



ISO/TC 142 "Cleaning equipment for air and other gases"

Secretariat: **UNI**

Committee manager: **Martino Anna Mrs**



N1033 - Replies on comment received on ISO/CD 29461-4

Document type	Related content	Document date	Expected action
Project / Other		2023-12-05	INFO

MB/ NC ¹	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment ²	Comments	Proposed change	Observations of the secretariat
MB -001		3			Terms from the report section will need to be added here or in the definition section (water mass).		Will be added
MB- 002			Figure 6		Salt penetration mass	Add section how to calculate the Salt penetration Mass	Will be added in the report section
MB- 003			Figure 6		Water penetration mass	Consider including Water removal efficiency	Will be added in the report section
MB- 004	1	1			Align the scope definition with ISO 29461 part 2 and assure consistency		In progress, alignment/harmonisation
MB- 005	1	1			Replace "The scope of this procedure includes methods	This procedure defines test methods	Implemented
MB- 006	1	3.2.1		te	Salt needs to be defined and consistently named as NaCl	NaCl	To be implemented
US- 007	1	3.2.1	1	te	The terms salt and NaCl are both used in the standard. In this definitions section the term salt removal efficiency should clearly state this means the ability of the filter to remove salt in the form of NaCl as the Na is what is being measured in the procedure. Salt is a more general term.	Change the sentence to state "... filter to remove salt in the form of NaCl from air ...". Then change all future references where appropriate from "NaCl" to salt.	Same as no 6
US- 008	1	3.2.2	1	ed	The terms used in the reporting template need to be added to this definitions section, such as "water mass" etc.	Add definitions for the additional terms used in the report template.	To be implemented

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Template for comments and secretariat observations

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MB-009		4		ed	Inconsistency in the use of abbreviations	Abbreviations; should be written fully the first time and used consistently	To be implemented
US-010		4		ed	The abbreviations CV and RH are missing.	Add definitions for the abbreviations CV and RH.	To be implemented
MB-011	13	5			Add a third criteria	Point c) should be added: Adverse pressure reaction (ref section 9.1.3)	The test description will be rewritten, not so specific as per now, but in more general format. The 9.1 is determining the stop/fail
US-012		5		te	A third test stop criteria exists, that of reaching a high pressure loss and so this needs adding.	Add c) adverse pressure reaction to moisture or salt loading.	Same as no 11
MB-013	9	6.1.1			Change/add figure 1	Figure 1 needs to be updated, e.g.: - 3 inlets should be changed to 1 or 2 - P.C. to be replaced by SFP - number of drains should be considered Consider if the term "module" should be changed to "section" and defined. Consider showing basins and ball valves in the figure.	Figure 1 has been redrawn
US-014		6.1.1	Fig 1	te	Figure 1 needs to be updated to change the P.C.'s to SFP sampling point and the three salt loading spray injection tubes should be reduced to two (1x salt injection, 1x water injection). Fig B.1 (System) needs updating also.	Update figure 1 to change the P.C.'s to SFP sampling point and change the three salt loading water spray tubes to two (1x salt injection, 1x water injection). Update Fig B.1 also.	Same as no 13
MB-015	11	6.2.1			Delete the sentence: A positive pressure		Implemented

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					arrangement is not...inlet systems.		
MB- 016	5	6.2.1			the proposed offshore inlet system	Delete offshore inlet	Implemented
MB- 017	8	6.2.1		te	Gloss number 25%	Gloss level 20% acc. ISO 2813	Implemented
US- 018		6.2.4		te	A section on the measurement of Relative Humidity should be added, Measuring humidity at >90 - 95% is difficult and usually requires a heated probe measurement device which are quite expensive. The tolerance for measurement accuracy should also be added, especially above 90%RH.	Add a section on the measurement of Relative Humidity, to include advice on the type of instrument required to measuring humidity at >90 - 95%, i.e. a heated probe measurement device. The tolerance for measurement accuracy should also be added, especially above 90%RH, suggest +-2%RH	A section 6.2.6 concerning RH measurement will be added with tolerance and guidance of measurement technology (preferred sensor type)
MB- 019	3	6.3			Specification Humidity sensors	Should be specified in a new section 6.2.4b "Humidity sensors"	Is similar to no 18, will be solved by the action in no 18
MB- 020	9	6.3.1			SFP measures sodium content, not sodium chloride content. Section needs to be added	Section needs to be added	Accepted, Section of Sodium chloride content to be added
MB- 021	0	6.3.1			Specify the Sodium Flame Photometer to be suitable for measurements in air (not liquid).		To be added
DE- 022		6.3.1		TE	Specification of the sodium flame photometer "The sensitivity of the sodium flame photometer shall be 10 ng/m ³ or better." : According to discussions with test equipment manufacturers the current available sodium flame photometers has a much higher detection limit than 10 ng/m ³ (by several multiples of it). As the sensitivity of this devise is of most importance for the standard, this must be verified.	Please check if sodium flame photometers are available on the market with this specification and give an example for such a device (manufacturer / model) – if not possible in the standard (usually not allowed to mention manufacturers) then at minimum within the response of the comment.	There are sodium flame photometers that can fulfil the requirement, tests have been done. An appropriate example will be given, although not mentioning a sp
US-		6.3.1		te	Note, the SFP will measure the amount of Na, not	Add a section that describes how to convert	Accepted, similar to #20

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023					NaCl, so additional text needs to be added to describe how to convert from Na to NaCl (molar masses etc?), it is a simple ratio.	concentration of Na in air to NaCl in air.	
MB-024	6	6.4.1			Recommended replaced by required		Accepted, "recommended" will be used.
MB-025	0	6.5.1			Consider including nozzle flushing/cleaning if the test cycle is not continuous/interrupted.		Should be included. Work initiated
MB-026	2	6.5.1		te	30/10 w/w	30 weight%	30 g NaCl with 100g Water
MB-027	3	6.6			Water flow	Mass flow	Changed
MB-028	1	6.6			Replace water spray	Water fogging	Changed
MB-029	0	6.6			Replace water spray device	Water fogging device	Changed
US-030		6.6		te	A droplet size range for the water spray device should be specified as this is likely to be important and as the standard specifies water fog and dual fluid nozzles. ISO 29461 Part 2 specifies a droplet size requirement.	Add a droplet size requirement, see ISO 29461 part 2 for an example.	use the ISO 29461-2 specification
US-031	2	6.6	1	te	Text "Adjusted by compressed air and water flow velocity". Water flow velocity should be changed to water volume flow rate or water pressure. As these are the variables that will generally be measured and controlled. It would be unusual to measure and adjust water flow velocity.	Change "water flow velocity" to "Water volume flow rate or water pressure"	Removed velocity, used "water mass flow"
MB-032	1	7.1.2			Add specific ISO revision? Check ISO practice.		Accepted, will check the ISO practice

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MB-033	4	7.2.1			8000	Add footnote "or the maximum design flow rate for the test rig".	Implemented
US-034	4	7.2.2	1	ed	States "meeting criteria set in 6.3.1, but section 6.3.1 does not specify any criteria to be met.	Change the last sentence to say "The measurements shall be made with the SFP."	No action, the description is OK
MB-035	7	7.2.3			mean values	arithmetic average	Implemented
MB-036	0	9.1.1			Change to bullet points	Water bypasses the tested object and visible droplets are visible downstream. Document the evidence by adding a picture to the report.	Changed to bullet points with improved description
US-037		9.1.1		te	The stop criteria is stated as "water bypasses the test object" This needs to be better defined, do you mean if water is measured in the basins or if one droplet is seen on the back of the pleat pack? If a droplet on pleat pack is the criteria, then what is the purpose of the water collection basins?	Add a description of what is meant by water bypassing the test object and suggest it is water collected in the basins or visible water on the floor of the downstream duct.	Will be implemented, see also no 36
MB-038	0	9.1.2			Change to bullet points	The test time exceeds 120 hours	See no 36
MB-039	0	9.1.3			Change to bullet points	Pressure drop test object exceeds 1000 Pa	See no 36
MB-040	3	9.3.4			Reduce the interval to less than 7 days		Accepted, the final requirement will be as follows: "the test shall always be started

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							with fresh solution"
MB-041	2	9.3.4			No specification in Annex A	Water level at the airflow rate of the generator still needs to be included in the standard.	To be included
US-042	2	9.3.4	1	te	States "it is at the appropriate level as specified in Annex A. Annex A does not specify the water level. Also, the airflow rate for the salt generator is also not specified or the temperature of the air to be supplied to it.	Add a value for; the water level and airflow rate for the salt generator and air temperature setting at the inlet or outlet of the salt generator	To be added
MB-043	4	9.3.5			"at maximum 4 fixation points"	Replace by "and number of fixation points for the system." Text should be harmonised with other ISO standards and avoid specialised fixation for test only; fixation should be identical to one in the field. Installation with other clamping systems can represent a risk.	replaced by ISO 16890-3 text (that part that is relevant at this position)
US-044	2	9.3.5	2	te	Why restrict to a "maximum 4 fixation points"? The manufacturers particular system may use more, which should be allowed.	Change text "at maximum 4 fixation points" to "and number of fixation points", or refer to similar text from ISO 29463 or other standard.	Done, see no 43
US-045		9.4.2	2	te	The test sequence for measurement of salt removal is written as though a single SFP is used and not dual instruments. If this is the intent, then this should be stated clearly, maybe in section 6.3.1	Add a statement that the test method currently utilises a single SFP with a change over valve, to measure both the upstream and downstream salt concentrations. The use of Dual SFP's have not been defined in this version of the standard.	Implemented
MB-046	4	9.4.3			The formula needs to be reviewed.	Consider if it should be "water injected - water collected upstream"	Accepted, will be changed
MB-047	0	9.4.3			In case water bypasses the object, the weight of the downstream water has to be measured at each downstream drain once.		No action
US-048	2	10.1	4	te	Item 3 of this procedure is missing the zero adjustment of the SFP before taking a	Add ", then measure the background concentration and adjust the zero of the SFP" to the end of item 3.	Will change according to suggestion

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					measurement of salt concentration in item 4.		
MB- 049	0	10.6			Add a step to measure salt removal efficiency.		Will change according to suggestion
MB- 050	5	10.7			Measure the water collected in each basin	Check for evidence of water in each basin	No action, is already in place
MB- 051	7	10.8			Add step 29 before 33.		Accepted, step 29 shall be before step 33
MB- 052	11	10.8			Measure the water collected in each basin	Check for evidence of water in each basin	No action, is already in place
MB- 053	1/2	10.9			Add additional step between 38 and 39	Stop the SG	Will be implemented
MB- 054		10.10			Consider to include the last hour of drying and put "stop the SG"		TBD, See no 53
MB- 055		10.10			Consider to add a symbol indicating each check of water in the basins		Figure 4 has been revised
MB- 056		10.10			There should be a blue dot at the beginning of every test		Figure 4 has been revised
US- 057		10.10		te	The salt generator needs to be stopped before the filter is dried at the end of the test.	Add item between 38 and 39, "Stop SG"	TBD, See no 53
US- 058		10.10	Fig 4	te	The point where the water deluge is turned on is missing for the Primary Deluge.	Add to turn on the water deluge (1 hour) at the start of the test.	Figure 4 has been revised
US- 059		10.10	Fig 4	te	Consider adding a third dot type indicating when to check for water collected in the basins.	Add a third dot type indicating when to check for water collected in the basins.	Figure 4 has been revised

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US-060		10.10	Fig 4	te	Stopping the salt generator and the drying hour is missing from the end of the test.	Add stop SG at the end of the test and add one extra hour of drying as per 10.9	Figure 4 has been revised
US-061		11.2	d	te	When recording water penetration observation, also add location on filter.	Change "Water penetration" to "Water penetration and location"	To be implemented
MB-062	0	11.3			Propose change to the reporting template to include information about filter condition at start of the test to allow for testing of filters returned from operation.		Rejected, this document specifies clean filters. Used filters can be tested but it is out of the scope of this document
MB-063	19	11.3			results	Add reason to stop the test	To be implemented
MB-064	11	11.3			Device replace	Equipment	To be implemented
MB-065	12	11.3			Air flow rate (per nozzle)	Per nozzle should be deleted	To be implemented
MB-066	9	11.3			Construction	Filter type	To be implemented
MB-067	8	11.3			Filter media	Media type	To be implemented
MB-068	1	11.3			#name should be blank		To be implemented
US-069		11.3	Fig 5	te	Descriptors, "Filter media" and "Construction" are not that clear, do you mean "Filter media type" and "Type of filter"?	Change "Filter media" to "Filter media type" and "Construction" to "Type of filter"	Accepted, an example will be added for clarity
US-		11.3	Fig 5	te	"Air flow rate (per nozzle)" is not a required	Remove air flow rate (per nozzle)	Accepted, airflow will be

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070					measurement and so will not be available to record		removed.
US- 071		11.3	Fig 5	te	It would be helpful to record the value of Total water captured downstream	Add "Total water captured downstream"	Accepted, there will be salt penetration and water added to the result table
US- 072		11.3	Fig 5	te	The reason for ending the test has not been recorded, so it is not obvious if the filter has passed or failed.	Add "Reason for ending the test"	Accepted, reason to stop the test will be added
US- 073		11.3	Fig 6	te	There is a column for "salt penetration mass" which is a good idea, but nowhere does the standard define how this is calculated and this could be achieved in several different ways, so a section needs to be added to define how this should be calculated.	Add a section to the standard that defines how to calculate the salt penetration mass per cycle.	To be implemented
US- 074		A.1.2.1		ed	The first part in the table, Artnr 1203040, should be 12303040	Change 1203040 to 12303040	To be implemented
US- 075	2	Introduction	3	ed	"wind dust"	Replace with "seasonal dust"	To be implemented
US- 076	10	Introduction	3	ed	ISO unlikely to like the commercial word "profitable"	Remove "and profitable"	To be implemented
US- 077	4	Introduction	4	ed	ISO unlikely to like the commercial word "OPEX"	Remove the last sentence.	To be implemented
US- 078	5	Introduction	8	ed	Text mentions "three different concepts", but these are not explained.	Remove the last sentence.	To be implemented

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ISO_CD 29461-4_ANSI.doc: Collation successful

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Collation of files was successful. Number of collated files: 3

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