
Okoljsko preskušanje – 2-2. del: Preskusi – Preskusi B: Suha vročina

Environmental testing – Part 2-2: Tests – Tests B: Dry heat

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104/371/CDV

COMMITTEE DRAFT FOR VOTE (CDV) PROJET DE COMITÉ POUR VOTE (CDV)

Project number Numéro de projet		IEC 60068-2-2 Ed. 5.0	
IEC/TC or SC: 104 CEI/CE ou SC:	Date of circulation Date de diffusion 2005-05-06	Closing date for voting (Voting mandatory for P-members) Date de clôture du vote (Vote obligatoire pour les membres (P)) 2006-10-07	
Titre du CE/SC:		TC/SC Title:	Environmental Conditions, classification and methods of test
Secretary: Alf Olsson, Sweden Secrétaire:			
Also of interest to the following committees Intéresse également les comités suivants Almost every product related IEC Committee		Supersedes document Remplace le document 104/317/CD – 104/370/MCR	
Functions concerned Fonctions concernées			
<input type="checkbox"/> Safety Sécurité	<input type="checkbox"/> EMC CEM	<input type="checkbox"/> Environment Environnement	<input type="checkbox"/> Quality assurance Assurance qualité

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Titre : Essais d'environnement - Partie 2-2: Essais - Essais B: Chaleur sèche
Title : Environmental testing – Part 2-2: Tests – Tests B: Dry Heat

Introductory note

The Maintenance Team, MT 16 of IEC TC 104 has reviewed this basic IEC Test at several meetings and over a long period of time. The work with the first CD started in Helsinki, February 2002 and continued until the Lindenstruth meeting in April 2003 where it was decided to reformat both the style and the presentation. The comments received on the 2nd CD was presented in Kyoto in November the same year but was only introduced in the draft for a CDV in Massa Martana in October 2004. Although the MT realised that the basis for making major changes of the document was little it still felt it necessary to go ahead with the changes announced in both CDs and in the relevant MCRs. Consequently MT 16 have deleted tests Ba and Bc since they were more severe test than Test Nb, IEC 60068-2-14: Change of temperature.

Secondly it was considered justified to delete the 3% value on the temperature difference between the chamber air and the wall temperatures; Thirdly it is proposed that the test specimen be powered throughout the test were required to and; finally the annexes are removed

Finally a message from the experts of TC 104:

When the revision of IEC 60068-2-1 and 60068-2-2 have been successfully concluded then MT 16 intends to review IEC 60068-3-1.

IF YOU CARE ABOUT THE WORK, THEN YOU SHOULD PARTICIPATE?

Either you come to us or we come to you.

IF YOU AGREE WITH WHAT WE ARE DOING? THEN YOU MUST CONTRIBUTE BY SENDING COMMENTS.

IF YOU DON'T CARE or DON'T AGREE and DON'T PARTICIPATE then there will soon be

NO ONE LEFT TO DO THE JOB FOR YOU.

This project was cancelled in October 2004, see SMB/2924/DL, prior to circulation of the compilation of comments on 104/317/CD.

The comments are attached in Annex A for information.

ATTENTION

ATTENTION

**CDV soumis en parallèle au vote (CEI)
et à l'enquête (CENELEC)**

Parallel IEC CDV/CENELEC Enquiry

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IEC 60068-2-2 Ed.5.0 was cancelled in October 2004, see SMB/2924/DL, prior to circulation of the compilation of comments on 104/317/CD.
The comments are attached below for information.

Annex A

Date 2004	Document 104/317/CD
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National Committee	Clause/ Subclause	Paragraph Figure/Table	Type of comment (General/ Technical/Editorial)	COMMENTS	Proposed change	OBSERVATIONS OF THE SECRETARIAT on each comment submitted
FR1	0			The French National Committee supports the above document, and submits the following comment.		Noted
PL1	0		General	The Polish NC supports removal of the test method A and B from Test Bc and Bd, as well as the numerous discussions on specific cases (annexes).		Agreed
US1	0		Editorial	Redundant Presentation - an expected outcome was a more compact standard, easier to read.	Reduce redundancies	Agreed - The style will be changed to align with IEC 60068-2-1
US2	0		Editorial	Headers from page 16 reference 60068-2-1	Change to 60068-2-2	Agreed
US3	0		Editorial	General description of the test: "fit" instead of "fir" in the second line	Correct spelling to "fit"	Agreed
US4	0	Fig.	Editorial	Figure is not labelled	"C" should be marked on figure	Agreed
US12	0	NEW	Technical	PreConditioning through Final Measurement should be under "Procedure" or "Test Procedure"	Create a new Clause, "Test Procedure"	Agreed
US13	0	NEW	Technical	Create an outline test procedure for Non-heat dissipating specimens:	Create an outline test procedure for Non-heat dissipating specimens: Preconditioning, Initial Measurements, Conditioning, Steady State Conditions, Intermediate Measurements, Recovery, Final Measurements,	Not agreed the basic test procedure is common for all tests
US14	0	NEW	Technical	Create an outline test procedure for Heat-dissipating specimens:	Create an outline test procedure for Heat-dissipating specimens: Preconditioning, Initial Measurements, Conditioning, Steady State	Not agreed the basic test procedure is common for all tests

National Committee	Clause/ Subclause	Paragraph Figure/Table	Type of comment (General/ Technical/Editorial)	COMMENTS	Proposed change	OBSERVATIONS OF THE SECRETARIAT on each comment submitted
					Conditions, Intermediate Measurements, Final Temperature Ramp, Recovery, Test conditions applicable when more than one specimen is tested in the chamber and Specimen with artificial cooling, Final Measurements	
CZ1	0		General, editorial	This is standard for dry heat tests but an many places in the draft, it is written "low temperature" instead of "high temperature" and "temperature is raised" instead of "temperature is declined".	Check all occurrences of expression "low temperature" and correct them to "high temperature" or "elevated temperature", and occurrences of "temperature is raised" to "temperature is declined".	Agreed
SP1	0		General Editorial	From page 15, the standard number is wrong (60068-2-1)	60068-2-2	Agreed
FI1	0		General	1. The test Ba and Bc are rarely used 2. No effect to test result 3. No need for the test Be, because you can use test Ad and specify in the relevant specification the state of the specimen during testing. 4. OK		Noted – Test Ba and Bc will be withdrawn. The requirement for test Be was identified by TC 104 WG1 in its list of deficiencies produced when formulating the IEC 60721-4 standards.
IT1	0		General	The document 104/316/CD is very well done since the common requirements have been merged and the clause references have been aligned to the other 60068-2 standards.	Merge the common requirements and renumber the clause references according to the method used with the other 60068-2 standards.	Noted
GB	0			No Comments		Noted
NL	0			We agree and have no comments		Noted
US6	5,3 - 5,11 6,3 - 6,11 7,3 - 7,9, 7,11, 7,14, 8,3 - 8,9, 8,11, 8,14,		Editorial	For each test variant (Ba, Bb, Bc, Bd, Be) these identical clauses do NOT change: Severities, Preconditioning, Initial Measurements, Conditioning, Steady State Conditions, Intermediate Measurements, Recovery, Final Measurements, Information to be given in the relevant	Consolidate the multiple copies of these identical clauses and refer to them.	Agreed

National Committee	Clause/ Subclause	Paragraph Figure/Table	Type of comment (General/ Technical/Editorial)	COMMENTS	Proposed change	OBSERVATIONS OF THE SECRETARIAT on each comment submitted
	9,3 - 9,9, 9,11, 9,14			specification and Information to be given in the test report.		
CZ2	2		Editorial	Subtitles of standards is necessary to write with upper case letter.	IEC 60068-3-1: Environmental testing – Part 3: Background information – Section One: Cold and dry heat tests. IEC 60068-3-5: Environmental testing – Part 3.5: Supporting documentation and guidance – Conformation of the performance of temperature chambers. IEC 60068-3-7: Environmental testing – Part 3.7: Supporting documentation and guidance – Measurements in temperature chambers for tests A and B with load.	Agreed
PL2	2		Technical		Add IEC 60068-2-14 referred to in clause 1 and IEC 60721 referred to in 5.4.	Agreed
CZ3	4	1 st sentence	Technical	But in subclause 4.3 of IEC 60068-1, “heat-dissipating specimen” is defined as specimen with hottest point temperature of more than 5 K (not 3 K) above the ambient temperature.	A specimen is considered heat-dissipating only if the hottest point on its surface, measured in free air conditions (i.e. with low air velocity circulation), is more than 5 K above the ambient temperature of the surrounding atmosphere after temperature stability has been reached (see 4.8 of IEC 60068-1).	Agreed
FI2	4			The specimen is considered heat-dissipating if the temperature of the hottest point is more than 3 K above the ambient temperature. Should it be 5 K, because 3 K temperature difference is achieved very easy and its might be difficult to divide	more than 5 K	Agreed

National Committee	Clause/ Subclause	Paragraph Figure/Table	Type of comment (General/ Technical/Editorial)	COMMENTS	Proposed change	OBSERVATIONS OF THE SECRETARIAT on each comment submitted
				specimens non heat-dissipating or heat-dissipating specimens.		
PL3	4,1	line 3	Editorial		Correct „Test Aa” to „Test Ba”.	Agreed
CZ4	4,3	1 st sentence	Technical, editorial	“Laboratory standard conditions” are not defined in IEC 60068-1; defined conditions are “standard atmospheric conditions for measurement and tests” according to 5.3.1 of IEC 60068-1. It is necessary to use decimal comma . “High temperature” should be written instead of “low temperature”.	Under <u>standard atmospheric conditions for measurement and tests</u> with an air velocity <0,2 m/s, the specimen shall be switched on or electrically loaded as specified for the <u>high</u> temperature at which the test is to be carried out.	Agreed
PL4	4,3	First line	Editorial	The first sentence should begin with:	„In the chamber under...”	Not agreed
PL5	4,3 5,1	Line 2 Line 3 and 5	Technical		Correct „low temperature” to „high temperature”.	Agreed
CZ5	4,6	Figure 1	Technical	As Bc is test with sudden change of temperature and Bd and Be are tests with gradual change of temperature, denotations “No” and “Yes” at right decide block “Sudden change of temperature?” shall be interchanged.	Interchange “No” and “Yes” at right decide block “Sudden change of temperature?” <u>or</u> change its text to “ <u>Gradual</u> change of temperature?”	Agreed
CZ6	4,6	Figure 1	Editorial	There is superfluous text above the figure. Text in right bottom decide block is partly illegible.	Delete superfluous text above the figure. Modify following text editorially: „Powered during conditioning period?”	Agreed
FI3	4,6	Figure 1		The test Bc is used when sudden change of temperature achieved.	Change in the diagram YES and NO.	Agreed
FR2	4,6	Fig. 1	Technical	In the documents 104/316/CD and 104/317/CD, relationship suffixes between tests A "Cold" and B "Dry heat" are identical: - “d”: with gradual change of temperature that are not powered during the conditioning period - “e”: with gradual change of temperature that are required to be powered throughout the test.	In order to be consistent between the two documents, please proceed to the verification. The answers “Yes” to the test “powered during the conditioning period?” should be Ae and Be.	Agreed

National Committee	Clause/ Subclause	Paragraph Figure/Table	Type of comment (General/ Technical/Editorial)	COMMENTS	Proposed change	OBSERVATIONS OF THE SECRETARIAT on each comment submitted
CZ7	5,1		Editorial	"High temperature" should be instead of "low temperature".	To provide a standard test ...under conditions of <u>high</u> temperature and This procedure is for specimens which are subjected to a <u>high</u> temperature ...	Agreed
SP2	5,1 5,1 6,1 6,8,1 8,1	§ 1 § 2 § 2 § 1 § 1	General Technical	The term "low temperature" is wrong	... elevated temperature ...	Agreed
PL11	5,12		Technical		Add reference numbers of the relevant clauses.	Not agreed
PL12	5,12		Technical	Add the following new item:	x) Mounting should be added	Agreed
DE1	5,13 6,13 7,16 8,16 9,16	Item 5. 7 8. 9. 10. 16.	General	The consideration of the items in the test report shall be restricted in some cases.	In the parentheses should be added (.. if required by the customer only) (.. if existing) (.. details only if agreed by the customer) (.. if not certified by the manufacturer) (.. if relevant to the actual testing process) (.. if relevant to the performance of the specimen(s))	Not Agreed – required by ISO/IEC 17025 Agreed Not Agreed – required by ISO/IEC 17025 Not Agreed – required by IEC 60068-3 series Not Agreed – required by ISO/IEC 17025 Not agreed
		15.	Editorial	"Test Severities" meaning is unclear in the present context	Data on the specimen(s) under test (operating, measuring, monitoring etc.)	Agreed
		xx.	Technical	A new item should be added concerning the use of equipment provided by the customer e.g.	xx. Data on test equipment and software provided by the customer or a third person (if relevant)	Agreed

National Committee	Clause/Subclause	Paragraph Figure/Table	Type of comment (General/Technical/Editorial)	COMMENTS	Proposed change	OBSERVATIONS OF THE SECRETARIAT on each comment submitted
CZ11	5,10,2		Technical	No droplets occur during dry heat test.	Delete this subclause and renumber the others.	Agreed
CZ10	5,4		Technical	There is missing a tolerance of severity temperature.	The severities, as indicated by temperature and duration of exposure, shall be prescribed by the relevant specification <u>and the temperature shall be within ±3 K.</u>	Part agreed Temperature tolerance to be given in the working space sub section of the test procedure
IT2	5,4		Technical	In our opinion the sentences in the items b and c will lead to a too wide number of choices.	Delete item b and c	Not agreed – product committees may need non preferred severities
CZ8	5,3,2,2		Editorial	Text of first sentence is to be stated more precisely.	5.3.2.2 The <u>temperature of incident air delivered to the test specimen shall be within ± 3 K of test severity temperature during the steady state conditions.</u>	Agreed
CZ9	5,3,2,2	NOTE	Technical	Note relates to cold test (IEC 60068-2-1, see 104/316/CD)	Reword or delete the note.	Agreed
PL6	5,3,2,2		Technical		The text should be replaced with the text existing in 9.3.2.1.	Agreed – Paragraph to be reworded
PL7	5,3,2,2	Note	Technical		Delete the Note - not applicable here.	See PL6
PL8	5,7,1	Para 2	Editorial		Move the second paragraph to 5.3.5.	Agreed
PL10	5,8	Title	Technical	For conformity with Figure 1 and to show that it is an integral part of the conditioning, the title should be changed to read:	„Steady state conditioning period”	Not agreed- this is not a conditioning period it is the test.
PL9	5,7,3	Para 2	Editorial	Amend this sentence to read:	„If required by the relevant specification, for steady state conditioning period the specimen...”	Agreed
CZ12	6,1	2 nd para	Editorial	“High temperature” should be instead of “low temperature”.	This procedure is for specimens which are subjected to a <u>high</u> temperature ...	Agreed
CZ18	6,10,2		Technical	No droplets occur during dry heat test.	Delete this subclause and renumber the others.	Agreed
PL13	6,3		Editorial		Add 6.3.1.2 with the text (similar to 5.3.1.2).	Agreed

National Committee	Clause/ Subclause	Paragraph Figure/Table	Type of comment (General/ Technical/Editorial)	COMMENTS	Proposed change	OBSERVATIONS OF THE SECRETARIAT on each comment submitted
PL17	6,3	New subclause	Editorial	Requirements concerning absolute humidity are omitted (see 5.3.4 and IEC 60068-2-2, 14.3).	Add the relevant requirements concerning absolute humidity.	Agreed
CZ15	6,4		Technical	There is missing a tolerance of severity temperature.	The severities, as indicated by temperature and duration of exposure, shall be prescribed by the relevant specification <u>and the temperature shall be within ±3 K.</u>	Part agreed – see CZ10
IT3	6,4		Technical	In our opinion the sentences in the items b and c will lead to a too wide number of choices.	Delete item b and c	Not agreed – see IT2
PL16	6,3,3	Line 2 and 3	Editorial		The last sentence being repetition of 6.3.1.1 should be deleted.	Agreed
CZ13	6,3,2,2		Editorial	Text of first sentence is to be stated more precisely.	6.3.2.2 The temperature of incident air delivered to the test specimen shall be within ± 3 K of test severity temperature during the steady state conditions.	Agreed
CZ14	6,3,2,2	NOTE	Technical	Note relates to cold test (IEC 60068-2-1, see 104/316/CD)	Reword or delete the note.	Agreed
PL14	6,3,2,2		Technical		The text should be replaced with the text as in 9.3.2.1.	Not agreed – however the tolerance shall be restored to ± 2 K
PL15	6,3,2,2	Note	Technical		Delete the Note - not applicable here.	Not agreed – however the note will be reworded
PL19	6,8	Title	Editorial	For conformity with Figure 1 and to show that it is an integral part of the conditioning, the title should be changed to read:	„Steady state conditioning period”	Not agreed see PL10
CZ16	6,8,1	1 st para	Editorial	“High temperature” should be instead of “low temperature”.	The specimen shall then be exposed to the <u>high</u> temperature conditions ...	Agreed
PL18	6,7,3	Para 2	Editorial	Amend this sentence to read:	„If required by the relevant specification, for steady state conditioning period the specimen...”	Agreed
CZ17	6,8,3	1 st and 3 rd paragraphs	Editorial	Temperature is high in dry heat test and it shall be declined after it, not raised.	At the end of this period, the specimen shall remain in the chamber and the temperature shall be	Agreed