



## 3D Packaging & Integration North America TC Chapter

### Meeting Summary and Minutes

NA Standards Spring Meeting 2021

Tuesday, March 23, 10:00 – 12:00 Noon (Pacific)

via Official Virtual TC Chapter Meeting (OVTCCM)

#### TC Chapter Announcements

*Next TC Chapter Meeting*

NA Standards Summer Meetings 2021

~~Tuesday, June 8, 2021, 11:00 – 13:00 Pacific [Rescheduled]~~

Thursday, July 15, 13:30 – 14:30 Pacific

via Official Virtual TC Chapter Meeting (OVTCCM)

#### Table 1 Meeting Attendees

**Co-Chairs:** Bill Kerr (Evergreen Enhancement), Chris Moore (Covalent Metrology)

**SEMI Staff:** Laura Nguyen

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
Air Products	Arslanian	Gregory	Nordson SONOSCAN	Martell	Steve
ASM NEXX	Hollman	Richard	SEMI Pathfinders	Chu	Cristina
AT&S	Leitgeb	Markus	Thermo Fisher Scientific	Biedrycki	Mark
Corning	Schmidt	Ilona	Wooptix	Gaudestad	Jan
Fritz Consulting	Fritz	Denny			
ITS	Broz	Jerry	SEMI	Nguyen	Laura
NIST	Allen	Richard	SEMI	Nguyen	Thai

#### Table 2 Leadership Changes

None

#### Table 3 Committee Structure Changes

None

#### Table 4 Ballot Results

The following Letter Ballot Reviews were approved by GCS to be transferred to the Japan 3D Packaging & Integration TC Chapter and adjudicated on July 10, 2020.

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
6591	Revision to SEMI 3D20-0719, Specification for Panel Characteristics for Panel Level Packaging (PLP) Applications	<b>Failed</b>
6631	Line Item Revision to SEMI 3D12-0315, Guide for Measuring Flatness and Shape of Low Stiffness Wafers	

#### Table 4 Ballot Results

The following Letter Ballot Reviews were approved by GCS to be transferred to the Japan 3D Packaging & Integration TC Chapter and adjudicated on July 10, 2020.

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
L1	Clarify the Purpose statement in ¶1.3.	<b>Passed</b> , with editorial change(s)
L2	Add definition of precise monofilament and revise definitions in Terminology §5 for clarity.	<b>Passed</b> , as balloted

The following Letter Ballot Reviews are adjudicated by the 3D Packaging & Integration NA TC Chapter.

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
6591A	Revision to SEMI 3D20-0719, Specification for Panel Characteristics for Panel Level Packaging (PLP) Applications	<b>Passed</b> , with editorial change(s)
6641	Revision to SEMI 3D8-0514, Guide for Describing Silicon Wafers for Use as 300 mm Carrier Wafers in a 3DS-IC Temporary Bond-Debond (TBDB) Process	<b>Passed</b> , with technical changes, Ratification Ballot to be issued

#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 Activities Approved by the GCS between meetings of the TC Chapter

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
6641	SNARF	Bonded Wafer Stacks TF	Revision to SEMI 3D8-0514, Guide for Describing Silicon Wafers for Use as 300 mm Carrier Wafers in a 3DS-IC Temporary Bond-Debond (TBDB) Process — <b>TC Member Review took place between 03/02/2020–03/15/2020</b> — <b>Approved by GCS on 03/27/2020</b>
--	Adjudication Locale Transfer	3DP&I NA TC	Transfer responsibilities for Letter Ballot review from the North America Chapter to the Japan Chapter for NA Ballots 6591 & 6631 — <b>Approved by GCS on 06/30/2020</b> — <b>To be adjudicated at Japan Summer Meetings</b>
6591A	Ballot Authorization for Cycle 6 or 7-2020	PLP Panel TF	Revision to SEMI 3D20 0719, Specification for Panel Characteristics for Panel Level Packaging (PLP) Applications — <b>Approved by GCS on 08/12/2020</b>
6641	Ballot Authorization for Cycle 6 or 7-2020	Bonded Wafer Stacks TF	Revision to SEMI 3D8-0514, Guide for Describing Silicon Wafers for Use as 300 mm Carrier Wafers in a 3DS-IC Temporary Bond-Debond (TBDB) Process — <b>Approved by GCS on 08/12/2020</b>
--	Special online ballot for OVTCCM	3DP&I GTC	Authorizing the special online ballot for adoption of OVTCCM. — <b>Approved by GCS on 11/25/2020</b>

**Table 6 Authorized Activities**

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

#	Type	SC/TF/WG	Details
6810	SNARF	Inspection & Metrology TF	Reapproval of SEMI 3D13-0715, Guide for Measuring Voids in Bonded Wafer Stacks
6812	SNARF	Inspection & Metrology TF	Reapproval of SEMI 3D4-0915, Guide for Metrology for Measuring Thickness, Total Thickness Variation (TTV), Bow, Warp/Sori, and Flatness of Bonded Wafer Stacks
6811	SNARF	Bonded Wafer Stacks TF	Reapproval of SEMI 3D2-0216, Specification for Glass Carrier Wafers for 3DS-IC Applications

#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**

#	When	TF	Details
R6641	Cycle 4-2021	Bonded Wafer Stacks TF	Revision to SEMI 3D8-0514, Guide for Describing Silicon Wafers for Use as 300 mm Carrier Wafers in a 3DS-IC Temporary Bond-Debond (TBDB) Process
6810	Cycle 4 or 5-2021	Inspection & Metrology TF	Reapproval of SEMI 3D13-0715, Guide for Measuring Voids in Bonded Wafer Stacks
6812	Cycle 4 or 5-2021	Inspection & Metrology TF	Reapproval of SEMI 3D4-0915, Guide for Metrology for Measuring Thickness, Total Thickness Variation (TTV), Bow, Warp/Sori, and Flatness of Bonded Wafer Stacks
6811	Cycle 4 or 5-2021	Bonded Wafer Stacks TF	Reapproval of SEMI 3D2-0216, Specification for Glass Carrier Wafers for 3DS-IC Applications

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

None

**Table 9 SNARF(s) Abolished**

None

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

None

**Table 11 New Action Items**

None

**Table 12 Previous Meeting Action Items**

Item #	Assigned to	Details
2019Nov#01	Laura Nguyen	Send SEMIViews access to participants for the current list of Standards coming up for Five-Year Review. <a href="#">Completed.</a> <a href="#">Closed.</a>

## 1 Welcome, Reminders, and Introductions

Steve Martell (Nordson SONOSCAN), Acting Cochair, called the meeting to order at 10:07 Pacific. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.

**Attachment:** SEMI Standards Required Elements

## 2 Review of Previous Meeting Minutes

The TC Chapter reviewed the minutes of the previous meeting.

**Motion:** To accept the previous meeting minutes (from Fall 2019) as written.  
**By / 2<sup>nd</sup>:** By: Cristina Chu / SEMI Pathfinders  
 Second: Richard Allen / NIST - National Institute of Standards & Technology  
**Discussion:** None.  
**Vote:** 8-0 in favor. Motion passed.  
**Attachment:** [2019Fall] 3DP&I NA TC Chapter Meeting Minutes FINAL

## 3 Liaison Reports

### 3.1 3D Packaging & Integration Japan TC Chapter

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

#### Meeting Information

- Last meeting: Monday, January 18, 2021, at the SEMI Standards Japan Winter Meetings, Web conference
- Next meeting: Friday, May 28, 2021, SEMI Japan, Tokyo/Web conference

#### Leadership {See attachment for Org Chart}

- Committee Co-Chairs
  - Kazunori Kato – AiT
    - 1st GCS voting member; 1st 3D Packaging & Integration representative to the JRSC
  - Masahiro Tsuruya – iNEMI
    - 2nd GCS voting member; 3rd 3D Packaging & Integration representative to the JRSC
  - Haruo Shimamoto – AIST
    - 2nd 3D Packaging & Integration representative to the JRSC

#### Committee Highlights

- Japan TC Chapter completed simulation training for the OVTCCM on November 6, 2020.
- Special online ballot to vote on whether to adopt or not adopt has been sent out for a 14-day voting period (November 25th – December 9th).
- All official meetings for 3DP&I must now be OVTCCM.

#### Ballot Results

- 6590, New Standard: New Standard: Specification for Glass Carrier Characteristics for Panel Level Packaging (PLP) Applications
  - Passed, as balloted

#### Authorized Activities

Doc #	Type	SC/TF/CFG	Document Title/Details
6703	Ballot	3D Packaging & Integration 5 Year Review TF	SNARF for: Revision to SEMI G63-95 (Reapproved 0811) “Test Method for Measurement of Die Shear Strength” – <i>Authorized new SNARF</i>
6706	Ballot	Encapsulation Characteristics for Wafer Level Package and Panel Level Packaging Panel TF	SNARF for: New Standard: Specification for CTE and Tg Measurement Methodology for PLP/WLP Encapsulation Materials – <i>Authorized new SNARF</i>

6707	Ballot	Encapsulation Characteristics for Wafer Level Package and Panel Level Packaging Panel TF	SNARF for New Standard: Specification for Flowability Measurement Methodology for PLP/WLP Encapsulation materials – <b>Authorized new SNARF</b>
6708	Ballot	Encapsulation Characteristics for Wafer Level Package and Panel Level Packaging Panel TF	SNARF for: New Standard: Specification for Gel Time Measurement Methodology for PLP/WLP Encapsulation materials – <b>Authorized new SNARF</b>
6709	Ballot	Encapsulation Characteristics for Wafer Level Package and Panel Level Packaging Panel TF	SNARF for: New Standard: Specification for Modulus Measurement Methodology for PLP/WLP Encapsulation materials – <b>Authorized new SNARF</b>
6710	Ballot	Encapsulation Characteristics for Wafer Level Package and Panel Level Packaging Panel TF	SNARF for: New Standard: Specification for Shear Strength Measurement Methodology for PLP/WLP Encapsulation Materials – <b>Authorized new SNARF</b>
6711	Ballot	Encapsulation Characteristics for Wafer Level Package and Panel Level Packaging Panel TF	SNARF for: New Standard: Specification for Viscosity Measurement Methodology for PLP/WLP Encapsulation materials – <b>Authorized new SNARF</b>
6712	Ballot	Encapsulation Characteristics for Wafer Level Package and Panel Level Packaging Panel TF	SNARF for: New Standard: Specification for Wettability Measurement Methodology for PLP/WLP Encapsulation materials – <b>Authorized new SNARF</b>

#### Authorized Ballots

Doc #	When	TF	Document Title/Details
6703	Cycle 3-2021	3D Packaging & Integration 5 Year Review TF	SNARF for: Revision to SEMI G63-95 (Reapproved 0811) “Test Method for Measurement of Die Shear Strength”
6706	CycleX-2021	Encapsulation Characteristics for Wafer Level Package and Panel Level Packaging Panel TF	SNARF for: New Standard: Specification for CTE and Tg Measurement Methodology for PLP/WLP Encapsulation Materials
6707	CycleX-2021	Encapsulation Characteristics for Wafer Level Package and Panel Level Packaging Panel TF	SNARF for New Standard: Specification for Flowability Measurement Methodology for PLP/WLP Encapsulation materials
6708	CycleX-2021	Encapsulation Characteristics for Wafer Level Package and Panel Level Packaging Panel TF	SNARF for: New Standard: Specification for Gel Time Measurement Methodology for PLP/WLP Encapsulation materials
6709	CycleX-2021	Encapsulation Characteristics for Wafer Level Package and Panel Level Packaging Panel TF	SNARF for: New Standard: Specification for Modulus Measurement Methodology for PLP/WLP Encapsulation materials
6710	CycleX-2021	Encapsulation Characteristics for Wafer Level Package and Panel Level Packaging Panel TF	SNARF for: New Standard: Specification for Shear Strength Measurement Methodology for PLP/WLP Encapsulation Materials
6711	CycleX-2021	Encapsulation Characteristics for Wafer Level Package and Panel Level Packaging Panel TF	SNARF for: New Standard: Specification for Viscosity Measurement Methodology for PLP/WLP Encapsulation materials
6712	CycleX-2021	Encapsulation Characteristics for Wafer Level Package and Panel Level Packaging Panel TF	SNARF for: New Standard: Specification for Wettability Measurement Methodology for PLP/WLP Encapsulation materials

#### Task Force Highlights

- Encapsulation Characteristics for Wafer Level Package and Panel Level Packaging TF
  - Taskforce Kick-off: November 18, 2020
  - Under development of standard document drafts for 8 encapsulate materials characteristics and 3 items for performances



- SNARFs approval requests for 8 material characteristics
  - Ballot 6706,6707,6708,6709,6710,6711,6712
- Plan to develop final ballot draft by the end of Q2.
- Panel Level Packaging (PLP) Glass Carrier TF
  - Reviewed ballot 6590, New Standard: Specification for Glass Carrier Characteristics for Panel Level Packaging (PLP) Applications
- Five Years Review TF
  - Completed the review and submitted the ballots for 2020 required review documents.
  - Will start for 2021 review needed
- 3DS IC Bonded Layer Inspection Metrology TF
  - Pre-trial using the SEMATECH sample was done by Aug. 2020.
  - Detectable void size by the nominal frequency of the transducer was defined.
  - A sample for the feasibility study was designed by Sept. 2020.
  - Manufacturing the sample for the feasibility study is delayed due to COVID and equipment trouble.
- 3D Packaging & Integration Steering Group WG
  - Continue to brainstorm the potential areas of SEMI Standard.
    - Example: RDL Adhesion Strength Measurement/Metrology Proposal
  - Share the taskforce activities progress
  - Work on the joint discussion with TWN TC (held meeting on August 2020)
  - Displayed 3 posters at SEMICON Japan 2020

Staff Contact: Mami Nakajo, mnakajo@semi.org

**Attachment:** 20210226\_3DPI-Japan\_LiaisonR\_v1.0

### 3.2 3D Packaging & Integration Taiwan TC Chapter

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

#### Meeting Information

- Last meeting: March 2, 2021 at the SEMI Standards Taiwan Spring 2021 Meetings
  - SEMI Taiwan Office, Zhubei City, Hsinchu County, Taiwan
- Next meeting: Aug. 13, 2021 at the SEMI Standards Taiwan Spring 2021 Meetings
  - SEMI Taiwan Office, Zhubei City, Hsinchu County, Taiwan

#### Leadership

- Committee Co-Chairs:
  - Wei-Chung Lo (ITRI)
  - Wendy Chen (King Yuan Electronics)
  - Roger Hwang (ASE)

#### Leadership Changes

- Testing Task Force
  - Previous Leader: Shang-Chun Chen /ITRI
  - New Leader: Chang-Sheng Chen/ITRI

Organization Chart {See attachment for Org Chart}

#### Task Force Highlights

3DP&I Middle-End Process Task Force

- Leadership: Arthur Chen – NTUST, Mike Chang - ITRI
- New Business
  - Over 5 years review by TF then feedback next TC Meeting



- SEMI 3D15-0316 Guide for Overlay Performance Assessment for 3DS-IC Process
- Study the feasibility of submitting a new SNARF for CMP standards in the next TC meeting.

Testing Task Force

- Leadership Change
  - Shang-Chun Chen – ITRI changed to Chang-Sheng Chen/ITRI
- New Business
  - Over 5 years review by TF then feedback next TC Meeting
    - 3D14-0615 Guide for Incoming/Outgoing Quality control and Testing Flow
  - New topic direction discussion: Chip testing before stacking: standard CCC might not be sufficient, consider to introduce MAC to protect both the chip and probe, and its testing temperature condition
  - Action Item: TF Co-leaders work with SEMI Staff to invite Probe card players to kick off meeting at the end of March

Staff Contact: Cher Wu; cherwu@semi.org

**Attachment:** 3D P&I TW Liaison Report\_20210302

### 3.3 SEMI Staff Report

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

SEMI Global Calendar of Events

- SEMICON Southeast Asia (August 23-27 [Hybrid]; Singapore)
- SEMICON Taiwan (September 8-10; Taipei, Taiwan)
- SEMICON Europa (November 16-19; Munich, Germany)
- SEMICON West (December 7-9 [Hybrid]; San Francisco, CA/USA)
- SEMICON Japan (December 11-13; Tokyo, Japan)

Letter Ballot Critical Dates for 2021

- Cycle 3-2021: Ballot Submission Due: Mar 9/Voting Period: Mar 23 – Apr 22
- Cycle 4-2021: Ballot Submission Due: Apr 14/Voting Period: Apr 28 – May 28
- Cycle 5-2021: Ballot Submission Due: May 18/Voting Period: June 1 – July 1
- Cycle 6-2021: Ballot Submission Due: Aug 3/Voting Period: Aug 17 – Sept 16
- Cycle 7-2021: Ballot Submission Due: Sept 1/Voting Period: Sept 15 – Oct 15
- Cycle 8-2021: Ballot Submission Due: Oct 8/Voting Period: Oct 22 – Nov 22
- Cycle 9-2021: Ballot Submission Due: Nov 16/Voting Period: Nov 30 – Dec 30

Critical Dates: <http://www.semi.org/en/Standards/Ballots>

Standards Publications Report

<i>Cycle</i>	<i>New</i>	<i>Revised</i>	<i>Reapproved</i>	<i>Withdrawn</i>
January 2021	0	1	6	0
February 2021	1	2	7	0

Total in portfolio – 1,030 (includes 274 Inactive Standards)

#### New Standards

<i>Cycle</i>	<i>Designation</i>	<i>Title</i>	<i>Committee</i>	<i>Region</i>
February 2021	SEMI MS13	Guide for Use of Test Patterns for Characterizing a Deep Reactive Ion Etching (DRIE) Process	MEMS/NEMS	NA

#### Inactive Standards

<i>Committee</i>	<i>Number of Inactive Standards</i>
Assembly & Packaging	48
Automated Test Equipment	2
Compound Semiconductor Materials	4
Environmental Health & Safety	8
Facilities	15
FPD – Equipment	5
FPD – Factory Automation	14
FPD – Materials & Components	13
Gases	18
Information & Control	37
Liquid Chemicals	26
MEMS	3
Metrics	12
Micropatterning	30
Photovoltaic	1
Physical Interfaces & Carriers	19
Silicon Wafer	11
Traceability	8

#### connect@SEMI - Contact your staff if a TF Site is desired

- Web link - <https://connect.semi.org>
  - Login using Standards account (username and password)
- Program Member
  - Join any task forces; Post discussion thread
- TF Leader/Community Admin; contact your staff if a TF Site is desired
  - Add member; Upload meeting minutes
  - Communicate TF members
- Details
  - [www.semi.org/standards](http://www.semi.org/standards) >> Committee Info >> Collaboration Community

#### Regulations & Procedure Manual

- *Regulations* (November 5, 2020)
  - Clarification on § 6.5, Disbandment of a TC Chapter
  - Requires an RSC to disband a TC Chapter when it is shown to be inactive by failing to:
    - hold meetings for two consecutive years,
    - report activity to its RSC for two consecutive years,
    - or initiate new Standards Documents activities.
- *Procedure Manual* (November 5, 2020)
  - New § 6.1.3.4.1 defining detailed procedures for disbandment of inactive TC Chapters.





### Meeting Information

#### Last meeting:

- Spring 2020 Meeting (TC Chapter meetings postponed due to COVID-19)
  - Thursday, April 2, 2020, at the SEMI Standards NA Spring Meetings
- Summer 2020 Meetings (TC Chapter meetings postponed due to COVID-19)
  - Task forces met via Web conference
  - Thursday, July 9, 2020, at the SEMI Standards NA Summer Meetings
- Fall 2020 Meetings (TC Chapter meetings postponed due to COVID-19)
  - Task Forces did not meet

#### Next meeting:

- Spring Meeting 2021, Tuesday, March 23, 2021, via OVTCCM

### Virtual Meeting Simulation Training

- North America TC Chapter completed simulation training for the OVTCCM on October 23, 2020.
- Special online ballot to vote on whether to adopt or not adopt was sent out for a 14-day period (November 25th – December 9th).
  - Results were positive.
- All official meetings for 3DP&I must now be OVTCCM.

### Activities Approved via GCS between Meetings

#### Before Spring Meetings

- Bonded Wafer Stacks TF
  - 6641: Revision to SEMI 3D8-0514, Guide for Describing Silicon Wafers for Use as 300 mm Carrier Wafers in a 3DS-IC Temporary Bond-Debond (TBDB) Process
    - TC Member Review took place between 03/02/2020–03/15/2020
    - SNARF Approved by GCS on 03/27/2020

#### After Spring Meetings

- Adjudication Locale Transfer
  - Transfer responsibilities for Letter Ballot review from the North America Chapter to the Japan Chapter for NA Ballots 6591 & 6631
    - Approved by GCS on 06/30/2020
    - To be adjudicated at Japan Summer Meetings (*See slide 7 for Ballot Results*)

### Task Force Highlights (from Summer Meetings)

- Bonded Wafer Stacks TF and Inspection & Metrology TF met jointly
  - Reviewed ballot 6631, Line Item Revision to SEMI 3D12-0315, Guide for Measuring Flatness and Shape of Low Stiffness Wafers
    - NA transferred Letter Ballot Review to Japan Chapter
  - New topics for Fall 2020 meetings: cleaning of glass wafers, local flatness
- Panel Level Packaging (PLP) Panel TF
  - 6591: Revision to SEMI 3D20-0719, Specification for Panel Substrate Characteristics for Panel Level Packaging (PLP) Applications
    - NA transferred Letter Ballot Review to Japan Chapter
    - TF plans to request GCS to ballot 6591A once Japan adjudicates 6591

### Ballot Results (Adjudicated at Japan Summer Meetings)

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
6591	Revision to SEMI 3D20 0719, Specification for Panel Characteristics for Panel Level Packaging (PLP) Applications	<b>Failed</b>
6631	Line Item Revision to SEMI 3D12-0315, Guide for Measuring Flatness and Shape of Low Stiffness Wafers	
L1	Clarify the Purpose statement in ¶1.3.	<b>Passed</b> , with editorial change(s)
L2	Add definition of precise monofilament and revise definitions in Terminology §5 for clarity.	<b>Passed</b> , as balloted

### Activities Approved via GCS between Meetings

#### After Summer Meetings

- PLP Panel TF
  - 6591A: Revision to SEMI 3D20 0719, Specification for Panel Characteristics for Panel Level Packaging (PLP) Applications
    - Ballot in voting Cycle 6 or 7-2021
    - Approved by GCS on 08/12/2020
- Bonded Wafer Stacks TF
  - 6641: Revision to SEMI 3D8-0514, Guide for Describing Silicon Wafers for Use as 300 mm Carrier Wafers in a 3DS-IC Temporary Bond-Debond (TBDB) Process
    - Ballot in voting Cycle 6 or 7-2021
    - Approved by GCS on 08/12/2020
- Special online ballot for OVTCCM
  - Authorizing the special online ballot for adoption of OVTCCM.
    - Approved by GCS on 08/12/2020

### Five-Year Review

<b>Designation #</b>	<b>Standard Title</b>	<b>Action By</b>	<b>Original TF assigned to:</b>
SEMI 3D13-0715	Guide for Measuring Voids in Bonded Wafer Stacks	Past Due	Inspection & Metrology
SEMI 3D4-0915	Guide for Metrology for Measuring Thickness, Total Thickness Variation (TTV), Bow, Warp/Sori, and Flatness of Bonded Wafer Stacks	Past Due	Inspection & Metrology
SEMI 3D2-0216	Specification for Glass Carrier Wafers for 3DS-IC Applications	Past Due	Bonded Wafer Stacks
SEMI 3D16-1116	Specification for Glass Base Material for Semiconductor Packaging	Fall 2021	Bonded Wafer Stacks

**Attachment:** Staff Report March 2021\_3DP&I

## **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 number for each balloted document is provided under each ballot review section below.

### 4.1 Document # 6591, Revision to SEMI 3D20-0719, Specification for Panel Characteristics for Panel Level Packaging (PLP) Applications

- The committee found the negatives 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.



4.2 Document # 6631, Line Item Revision to SEMI 3D12-0315, Guide for Measuring Flatness and Shape of Low Stiffness Wafers

4.2.1 Line Item #1: Clarify the Purpose statement in ¶1.3.

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

4.2.2 Line Item #2: Add definition of precise monofilament and revise definitions in Terminology §5 for clarity.

- The ballot passed TC Chapter review as balloted. See attachment for ballot adjudication.

**Attachment:** 6631\_Ballot Line-Item report\_r2

4.3 Document # 6591A, Revision to SEMI 3D20-0719, Specification for Panel Characteristics for Panel Level Packaging (PLP) Applications

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

**Attachment:** 6591A\_ProceduralReview

4.4 Document # 6641, Revision to SEMI 3D8-0514, Guide for Describing Silicon Wafers for Use as 300 mm Carrier Wafers in a 3DS-IC Temporary Bond-Debond (TBDB) Process

- The ballot passed TC Chapter review with technical changes. Ratification Ballot to be issued. See attachment for ballot adjudication.

**Attachment:** 6641\_ProceduralReview

**Motion:** Authorize the Document for Ratification Ballot 6641, in Cycle 4-21.

**By / 2<sup>nd</sup>:** By: Steve Martell / Nordson SONOSCAN  
Second: Cristina Chu / SEMI Pathfinders

**Discussion:** None.

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

## 5 Subcommittee and Task Force Reports

### 5.1 Panel Level Packaging (PLP) Panel Task Force

Task Force Leaders Cristina Chu (SEMI Pathfinders) and Rich Allen (NIST) reported for this Task Force. Of note, during the task force meeting, the task force reviewed the ballot results that can be found in Section 4 of these minutes.

The Task Force plans to hold a TF meeting next month. Please reach out to Laura Nguyen (SEMI) to get involved.

**Attachment:** 3DP&I ballot summary cycle 6-2020

### 5.2 3DP&I Inspection & Metrology and Bonded Wafer Stacks Task Force

Task Force Leaders Steve Martell (Nordson SONOSCAN) and Ilona Schmidt (Corning) reported for both the 3DP&I Inspection & Metrology and 3DP&I Bonded Wafer Stacks Task Forces.

Of note, during the task force meeting, the task force reviewed the ballot results that can be found in Section 4 of these minutes.

**Attachment:** 3DP&I ballot summary cycle 6-2020



## 6 Old Business

### 6.1 Standards due for Five-Year Review

The committee reviewed the Standards due for Five-Year Review. The committee discussed these documents and decided to submit Reapproval Ballots.

- Motion:** To approve SNARFs for Five-Year Review Reapproval for the following docs:  
SEMI 3D13-0715,  
SEMI 3D4-0915,  
SEMI 3D2-0216,  
and authorize for ballot in Cycle 4, or 5-2021.
- By / 2<sup>nd</sup>:** By: Steve Martell / Nordson SONOSCAN  
Second: Gregory Arslanian / Air Products
- Discussion:** None.
- Vote:** 7-0 in favor. Motion passed.

### 6.2 Previous Action Items

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

## 7 New Business

### 7.1 Proposal(s)

Ilona Schmidt (Corning) addressed the committee about a possible new shipping and handling container standard.

## 8 Next Meeting and Adjournment

The next meeting is tentatively scheduled for Tuesday, June 8, 2021, at 11:00–13:00 Pacific. See <http://www.semi.org/standards-events> for the current list of events.

Adjournment: 11:51.

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:

Bill Kerr (Evergreen Enhancement), Co-chair	<Date approved>
Chris Moore (Covalent Metrology), Co-chair	<Date approved>

Minutes approved by: **3DP&I NA OVTCCM on July 15, 2021.**



**Table 13 Index of Available Attachments<sup>#1</sup>**

<i>Title</i>	<i>Title</i>
SEMI Standards Required Elements	6631_Ballot Line-Item report_r2
[2019Fall] 3DP&I NA TC Chapter Meeting Minutes FINAL	6591A_ProceduralReview
20210226_3DPI-Japan_LiaisonR_v1.0	6641_ProceduralReview
3D P&I TW Liaison Report_20210302	3DP&I ballot summary cycle 6-2020
Staff Report March 2021_3DP&I	

<sup>#1</sup> 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.