Record of Letter Ballot Review by TC Chapter for Procedural Review

Region/Locale: North America
Global Technical Committee: 3D Packaging & Integration
TC Chapter Cochairs: Bill Kerr/Evergreen Enhancement, Chris Moore/Covalent Metrology
Standards Staff: Laura Nguyen

	Scheduled in Background Statement	Actual
Date	TBD	03/23/2021
Location	TBD	OVTCCM
Reason for Change of Date and/or Location (if changed)	COVID-19	

Note: See *Regulations* ¶ 9.5 Exceptions for allowable reason to change.

I. Document Number and Title

Document Number	Document Title
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

II. Tally

Voting Tally: As-cast tally after close of voting period

Note: A minimum of 60% of the Voting Interests that have TC Members within the global technical committee that issued the Letter Ballot must return Votes. (*Regulations* ¶ 9.6.2.1.1)

Voting Tally (with example values):

Voting Interest:	Returned Votes		Distribution		Return Rate	
Letter Ballot	71	÷	112	=	63.4%	≥60%
Intercommittee Ballot	55					
Voting Interest Reject(s)	1		Total Voters with Rejects			1
Voting Interest Accept(s)	62					

Note: See *Regulations* § 3.2.1 for definition of Voting Interest.

III. Rejects

Voting Interest Reject 1 (Voting Interest Name: TEL)
Voter Reject 1 (Voter: Supika Mashiro/Tokyo Electron Limited)
Negative 1

Negative	Referenced Section/ Paragraph	*TF/TC Chapter to fill in, including text in the ballot if necessary.			
	Negative Text	*Original complete Negative text (e.g., issue, justification, suggestion) should be copied.			
		Negative Guide subtype SEMI Standard shall not use 'must' to express requirement. Having any requirement in Guide is not allowed. (See Procedure Manual and Style Manual) Suggestion: change all instances of 'must' to 'should' or 'is recommended'.			
TF input (optional)					
Withdrawal (check one)		X	No Negative withdrawal made by Voter.		GO TO "Related" subsection
			Withdrawal document received by Standards staff on MM/DD/YYYY.		GO TO "Final" subsection → (A)
Related	Motion and Reason (check one)	X	'Related' is mutually agreed upon. (Needs no motion.)		GO TO "Persuasive" subsection
			Negative is not related. (Needs ≥2/3 votes to pass.)		
			Reason	XXXX	
	Motion by/ 2nd by	Name (Company)/Name (Company)			
	Discussion				
	Result of Vote (check one)	XX Y-XX N; Motion passed/failed.			
			[Negative is not related.] < 2/3		GO TO "Persuasive" subsection
			2/3 ≤ [Negative is not related.]		GO TO "Final" subsection → (B)
Persuasive	Motion and Reason (check one)	X	Negative is related and persuasive. (Needs >1/3 votes to pass.)		
			Negative is related and not persuasive. (Needs ≥2/3 votes to pass.)		
			Reason	XXXX	
	Motion by/ 2nd by	By: Cristina Chu / SEMI Pathfinders Second: Steve Martell / Nordson SONOSCAN			
	Discussion	None			
	Result of Vote (check one)	8 Y-0 N; Motion passed			
		X	[Negative is related and persuasive.] > 1/3	Is a technical change recommended? (check one) X Y	GO TO "Address by Technical Change Option" subsection

			[Negative is related and not persuasive.] < 2/3			N	GO TO "Final" subsection → (E)
			2/3 ≤ [Negative is related and not persuasive.] < 90%	GO TO "Final" subsection → (C)			
			90% ≤ [Negative is related and not persuasive.]	GO TO "Not Significant Finding Option" subsection			

Address by Technical Change Option

Technical Change Recommendations
Original section/paragraph number and at least one full sentence are required in "FROM" and "TO" fields.

Technical Changes — **1**

FROM: Section/Paragraph 6.2, 6.5, 6.6, 7.1, 7.2, 9.4

6.2 If the carrier wafer is expected to be used in a stack that will undergo IR imaging of the bond plane from the back of the carrier wafer, the IR transmission must be specified such that the wafer is sufficiently transparent at the desired wavelength.

6.5 In addition, the purchase order must indicate the test method to be used in evaluating each of those items for which alternate test procedures exist.

6.6 The following items must also be included in the purchase order:

7.1 The entries in Table 1 provide an indication of the properties often specified for carrier wafers used in 3DS-IC applications. Where blanks are included, appropriate values must be inserted into the purchase order.

7.2 The appropriate test method must also be specified for each parameter specified in the order form (see § 9 for additional guidance in this matter).

9.4 If no standard test method for an item is available, the test procedure to be used must be agreed upon between supplier and customer.

9.5

TO: Section/Paragraph 6.2, 6.5, 6.6, 7.1, 7.2, 9.4

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6.5 In addition, the purchase order ~~must~~ should indicate the test method to be used in evaluating each of those items for which alternate test procedures exist.

6.6 The following items ~~must~~ should also be included in the purchase order:

7.1 The entries in Table 1 provide an indication of the properties often specified for carrier wafers used in 3DS-IC applications. Where blanks are included, appropriate values ~~must~~ should be inserted into the purchase order.

7.2 The appropriate test method ~~must~~ should also be specified for each parameter specified in the order form (see § 9 for additional guidance in this matter).

9.4 If no standard test method for an item is available, the test procedure to be used ~~must~~ should be agreed upon between supplier and customer.

9.5

Justification (If necessary)
"must" is not allowed in a "Guide" per PM/Style Manual.

Motion	Negative is addressed by the technical change(s).
Motion by/2nd by	By: Steve Martell / Nordson SONOSCAN Second: Gregory Arslanian / Air Products
Discussion	None
Result of Vote	8 **Y**-0 **N**; Motion passed

	(check one)		X	2/3 ≤ [Negative is addressed by the technical change(s).]	GO TO "Incorporation of the Technical Change" subsection
				[Negative is not addressed by the technical change(s).] < 2/3	GO TO "Final" subsection → (E)
	Incorporation of the Technical Change	Motion	To incorporate the technical change(s).		
		Motion by/2nd by	By: Cristina Chu / SEMI Pathfinders Second: Steve Martell / Nordson SONOSCAN		
		Discussion	None		
		Result of Vote (check one)	7 **Y0 N**; Motion passed		
			X	90% ≤ [Agree to incorporate.]	GO TO "Final" subsection → (F)
				[Disagree to incorporate.]>10%	GO TO "Final" subsection → (E)

Final	(check if applicable)		(A)	Withdrawn (counted under h in disposition)	
			(B)	Not related (counted under i in disposition)	
			(C)	Related and not persuasive (significant)	
			(D)	Not significant (counted under j in disposition)	
			(E)	Related and persuasive and not addressed by technical change	DOCUMENT FAILS
		X	(F)	Addressed by technical change (counted under k disposition)	
	(check if applicable)		*Comment generated. See Section V-(ii) Comment # X.*		

This table is needed for each Negative.

Disposition of Voting Interest Reject 1

Check only when the Document has not been failed.

1	Original number (#) of Negatives			**(g)**
0	Number of Negatives withdrawn			**(h)**
0	Number of Negatives found not related			**(i)**
0	Number of Negatives found not significant			**(j)**
1	Number of Negatives addressed by technical change (Negative becomes not significant)			**(k)**
Final		X	**g** - (**h** + **i** +**j** + **k**) = 0	Reject is Not Valid and is not included in the denominator of § VI. *Approval Conditions Check*
			g - (**h** + **i** +**j** + **k**) >0	Reject is included in the denominator of § VI. *Approval Conditions Check*
			Reject without a Negative	Not Valid

This table is needed for each Voting Interest Reject.

Note: If all of the Negatives included with a Reject Vote are withdrawn, determined to be not related, or determined to be not significant, the Reject Vote is not valid. (*Regulations* ¶ 9.4.3.3)
Note: A Negative addressed by a technical change is automatically considered to be not significant. (*Regulations* ¶ 9.6.1.4.5.2)

IV. Other Technical Issues
None

V. Comments
V- (i) Voters' Comments
None

V-(ii) Comments Created by Handling Negative
None

VI. Editorial Changes Other than Those Voted on in § V
None

VII. Approval Conditions Check
VII. - (i). Approval Rate

APPROVAL CONDITION 1: All Negatives have been discussed and were withdrawn, found not related, found not persuasive, or addressed by a technical change. (*Regulations* ¶ 9.6.2.1.2)

APPROVAL CONDITION 2: At least 90% of the sum of valid Voting Interest Accept and Voting Interest Reject Votes must be Accept. (*Regulations* ¶ 9.6.2.1.3)

Note: If both approval conditions are not satisfied, the Document fails.

		Accepts		(Accepts + Valid Rejects)				
Approval Rate	=	62	/	62	=	100.0%		≥90%

VII. – (ii) Approval Level (check one)

Note: See *Regulations* § 9.6.2 for further information.

	Globally Approved (No Ratification Ballot needed): The Letter Ballot meets the Letter Ballot approval conditions for the global technical committee.
X	**Need a Ratification Ballot:** The Letter Ballot meets the Letter Ballot approval conditions for the TC Chapter and a Ratification Ballot will be issued to validate technical changes.

VIII. Safety Check

Note: See *Regulations* § 15 for further information.

Motion		
	X	**This is not a Safety Document**, when all safety-related information is removed, the Document is still technically sound and complete. (*Regulations* ¶ 8.7.1)
		This is a Safety Document, when all safety-related information is removed, the Document is not technically sound and complete. (*Regulations* ¶ 8.7.2)
		Safety Checklist (*Regulations* ¶ 15.3) is complete and has been included with the Document throughout the balloting process. (*Regulations* ¶ 15.1.2)
Motion by/2nd by		By: Gregory Arslanian / Air Products Second: Steve Martell / Nordson SONOSCAN
Discussion		None
Vote		8 **Y**-0 **N**; Motion passed

IX. Intellectual Property (IP) Check

Note: This Letter Ballot may cover all or part of a Standard or Safety Guideline. Regardless of the coverage, this IP check applies to the entire Standard or Safety Guideline*. See *Regulations* § 16 for further information.

X	The TC Chapter meeting chair asked those participating, if they were aware of any patented technology that might be relevant (see *Regulations* ¶ 16.3.1.1) to the Standard or Safety Guideline; or, any copyrighted items or trademarks that are used/reproduced (see *Regulations* ¶ 16.4.1.2) in the Standard or Safety Guideline. (Also see, *Regulations* § 8.8)				
	X	The question is NOT answered in affirmative (No potentially material patented technology or use/reproduction of copyrighted items/trademarks is known.)	**GO TO SECTION X.**		
		The question is answered in affirmative	Is any of the known IPs a patented technology?	**Yes, at least one of them is a patented technology**	**GO TO IX (a) "Patented Technology" subsection**
				No	**GO TO IX (b) "Copyright items" subsection**

X. Action for This Document

Motion		This Document passed TC Chapter review as balloted and will be forwarded to the ISC A&R SC for procedural review.
		This Document passed TC Chapter review with editorial changes and will be forwarded to the ISC A&R SC for procedural review.
	X	This Document passed TC Chapter review with technical changes and with or without editorial changes and will be forwarded to the ISC A&R SC for procedural review. A Ratification Ballot will be issued to verify the technical changes.
		This Document failed TC Chapter review and will be returned to the TF for rework.
		This Document failed TC Chapter review and work will be discontinued.
Motion by/ 2nd by		By: Steve Martell / Nordson SONOSCAN Second: Cristina Chu / SEMI Pathfinders
Discussion		None
Vote		8 **Y**-0 **N**
Final Action	X	Motion passed
		Motion failed

Note: If the use of PMPT or copyrighted item is justified by the TC Chapter, LOA or release form must be received before publication can proceed.