EUROVENT CERTIFICATION COMPANY

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OPERATIONAL MANUAL
for the
CERTIFICATION
of
DRIFT ELIMINATORS

OM-14-2009

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Second edition

Material family was introduced (IV.2),
§V.2.b.2 was deleted (part of Certification Manual ed5 p16),
Exclusion clause was added (Appendix A),
Forms were updated (Appendix C).

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I. PURPOSE

The purpose of this manual is to prescribe procedures for the operation of the EUROVENT CERTIFICATION Programme for Evaporative Cooling Equipment Drift Eliminators, in accordance with the EUROVENT Certification Manual.

II. SCOPE

The EUROVENT Drift Eliminators Certification Programme applies to Drift Eliminators used for evaporative water-cooling equipment.

III. BASIC OUTLINE OF THE PROGRAMME

Participation in the EUROVENT Drift Eliminators Certification Programme consists of the following:

III.1 Application

After signing the License Agreement, the Applicant has to submit a file describing the types of Drift Eliminators which are to be qualified by EUROVENT CERTIFICATION according to EUROVENT Rating Standard 9/C/003.

III.2 Qualifying procedure

All drift eliminator types described in the application form shall be tested by an independent test agency in the laboratory assigned by EUROVENT CERTIFICATION. For each drift eliminator, the maximum air velocity shall be determined and registered and the design shall qualify if the performance criteria specified in the relevant Rating Standard are met.

III.3 Repetition procedure

The manufacturer has to ensure that there is conformity between design of the drift eliminator he manufactures and sells and the design described in the application form and then tested. Conformity is verified on an annual basis by the collection of a declaration of conformity from the Participant and inspection of factory or site.

Upon decision of EUROVENT CERTIFICATION, an independent agency could perform at random checking of either the manufacturing facility or sites where the drift eliminators are actually installed. In case of inspection on site, the site must not be older than 3 months.

If the manufacturer makes changes to his design, this will require a new application file and a new test.

III.4 Failure treatment

When the test results fail to comply with the requirements of the relevant EUROVENT Rating Standard, the drift eliminator does not qualify and the certification label is not assigned.

Whenever the manufacturer has changed his design and has not submitted a new application and continues to use the certification label, it is considered as violation of rules.

III.5 Complaint procedure

Under special conditions a complaint procedure may be carried out as described in the EUROVENT CERTIFICATION Manual. The complaint procedure here is limited to the case when a manufacturer uses the EUROVENT CERTIFICATION label in an unauthorised manner.

IV. OPERATION OF THE PROGRAMME

IV.1 Declaration of data

All characteristics shall be expressed in SI Units. Maximum of three (3) significant digits shall be used for drift losses.

Original Equipment Manufacturer: For models submitted by an original equipment manufacturer Form DE-1 will be used, specifying:

- The name of the company
- The name of the model
- The material of the drift eliminator
- One photo of the drift eliminator

Technical form: Submittal for certification of drift eliminator models shall be made in writing and sent by email to EUROVENT CERTIFICATION as an Excel file, Form DE-3, specifying as a minimum:

- Material of the drift eliminator
- Photographs from each side of the drift
- Detailed drawings of the drift eliminator with the following key dimensions:
    - Air travel dimension
    - Thickness
    - Pitch
    - Other dimensions critical for the design

Copies of the forms are part of this manual (see APPENDIX C FORMS).

Confidentiality of Certification Data: All data submitted to EUROVENT CERTIFICATION shall be held confidential except for information authorised to be published on the Website.

IV.2 Models to be tested

Each drift eliminator model submitted shall be tested. Drift eliminators of different *material family* (such as PVC, PP, steel, FRP, etc) *and design* shall be considered as a new *drift* eliminator.

IV.3 Tests at the laboratory

a. General

Scheduled tests shall be performed at designated laboratories by an independent testing agency selected by EUROVENT CERTIFICATION. Units shall be installed in the test facility in accordance with the set-up description provided by the Participant.

The Participant shall bear the cost for un-crating, handling, installing, testing and re-crating of the unit for shipment.

The independent test agency personnel shall install and check out test units. The Participant may review the installation prior to the test. In any case, the Participant must formally approve the installation. No Participant's personnel shall be permitted to participate to the data collection. Participant may review his own test results.

b. Time limitation of acquisition of unit

Deadline for delivery of units to the laboratory together with the technical form completed and the purchase order shall be decided by EUROVENT CERTIFICATION in accordance with the Compliance Committee and the laboratory.

The Participant shall place a purchase order with EUROVENT CERTIFICATION to execute a test and participation to the repetition procedure.

If units, technical form and order are not delivered within the time limits (specified in the notification received from EUROVENT CERTIFICATION), it is considered as violation of rules (see IV.5 “Violation of rules”).

c. Report of tests results

Upon completion of the tests on each unit, the independent test agency will send EUROVENT CERTIFICATION the complete report as a PDF file. EUROVENT CERTIFICATION will forward a copy of the report together with the reporting and test result Form DE-4-5 and eventual re-rate Form DE-6 to the participating company (see APPENDIX C).

Participant has to recover its products one month after receiving the test report. If the units are not recovered after this delay, the laboratory will destroy the units and invoice the manufacturer.

IV.4 Failure treatment

a. General

In case of test failure, the Participant will have four working weeks from the notification of the failure to ask for a second test on the same unit scheduled as per availability of the laboratory and the test agency.

If this second test is successful, the drift eliminator design shall be listed on the EUROVENT CERTIFICATION Website. When the second test is unsuccessful, the drift eliminator design is not qualified and will not carry the EUROVENT CERTIFICATION label.

b. Component failure

If the drift eliminator is damaged and cannot be repaired or replaced at the laboratory, then this is considered as “component failure". Replacements shall then be delivered for a subsequent test; timing to be agreed with the laboratory and the test agency.

IV.5 Violation of rules

In case of violation of rules, such as unauthorised use of the certification label, the Participant shall be notified by EUROVENT CERTIFICATION that the list of all his products will be withdrawn from the Website, within one month, for a period of one year.

To come back to the certification programme, the expelled Participant has to complete the repetition procedure (cf. III.3) of the year for which he has been expelled and provide all necessary documentation for the following repetition campaign.

V. PROMOTION OF THE PROGRAMME

V.1 By EUROVENT CERTIFICATION

The products certified according to the Rating Standard are published on the EUROVENT CERTIFICATION Website: www.eurovent-certification.com.

Beside current models, the Participant shall declare on Form DE-1:

- As deleted, “DEL”, the models for which the production has ceased but stock is still available. Deleted models cannot be selected for test campaign n. The deleted models are displayed on the EUROVENT CERTIFICATION Website as such, with a “DEL” mark. Models deleted for a previous test campaign can only become obsolete.
- As obsolete, “OBS”, the models for which the production has ceased and no stock is available. Deleted models cannot be selected for test campaign n. The obsolete models are withdrawn from the EUROVENT CERTIFICATION Website.

EUROVENT CERTIFICATION will supply, on request, to any interested party, the current status of any Participant or of any model.

The following information pertaining to each model certified shall be published on the EUROVENT CERTIFICATION Web page for Drift Eliminators:

- Name of Company
- Trade or brand name of model
- Model number(s) or designation(s)
- The certified drift eliminator has produced a drift rate less than or equal to 0.01% when tested according to EUROVENT Rating Standard 9/C/003.
- The value over time of this certification is subject to proper installation and maintenance of the drift eliminator and to the respect of adequate manufacturer's recommendations.
- Breakthrough velocity (not certified, for information only).

V.2 By Participants

The participating Company shall indicate participation in the Programme by displaying the appropriate Certification Symbol on all specification sheets and in other literature and software carrying ratings, or claiming certification, of certified models.

The participation to the EUROVENT Certification Programme for Drift Eliminators may further be indicated by:

a. Display of certification symbol on production units

A supplier of evaporative cooling equipment equipped with certified eliminators is entitled to display the certification symbol (see APPENDIX A), in an authorised manner, on his equipment.

1. Regulations regarding display of labels

- **Data on Labels**

No data or other marking shall be added to the label.

- **Location of labels on units**

The supplier of evaporative cooling equipment equipped with certified eliminators may affix the certification symbol at any location satisfactory to him.

The certification symbol may be applied under the following regulations:

- **Design**

The certification symbol shall be identical to the design approved for the symbol (specifications will be supplied by EUROVENT CERTIFICATION) in all respects, including design, dimensions, letter size and style, and colour.

- **Colour**

The acceptable colour combinations consist of green Pantone No. 341 on white or black on white.

b. Display of certification symbol on sheets, literature, software and advertising

1. Publications

The test data are the property of EUROVENT CERTIFICATION and of the Participant. The manufacturer of the drift eliminator is then allowed to use the actual measured values for his own literature, but he cannot mention EUROVENT CERTIFICATION in connection with these data.

The Participant may state in his publications that a specified drift eliminator design has been qualified under test by the EUROVENT CERTIFICATION COMPANY. He may furthermore state that tests were carried out by an independent testing agency according to the isokinetic test method. He may state that the breakthrough velocity has been measured. He may however NOT state that all performance information he publishes has been certified by EUROVENT CERTIFICATION.

2. Non-certified models

If any of the above literature contains references to non-certified models outside of the applied Certification Programme, these may be included providing that they are clearly footnoted and the footnote states:

"Models so marked are not EUROVENT Certified".

APPENDIX A. EXCLUSION CLAUSE

In no event shall EUROVENT or EUROVENT CERTIFICATION be responsible for any damage or adverse consequences resulting from the use by a Participant or its clients of drift eliminators similar to the ones submitted by the Participant to EUROVENT CERTIFICATION for certification purposes.

APPENDIX B. EUROVENT CERTIFICATION LABEL

APPENDIX C. FORMS

C.I. Form DE-1: Declaration file for certification by Original Equipment Manufacturer

Eurovent article n°	Eurovent Classifi-cation	Participant	Trade Name	Distributor	Master article n°	Design Model	Material	Drift rate (%)	Breakthrough velocity (m/s)	Status (DEL/OBS)	Testing year	Update date	Note
	DE/CO												
	DE/CR/NI												
	DE/CR/I												

C.II. Form DE-2: Declaration file for certification by Brand Names

Eurovent article n°	Eurovent Classifi-cation	Participant	Trade Name	Distributor	Master article n°	Design Model	Material	Drift rate (%)	Breakthrough velocity (m/s)	Status (DEL/OBS)	Testing year	Update date	Note
	DE/CO												
	DE/CR/NI												
	DE/CR/I												

C.III. Form DE-3-4-5: Technical form for unit to be tested, Reporting form and Result form

EUROVENT CERTIFICATION PROGRAMME FOR
EVAPORATIVE COOLING EQUIPMENT DRIFT ELIMINATORS
Selected design, sample to be tested, summary of test results and conclusions

REFERENCES[1]				
Company	Example Company	EUROVENT Participant n°	100
Model name	MyModel	Drift eliminator type	Counter Flow
Model number	10	Test Facility	BestCell
Material Family	PVC	Test Agency	BestTest
EUROVENT Article n°	12345	EUROVENT Test n°	3210
Production place name	Example Factory	EUROVENT Factory n°	213

PICTURES AND DRAWINGS (SEE ANNEX) File Names[2]

General Picture	DE MyModel 10 GP.jpg	Drawing 1	DE MyModel 10 draw1.jpg
Picture side 1	DE MyModel 10 pic1.jpg	Drawing 2	DE MyModel 10 draw2.jpg
Picture side 2	DE MyModel 10 pic2.jpg	Drawing 3	DE MyModel 10 draw3.jpg
Picture side 3	DE MyModel 10 pic2.jpg	Other	-

DESIGN

	Declared[2]	Measured[3]	Conclusion[4]
Material	HPVC	as declared	Passed
Air travel dimension [mm]			
Thickness [mm]			
Pitch [mm]			
Other dimensions			Drawing Reference[2]
Dimension A [mm]			draw2
Dimension B [mm]			draw1
Dimension C [mm]			draw1
Dimension D [mm]			draw2
Dimension E [mm]			draw3
Dimension F [mm]	-	-	-

BREAKTHROUGH VELOCITY

Breaktrough velocity [m/s]

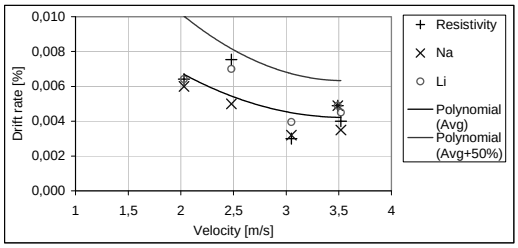
Declared[5]	Measured[3]
4,5	
Average	5,16
Test 1	5,1
Test 2	4,9
Test 3	5,4
Test 4	5,5
Test 5	4,9

DRIFT RATE

	Declared Drift Rate [%][5]	Measured Specific Water Flow [m³/hm²][3]	Measured Velocity [m/s][3]	Measured Drift Rate Resistivity [%][3]	Measured Drift Rate Tracer Na [%][3]	Measured Drift Rate Tracer Li [%][3]	Target Drift Rate [%]
Single Drift rate							=< 0.007
Velocity 4 4 A			3,52	0,00400	0,00350	0,00450	CONCLUSION[4]
Velocity 1 1	0,0084		2,03	0,00642	0,00600	0,00642	PASSED
Velocity 2 2	0,0062		2,48	0,00754	0,00500	0,00700	
Velocity 3 3	0,0046		3,05	0,00300	0,00320	0,00395	
Velocity 4 4 B			3,49	0,00489	0,00489	0,00489	Drift rate avg (%)
Additional test							
Velocity 4 4 (Average)	0,0042		3,505	0,00445	0,00420	0,00470	0,00445
Drift rate (rounded at 3°digit) [%]	0,004			**0,004**	**0,004**	**0,005**	**0,004**

TESTING CONDITIONS

	Air Velocities 1 / 2 / 3 / 4 [m/s]	Specific Water Flow [m³/hm²]
Counter Flow	2.0/ 2.5/ 3.0/ 3.5	20
Cross Flow Non Integrated	1.5/ 2.0/ 2.5/ 3.0	50
Cross Flow Integrated	2.0/ 2.5/ 3.0/ 3.5	70
Tolerance	-	+/- 5%



Applicant/Participant comments and additionnal information[2]

No additional comment

Test Agency comments and additionnal information[3]

No additional comment

EUROVENT CERTIFICATION comments and additionnal information[4]

No additional comment

GENERAL CONCLUSION[4]
PASSED

	For the APPLICANT/ PARTICIPANT	For the TEST AGENCY	For EUROVENT CERTIFICATION
Date	15/03/2009	10/04/2009	25/04/2009
Name	Mr Dupont	Mr Smith	Mr Martin
Title	R&D Manager	Test Engineer	Certification Engineer
Signature			

[1] to be completed by Eurovent Certification according to declaration form DE-1
[2] to be completed by the APPLICANT/PARTICIPANT
[3] to be completed by the TEST AGENCY
[4] to be completed by EUROVENT CERTIFICATION
[5] not manadatory to be declared

C.IV. Form DE-6: Re-rate form

CERTIFICATION PROGRAMME FOR DRIFT ELIMINATORS

RESPONSE FORM AFTER FAILURE ON TESTED UNIT

This response form shall be sent back by fax to EUROVENT CERTIFICATION Company within one month maximum.
Without news from you after this delay, we will re-rate performances and our Website will be automatically updated with re-rated performances.
Our fax number : **00 33 1 49 96 45 10**

Date : _____ Your name : _____ Signature :

According to the document OM-14-2009, you are asked to select one of the following alternatives :

☐ **Ask for a second test on the sample already tested.**

☐ **Ask for a second test on another unit of the same model selected by EUROVENT CERTIFICATION.**

☐ **Re-rate your performance according to the test results, as follows :**

Re-rated data:

Eurovent article n°	Eurovent Classifi-cation	Participant	Trade Name	Distributor	Master article n°	Design Model	Material	Drift rate (%)	Breakthrough velocity (m/s)	Status (DEL/OBS)	Testing year	Update date	Note

Declared data:

Eurovent article n°	Eurovent Classifi-cation	Participant	Trade Name	Distributor	Master article n°	Design Model	Material	Drift rate (%)	Breakthrough velocity (m/s)	Status (DEL/OBS)	Testing year	Update date	Note