

# Record of Letter Ballot Review by TC Chapter for Procedural Review

Region/Locale: **North America**

Global Technical Committee: **Liquid Chemicals**

TC Chapter Cochairs: **Don Hadder (Intel), Steven Rogers (KMG Chemicals), Laura Ledenbach (PeroxyChem/Evonik), Koh Murai (MegaFluid Systems)**

Standards Staff: **Laura Nguyen**

	Scheduled in Background Statement	Actual
Date	TBD	02/17/2021
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
6600	New Standard: Guide for Drain Segregation for Semiconductor Manufacturing Tools to Support Site Water Reuse

## 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* ¶ 9.6.2.1.1)

Voting Tally (with example values):

Voting Interest:	Returned Votes		Distribution		Return Rate	
Letter Ballot	65	÷	105	=	61.9%	≥60%
Intercommittee Ballot	32					
Voting Interest Reject(s)	1		Total Voters with Rejects		1	
Voting Interest Accept(s)	38					

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

<b>Negative</b>	<b>Referenced Section/ Paragraph</b>	A7-6, A8-4.1, A8-6.1, A8-7.1, A8-7.2, A9-3.4, A9-3.5			
	<b>Negative Text</b>	<p>Negative/ Use of "shall" to express requirement in "Guide" subtype Standard is not allowed.</p> <p>In all such instances except in the case "shall" appears in SEMI provided standard NOTICE need to be corrected.</p> <p>[Justification] Style Manual 4-5(8) clearly forbids use of "shall" in "Guide" subtype of Standard.</p> <p>[Suggestion] Replace "shall" with "should". Or change the Standard subtype to "Practice"</p>			
	<b>TF input (optional)</b>				
<b>Withdrawal (check one)</b>	<input checked="" type="checkbox"/>	No Negative withdrawal made by Voter.		<b>GO TO "Related" subsection</b>	
	<input type="checkbox"/>	Withdrawal document received by Standards staff on MM/DD/YYYY.		<b>GO TO "Final" subsection → (A)</b>	
<b>Related</b>	<input checked="" type="checkbox"/>	'Related' is mutually agreed upon. <b>(Needs no motion.)</b>		<b>GO TO "Persuasive" subsection</b>	
	<input type="checkbox"/>	Negative is not related. <b>(Needs ≥2/3 votes to pass.)</b>			
	<input type="checkbox"/>	Reason	XXXX		
<b>Persuasive</b>	<input checked="" type="checkbox"/>	Negative is related and persuasive. <b>(Needs &gt;1/3 votes to pass.)</b>			
	<input type="checkbox"/>	Negative is related and not persuasive. <b>(Needs ≥2/3 votes to pass.)</b>			
	<input type="checkbox"/>	Reason	XXXX		
	<b>Motion by/ 2<sup>nd</sup> by</b>	Paul Kerr (Intel) / Slava Libman (FTD Solutions)			
	<b>Discussion</b>	None.			
	<b>Result of Vote (check one)</b>	11 Y-0 N; Motion passed.			
<input checked="" type="checkbox"/>	[Negative is related and persuasive.] > 1/3	<b>Is a technical change recommended? (check one)</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>GO TO "Address by Technical Change Option" subsection</b>
<input type="checkbox"/>	[Negative is related and not persuasive.] < 2/3		<input type="checkbox"/>	<input type="checkbox"/>	<b>GO TO "Final" subsection → (E)</b>
<input type="checkbox"/>	2/3 ≤ [Negative is related and not persuasive.] < 90%	<b>GO TO "Final" subsection → (C)</b>			
<input type="checkbox"/>	90% ≤ [Negative is related and not persuasive.]	<b>GO TO "Not Significant Finding Option" subsection</b>			
<b>Add</b>	<b>Technical Change Recommendations</b>				
<b>ress</b>	<b>Original section/paragraph number and at least one full sentence are required in "FROM" and "TO" fields.</b>				

Technical Changes	1	<p><b>FROM: Section/Paragraph <a href="#">A7-6.2</a>, <a href="#">A8-4.1</a>, <a href="#">A8-6.1</a>, <a href="#">A8-7.1</a>, <a href="#">A8-7.2</a>, <a href="#">A9-3.4</a>, <a href="#">A9-3.5</a></b></p> <p>A7-6.2 Electrical cabinets shall be rated NEMA 4 if located in areas prone to leakage of water or chemical from pipes or equipment.</p> <p>A8-4.1 Where a full linear label cannot fit, the following exceptions shall be permitted, prioritized in the listed order:</p> <p>A8-6.1 All pipe-labeling requirements apply to outer containments. When multiple services have a common containment, the label shall identify all hazards.</p> <p>A8-7.1 Chamber/component destination labels shall be placed at all valves/sticks/GIB box's in the FAB. They shall be viewable from view tiles.</p> <p>A8-7.2 At minimum, directional arrows and flow stream ID's shall be placed as close as possible to tool POCs.</p> <p>A9-3.4 <i>Pressure, Temperature, etc.</i> — Materials and components shall be capable of operating up to 10 bar (150 psig) and up to 85°C.</p> <p>A9-3.5 <i>Accessibility</i> — Sampling ports shall be accessible to allow for easy operation and flushing and getting a one-liter sample container in place directly adjacent to the output without possibility of outside contamination.</p> <p><b>TO: Section/Paragraph <a href="#">A7-6.2</a>, <a href="#">A8-4.1</a>, <a href="#">A8-6.1</a>, <a href="#">A8-7.1</a>, <a href="#">A8-7.2</a>, <a href="#">A9-3.4</a>, <a href="#">A9-3.5</a></b></p> <p>A7-6.2 Electrical cabinets <del>shall</del> <u>should</u> be rated NEMA 4 if located in areas prone to leakage of water or chemical from pipes or equipment.</p> <p>A8-4.1 Where a full linear label cannot fit, the following exceptions <del>shall</del> <u>should</u> be permitted, prioritized in the listed order:</p> <p>A8-6.1 All pipe-labeling requirements apply to outer containments. When multiple services have a common containment, the label <del>shall</del> <u>should</u> identify all hazards.</p> <p>A8-7.1 Chamber/component destination labels <del>shall</del> <u>should</u> be placed at all valves/sticks/GIB box's in the FAB. They <del>shall</del> <u>should</u> be viewable from view tiles.</p> <p>A8-7.2 At minimum, directional arrows and flow stream ID's <del>shall</del> <u>should</u> be placed as close as possible to tool POCs.</p> <p>A9-3.4 <i>Pressure, Temperature, etc.</i> — Materials and components <del>shall</del> <u>should</u> be capable of operating up to 10 bar (150 psig) and up to 85°C.</p> <p>A9-3.5 <i>Accessibility</i> — Sampling ports <del>shall</del> <u>should</u> be accessible to allow for easy operation and flushing and getting a one-liter sample container in place directly adjacent to the output without possibility of outside contamination.</p> <p><b>Justification (if necessary)</b>  <a href="#">Style Manual 4-5(8)</a> forbids use of “shall” in “Guide” subtype of Standard.</p>
	<b>Motion</b>	Negative is addressed by the technical change(s).
<b>Motion by/2<sup>nd</sup> by</b>	<a href="#">Slava Libman (FTD Solutions)</a> / <a href="#">Paul Kerr (Intel)</a>	
<b>Discussion</b>	None	
<b>Result of Vote (check one)</b>	<input checked="" type="checkbox"/> 2/3 ≤ [Negative is addressed by the technical change(s).]	GO TO “Incorporation of the Technical Change” subsection
	<input type="checkbox"/> [Negative is not addressed by the technical change(s).] < 2/3	GO TO “Final” subsection → (E)
Incorporati on of the	<b>Motion</b>	To incorporate the technical change(s).
	<b>Motion by/2<sup>nd</sup> by</b>	<a href="#">Paul Kerr (Intel)</a> / <a href="#">Slava Libman (FTD Solutions)</a>
	<b>Discussion</b>	None.
		11 Y-0 N; Motion passed.

		<b>Result of Vote (check one)</b>	<input checked="" type="checkbox"/> 90% ≤ [Agree to incorporate.]	<b>GO TO “Final” subsection → (F)</b>
			<input type="checkbox"/> [Disagree to incorporate.] > 10%	<b>GO TO “Final” subsection → (E)</b>
<b>Final</b>	<b>(check if applicable)</b>	<input type="checkbox"/>	<b>(A)</b> Withdrawn <b>(counted under h in disposition)</b>	
		<input type="checkbox"/>	<b>(B)</b> Not related <b>(counted under i in disposition)</b>	
		<input type="checkbox"/>	<b>(C)</b> Related and not persuasive (significant)	
		<input type="checkbox"/>	<b>(D)</b> Not significant <b>(counted under j in disposition)</b>	
		<input type="checkbox"/>	<b>(E)</b> Related and persuasive and not addressed by technical change	<b>DOCUMENT FAILS</b>
		<input checked="" type="checkbox"/>	<b>(F)</b> Addressed by technical change <b>(counted under k disposition)</b>	
	<b>(check if applicable)</b>	<input type="checkbox"/>	Comment generated. <b>See Section V-(ii) Comment # X.</b>	

*This table is needed for each Negative.*

## Negative 2

<b>Negative</b>	<b>Referenced Section/ Paragraph</b>	APPENDIX 7		
	<b>Negative Text</b>	<p>Negative/ The content and recommendations do not pass the test defined in the §8.7 of the Regulations. If all safety-related information is removed from Appendix 7 it is not technically sound and complete anymore. Since Appendices are the official part of the Standard even when only one of the Appendices becomes not technically sound makes entire document not technically sound and complete.</p> <p>[Justification] §8.7 of the Regulations [Suggestion] Remove Appendix 7. In addition, maybe a section titled “Safety Consideration” can be added as long as the section to indicate something like “This Guide does not address the safety aspect of drain segregation for semiconductor manufacturing tool or the Fab in which semiconductor manufacturing tools are installed. It is the responsibility of the manufacturing tool user to ensure all applicable safety regulations are observed.</p>		
	<b>TF input (optional)</b>			
	<b>Withdrawal (check one)</b>	<input checked="" type="checkbox"/>	No Negative withdrawal made by Voter.	<b>GO TO “Related” subsection</b>
		<input type="checkbox"/>	Withdrawal document received by Standards staff on MM/DD/YYYY.	<b>GO TO “Final” subsection → (A)</b>
<b>Related</b>	<b>Motion and Reason (check one)</b>	<input checked="" type="checkbox"/>	‘Related’ is mutually agreed upon. <b>(Needs no motion.)</b>	<b>GO TO “Persuasive” subsection</b>
		<input type="checkbox"/>	Negative is not related. <b>(Needs ≥2/3 votes to pass.)</b>	
<b>Persuasive</b>	<b>Motion and Reason (check one)</b>	<input checked="" type="checkbox"/>	Negative is related and persuasive. <b>(Needs &gt;1/3 votes to pass.)</b>	
		<input type="checkbox"/>	Negative is related and not persuasive. <b>(Needs ≥2/3 votes to pass.)</b>	
		<input type="checkbox"/>	Reason	XXXX

	<b>Motion by/ 2<sup>nd</sup> by</b>	Paul Kerr (Intel) / Slava Libman (FTD Solutions)					
	<b>Discussion</b>	None					
	<b>Result of Vote (check one)</b>	11 Y-0 N; Motion passed.					
		<input checked="" type="checkbox"/>	[Negative is related and persuasive.] > 1/3	<b>Is a technical change recommended? (check one)</b>	<input checked="" type="checkbox"/>	Y	GO TO "Address by Technical Change Option" subsection
		<input type="checkbox"/>	[Negative is related and not persuasive.] < 2/3		<input type="checkbox"/>	N	GO TO "Final" subsection → (E)
<input type="checkbox"/>		2/3 ≤ [Negative is related and not persuasive.] < 90%	GO TO "Final" subsection → (C)				
<input type="checkbox"/>	90% ≤ [Negative is related and not persuasive.]	GO TO "Not Significant Finding Option" subsection					
<b>Address by Technical Change Option</b>	<b>Technical Change Recommendations</b> Original section/paragraph number and at least one full sentence are required in "FROM" and "TO" fields.						
	<b>Technical Changes</b> 1	<b>FROM: Section/Paragraph Appendix 7, 6.7</b> <b>APPENDIX 7</b> <b>GENERAL SAFETY RECOMMENDATIONS</b>  <see Draft Document for renumbering >  6.7 <i>Safety Considerations (Mitigating Unsafe Conditions that Could Result from Water Reuse Activities)</i> — Substantial safety consideration, as seen in Appendix 7, should be part of a water reuse system. The safety considerations protect personnel, site operations, and additionally provide guidance on environmental means for proper disposal, which all ensure a successful water reuse application for a site.					
		<b>TO: Section/Paragraph Related Information (new section), 6.7</b> <b>APPENDIX 7 RELATED INFORMATION 1</b> <b>GENERAL SAFETY RECOMMENDATIONS</b>  <see Draft Document for renumbering >  6.7 <i>Safety Considerations (Mitigating Unsafe Conditions that Could Result from Water Reuse Activities)</i> — Substantial safety consideration, as seen in <del>Appendix 7</del> <u>Related Information 1</u> , should be part of a water reuse system. The safety considerations protect personnel, site operations, and additionally provide guidance on environmental means for proper disposal, which all ensure a successful water reuse application for a site.					
		<b>Justification (if necessary)</b> Change Appendix 7 GENERAL SAFETY RECOMMENDATIONS to Related Information section, thus resolving the tension with the safety guideline definition.					
		<b>Motion</b> Negative is addressed by the technical change(s).					
<b>Motion by/2<sup>nd</sup> by</b>	Paul Kerr (Intel) / Koh Murai (Mega Fluid Systems)						
<b>Discussion</b>	None						
<b>Result of Vote (check one)</b>	11 Y-0 N; Motion passed.						
	<input checked="" type="checkbox"/>	2/3 ≤ [Negative is addressed by the technical change(s).]	GO TO "Incorporation of the Technical Change" subsection				
	<input type="checkbox"/>	[Negative is not addressed by the technical change(s).] < 2/3	GO TO "Final" subsection → (E)				

<b>Incorporation of the Technical Change</b>	<b>Motion</b>	To incorporate the technical change(s).				
	<b>Motion by/2<sup>nd</sup> by</b>	Koh Murai (Mega Fluid Systems) / Paul Kerr (Intel)				
	<b>Discussion</b>	None				
	<b>Result of Vote (check one)</b>	10 Y-0 N; Motion passed				
<input checked="" type="checkbox"/>		90% ≤ [Agree to incorporate.]	GO TO "Final" subsection → (F)			
<input type="checkbox"/>		[Disagree to incorporate.] > 10%	GO TO "Final" subsection → (E)			
<b>Final</b>	<b>(check if applicable)</b>	<input type="checkbox"/>	(A)	Withdrawn (counted under h in disposition)		
		<input type="checkbox"/>	(B)	Not related (counted under i in disposition)		
		<input type="checkbox"/>	(C)	Related and not persuasive (significant)		
		<input type="checkbox"/>	(D)	Not significant (counted under j in disposition)		
		<input type="checkbox"/>	(E)	Related and persuasive and not addressed by technical change	DOCUMENT FAILS	
		<input checked="" type="checkbox"/>	(F)	Addressed by technical change (counted under k disposition)		
	<b>(check if applicable)</b>	<input type="checkbox"/>	Comment generated. See Section V-(ii) Comment # X.			

### Disposition of Voting Interest Reject 1

Check only when the Document has not been failed.

2	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)	
2	Number of Negatives addressed by technical change (Negative becomes not significant)	(k)	
<b>Final</b>	<input checked="" type="checkbox"/>	$g - (h + i + j + k) = 0$	Reject is Not Valid and is not included in the denominator of § VI. Approval Conditions Check
	<input type="checkbox"/>	$g - (h + i + j + k) > 0$	Reject is included in the denominator of § VI. Approval Conditions Check
	<input type="checkbox"/>	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

Note: TC Chapter may choose to address a technical issue that is not part of a Negative received on a Letter Ballot (i.e., a Comment or a reason not addressed by a Vote response) by handling it as a Negative and finding it related and technically persuasive. The TC Chapter may then fail the Document or address such technical issue by using the procedure defined in Regulations § 9.6.1.4.3 to make a technical change to the Document. (Regulations ¶ 9.6.1.4.2.5)

## 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	=	38	/	39	=	97.4%		≥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.

#### 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	<input checked="" type="checkbox"/>	This is not a <b>Safety Document</b> , when all safety-related information is removed, the Document is still technically sound and complete. ( <i>Regulations ¶ 8.7.1</i> )
	<input type="checkbox"/>	This is a <b>Safety Document</b> , when all safety-related information is removed, the Document is not technically sound and complete. ( <i>Regulations ¶ 8.7.2</i> )
	<input type="checkbox"/>	Safety Checklist ( <i>Regulations ¶ 15.3</i> ) is complete and has been included with the Document throughout the balloting process. ( <i>Regulations ¶ 15.1.2</i> )
<b>Motion by/2<sup>nd</sup> by</b>		Paul Kerr (Intel) / Koh Murai (Mega Fluid Systems)
<b>Discussion</b>		None
<b>Vote</b>		10 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.

<input checked="" type="checkbox"/>	The TC Chapter meeting chair asked those participating, if they were aware of any patented technology that might be relevant (see <i>Regulations ¶ 16.3.1.1</i> ) to the Standard or Safety Guideline; or, any copyrighted items or trademarks that are used/reproduced (see <i>Regulations ¶ 16.4.1.2</i> ) in the Standard or Safety Guideline. (Also see, <i>Regulations § 8.8</i> )	
<input checked="" type="checkbox"/>	The question is NOT answered in affirmative (No potentially material patented technology or use/reproduction of copyrighted items/trademarks is known.)	<b>GO TO SECTION X.</b>

## X. Action for This Document

<input checked="" type="checkbox"/>	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.	
<b>Motion by/2<sup>nd</sup> by</b>		Paul Kerr (Intel) / Chuck Dale (Suez)
<b>Discussion</b>		None.
<b>Vote</b>		11 Y-0 N
<b>Final Action</b>		<input checked="" type="checkbox"/> Motion passed
		<input type="checkbox"/> 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.