# Record of Line-item Letter Ballot Review by TC Chapter for Procedural Review

Region/Locale: North America
Global Technical Committee: EHS

TC Chapter Cochairs: Sean Larsen (Lam Research), Chris Evanston (Salus Engineering), Bert

Planting (ASML)

Standards Staff: Kevin Nguyen

	Scheduled in Background Statement	Actual
Date	7/14/2016	7/14/2016
Location	San Francisco Marriott Marquis, CA	San Francisco Marriott Marquis, CA
Reason for Change of Date and/or Location (if changed)		

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

## **Document Information**

## I. Document Number, Title, Lists of Line Items

Doc	ument Number	Document Title			
5917	•	Line Item Revisions to SEMI S8, Safety Guideline for			
		Ergonomics Engineering of Semiconductor			
		Manufacturing Equipment. Addition of reference to a			
		manual material-handling guide in SEMI-S8, Appendix			
	_	2, Lifting, Strength, and Materials Handling			
		Line Item Title			
	Line Item 1	Add a Definition for "hand-object coupling point" in			
		the Terminology Section			
List		Line Item Title			
<b>ુ</b>	Line Item 2	Add a reference to SEMATECH ISMI Manual Material			
-		Handling Application Guide			
Line	Line Here O	Line Item Title			
<del> </del>	Line Item 3	Revisions and additions to hand/arm clearances			
Items		Line Item Title			
เร	Line Hom 4	Add a new Related Information section to assist with			
	Line Item 4	determining what tasks are within the scope of an			
		assessment to SEMI S8			

## **Line Item 1 Adjudication**

## II. Tally

Standards staff to fill in.

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* ¶ 9.7.1.1)

#### **Voting Tally:**

Voting Interest:	Returned Votes		Distribution		Return Rate	
Letter Ballot	54	÷	89	=	60.7%	≥60%
Intercommittee Ballot	19					
Voting Interest Reject(s)	0		Total	Vote	rs with Rejects	0
Voting Interest Accept(s)	39					

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

## III. Rejects

There was no reject

## 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

# 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APPROVAL CONDITION 1: All Negatives have been discussed and were withdrawn, found not related, found not persuasive, or addressed by a technical change.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* ¶ 9.7.1.2)

APPROVAL CONDITION 2: At least 90% of the sum of valid Voting Interest Accept and Voting Interest Reject Votes must be Accept. (*Regulations* ¶ 9.7.1.3)

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

		Accepts		(Accepts + Valid Rejects)			
Approval Rate	=	39	/	39	=	100.0%	≥90%

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

Note: See Regulations § 9.7.2 for further information.

)	K	Globally Approved (No Ratification Ballot needed): Line Item 1 meets the Letter Ballot approval conditions for the global technical committee.
		Need a Ratification Ballot: Line Item 1 meets the Letter Ballot approval conditions for the TC Chapter and a Ratification Ballot will be issued to validate technical changes.

## **Line Item 2 Adjudication**

## II. Tally

Standards staff to fill in.

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* ¶ 9.7.1.1)

#### **Voting Tally:**

Voting Interest:	Returned Votes		Distribution		Return Rate	
Letter Ballot	54	÷	89	=	60.7%	≥60%
Intercommittee Ballot	19					
Voting Interest Reject(s)	0		Total	Vote	rs with Rejects	0
Voting Interest Accept(s)	40					

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

## III. Rejects

There was no reject

## 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

# 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* ¶ 9.7.1.2)

APPROVAL CONDITION 2: At least 90% of the sum of valid Voting Interest Accept and Voting Interest Reject Votes must be Accept. (*Regulations* ¶ 9.7.1.3)

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

		Accepts		(Accepts + Valid Rejects)			
Approval Rate	=	40	/	40	=	100.0%	≥90%

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

Note: See Regulations § 9.7.2 for further information.

X	Globally Approved (No Ratification Ballot needed): Line Item 2 meets the Letter Ballot approval conditions for the global technical committee.
	Need a Ratification Ballot: Line Item 2 meets the Letter Ballot approval conditions for the TC Chapter and a Ratification Ballot will be issued to validate technical changes.

# **Line Item 3 Adjudication**

# II. Tally

Standards staff to fill in.

Returned Votes		Distribution		Return Rate	
54	÷	89	=	60.7%	≥60%
19					
2		Total	Vote	rs with Rejects	2
34					
	54 19	54 ÷ 19	54 ÷ 89  19  2 Total	54 ÷ 89 = 19 2 Total Vote	54 ÷ 89 = 60.7%  19  2 Total Voters with Rejects

# III. Rejects

Voting Interest Reject 1 (Voting Interest Name: TEL) Voter Reject 1 (Voter: Lauren Crane/Tokyo Electron)

Negative 1

	Referenced Section/ Paragraph	*TF/TC Chapter to fill in, including text in the ballot if necessary.  LI3 7.3
Negative	Negative Text	*Coriginal complete Negative text (e.g., issue, justification, suggestion) should be copied.  Perceived Problem (PP)  Negative PP – "Interfere with access" is too subjective for consistent evaluation. For example, if door is spring loaded or gravity 'fed' such that it touches active hand, but the active hand can nonetheless achieve the task, is this the foreseen 'interference' that should not occur?  'Hinged" is too limiting. The concern may be related to doors that are other than hinged, (e.g. a swivel).  'Doors" is too limiting. The concern may be relevant to features that are seen as something other than a 'door' (e.g., a panel, a cover)  Proposed Solution (PS)  PS – Change to the effect of 'If there are aperture access covers (e.g., panels, doors) that remain attached for the anticipated task, they should not interfere with aperture access such as requiring being held open by a second person when the related task is anticipated to be a one person task."
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' is mutu	ıally agr	eed ı	upon. (Needs no r	notic	n.)	GO TO "Persuasive" subsection
		otion Reas	and on		Negative is not r	elated.	(Nee	ds ≥2/3 votes to p	oass.	)	
	(ch	neck	one)		Reason		XXX	(			
Rel		otior 2 <sup>nd</sup> l	າ by/ by	Nan	lame (Company)/Name (Company)						
Related	Dis	scus	sion								
				XX	Y-XX N; Motion բ	oassed/f	failed				
			of Vote		[Negative is not related.] < 2/3					GO TO "Persuasive" subsection	
	,				2/3 ≤ [Negative is not related.]					GO TO "Final" subsection → (B)	
				х	Negative is relat	ed and	persu	uasive. (Needs >1/	/3 vo	tes t	to pass.)
	F	Motion and Reason (check one)			Negative is relat	ed and	not p	ersuasive. (Needs	≥ <b>2</b> /3	vot	es to pass.)
	`		ŕ		Reason XXXX						
Po	Motion by/ 2 <sup>nd</sup> by			Pau	Paul Schwab (TI)/Lauren Crane (Tokyo Electron)						
Persuasive	Dis	scus	sion								
lasiv				8 Y-	0 <b>N</b> ; Motion pas	sed					
/e	Pos	ult o	of Vote	x	[Negative is rela persuasive.] > 1			Is a technical change recommended?		Y	GO TO "Address by Technical Change Option" subsection
			one)		[Negative is rela persuasive.] < 2	/3		(check one)	Х	N	GO TO "Final" subsection → (E)
					2/3 ≤ [Negative i and not persuas	ive.] < 9	90%	GO TO "Final" s	ubse	ectio	n → (C)
					90% ≤ [Negative and not persuas	ive.]	ed	GO TO "Not Sign	nifica	ant F	Finding Option" subsection
Address by Technical Change Option		nal s			ecommendation agraph number a		east (	one full sentence	are	requ	iired in "FROM" and "TO"
by Te			FROM:	Sect	ion/Paragraph 🗴	XXX					
chnic	Tech	1	TO: Se	ctior	n/Paragraph xxx						
al Cha	nical		Justific	atio	n (If necessary)						
ange O	Technical Changes		FROM:	Sect	ion/Paragraph 🗴	XXX					
ption	Sé	2	TO: Se	ctior	n/Paragraph xxx						

l												
	Motic	n		Neg	Negative is addressed by the technical change(s).							
	Motic	n by/2 <sup>nd</sup> by	y	Nar	Name (Company)/Name (Company)							
	Discu	ıssion										
I				XX	Y-XX N;	Motion passed/failed.						
		Result of V (check on			2/3 ≤ [N change(	egative is addressed by the technical s).]	GO TO "Incorporation of the Technical Change" subsection					
						e is not addressed by the technical s).] < 2/3	GO TO "Final" subsection → (E)					
		Motion		То	To incorporate the technical change(s).							
I	ncc Tec	Motion by/	2 <sup>nd</sup> b	Name (Company)/Name (Company)								
	Incorporation of the Technical Change	Discussion										
I				XX	Y-XX N;							
	n of t hang	Result o		e	90% ≤ [A	Agree to incorporate.]	GO TO "Final" subsectio → (F)					
	he e	(check	one)		[Disagre	e to incorporate.]>10%	GO TO "Final" subsectio → (E)					
	Us	e of "Not		It is mut significa		eed upon to term the Negative "not	GO TO "Final" subsection  → (D)					
	siç findi	gnificant ng option" eck one)		It is mut		eed upon to term the Negative	GO TO "Final" subsectio → (C)					
ļ	(CII	eck one)		Whethe	r or not th	e Negative is "not significant" is decide	ed by a vote.					
					gative is "not significant".							
	ı	Motion			e is "not s							
	Мо	otion by/	The I	Negative								
	Мо	otion by/ 2 <sup>nd</sup> by	The I	Negative	oany)/Nar	ignificant".	GO TO "Final" subsectio					
	Мо	otion by/	The I	e (Comp	oany)/Nar X <b>N</b> ; Motio	ignificant". me (Company)	GO TO "Final" subsection → (D)					
	Мо	otion by/ 2 <sup>nd</sup> by	The I	e (Comp	oany)/Nar X <b>N</b> ; Motio	ignificant". me (Company) on passed with simple majority	GO TO "Final" subsectio → (D) GO TO "Final" subsection → (C)					
	Мо	otion by/ 2 <sup>nd</sup> by	The I	Negative e (Comp XX Y-XX XX Y-XX	oany)/Nar X <b>N</b> ; Motio X <b>N</b> ; Motio	ignificant".  me (Company)  on passed with simple majority  on failed with simple majority	GO TO "Final" subsection  → (D)  GO TO "Final" subsection  → (C)  position)					
	Mo	otion by/ 2 <sup>nd</sup> by	The I	e (Comp XX Y-XX XX Y-XX	oany)/Nar × N; Motion × N; Motion	ignificant".  me (Company)  on passed with simple majority  on failed with simple majority  Withdrawn (counted under h in disp	GO TO "Final" subsectio → (D) GO TO "Final" subsectio → (C) position)					
	Md:	otion by/ 2 <sup>nd</sup> by Vote	The I	e (Comp XX Y-XX XX Y-XX	x N; Motion X N; Motion X N; Motion X N; Motion A)	ignificant".  me (Company)  on passed with simple majority  on failed with simple majority  Withdrawn (counted under h in disp  Not related (counted under i in disp  Related and not persuasive (significa  Not significant (counted under j in d	GO TO "Final" subsectio  → (D)  GO TO "Final" subsectio  → (C)  position)  position)  nt)					
	Md:	votion by/ 2 <sup>nd</sup> by  Vote	The I	e (Composition of Composition of Com	X N; Motion X D; M	ignificant".  me (Company)  on passed with simple majority  on failed with simple majority  Withdrawn (counted under h in disp  Not related (counted under i in disp  Related and not persuasive (significant of the counted under j in decent of the counted under j in	GO TO "Final" subsection  → (D)  GO TO "Final" subsection → (C)  position)  not)  iisposition)  DOCUMENT FAILS					
	Md (( ap	votion by/ 2 <sup>nd</sup> by  Vote	Name	e (Composition of Composition of Com	× N; Motion X N; Motion X N; Motion A) B) C)	ignificant".  me (Company)  on passed with simple majority  on failed with simple majority  Withdrawn (counted under h in disp  Not related (counted under i in disp  Related and not persuasive (significa  Not significant (counted under j in d  Related and persuasive and not	GO TO "Final" subsection  → (D)  GO TO "Final" subsection → (C)  position)  position)  itsposition)  DOCUMENT FAILS					

# **Line Item 4 Adjudication**

# II. Tally

Standards staff to fill in.

Voting Interest:	Returned Votes		Distribution		Return Rate	
Letter Ballot	54	÷	89	=	60.7%	≥60%
Intercommittee Ballot	19					
Voting Interest Reject(s)	2		Total	Vote	rs with Rejects	2
Voting Interest Accept(s)	38					

# III. Rejects

Voting Interest Reject 1 (Voting Interest Name: LAM) Voter Reject 1 (Voter: Sean Larsen/Lam Research)

Negative 1

	alive i							
	Referenced Section/ Paragraph		TC Chapter to fill in, ir	essary.				
Negative	Negative Text	*Original complete Negative text (e.g., issue, justification, suggestion) should be copied.  The flow chart seems to hugely deprioritize the access requirements in the SESC. With systems getting taller and platforms becoming more common, this is needed for more tasks that have minimal lifting.  Suggestion / Justification This is fine for the MMH tasks, but I think another flow chart or more instructions are needed. Rewrite as appropriate.						
TFi	input (optional)							
	Withdrawal (check one)		x No Negative withdrawal made by Voter.		GO TO "Related" subsection			
			Withdrawal document r MM/DD/YYYY.	received by Standards staff on	GO TO "Final" subsection → (A)			
	Motion and		'Related' is mutually ag	reed upon. (Needs no motion.)	GO TO "Persuasive" subsection			
	Reason		Negative is not related.	(Needs ≥2/3 votes to pass.)				
Rel	(check one)		Reason	xxxx				
Related	Motion by/ 2 <sup>nd</sup> by	Nan	ne (Company)/Name (C	Company)				
	Discussion							
		XX Y-XX N; Motion passed/failed.						

	1								00.70 %				
	Result of Vote (check one)			[Negative is not rel	ated.] < 2	2/3		GO TO "Persuasive" subsection					
	(cl	neck	cone)		2/3 ≤ [Negative is r	not relate	ed.]		GO TO "Final" subsection → (B)				
		Matianand			Negative is related	egative is related and persuasive. (Needs >1/3 votes to pass.)							
	Motion and Reason (check one)				Negative is related	legative is related and not persuasive. (Needs ≥2/3 votes to pass.)							
	(GIICON OIIC)			Reason	XXX	«Χ							
P	M	otio 2 <sup>nd</sup>	n by/ by	Pau	l Schwab (TI)/Sean	Larsen (	Lam Research)						
ers	Di	scu	ssion										
uas				8 Y-	- 0 <b>N</b> ; Motion passe	d							
Persuasive	[Ne			x	[Negative is related persuasive.] > 1/3	d and	Is a technical change recommended?	Y	GO TO "Address by Technical Change Option" subsection				
		(check one) [h			[Negative is related persuasive.] < 2/3		(check one)	x N	GO TO "Final" subsection → (E)				
					2/3 ≤ [Negative is r and not persuasive	e.] < 90%	GO TO "Final" subsection → (C)						
					90% ≤ [Negative is and not persuasive		Finding Option" subsection						
	Tech	nica	al Chang	je Ro	ecommendations	··1							
	Original section/paragraph number and at least one full sentence are required in "FROM" and "TO" fields.												
			FROM:	Sect	tion/Paragraph XX	<b>(</b>							
Addr	_	1	TO: Se	ctior	n/Paragraph xxx								
Address by	Technic		Justific	atio	n (If necessary)								
-	ical Changes		FROM:	Sect	tion/Paragraph XX	(							
Technical Change Option	nges	2	TO: Se	ctior	n/Paragraph xxx								
nange			Justific	cation (If necessary)									
Optio	Moti	on			Negative is ad	Negative is addressed by the technical change(s).							
3	Moti	on b	y/2 <sup>nd</sup> by	,	Name (Compa	Name (Company)/Name (Company)							
	Disc												
					XX Y-XX N; M	otion pa	ssed/failed.						
	Result of Vote (check one)					gative is	addressed by the te	echnical	GO TO "Incorporation of the Technical Change" subsection				

						[Negative change(s	e is not addressed by the technical	GO TO "Final" subsection  → (E)			
		Motion		To incorporate the technical change(s).							
	Inc Te	Motion by/2 <sup>nd</sup> by			Name (Company)/Name (Company)						
	Incorporation of th Technical Change	Discussion				· ·					
	orati ical				VV 1	Z VV NI. N	Antino properties				
	on Ch				XX	X Y-XX N; Motion passed/failed.  GO TO "Final" subsect					
	of th	Result o				90% ≤ [A	gree to incorporate.]	→ (F)			
	the ge	(check one)			[Disagree to incorporate.]>10%		e to incorporate.]>10%	GO TO "Final" subsection → (E)			
7	This option can be used only "if the TC Chapter finds a Negative not persuasive by a vote equipment of the persons voting on the action". (Regulations ¶ 9.6.4.4.2)										
lot Siç	Us	e of "Not			mutı ifica		ed upon to term the Negative "not	GO TO "Final" subsection → (D)			
Not Significant Finding Option	significant finding option" (check one)				mutı nifica		ed upon to term the Negative	GO TO "Final" subsection → (C)			
ıt F	(01)	,		Whether or not the Negative is "not significant" is decided by a vote.							
indi	ı	Motion	The	Neg	ative	is "not si	gnificant".				
ng Op		otion by/ 2 <sup>nd</sup> by	Nam	ne (C	Company)/Name (Company)						
tion		Vote		XX '	Y-XX N; Motion passed with simple majority			GO TO "Final" subsection → (D)			
		VOLE		XX Y-XX N; Motion failed with simple majority		n failed with simple majority	GO TO "Final" subsection → (C)				
					(4	A)	Withdrawn <mark>(counted under h in dis</mark>	position)			
					(1	(B) Not related (counted under i in d		isposition)			
	(0	check if			(	C)	Related and not persuasive (significa	nt)			
Final		plicable)			(1	D)	Not significant (counted under j in d	lisposition)			
<u>a</u>			х			E)	Related and persuasive and not addressed by technical change	DOCUMENT FAILS			
		check if			(	F)	Addressed by technical change (cou	nted under k disposition)			
	ap		Con	nmer	nt generat	ted. See Section V-(ii) Comment # X					

### Checks for Entire Document Including All Approved Line Items

## VIII. Safety Check

Note: This Safety check <u>applies to the entire Standard or Safety Guideline</u> including all the approved Line Items. See § 15 of the *Regulations* for further information.

_											
			<b>This is not a Safety Document</b> , when all safety-related information is removed, the Document is still technically sound and complete. ( <i>Regulations</i> ¶ 8.7.1)								
Motion	x	Th tec	<b>This is a Safety Document</b> , when all safety-related information is removed, the Document is not technically sound and complete. ( <i>Regulations</i> ¶ 8.7.2)								
		х		ecklist ( $Regulations$ ¶ 15.3) is complete and has been included with the Document the balloting process. ( $Regulations$ ¶ 15.1.2)							
	Motion by/2 <sup>nd</sup> by			Paul Schwab (TI)/Sean Larsen (Lam Research)							
	Discussion			None							
	Vote			6 Y-0N; Motion passed							

# IX. Intellectual Property (IP) Check

Note: This IP check <u>applies to the entire Standard or Safety Guideline</u> including all the approved Line Items. See § 16 of the *Regulations* for further information.

Х		C Chapter meeting chair asked those participating, if they were aware of any potentially rial patented technology or copyrighted items* in the Standard or Guideline. ( <i>Regulations</i> ¶											
	Х	GO TO SECTION X.											
		GO TO SECTION X.											
		use o	of such ma	terials i	erial patented technology or reproduction of copyrighted items is known and terials is technically justified by the TC Chapter, but an LOA or copyright r some of the item(s) has NOT been obtained or presented to the TC Chapter.								
	<b>Z</b>		Ask ISC f	Ask ISC for special permission to publish.									
	Motion		Quit activ	ty.									
	ň		Wait for L	OA for	OA for patented technology or release of copyrighted items.								
	Mot	ion by	y/2 <sup>nd</sup> by	Name	ne (Company)/Name (Company)								
		Discussion			XXXX								
		Vot	te	XX Y-XX N									
	_	inal A	ction		Motion passed								
	Final Action				Motion failed								

<sup>\*</sup> Note: Such potentially material patented technology or copyrighted items might have become known since the Standard or Safety Guideline was last reviewed, or might become relevant due to this Letter Ballot.

# X. Action for This Document

a	X	Line SC fo	item(s) [1] and [3] passed TC Chapter review as balloted and will be forwarded to the ISC A&R or procedural review.					
Line item(s) [X], [X] and [X] passed TC Chapter review with editorial changes and will to the ISC A&R SC for procedural review.								
Motion (Check all applicable items)	item(s) [X], [X] and [X] passed TC Chapter review with technical changes and with or without rial changes and will be forwarded to the ISC A&R SC for procedural review. A Ratification t will be issued to verify the technical changes.							
ls)	X	Line	ne item(s) [3] and [4] failed TC Chapter review and will be returned to the TF for rework.					
		Line	item(s) [X], [X] and [X] failed TC Chapter review and work will be discontinued.					
Motion by	y/ 2n	d by	Paul Schwab (TI)/Bert Planting (ASML)					
Discussion			None					
Vo	te		7 Y-0 N					
Einal A	Final Action		x Motion passed					
Final A			Motion failed					

#### Standards staff to record the result of the A&R procedural review here:

		Line item(s) [X], [X] and [X] are Approved for publication								
A&R		Line item(s) [X], [X] and [X] are Approved pending acceptance of the Ratification Ballot								
710/11		Line item(s) [X], [X] and [X] are Not approved								
	Reason:									