



Facilities & Gases Joint North America TC Chapter

Meeting Summary and Minutes

NA Standards Fall Meetings 2023

Tuesday, November 7, 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

NA Standards Spring Meetings 2024

Tuesday, March 26, 09:00 – 12:00 Pacific

SEMI Global Headquarters, Milpitas, California/USA

Table 1 Meeting Attendees

Italics indicate virtual participants

Facilities Co-Chairs: Steve Lewis (Gilbane Building Company)

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

SEMI Staff: Laura Nguyen

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
Applied Materials	Chen	Yanli	Swagelok	Rice	Taylor
<i>BriskHeat</i>	<i>Colquhoun</i>	<i>David</i>	Swagelok	Zawada	John
Brooks Instrument	Saleem	Mohamed	TEL	Mashiro	Supika
Daido Steel	Naoki	Sei	UCT	Milburn	Matt
Daido Steel	Yoshida	Yutaka	<i>Valex</i>	<i>Kim</i>	<i>Josh</i>
Festo SE & Co. KG	van den Berg	Max	WIKA Instruments	Adair	Eric
Gilbane Building Company	Lewis	Steve	WIKA Instruments	Christian	Jeff
Gilbane Building Company	Sanders	Chris	WIKA Instruments	Fritz	Thomas
Ichor Systems	Findleton	Kevin	<i>Yamashin Industry Co., Inc.</i>	<i>Muraki</i>	<i>Hiromichi</i>
<i>Mettler-Toledo Thornton Inc.</i>	<i>Cannon</i>	<i>Jim</i>	<i>Yamashin Industry Co., Inc.</i>	<i>Ninomaru</i>	<i>Yoshihiro</i>
<i>Perkinelmer</i>	<i>Stephan</i>	<i>Chady</i>			
<i>Parker Hannifin</i>	<i>Lis</i>	<i>Joseph</i>	SEMI	Nguyen	Laura

Table 2 Leadership Changes

<i>WG/TF/SC/TC Name</i>	<i>Previous Leader</i>	<i>New Leader</i>
<i>Facilities</i>		
None		
<i>Gases</i>		
Materials of Construction of Gas Delivery Systems Task Force	Bill Kiikvee (AP Tech) <i>[stepped down]</i> Matt Milburn (UCT)	Max van den Berg (Festo) <i>[New]</i> Matt Milburn (UCT)

Table 3 Committee Structure Changes

None



Table 4 Ballot Results

<i>Document #</i>	<i>Document Title</i>	<i>TC Chapter Action^{#1,2}</i>
<i>Facilities</i>		
None		
<i>Gases</i>		
6916	Replacement of SEMI F109-0212, Guide for Heater Systems Requirements, as a New Standard: Guide for Material Selection for Heater Systems	Failed
7097	Line-Item Revision to SEMI C54-1116, Specification for Oxygen	
L1	Add chemical formula for oxygen in title.	Passed , with editorial changes.
L2	Update throughout to comply to Regs, PM and SM.	Passed , Ratification Ballot to be issued.
L3	Clarify word usage and SI units in §9 through § 10 per SM.	Passed , with editorial changes.
L4	Change “is to”, “may”, “must”, or “should” to “shall” or “should” throughout, where appropriate.	Passed , Ratification Ballot to be issued.
7098	Line-Item Revision to SEMI C56-1116, Specification for Dichlorosilane	
L1	Add chemical formula for dichlorosilane in title.	Passed , with editorial changes.
L2	Update throughout to comply to Regs, PM and SM.	Passed , with editorial changes.
7151	Line-Item Revision to SEMI E16-0517, Guide for Determining and Describing Mass Flow Controller Leak Rates	
L1	Update throughout to comply to Regs, PM and SM.	Passed , as balloted.
L2	Change “must” or “shall” to “should” throughout.	Passed , Ratification Ballot to be issued.
7152	Line-Item Revision to SEMI E27-1017, Guide for Mass Flow Controller and Mass Flow Meter Linearity	
L1	Update throughout to comply to Regs, PM and SM.	Passed , as balloted.

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

#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

<i>Document #</i>	<i>Document Title</i>	<i>ISC A&R Action^{#1,2}</i>
<i>Facilities</i>		
None		
<i>Gases</i>		
R7092	Line-Item Revision to SEMI E29-1110 (Reapproved 0417), Terminology for the Calibration of Mass Flow Controllers and Mass Flow Meters	Passed

#1 **Passed** Ratification ballots will be submitted to SEMI publication for final processing.

#2 **Failed** Ratification ballots were returned to the originating task forces for re-work and re-balloting or abandoning.

Attachment: R7092_ProceduralReview_passed



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>			
7051	SNARF/ Ballot Authorization	Mass Flow Controller TF	Line-Item Revision to SEMI E16-0517, Guide for Determining and Describing Mass Flow Controller Leak Rates – Approved by GCS on 09/15/2023
7052	SNARF/ Ballot Authorization	Mass Flow Controller TF	Line-Item Revision to SEMI E27-1017, Guide for Mass Flow Controller and Mass Flow Meter Linearity – Approved by GCS on 09/15/2023
7053	SNARF/ Ballot Authorization	Mass Flow Controller TF	Line-Item Revision to SEMI E66-0611 (Reapproved 0517), Test Method for Determining Particle Contribution by Mass Flow Controllers – Approved by GCS on 09/15/2023

Table 7 Authorized Activities

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

#	Type ^{#1}	SC/TF/WG	Details
<i>Facilities</i>			
7196	SNARF	Voltage Sag Immunity TF	Revision to SEMI F47-0706 (Reapproved 0812), Specification for Semiconductor Processing Equipment Voltage Sag Immunity
<i>Gases</i>			
-	TFOF	Materials of Construction of Gas Delivery Systems TF	Appoint new co-leader: Max van den Berg (Festo). Bill Kikvee (AP Tech) stepped down.
7197	SNARFs	Filters & Purifiers TF	Line-Item Revision to SEMI F28, Test Method for Measuring Particle Generation from Process Panels
7198	SNARFs	Filters & 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
7199	SNARFs	Filters & Purifiers TF	Line-Item Revision to SEMI F59-0302 (Reapproved 0613), Test Method for Determination of Filter or Gas System Flow Pressure Drop Curves
7200	SNARFs	Filters & Purifiers TF	Line-Item Revision to SEMI F67-1101 (Reapproved 0713), Test Method for Determining Inert Gas Purifier Capacity
7201	SNARFs	Filters & Purifiers TF	Line-Item Revision to SEMI F68-1101 (Reapproved 0713), Test Method for Determining Purifier Efficiency
7202	SNARFs	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
7203	SNARFs	Materials of Construction of Gas Delivery Systems TF	Line-Item Revision to SEMI F78-0611 (Reapproved 0917), Practice for Gas Tungsten Arc (GTA) Welding of Fluid Distribution Systems in Semiconductor Manufacturing Applications
7204	SNARFs	Materials of Construction of Gas Delivery Systems TF	Line-Item Revision to SEMI F81-0611 (Reapproved 0917), Specification for Visual Inspection and Acceptance of Gas Tungsten Arc (GTA) Welds in Fluid Distribution Systems in Semiconductor Manufacturing Applications

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



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>			
6916A	Cycle 9-23, 1 or 2-2024	Heater Jacket TF	Replacement of SEMI F109-0212, Guide for Heater Systems Requirements, as a New Standard: Guide for Material Selection for Heater Systems
7197	Cycle 9-23, 1 or 2-2024	Filters & Purifiers TF	Line-Item Revision to SEMI F28, Test Method for Measuring Particle Generation from Process Panels
7198	Cycle 9-23, 1 or 2-2024	Filters & 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
7199	Cycle 9-23, 1 or 2-2024	Filters & Purifiers TF	Line-Item Revision to SEMI F59-0302 (Reapproved 0613), Test Method for Determination of Filter or Gas System Flow Pressure Drop Curves
7200	Cycle 9-23, 1 or 2-2024	Filters & Purifiers TF	Line-Item Revision to SEMI F67-1101 (Reapproved 0713), Test Method for Determining Inert Gas Purifier Capacity
7201	Cycle 9-23, 1 or 2-2024	Filters & Purifiers TF	Line-Item Revision to SEMI F68-1101 (Reapproved 0713), Test Method for Determining Purifier Efficiency
7202	Cycle 9-23, 1 or 2-2024	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
7203	Cycle 9-23, 1 or 2-2024	Materials of Construction of Gas Delivery Systems TF	Line-Item Revision to SEMI F78-0611 (Reapproved 0917), Practice for Gas Tungsten Arc (GTA) Welding of Fluid Distribution Systems in Semiconductor Manufacturing Applications
7204	Cycle 9-23, 1 or 2-2024	Materials of Construction of Gas Delivery Systems TF	Line-Item Revision to SEMI F81-0611 (Reapproved 0917), Specification for Visual Inspection and Acceptance of Gas Tungsten Arc (GTA) Welds in Fluid Distribution Systems in Semiconductor Manufacturing Applications

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

None

Table 10 SNARF(s) Abolished

None

Table 11 Standard(s) to receive Inactive Status

None

Table 12 New Action Items

Item #	Assigned to	Details
2022Nov#02	Max van den Berg, Thomas F.	Prepare SNARF for SEMI E49.6 and E49.8. Ongoing. Completed.

Table 13 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. Ongoing.

Table 13 Previous Meeting Action Items

<i>Item #</i>	<i>Assigned to</i>	<i>Details</i>
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.
2021July#02	Laura Nguyen	Work with Mohamed to abolish Reapproval SNARFs and reissue new SNARFs. Abolished RA SNARFs, need to reissue new SNARFs. Ongoing.

1 Welcome, Reminders, and Introductions

Steve Lewis (Gilbane) called the meeting to order at 09:08. 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: Yanli Chen / Applied Materials, Inc.
Second: Matthew Milburn / UCT

Discussion: None.

Vote: 13-0 in favor. Motion passed.

Attachment: [2023West] F&G NA TC Chapter Meeting Minutes FINAL

3 Liaison Reports

3.1 Gases & Liquid Chemicals Europe TC Chapter

No update.

3.2 Gases & Facilities Japan TC Chapter

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

Meeting Information

- Last meeting: Friday, October 20, 2023, via SEMI Japan office + OVTCCM (Hybrid)
- Next meeting: Friday, January 26, 2024, via SEMI Japan office + OVTCCM (Hybrid)

F&G Leadership

- Committee Co-chairs
 - Hiromichi Enami (iZOOM), Isao Suzuki (Consultant), Masafumi Kitano (Fujikin)

F&G Current Organization Chart of Japan TC Chapter {See attachment for Org Chart}

Ballot Results

- Failed, 7084: Reapproval of SEMI F44-0307 (Reapproved 0818), Specification for Machined Stainless Steel Weld Fittings
- Failed, 7085: Reapproval of SEMI F45-0307 (Reapproved 0818), Specification for Machined Stainless Steel Reducing Weld Fittings



Abolished SNARF(s)

- 7084: Reapproval of SEMI F44-0307 (Reapproved 0818), Specification for Machined Stainless Steel Weld Fittings
- 7085: Reapproval of SEMI F45-0307 (Reapproved 0818), Specification for Machined Stainless Steel Reducing Weld Fittings

Task Force Highlights

- F1 Revision Task Force
 - Nothing specific to report.
- 5-Year Review TF
 - Reapproval ballots failed and SNARFs were abolished:
 - Doc.#7084, Reapproval of SEMI F44-0307 (Reapproved 0818), Specification for Machined Stainless Steel Weld Fittings
 - Doc.#7085, Reapproval of SEMI F45-0307 (Reapproved 0818), Specification for Machined Stainless Steel Reducing Weld Fittings
 - TF will prepare SNARFs to revise the above two documents.

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

Attachment: G+F_JA TC Chapter Liaison Report_Nov 2023_R0

3.3 *Facilities Korea TC Chapter*

Meeting Information

- Last meeting: September 28, 2022, SEMI Korea, Seoul, Korea
- Next meeting: November 2023, tentative

F&G Leadership

- Committee Co-chairs
 - John Oh (SGS)

Current Organization Chart of Korea TC Chapter {See attachment for Org Chart}

Task Force Highlights

- Voltage Sag Immunity TF
 - Last meeting: August 24, 2023 @ SEMI Korea, Seoul
 - Reviewing the F47 test guideline* is still ongoing.
 - *Background: Last year, one of local IC makers suggested enhanced F47 test guidelines w/ E6 to 3rd parties and asked for feedback.
- NA Voltage Sag Immunity TF agreed to include proposed revision items into their F47 revision scope.

Staff Contact: Natalie Shim (eshim@semi.org)

Attachment: Liaison report_Facilities_KR__Nov2023

3.4 *SEMI Staff Report*

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

SEMI Global 2023 & 2024 Calendar of Events

- [2023] SEMICON Europa (Nov 15-17; Munich, Germany), SEMICON Japan (December 13-15; Tokyo)
- [2024] SEMICON Korea (Jan 31-Feb 2; Seoul, Korea), SEMICON China (Mar 20-22; Shanghai, China), SEMICON SEA (May 28-30; Kuala Lumpur, Malaysia), SEMICON West (July 9-11; San Francisco, CA)



Upcoming NA Meetings

- NA Standards Spring Meetings
 - March 25-28, 2024, at SEMI HQ, Milpitas, California/USA
- SEMICON West Standards Meetings
 - July 8-11, 2024, at Moscone Center, San Francisco, CA/USA

Critical Dates for SEMI Standards Ballots

- Cycle 8-2023: Ballot Submission Due: Oct 4/Voting Period: Oct 18 – Nov 17
- Cycle 9-2023: Ballot Submission Due: Nov 15/Voting Period: Nov 29 – Dec 29
- Cycle1-2024: Ballot Submission Due: Jan 3/Voting Period: Jan 17 – Feb 16
- Cycle 2-2024: Ballot Submission Due: Feb 1/Voting Period: Feb 14 – Mar 15
- Cycle 3-2024: Ballot Submission Due: Mar 6/Voting Period: Mar 20 – Apr 19
- Cycle 4-2024: Ballot Submission Due: Apr 24/Voting Period: May 8 – June 7
- Cycle 5-2024: Ballot Submission Due: May 7/Voting Period: May 21 – June 20

Standards Publications Report

<i>Cycle</i>	<i>New</i>	<i>Revised</i>	<i>Reapproved</i>	<i>Withdrawn</i>
July 2023	0	5	1	0
August 2023	3	8	8	0
September 2023	3	14	11	0
October 2023	0	5	25	0

Total in portfolio – 1,085 (includes 335 Inactive Standards)

New Standards

<i>Cycle</i>	<i>Designation</i>	<i>Title</i>	<i>Committee</i>	<i>Region</i>
August 2023	SEMI P49 (Preliminary)	Specification for Experimental Curvilinear Multigon Extension to SEMI P39	Micropatterning	NA
August 2023	SEMI PV101	Guide for Scrap Judgement of Photovoltaic Modules in Building	Photovoltaic	CH
August 2023	SEMI D84	Test Method for Warm-Up Properties of Display Picture Quality	FPD – Metrology	JA
September 2023	SEMI F121	Guide for Evaluating Metrology for Particle Precursors in Ultrapure Water	Liquid Chemicals	NA
September 2023	SEMI C105	Guide for Trace Iron Analysis in High Purity 2-Propanol (IPA)	Process Chemicals	NA
September 2023	SEMI M93	Test Method for Quantifying Basal Plane Dislocation Density in 4H-SiC by X-Ray Diffraction Topography/Imaging	Compound Semiconductor Materials	EU

EU Standards Meetings at SC Europa 2023 {See attachment for schedule}

New Online Ballot System {See attachment for visuals}

SVM – Addressing Critical Issues

- User Data Quality
 - Problem – User Data in SVM shows incorrect information
 - Cause – The SVM Login process has a separate User Database than the existing Online Ballot System and requires ongoing synchronization. Also affects <https://connect.semi.org>
 - Progress: Completed internal testing, Documentation and Training in development
- Open Community Preview of the New Online Ballot System during Cycle 9, 2023
 - Committee Members to become familiar with new interface and provide feedback



- Open New Online Ballot System for Live Ballot voting for Cycle 1, 2024

Facilities: On-going *(Searching for volunteers to lead this activity)*

- 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 F47, Specification for Semiconductor Processing Equipment Voltage Sag Immunity
 - Reapproval ballot failed TCC review; Spring 2018 – SNARF expired; SNARF abolished Fall 2019
 - Voltage Sag Immunity TF to issue minor revision SNARF to keep from moving to Inactive Status
- 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
- 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

Facilities Five-Year Review *{See attachment for details}*

SNARF 3-Year Status

Facilities

- 6628: New Standard, Guide for Facilities Data Package for Semiconductor Manufacturing Equipment Installation and Building Information Modeling
 - SNARF expires Spring 2024

Gases

- 6394: Line-Item Revision to SEMI F74-1103 (Reapproved 0710), Test Method for the Performance and Evaluation of Metal Seal Designs for Use in Gas Delivery Systems
 - SNARF expires West 2024
- 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 2024

Gases: On-going

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

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

Gases SNARF(s) Approved by GCS *{See attachment for details}*

Gases Five-Year Review *{See attachment for details}*

Attachment: Staff Report Nov 2023 v2_F&G

4 Ballot Review

NOTE 1: 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 # 6916, Replacement of SEMI F109-0212, Guide for Heater Systems Requirements, as a New Standard: Guide for Material Selection for Heater Systems

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

Motion: To find Negative TEL-1 related and persuasive.

By / 2nd: By: Matthew Milburn / UCT
Second: Chris Sanders / CBRE

Discussion: None.

Vote: 15-0 in favor. Motion passed.

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

By / 2nd: By: John Zawada / Swagelok
Second: Matthew Milburn / UCT

Discussion: None.

Vote: 16-0 in favor. Motion passed.

Attachment: Gases Ballot Results Cycle 7-23

4.2.2 Document # 7097, Line-Item Revision to SEMI C54-1116, Specification for Oxygen

4.2.2.1 Line Item # 1: Add chemical formula for oxygen in title.

- **Passed** TC Chapter review with editorial changes. See attachment for ballot adjudication.

4.2.2.2 Line Item # 2: Update throughout to comply to Regs, PM and SM.

- **Passed** TC Chapter review with technical changes and with or without editorial changes. A Ratification Ballot to be issued to verify the technical changes. See attachment for ballot adjudication.

4.2.2.3 Line Item # 3: Clarify word usage and SI units in §9 through § 10 per SM.

- **Passed** TC Chapter review with editorial changes. See attachment for ballot adjudication.

4.2.2.4 Line Item # 4: Change “is to”, “may”, “must”, or “should” to “shall” or “should” throughout, where appropriate.

- **Passed** TC Chapter review with technical changes and with or without editorial changes. A Ratification Ballot to be issued to verify the technical changes. See attachment for ballot adjudication.

Attachment: 7097_ProceduralReview

4.2.3 Document # 7098, Line-Item Revision to SEMI C56-1116, Specification for Dichlorosilane

4.2.3.1 Line Item # 1: Add chemical formula for dichlorosilane in title.

- **Passed** TC Chapter review with editorial changes. See attachment for ballot adjudication.



4.2.3.2 Line Item # 2: Update throughout to comply to Regs, PM and SM.

- **Passed** TC Chapter review with editorial changes. See attachment for ballot adjudication.

Attachment: 7098_ProceduralReview

4.2.4 Document # 7151, Line-Item Revision to SEMI E16-0517, Guide for Determining and Describing Mass Flow Controller Leak Rates

4.2.4.1 Line Item # 1: Update throughout to comply to Regs, PM and SM.

- **Passed** TC Chapter review as balloted. See attachment for ballot adjudication.

4.2.4.2 Line Item # 2: Change “must” or “shall” to “should” throughout.

- **Passed** TC Chapter review with technical changes and with or without editorial changes. A Ratification Ballot to be issued to verify the technical changes. See attachment for ballot adjudication.

Attachment: 7151_ProceduralReview

4.3 Document # 7152, Line-Item Revision to SEMI E27-1017, Guide for Mass Flow Controller and Mass Flow Meter Linearity

4.3.1 Line Item # 1: Update throughout to comply to Regs, PM and SM.

- **Passed** TC Chapter review as balloted. See attachment for ballot adjudication.

Attachment: 7152_ProceduralReview

5 Subcommittee and Task Force Reports

5.1 Facilities

5.1.1 SEMI F51 Revision Task Force – Did not meet

5.1.2 Power Grid Harmonics Task Force – Did not meet

5.1.3 Building Information Modeling (BIM) for Semiconductor Capital Equipment Task Force – Did not meet

5.1.4 Voltage Sag Immunity Task Force

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

- To review the TF’s Member list, agenda, and schedule of tasks, please refer to the PPT attachment.
- SNARF Renewal *{see attachment}*
- Korean Voltage Sag Immunity TF Proposal Revision
 - Date: January 16, 2023, Proposed by: Hohan Kang, F47 TF Co-leader
 - Considering the proposed comments to the additional Notes to Section 7.7 and Section 7.8.1
 - Summary:
 - Proposal #1: Proposing the Pass/Fail Criteria related to the performance level is to be agreed by the EUT Manufacturer and the supplier and end user.
 - Proposal #2: Add a statement in Section 7.7 Test Conditions: Data Sheet #400 Electrical Power of SEMI E6 may be used for showing maximum power processing of semiconductor process equipment, also consider showing process recipe of EUT.
 - Proposal #3: Proposed additional Related Information Section and text in SEMI-F47 derived from Korean Facilities Technical Committee (Testing guidelines)
- Korean Input *{see attachment}*
- Revision Subgroup Formed *{see attachment}*



- SEMI F47 Proposed Revision – Initial Brainstorm, Further Brainstorming, and Discussions *{see attachment}*
- Next TF Meeting plan
 - Task Force SEMI F47 Proposed Revision Subgroup
 - Continue to meet frequently to work on proposed revisions
 - Next meeting: November 14, 3PM Eastern
 - Next Regular TF Meeting
 - Proposed for Thursday, January 18, 2024, 4-5 PM Eastern via Webex

Attachment: SEMI Voltage Sag Task Force Mtg 20 Report Out 11_7_23

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:

- 6394: Line Item Revision to SEMI F74-1103 Discussed Appendix item and the need to update or not. Need help from others to clarify/update.
- 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
- 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
- Still a work in progress somewhat hinging upon “fixes” to F32
- Reviewed ballot results for F20
- Solicited assistance for five-year reviews of: E137, F19, F32, F37, F69, F74, F78, & F81
- Expressed a need for current email addresses

Attachment: Materials of Constr Meeting Summary 11_07_2022_LNN

5.2.1 Filters & Purifiers Task Force

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

Meeting Summary

- Reviewed 5 SNARFs:
 - 6814 - Std-Gases Reapproval of SEMI F43-0308 (Reapproved 0613), Test Method for Determination of Particle Contribution by Point-of-Use Gas Purifiers and Gas Filters
 - 6815 - Std-Gases Reapproval of SEMI F59-0302 (Reapproved 0613), Test Method for Determination of Filter or Gas System Flow Pressure Drop Curves
 - 6816 - Std-Gases Reapproval of SEMI F67-1101 (Reapproved 0713), Test Method for Determining Inert Gas Purifier Capacity
 - 6817 - Std-Gases Reapproval of SEMI F68-1101 (Reapproved 0713), Test Method for Determining Purifier Efficiency
 - 6813 - Std-Gases Reapproval of SEMI F28-1103 (Reapproved 0815), Test Method for Measuring Particle Generation from Process Panels
- All will be line item ballots and will be voted at the TC Chapter meeting.
- 5-year Review:
 - C14, F36 (Dimensional Uniformity) and F21 (Sara Vogt, Mark C to collaborate and help)

Attachment: FP TF Summary Nov 06 2023



5.2.2 Mass Flow Controller Task Force

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

Meeting Summary

- The Task Force reviewed:
 - Previous meeting minutes.
 - Ballot results from Cycle 7 2023.
 - Reviewed Upcoming Five-year reviews
- 7151 — Line-Item Revision to SEMI E16-0517, Guide for Determining and Describing Mass Flow Controller Leak Rates
 - SG2-4, Technical change - issue ratification ballot, change “the absolute value of the pressurizing helium to “pressure of the helium supply”.
 - All other comments determined to be editorial.
- 7152: — Line-Item Revision to SEMI E27-1017, Guide for Mass Flow
 - SG1-4, Technical Change – issue ratification ballot for figure 1 to make clearer.
 - All other comments determined to be editorial.

Attachment: MFC TF Meeting Summary 11_07_2022_LNN

5.2.3 Gases Specification Task Force

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

Meeting Summary

- Reviewed Cycle 7 ballot results for LI C54 and LI C56
- All rejects were reviewed and addressed.
- Will submit these as RF ballots.
- 5 year documents: C58 (H2) and C70 (WF6) next

5.2.4 Heater Jacket Task Force

David Colquhoun (BriskHeat) reported for this task force. Of note:

- The Task Force reviewed the ballot results for Doc 6916, Replacement of SEMI F109-0212, Guide for Heater Systems Requirements, as a New Standard: Guide for Material Selection for Heater Systems.
 - Refer to ¶ 4.2.1 Ballot Review for additional information.

David C. addressed the Committee on this:

Motion: Authorize the Document 6916, Replacement of SEMI F109-0212, Guide for Heater Systems Requirements, as a New Standard: Guide for Material Selection for Heater Systems, for Letter Ballot in Cycle 9-23, 1-24, or 2-24.

By / 2nd: By: David Colquhoun / BH Thermal
Second: Thomas Fritz / WIKA Instrument Corporation

Discussion: None.

Vote: 9-0 in favor. Motion passed.

Attachment: Gases Ballot Results Cycle 7-23



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 Approve New SNARFs

Motion: Approve the following SNARF:

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

By / 2nd: By: Thomas Fritz / WIKA Instrument Corporation
Second: Jeff Christian / WIKA Instrument Corporation

Discussion: None.

Vote: 15-1 in favor. Motion passed.

Motion: Approve the following SNARFs and Authorize for Letter Ballot in Cycle 9-23, 1-24, or 2-24

- Revision to SEMI F47-0706 (Reapproved 0812), Specification for Semiconductor Processing Equipment Voltage Sag Immunity
- Line-Item Revision to SEMI F69-1213E, Test Method for Transport and Shock Testing of Gas Delivery Systems
- Line-Item Revision to SEMI F78-0611 (Reapproved 0917), Practice for Gas Tungsten Arc (GTA) Welding of Fluid Distribution Systems in Semiconductor Manufacturing Applications
- Line-Item Revision to SEMI F81-0611 (Reapproved 0917), Specification for Visual Inspection and Acceptance of Gas Tungsten Arc (GTA) Welds in Fluid Distribution Systems in Semiconductor Manufacturing Applications
- Line-Item Revision to SEMI F28, Test Method for Measuring Particle Generation from Process Panels)
- 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
- Line-Item Revision to SEMI F59-0302 (Reapproved 0613), Test Method for Determination of Filter or Gas System Flow Pressure Drop Curves
- Line-Item Revision to SEMI F67-1101 (Reapproved 0713), Test Method for Determining Inert Gas Purifier Capacity
- Line-Item Revision to SEMI F68-1101 (Reapproved 0713), Test Method for Determining Purifier Efficiency

By / 2nd: By: Thomas Fritz / WIKA Instrument Corporation
Second: Jim Cannon / Mettler Toledo Thornton

Discussion: None.

Vote: 15-0 in favor. Motion passed.

7.2 New Leadership

Motion: Appoint Max van den berg as co-leader to Materials of Construction of Gas Delivery Systems Task Force.

By / 2nd: By: Kevin Findleton / Ichor Systems
Second: Matthew Milburn / UCT

Discussion: None.

Vote: 17-0 in favor. Motion passed.



8 Action Item Review

8.1 New Action Items are noted in Table 11. 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 March 25-28, in conjunction with SEMI Standards NA Spring Meetings 2024. Schedule details TBD. Please check www.semi.org/standards for updates.

Adjournment: 11:45.

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:

Steve Lewis (Gilbane Building Company), Facilities Co-chair	<Date approved>
Mohamed Saleem (Brooks Instrument/ITW), Gases 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	7098_ProceduralReview
[2023West] F&G NA TC Chapter Meeting Minutes FINAL	7151_ProceduralReview
R7092_ProceduralReview_passed	7152_ProceduralReview
Staff Report Nov 2023 v2_F&G	SEMI Voltage Sag Task Force Mtg 20 Report Out 11_7_23
G+F_JA TC Chapter Liaison Report_Nov 2023_R0	MoC_TF_Meeting_Brief.R2
Liaison report_Facilities_KR_Nov2023	FP TF Summary Nov 06 2023
Gases Ballot Results Cycle 7-23	MFC Task Force Summary Report 10_6_23
7097_ProceduralReview	

#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.