Purifier Efficiency
 - 7325: Revision to SEMI F28-1103 (Reapproved 0815), Test Method for Measuring Particle Generation from Process Panels
 - 7326: Revision to SEMI F43-0308 (Reapproved 0613), Test Method for Determination of Particle Contribution by Point-of-Use Gas Purifiers and Gas Filters
- Mass Flow Controller TF
 - 7153: Line-Item Revision to SEMI E66-0611 (Reapproved 0517), Test Method for Determining Particle Contribution by Mass Flow Controllers
- Heater Jacket TF
 - 7308: Revision to SEMI F109-0212, Guide for Heater Systems Requirements, with title change to: Guide for Material Selection for Heater Systems
 - 7309, New Standard: Test Method for Surface Heater Particle Generation

Gases: On-going

Reapproval Ballots below failed TC Chapter Review; Summer 2021; Abolished West 2022

- Action Item to reissue new SNARFs (*Materials of Construction TF*)
 - SEMI F60-1214, Test Method for ESCA Evaluation of Surface Composition of Wetted Surfaces of Passivated 316L Stainless Steel Components [Former 6876]
 - SEMI F73-1214, Test Method for Scanning Electron Microscopy (SEM) Evaluation of Wetted Surface Condition of Stainless Steel Components [Former 6877]
 - SEMI F77-0915, Test Method for Electrochemical Critical Pitting Temperature Testing of Stainless Steel Surfaces Used in Corrosive Gas Systems [Former 6879]



- Mass Flow Controller
 - Line-Item Revision to SEMI E66-0611 (Reapproved 0517), Test Method for Determining Particle Contribution by Mass Flow Controllers [Doc 7152]

Gases Five-Year Review {refer to attachment for details}

Staff Contact: Laura Nguyen, Lnguyen@semi.org

Attachment: Staff Report Feb 2025 v3_F&G

4 Ballot Review

NOTE 3: TC Chapter adjudication on ballots reviewed is detailed in the Audits & Review (A&R) Subcommittee Forms for procedural review. The A&R forms are available as attachments to these minutes. The attachment file name for each balloted document is provided under each ballot review section below.

4.1 Facilities

None

4.2 Gases

4.2.1 Document # 7326, Revision to SEMI F43-0308 (Reapproved 0613), Test Method for Determination of Particle Contribution by Point-of-Use Gas Purifiers and Gas Filters

- The committee found the negative related and technically persuasive. The ballot **failed** and returned to the task force for re-work.

Motion: To find Negative SG006 related and persuasive.

By / 2nd: By: Yanli Chen / Applied Materials, Inc.
Second: Daniel Zito / Swagelok

Discussion: None.

Vote: 10-0 in favor. Motion passed.

Motion: This Document failed TC Chapter review and will be returned to the TF for rework.

By / 2nd: By: Taylor Rice / Swagelok Company
Second: Daniel Zito / Swagelok

Discussion: None.

Vote: 11-0 in favor. Motion passed.

Attachment: 01-25-Gases

4.2.2 Document # 7327, Line-Item Revision to SEMI E56-0317, Test Method for Determining Accuracy, Linearity, Repeatability, Short-Term Reproducibility, Hysteresis, and Deadband of Thermal Mass Flow Controllers

4.2.2.1 Line Item #1: Remove “thermal” throughout.

- The committee found the negative related and technically not persuasive. Line item 1 passed TC Chapter review as balloted and will be forwarded to the ISC A&R SC for procedural review. Refer to attachment for Procedural Review.

Attachment: Gas_Mashiro_Cycle1-2025

Attachment: 7327_ProceduralReview

5 Subcommittee and Task Force Reports

5.1 Facilities

5.1.1 Power Grid Harmonics Task Force – Did not meet

5.1.2 SEMI F51 Revision Task Force – Did not meet

5.1.3 Building Information Modeling (BIM) for Semiconductor Capital Equipment Task Force

Michael Potts (Arcadis) reported for this task force. Of note:

- Summary
 - 7 Attendees
 - F122 published and available in SEMI Store
 - Old: BIM Task Force
 - F122
 - New: Manufacturing Equipment Installation Task Force
 - F122 - Guide for Facilities Data Package for Manufacturing Equipment Installation And Building Information Modeling (new Feb 2025)
 - E6 - Guide for Semiconductor Equipment Installation Documentation (2021 reject with comments)
 - E51 – Guide for Typical Facilities Services And Termination Matrix (SNARF cancelled in 2017)
 - E76 - Guide for 300 Mm Process Equipment Points of Connection To Facility Services (Feb 2000)
- New TFOF

Motion: Approve the revised TFOF for BIM TF to Manufacturing Equipment Installation TF and updates to the charter and scope.

By / 2nd: By: Yanli Chen / Applied Materials, Inc.
Second: Taylor Rice / Swagelok Company

Discussion: None.

Vote: 10-0 in favor. Motion passed.

Attachment: TFOF_BIM_rev1

Attachment: SEMI BIM Task Force_TC Report Out_20240225

5.1.4 Voltage Sag Immunity Task Force

Michael Potts (Arcadis) presented the Task Force report on behalf of Mark Stephens (EPRI). Of note:

- Section 7 Test Requirement vs Related Info Recommended *{refer to attachment for images}*
- Overall Input
 - Keep Type II.A2 as an Alternative
 - Suggest noting Type II as “preferred”
 - Suggest providing Related Information guidance similar to IEEE-1668 approach
 - Related: Consider creation of Classes Class A, B, C passing
 - Include GF clause for previously certified equipment.
 - Make Three-phase tests part of recommended in related information – not required.
- *Refer to attachment for detailed slides*
- Seeking Input: Subcomponent Pass/Fail Criteria
 - Recently worked together with colleagues on subsystem and component test result interpretation
 - Some subsystem items shutdown and did not recover, but subsystem was able to continue at a lower throughput without operator intervention
 - OEM – should this not be a pass? It recovered operation...

- The intent of this section is that the subsystem would recover to full rated operation after the event, but it is not stated clearly
- Should Consider making b) and c) read...May not perform at full rated operation during the event but recovers to full rated operation... in next rev.

7.8.2 *Pass/Fail Criteria for Subsystems and Components* — Voltage sag immunity testing of subsystems and components should meet one of the following:

- a) Performs at full rated operation.
- b) May not perform at full rated operation but **recovers operation** without operator and/or host controller intervention. Must not send error signals to the equipment host controller indicating when full rated operation is not achieved.
- c) May not perform at full rated operation but **recovers operation** without operator and/or host controller intervention. May send signals to the equipment host controller indicating when full rated operation is not achieved.

- Review of SEMI F47 Proposed Revision Subgroup Update (Latest Subgroup Discussions)
 - Incorporate input from overall TF from Mtg 23 and Mtg 24 into draft document
 - Finalize Proposed Revisions
 - Present Draft and Proposed Revisions at SEMICON Summer Meetings (June 2nd) / SEMICON West
 - Initiate Balloting Process Upon Reasonable Consensus
- Next TF Meeting plan
 - Task Force SEMI F47 Proposed Revision Subgroup
 - Next meeting plan: Wednesday, March 26, 3-5 PM Eastern
 - Next Regular TF Meeting
 - Proposed Summer Meetings: June 2-3, SEMI HQ or SEMICON West: Oct 6-9; AZ

Attachment: SEMI VS Task Force Meeting No 24 022425 AL

5.2 Gases

5.2.1 Gases Specification Task Force – Did not meet

5.2.2 Heater Jacket Task Force – Did not meet

5.2.3 Materials of Construction of Gas Delivery Systems Task Force

Matt Milburn (UCT) reported for this task force. Of note:

Meeting Summary

- 6510: Line Item Revision to SEMI F32-0211 continuation of mechanical impossibility of apparatus as currently described which is beyond the scope of the original SNARF.
 - A little progress since November
 - Will share dimensional data on SEMI Connect
- 6612: New Subordinate Standard: Test Method for the Determination of Conductance of Fluid Handling Components at Sub-atmospheric and Vacuum Pressure, to SEMI F32-0211, Test Method for Determination of Flow Coefficient for High Purity Shutoff Valves
 - Shared test data and asked for guidance on next steps
 - Proposed sending out a reminder to the previously participating companies to replicate Swagelok's test results.
 - Do we need to reissue SNARF?



- SNARF extension motion

Motion: Approve a 1 year extension of the project period for the SNARF 6612, New Subordinate Standard: Test Method for the Determination of Conductance of Fluid Handling Components at Sub-atmospheric and Vacuum Pressure, to SEMI F32-0211, Test Method for Determination of Flow Coefficient for High Purity Shutoff Valves.

By / 2nd: By: Matthew Milburn / UCT
Second: Taylor Rice / Swagelok Company

Discussion: None.

Vote: 9-0 in favor. Motion passed.

- SEMI F36
 - Still holding on who is going to lead
- Further development of 2nd ballot review of F69
 - Limited to truck transportation only. Should we add air, rail, and/or ship transportation methods?
 - Proposed to send out a survey to TF participating companies to find out which transportation modes are used.
 - Also proposed to reach out to document originators to try to understand why the SEMI standard was written as it stands today (shock values, packaged vs. unpackaged, etc.)
- Five year review
 - SEMI E49.6-1103, Guide for Subsystem Assembly and Testing Procedures – Stainless Steel Systems
 - SEMI E49.8-1103, Guide for High Purity and Ultrahigh Purity Gas Distribution Systems in Semiconductor Manufacturing Equipment
 - SEMI F19-0815 Specification for the Surface Condition of the Wetted Surfaces of Stainless Steel Components
 - SEMI F22-0812 Guide for Bulk and Specialty Gas Distribution Systems
 - SEMI F37-0318 Test Method for Determination of Surface Roughness Parameters for Gas Distribution System Components
 - SEMI F60-1214 Test Method for ESCA Evaluation of Surface Composition of Wetted Surfaces of Passivated 316L Stainless Steel Components
 - SEMI F73-1214 Test Method for Scanning Electron Microscopy (SEM) Evaluation of Wetted Surface Condition of Stainless Steel Components
 - SEMI F77-0915 Test Method for Electrochemical Critical Pitting Temperature Testing of Stainless Steel Surfaces Used in Corrosive Gas Systems
 - SEMI F101-1105 Test Method for Determining Pressure Regulator Performance in Gas Distribution Systems

Attachment: MoC_TF_Meeting_Brief_October_2024

5.2.1 *Filters & Purifiers Task Force*

Yanli Chen (AMAT) reported for this task force. Of note:

Meeting Summary

- TF failed the Document 7326 balloting (7198: Particle Test Method for PO filters and purifiers) due to SG0006 for the technical persuasive reason and decided to continue to work on the modification for the document. Sarah Vogt from Entergris volunteered to review the ballot rejection comments from Eric and modify the latest document as necessary. Laura will send her all the related documents.



- TF will continue to work on the modification for the Doc 7197 (Particle Test Method for Process Panels) and prepare to submit for balloting in the next 2 cycles
- Five Year Review: F115, F114, F70
- Open SNARFs
 - 7199: Line-Item Revision to SEMI F59-0302 (Reapproved 0613), Test Method for Determination of Filter or Gas System Flow Pressure Drop Curves
 - 7200: Line-Item Revision to SEMI F67-1101 (Reapproved 0713), Test Method for Determining Inert Gas Purifier Capacity
 - 7201: Line-Item Revision to SEMI F68-1101 (Reapproved 0713), Test Method for Determining Purifier Efficiency
- Motion to reballot 7326A

Motion: Authorize the Document for Letter Ballot 7326, Revision to SEMI F43-0308 (Reapproved 0613), Test Method for Determination of Particle Contribution by Point-of-Use Gas Purifiers and Gas Filters, in Cycle 4, 2025.

By / 2nd: By: Daniel Zito / Swagelok
Second: Michael Potts / Arcadis

Discussion: None

Vote: 9-0 in favor. Motion passed.

Attachment: FP TF Summary_Feb 24 2025_SEMI Standard Winter Meeting

5.2.2 Mass Flow Controller Task Force

Kevin Findleton (Ichor Systems) reported for this task force. Of note:

- The Task Force reviewed previous meeting minutes
- Reviewed Reject / Abstain comments for E56 to remove the 3 mentions of “Thermal” before Mass Flow Controller.
 - Discussed if we can move forward with line-item ballot.
 - Or if we need to submit a major revision per PM 3.5.1.
 - Will decide during Chapter Meeting Tuesday Feb 25, 2025, best approach.
- Reviewed Five-year list
- Motion to ballot open SNARF

Motion: Authorize the Document for Letter Ballot 7153, Line-Item Revision to SEMI E66-0611 (Reapproved 0517), Test Method for Determining Particle Contribution by Mass Flow Controllers, in Cycle 4, or 5-2025

By / 2nd: By: Matthew Milburn / UCT
Second: Yanli Chen / Applied Materials, Inc.

Discussion: None

Vote: 11-0 in favor. Motion passed.

Attachment: MFC Task Force Summary Report Feb 24 2025

6 Old Business

6.1 Five-Year Review

Refer to the Staff Report file for a full list of Standards upcoming for Five-Year Review. Contact Laura Nguyen (SEMI) if you like to review any in further detail.



7 New Business

7.1 Open Discussion on Educational/Training

Michael Potts (Arcadis) brought a topic to the committee on how Facilities or Gases can provide training for the industry. In summary:

- Potential presentations on committee updates at West? If any interest comes up, those can be evolved into training.
- Potential topics: F122, standards currently being worked on
- Opportunities for entire new audience (architecture, fab builders, tool installation, etc.)

8 Action Item Review

8.1 There are no New Action Items. Previous action items are noted in Table 12 in 'red' and for recent updates in 'blue'. There is no further business.

9 Next Meeting and Adjournment

9.1 The next meeting is tentatively scheduled for the week of June 2-5, in conjunction with SEMI Standards NA Summer Meetings 2025. Schedule details TBD. Please check www.semi.org/standards for updates.

Adjournment: 10:55.

Respectfully submitted by:

Laura Nguyen

Sr. Coordinator, International Standards

SEMI Global Headquarters

Phone: +1.408.943.7019

Email: lnguyen@semi.org

Minutes tentatively approved by:

Michael Potts (Arcadis), Co-chair	<Date approved>
Mohamed Saleem (ITW/Brooks Instrument), Co-chair	<Date approved>

Minutes approved by: **F&G NA OVTCCM on XXX.**

Table 14 Index of Available Attachments^{#1}

<i>Title</i>	<i>Title</i>
SEMI Standards Required Meetings Elements	7327_ProceduralReview
[2024Fall] F&G NA TC Chapter Meeting Minutes	TFOF_BIM_rev1
G+F_JA TC Chapter Liaison Report_February 2025_R1_distr	SEMI BIM Task Force_TC Report Out_20240225
EU Gases & Liquid Chemicals Liaison Report Nov2024 v1	SEMI VS Task Force Meeting No 24 022425 AL
Staff Report Feb 2025 v3_F&G	MoC_TF_Meeting_Brief_October_2024
01-25-Gases	FP TF Summary_Feb 24 2025_SEMI Standard Winter Meeting
Gas_Mashiro_Cycle1-2025	MFC Task Force Summary Report Feb 24 2025

^{#1} Due to file size and delivery issues, attachments must be downloaded separately. A .zip file containing all attachments for these minutes is available at www.semi.org. For additional information or to obtain individual attachments, please contact Laura Nguyen at the contact information above.