



# Facilities & Gases Joint North America TC Chapter

## Meeting Summary and Minutes

SEMI Standards NA Fall Meetings 2024

Tuesday, November 5, 09:00–12:00 Noon Pacific

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

### TC Chapter Announcements

*Next TC Chapter Meeting*

SEMI Standards NA Winter Meetings 2025

Tuesday, February 25, 09:00 – 12:00 Pacific

SEMI Global Headquarters, Milpitas, California/USA

### Table 1 Meeting Attendees

*Italics indicate virtual participants*

**Facilities Co-Chairs:** Michael Potts (Arcadis)

**Gases Co-Chairs:** Mohamed Saleem (ITW/Brooks Instrument)

**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	Swagelok	Rama	Claire
Applied Materials	Chen	Yanli	Swagelok	Rice	Taylor
<i>Daido Steel</i>	<i>Yoshida</i>	<i>Yutaka</i>	Swagelok	Zito	Dan
<i>Ichor Systems</i>	<i>Findleton</i>	<i>Kevin</i>	<i>TEL</i>	<i>Mashiro</i>	<i>Supika</i>
ITW/Brooks Instrument	Saleem	Mohamed	UCT	Milburn	Matt
<i>Mark Camenzind Solutions</i>	<i>Camenzind</i>	<i>Mark</i>	<i>Watts Water Technologies</i>	<i>Dickey</i>	<i>Ned</i>
<i>Maruichi Stainless Steel</i>	<i>Nagao</i>	<i>Mamoru</i>	<i>WIKA Instruments</i>	<i>Adair</i>	<i>Eric</i>
<i>Millipore EMD</i>	<i>Wu</i>	<i>Sherry</i>	WIKA Instruments	Shawkey	Hosam
<i>Nikon Precision Inc.</i>	<i>Sutton</i>	<i>Carolyn</i>	SEMI	Nguyen	Laura

### Table 1 Leadership Changes

<i>WG/TF/SC/TC Name</i>	<i>Previous Leader(s)</i>	<i>New Leader(s)</i>
<i>Facilities</i>		
TC Chapter Co-chair	Steve Lewis (Gilbane Building Co)	Michael Potts (Arcadis)
<i>Gases</i>		
None		

### Table 2 Committee Structure Changes

None



**Table 3 Ballot Results**

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
<i>Facilities</i>		
6628A	New Standard: Guide for Facilities Data Package for Manufacturing Equipment Installation and Building Information Modeling	<b>Passed</b> , with editorial changes.
<i>Gases</i>		
7202B	Line-Item Revision to SEMI F69-1213E, Test Method for Transport and Shock Testing of Gas Delivery Systems	
L1	Update throughout to comply with SEMI Regulations, Procedural Manual, and Style Manual.	<b>Failed</b>

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 4 Ratification Ballot Results**

None
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**Table 5 Activities Approved by the GCS between meetings of the TC Chapter**

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
<i>Facilities</i>			
6288A	Ballot Authorization	Building Information Modeling (BIM) for Semiconductor Capital Equipment TF	New Standard: Guide for Facilities Data Package for Manufacturing Equipment Installation and Building Information Modeling – <i>Approved by GCS on 08/30/2024</i>
<i>Gases</i>			
7202B	Gases Ballot Authorization	Materials of Construction of Gas Delivery Systems TF	Line-Item Revision to SEMI F69-1213E, Test Method for Transport and Shock Testing of Gas Delivery Systems – <i>Approved by GCS on 08/30/2024</i>

**Table 6 Authorized Activities**

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

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
<i>Facilities</i>			
None			
<i>Gases</i>			
7308	SNARF	Heater Jacket TF	Revision to SEMI F109-0212, Guide for Heater Systems Requirements, with title change to: Guide for Material Selection for Heater Systems
7309	SNARF	Heater Jacket TF	New Standard: Test Method for Surface Heater Particle Generation

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



**Table 7 Authorized Ballots**

None

**Table 8 SNARF(s) Granted a One-Year Extension**

None

**Table 9 SNARF(s) Cancelled**

#	TF	Title
<i>Facilities</i>		
None		
<i>Gases</i>		
7197	Filters and Purifiers TF	Line-Item Revision to SEMI F28-1103 (Reapproved 0815), Test Method for Measuring Particle Generation from Process Panels
7198	Filters and Purifiers TF	Line-Item Revision to SEMI F43-0308 (Reapproved 0613), Test Method for Determination of Particle Contribution by Point-of-Use Gas Purifiers and Gas Filters
7202	Materials of Construction of Gas Delivery Systems TF	Line-Item Revision to SEMI F69-1213E, Test Method for Transport and Shock Testing of Gas Delivery Systems
7237	Gases Specifications TF	Line-Item Revision to SEMI C70-1116, Specification for Tungsten Hexafluoride
7238	Gases Specifications TF	Line-Item Revision to SEMI F113-1116 Test Method for Pressure Transducers Used in Gas Delivery Systems

**Table 10 Standard(s) to receive Inactive Status**

None

**Table 11 New Action Items**

Item #	Assigned to	Details
2024Nov#01	SEMI Staff	Author packet on what to look for when reviewing Standards for Five-Year.

**Table 12 Previous Meeting Action Items**

Item #	Assigned to	Details
2019Nov#01	Laura Nguyen	Create invite-only TF in connect@SEMI for SEMI E49.6-E49.8 revision. <b>Ongoing.</b> <a href="#">Keep under Materials of Construction of Gas Delivery Systems TF connect@SEMI.</a> <b>Completed.</b>
2021Feb#03	Bill, Mohamed, Max, Matthew Milburn	Review SEMI F19. <b>Ongoing.</b>
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). <b>Ongoing.</b>
2024Mar#02	Materials of Construction of Gas Delivery Systems TF	Identify potential leader for TFOF to address standards that fall under 'component dimensions.' <b>Ongoing.</b>



## 1 Welcome, Reminders, and Introductions

Mohamed Saleem (ITW/Brooks Instrument) called the meeting to order at 09:05. 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 / 2<sup>nd</sup>:** By: Taylor Rice / Swagelok Company  
Second: Hosam Shawkey / WIKA Instrument Corporation

**Discussion:** None.

**Vote:** 8-0 in favor. Motion passed.

**Attachment:** [2024West] 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: Friday, June 28, 2024, via SEMI Japan office + OVTCCM (Hybrid)
- Next meeting: Thursday, October 24, 2024, 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}

#### Ballot Results: Facilities

- Passed
  - 7205A, Line Item Revision to SEMI F44-0307 (Reapproved 0818), *Specification for Machined Stainless Steel Weld Fittings* [L1-3]
  - 7206B, Line Item Revision to SEMI F45-0307 (Reapproved 0818), *Specification for Machined Stainless Steel Reducing Weld Fittings* [L1-3]

#### Activities Approved via GCS between Meetings

- E137 Revision TF, SNARF 7297: Revision to SEMI E137-0705 (Reapproved 0118), *Guide for Final Assembly, Packaging, Transportation, Unpacking, and Relocation of Semiconductor Manufacturing Equipment*
  - Approved 10/11/2024

#### Authorized Activities: None

#### 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

#### Five-Year Review: None



## Task Force Highlights

### F1 Revision TF

- Nothing specific to report.

### 5-year Review TF

- Doc.#7205A, Line Item Revision to SEMI F44-0307 (Reapproved 0818), Specification for Machined Stainless Steel Weld Fittings and Doc.#7206A, Line Item Revision to SEMI F45-0307 (Reapproved 0818), Specification for Machined Stainless Steel Reducing Weld Fittings were submitted for Cycle 6.
- Voting results were adjudicated at the TC Chapter meeting on October 24.
  - Please see the slide 15 for the result of the ballot review.
- Ballot review results will be forwarded to the ISC A&R for procedural review.
- TF intends to make editorial change on F44 based on the Comment received during 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
- Kick-off meeting was held on August 23 and have bi-weekly TF meetings.
- SNARF was approved by the GCS in October and the TF is now working on Doc.#7297, Revision to E137-0705 (Reapproved 0118), Guide for Final Assembly, Packaging, Transportation, Unpacking, and Relocation of Semiconductor Manufacturing Equipment.
- Revision work will include expansion of Scope to include SME and AMHS equipment, update in Terminology section, and addition of optional material as crating/ packaging material other than wood.
- TF plans to submit the ballot for Cycle 2, 2025.

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

**Attachment:** G+F\_JA TC Chapter Liaison Report\_October 2024\_R0\_distr

### 3.2 *Gase & Liquid Chemicals Europe TC Chapter*

No update since SEMICON Europa 2023

### 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 2024 Calendar of Events

- SEMCON West (July 9-11; San Francisco, CA)
- SEMICON Taiwan (Sept 4-6; Taipei, Taiwan)
- SEMICON India (Sept 11-13; New Delhi, India)
- Energy Taiwan/X Net-Zero Taiwan (Oct 2-4; Taipei, Taiwan)
- SEMICON Europa (Nov 12-15; Munich, Germany)
- SEMICON Japan (December 11-13; Tokyo, Japan)

#### Global Standards Summit 2024: *Innovating Tomorrow: Standards for Future Factories*

- Inaugural SEMI Event @ SEMICON Japan 2024



- Thursday, December 12 | 10:30 AM to 4:30 PM, Tokyo Big Sight, Conference Tower, Room 606
- Objective: Identify standards-critical areas and work towards an industry
- standardization strategy for the next 3- and 7-year time horizons.
- Session Topics:
  - Smart Manufacturing for Future Factories
  - Packaging Architectures & Materials
  - Environmental Sustainability
- Why Attend?
  - Learn – Hear issues critical to the future advancements of semiconductor manufacturing, what’s happening to address them, as well as the standards needed to help enable.
  - Influence – Contribute to the direction of standards development by providing inputs to help optimize future factories.
  - Network – Organized networking events with other stakeholders from suppliers to solution providers to end customers.
  - Discover – Explore what SEMICON Japan has to offer (e.g., Sessions on AI & Data, Sustainability, Manufacturing, Integration of Front & Back-end; Standards Meetings)

#### 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

#### Europe Standards Meetings @ SEMICON Europa 2024

- November 12-14, 2024
- ICM (Internationales Congress Center München)
  - Meeting Room: Staffelsee (Mezzanine Level)
- TCs: Silicon Wafer, Gases, Liquid Chemicals, Compound Semiconductor Materials, ERSC

#### Upcoming NA Meetings 2025

- NA Standards Winter Meetings: February 24-27, 2025, at SEMI HQ, Milpitas, California/USA
- NA Standards Summer Meetings: June 2-6, 2025 (*tentative*), 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 8-2024: Ballot Submission Due: Oct 1/Voting Period: Oct 15 – Nov 14
- Cycle 9-2024: Ballot Submission Due: Nov 8/Voting Period: Nov 22 – Dec 23
- Cycle 1-2025: Ballot Submission Due: Dec 17, 2024/Voting Period: Jan 8 – Feb 7
- 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

<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>
July 2024	2	5	0	0
August 2024	0	5	4	0
September 2024	0	9	5	0
October 2024	2	1	0	0

Total in portfolio – 1,092 (includes 349 Inactive Standards)

### New Standards

<i>Cycle</i>	<i>Designation</i>	<i>Title</i>	<i>Committee</i>	<i>Region</i>
July 2024	SEMI D85	Guide for the Tone Reproduction Curves for Transparent Displays	FPD - Metrology	TW
July 2024	SEMI FH4	Test Method and Guide for the Tactile Characteristics of Flexible Hybrid Electronics Materials and Products	Flexible Hybrid Electronics	JA
October 2024	SEMI E191	Specification for Computing Device Cybersecurity Status Reporting	Information & Control	NA
October 2024	SEMI E191.1	Specification for SECS-II Protocol for Computing Device Cybersecurity Status Reporting to Specification for Computing Device Cybersecurity Status Reporting	Information & Control	NA

### Regulations & Procedure Manual Updates

- *Regulations* (Feb 20, 2024)
  - New definition of “Standards Document”
  - Clarification of confidential presentation materials
    - <https://www.semi.org/sites/semi.org/files/2024-02/Standards%20Regulations%20February%202024.pdf>
- *Procedure Manual* (Feb 20, 2024)
  - The use of Connect@SEMI for TF management and document development depository (next slide)
- *Procedure Manual* (Sept 27, 2024) **New!**
  - Clarification of § 6.4.5.10 for discharging of a TF
  - New ¶ 6.4.5.11 Designation of a TF as Dormant.
    - <https://www.semi.org/sites/semi.org/files/2024-09/Procedure%20Manual%20September%2027%2C%202024.pdf>

### Connect@SEMI Communities for all SEMI Standards Task Forces

- By Feb 2025, all Standards Task Forces shall use Connect@SEMI to host documents that are currently in development.
- Each Standards Task Force will have its own Community Page on Connect@SEMI.
- All program members may log in at: <https://connect.semi.org>
  - Enter their username and password (same as program membership log-in)
  - Contact staff if questions.
- Training materials are available at: <https://www.semi.org/standards>
  - Under Standards Developer Resources → Collaboration Tools (scroll to the bottom)

### SEMIViews 4.0 – Available Now! {refer to attachment graphics}

- New SEMIViews platform launched on August 19, 2024.
- SEMIViews 4.0 Features include:
  - Upgraded user interface, Improved company user administration functions



- Dynamic landing page, including feeds for new and revised Standards, upcoming meetings & events, and a reference center
- Enhanced search functionality and navigation panel, New SEMI Volumes Library, User defined shortcuts via Collections, Favorites, and now, Bookmarks
- Additional features planned in the pipeline.

Facilities: On-going (*Searching for volunteers to lead these activities*)

- SEMI E51, Guide for Typical Facilities Services and Termination Matrix
  - RA ballot failed TCC review; SNARF abolished Fall 2017; Action needed to either send to Inactive Status or issue new SNARF to reflect change in scope
- SEMI E6, Guide for Semiconductor Equipment Installation Documentation
  - RA ballot failed TCC review; Summer 2021 – Action needed to either send to Inactive Status or Abolish RA SNARF 6771 and reissue new SNARF
- SEMI E76, Guide for 300 mm Process Equipment Points of Connection to Facility Services
  - RA ballot failed TCC review; Summer 2021 – Action needed to either send to Inactive Status or Abolish RA SNARF 6773 and reissue new SNARF

Facilities Five-Year Review

- SEMI F51-0917, Guide for Elastometric Sealing Technology

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: 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]

Activities Approved via GCS between Meetings (on 08/30/2024)

- BIM TF, Ballot Authorization for 6628A: New Standard: *Guide for Facilities Data Package for Manufacturing Equipment Installation and Building Information Modeling*
- Materials of Construction of Gas Delivery Systems TF, Ballot Authorization for 7202B: Line-Item Revision to SEMI F69-1213E, *Test Method for Transport and Shock Testing of Gas Delivery Systems*

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

Staff Contact: Laura Nguyen, Lnguyen@semi.org

**Attachment:** Staff Report November 2024 v4\_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

4.1.1 Document # 6628A, New Standard: Guide for Facilities Data Package for Manufacturing Equipment Installation and Building Information Modeling

- The ballot passed TC Chapter review with editorial changes. Refer to attachment for ballot adjudication.

**Attachment:** 6628A\_ProceduralReview

### 4.2 Gases

4.2.1 Document # 7202B, Line-Item Revision to SEMI F69-1213E, Test Method for Transport and Shock Testing of Gas Delivery Systems

4.2.2 Line Item #1: Update throughout to comply with SEMI Regulations, Procedural Manual, and Style Manual.

- The committee found the negative related and technically persuasive. The ballot **failed** and returned to the task force for re-work. Revision SNARF to be issued for Two-Week TC Member Review and submit to GCS for approval.

**Attachment:** 07-24-Gases

**Motion:** To find Negative SG 1-5 related and persuasive.

**By / 2<sup>nd</sup>:** By: Michael Potts / Arcadis  
Second: Daniel Zito / Swagelok

**Discussion:** None.

**Vote:** 12-0 in favor. Motion passed.

**Motion:** Line Item 1 failed TC Chapter review and will be returned to the TF for rework.

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

**Discussion:** None.

**Vote:** 9-1 in favor. Motion passed.

**Motion:** Cancel SNARF Document #7202, Line-Item Revision to SEMI F69-1213E, Test Method for Transport and Shock Testing of Gas Delivery Systems  
*Issue revision SNARF for two-week review and submit to GCS for approval*

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

**Discussion:** None.

**Vote:** 13-0 in favor. Motion passed.

## 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 Voltage Sag Immunity Task Force

Laura Nguyen (SEMI) provided the Task Force report on behalf of Mark Stephens (EPRI). Of note:

- Review of SEMI F47 Proposed Revision Subgroup Update (Latest Subgroup Discussions)
  - There was agreement on the preferred test vectors for Type I and Type II testing, with an emphasis on ensuring these tests reflect actual voltage sag scenarios encountered in semiconductor fabs.
  - The sub-group reached a consensus on the necessity of including robust three-phase characterization testing in the revised SEMI F-47 standard to ensure accurate representation of real-world conditions.
  - The revision text will focus on clarifying requirements and including relevant test vectors in the main body of the standard.
  - Compliance testing required for: single-phase (Type I), two-phase (Type II)
  - Limited characterization testing required: three-phase (Type III) at specific points
- Proposed SEMI F47 Revision Test Vectors and Related Requirements
  - Table to be added to SEMI F47
  - Major Changes:
    - Two-Phase Vector Type II.A1
      - or three-phase power supply phase load robustness Shown to not accurately evaluate drive (not allow?, discourage, GF clause, or make a lower grade of compliance)?
  - Two-Phase Vector Type II preferred
    - Most realistic test form as noted in IEC 61000-4-34
  - Type II.A2
    - Same as SEMI F47-0812 revision
    - Different than IEC 61000-4/34
  - Add Limited Three-Phase Type III Characterization Testing.
    - While tools are not required to ride through Type III tests to pass the standard, the test results will help tool purchasers decide how to power the tools in semiconductor fabs, especially in locations prone to frequent three-phase voltage sags
  - *TF Discussion Input. Consider creation of Classes A, B, C passing criteria and GF clause considerations. Related to Type II testing.*
- Proposed Updates Discussed
  - Section 7.1:
    - For Table 1, added relevant test vector types.
  - Section 7.4
    - Added Three-Phase Voltage sag characterization test points
  - For Related information Section 1:
    - R1-4, added relevant test vector types.
- Section 7 Test Requirement Visualization *{refer to attachment for images}*
- Tools Grades of Power Terminal Breakout Discussions
  - High Quality Grade Power Feed:
    - Example “Online UPS” Power. Lower kVA on each tool for very critical functions (servers, controller, PLCs, Motion, DC power supplies for sensors if needed “brains” of machine). Covers deep events and keep brains functional.
    - Note: Most tools have some level of UPS power requirement in meeting SEMI F47 now.
  - Intermediate Grade Power Feed:
    - Conditioned “filtered” Power Source. Short duration coverage without significant energy storage. Mitigating normal grid operation to keep machine keep going.

- Could be for loads that need protection for 3-phase voltage sag events. Covers voltage sags for “muscle” that is critical and sensitive and does wafer processing work – cannot be hardened easily without stored energy on the tool.
- If tool trips for Type III tests, tool owner could decide to if wants to place intermediate grade power feed on a filtered power source.
- Regular Grade Power Feed: unfiltered/unregulated power (utility grade):
  - Sections of the tool that are utilizing components that are SEMI F47 compliant and are robust already. Voltage sags above the requirement would not cause the tool to trip.
  - Components such as diffusion furnace heaters, etc.
  - Covers components in tool that are SEMI F47 compliant by nature (contactors, relays, power supplies, heaters, pumps, drives) that can achieve compliance without the need for stored energy.
- *Planning to Add Guidance in related information section on tool power connection points.*
- *Could help fab owners decide to bring some levels of conditioned power to the tools.*
- Next TF Meeting plan
  - Task Force SEMI F47 Proposed Revision Subgroup
    - Continue to meet frequently to work on proposed revisions
    - Next meeting plan: Thursday, January 9, 2025
  - Next Regular TF Meeting
    - Proposed February 13, 2025

**Attachment:** SEMI VS Task Force Meeting No 23 Report Out

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

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

- Summary
  - Cycle 7 Ballot results: Accepted with Comments
    - 12 comments from 3 reviewers
      - 2 reviewers included attachments
  - TF reviewed and adjudicated comments to satisfy 2 reviewers present in meeting.
    - Supika Mashiro/TEL had one comment, but was not present in meeting.
  - TF made related editorial changes.
- *Please refer to the attachment for details of editorial changes*

**Attachment:** SEMI BIM Task Force TC Summary\_20241105

## 5.2 Gases

### 5.2.1 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.
  - Touched on prior work but little progress since July



- 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
  - John Z (Swagelok) has retired and handed off to Dan Z (Swagelok).
  - Running into pressure and flow challenges and the target vacuum level with current equipment and setup
- SEMI F36
  - Still holding on who is going to lead
- Started on 2nd ballot review of F69
  - Recommended to fail based on “SG1-5” (definition of “g”) of 26 failure items. Need to analyze and respond further
  - Also recommended to abolish current SNARF and issue a new one: major versus line item

**Attachment:** MoC\_TF\_Meeting\_Brief\_October\_2024

### 5.2.1 *Filters & Purifiers Task Force*

Mohamed Saleem (ITW/Brooks Instrument) reported for this task force. Of note:

#### Meeting Summary

- Reviewed rejects from Eric Sklar for 2 failed ballots from Semicon West:
  - 7197: Particle Test Method for Process Panels
  - 7198: Particle Test Method for POU filters and purifiers
- Saleem, co-chair of the TF reviewed all 28 rejects of 7197, and all 82 rejects of 7198. Sent the adjudicated document to Eric Sklar, reject issuer and plan to submit revised ballot for Cycle 1 (Dec 17). We will re-issue SNARFs to modify from Line Item ballot to Complete rewrite.

**Motion:** Cancel below SNARF Documents and issue revision SNARF for two-week review and submit to GCS for approval.

7197, Line-Item Revision to SEMI F28-1103 (Reapproved 0815), Test Method for Measuring Particle Generation from Process Panels

7198, Line-Item Revision to SEMI F43-0308 (Reapproved 0613), Test Method for Determination of Particle Contribution by Point-of-Use Gas Purifiers and Gas Filters

**By / 2<sup>nd</sup>:** By: Yanli Chen / Applied Materials, Inc.  
Second: Hosam Shawkey / WIKA Instrument Corporation

**Discussion:** None

**Vote:** 11-0 in favor. Motion passed.

**Attachment:** FP TF Meeting Summary Nov 04 2024

### 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 Open SNARF E66 from July Semi Meeting
  - Will issue a line-item ballot for E56 to remove the 3 mentions of “Thermal” before Mass Flow Controller



- F55 needs more detailed technical review by Kevin/Saleem before Semi style manual edits
- “Gasses” spelling to be changed to “gases”
- F101 will move out of MFC Task force
- Five-year reviews:
  - E66 : Test Method for Determining Particle Contribution by Mass Flow Controllers
    - For E66 – change “must” to “shall” throughout and adjust Definitions section
  - E56:

SEMI E56-0317	Test Method for Determining Accuracy, Linearity, Repeatability, Short-Term Reproducibility, Hysteresis, and Deadband of Thermal Mass Flow Controllers	Title change to remove Thermal
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- E18:

SEMI E18-1017	Guide for Temperature Specifications of the Mass Flow Controller	TB reviewed
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- F55 - “Gasses” misspelled at 2.1, other editorial changes needed, will review in more detail.

SEMI F55-1218	Test Method for Determining the Corrosion Resistance of Mass Flow Controllers	TB reviewed (Figure and “gasses” misspelled)
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- F101 – decided to move out of MFC Task Force – Saleem to help

SEMI F101-1105 (Reapproved 1018)	Test Method for Determining Pressure Regulator Performance in Gas Distribution Systems	Past due
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**Attachment:** MFC Task Force Summary Report 11\_4\_2024

### 5.2.3 Gases Specification Task Force

Mohamed Saleem (ITW/Brooks Instrument) reported for this task force. Of note:

#### Meeting Summary

- Reviewed rejects from Eric Sklar for 2 failed ballots from Semicon West:
  - 7237: LI Rev C70 Spec WF6
  - 7238: LI Rev F113 TM Pressure Transducers for GDS
- Thomas, co-chair of the TF already adjudicated all reject comments for 7237 but will send over to Eric Sklar for review prior to next ballot
- Saleem, co-chair of the TF reviewed all 36 rejects of F113, and reviewed during the meeting with TF. Joyce Chen and Jeff Christian, original co-authors for F113 agreed to review a few rejects that required further discussion

**Motion:** Cancel below SNARF Documents and issue revision SNARF for two-week review and submit to GCS for approval.

7237, Line-Item Revision to SEMI C70-1116, Specification for Tungsten Hexafluoride

7238, Line-Item Revision to SEMI F113-1116 Test Method for Pressure Transducers Used in Gas Delivery Systems

**By / 2<sup>nd</sup>:** By: Yanli Chen / Applied Materials, Inc.  
Second: Michael Potts / Arcadis

**Discussion:** None

**Vote:** 11-0 in favor. Motion passed.

**Attachment:** Gases Spec TF Meeting Summary Nov 04\_2024



#### 5.2.4 Heater Jacket Task Force

Matt Milburn (UCT) reported for this task force on behalf of David Colquhoun (BriskHeat). Of note:

- Matt Milburn presented two new SNARFs that was reviewed during the Task Force meeting, and entertained a motion for the below SNARFs to be approved:

**Motion:** Approve the SNARF for:  
Revision to SEMI F109-0212, Guide for Heater Systems Requirements, with title change to: Guide for Material Selection for Heater Systems

**By / 2<sup>nd</sup>:** By: Hosam Shawkey / WIKA Instrument Corporation  
Second: Michael Potts / Arcadis

**Discussion:** None

**Vote:** 11-0 in favor. Motion passed.

**Attachment:** SNARF\_F109 (Rev)\_distr\_edits\_final

**Motion:** Approve the SNARF for:  
New Standard: Test Method for Surface Heater Particle Generation

**By / 2<sup>nd</sup>:** By: Michael Potts / Arcadis  
Second: Hosam Shawkey / WIKA Instrument Corporation

**Discussion:** None

**Vote:** 11-0 in favor. Motion passed.

**Attachment:** SNARF\_HeaterParticles (new)\_distr\_edits\_final

## 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.

- Discussion: how to spread the work by reviewing Five-year standards

**Action Item:** 2024Nov#01, Author packet on what to look for when reviewing Standards for Five-Year.

## 7 New Business

*None*

## 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 February 24-27, in conjunction with SEMI Standards NA Winter Meetings 2025. Schedule details TBD. Please check [www.semi.org/standards](http://www.semi.org/standards) for updates.

Adjournment: 11:14.



Respectfully submitted by:

Laura Nguyen

Sr. Coordinator, International Standards

SEMI Global Headquarters

Phone: +1.408.943.7019

Email: [lnguyen@semi.org](mailto: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 February 25, 2025.**

**Table 13 Index of Available Attachments#1**

<i>Title</i>	<i>Title</i>
SEMI Standards Required Meetings Elements	SEMI BIM Task Force TC Summary_20241105
[2024West] F&G NA TC Chapter Meeting Minutes	MoC_TF_Meeting_Brief_October_2024
G+F_JA TC Chapter Liaison Report_October 2024_R0_distr	FP TF Meeting Summary Nov 04 2024
Staff Report November 2024 v4_F&G	MFC Task Force Summary Report 11_4_2024
6628A_ProceduralReview	Gases Spec TF Meeting Summary Nov 04_2024
07-24-Gases	SNARF_F109 (Rev)_distr_edits_final
SEMI VS Task Force Meeting No 23 Report Out	SNARF_HeaterParticles (new)_distr_edits_final

#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](http://www.semi.org). For additional information or to obtain individual attachments, please contact Laura Nguyen at the contact information above.