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Issued July 2016

OPERATIONAL MANUAL
for the
CERTIFICATION
of
**FORCED CIRCULATION AIR
COOLING AND HEATING COILS**

OM-9-2016

Issued July 2016

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1	Introduction of the certify all and specification of programme scope exclusion	II	4
2	Deletion of definitions section that can be found in RS/7/C/005	deleted	deleted
3	Detail of procedures for OEM and BN in qualification and repetition procedures	III	4
4	Operation and promotion of the programmes in two different sections in consistency with other programmes	IV and V	5 and 12
5	Introduction of factory audits	IV.5 and IV.6g	9 and 12
6	Deletion of complaint procedure section that can be found in Certification Manual	deleted	deleted
7	Deletion of violation of rules section that can be found in Certification Manual	deleted	deleted
8	Introduction of certification process and schedule	APPENDIX A	14
9	Introduction of forms to be filled in	APPENDIX B	16
10	Editorial revisions	VARIOUS	

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I. PURPOSE

The purpose of this manual is to prescribe procedures for the operation of the Eurovent *Certified Performance (ECP)* certification programme for Forced Circulation Air Cooling and Heating Coils, *in accordance with the Certification Manual.*

II. SCOPE

II.1 General

This programme applies to Forced Circulation Air Cooling and Heating Coils operating:

- *with water, +0-50% ethylene-glycol or propylene-glycol mix, acting as cooling or heating fluid*
- *without fans.*

This certification programme does not cover the heat recovery applications.

II.2 Certify-all requirement

Whenever a company participates in the programme for COIL, all forced circulation air cooling and heating coils that are promoted by the applicant/participant to end-users, specifiers, trading companies, contractors by means of paper or electronic catalogue, price list or software within the scope of the programme, shall be certified, in accordance with the relevant Rating Standard. For the COIL programme, the certify-all requirement as defined in the Certification Manual is applicable not only to the European market but worldwide.

III. BASIC OUTLINE OF THE PROGRAMME

Participation in *the* programme consists of the following:

III.1 Application

After signing the Licence Agreement, the Applicant has to fill in the declaration files with all models within the scope of the programme and requirements of the Rating Standard RS/7/C/005 : *software name and version, the software itself, declaration file and relevant literature (see also IV.1).*

III.2 Qualifying procedure

Once the application is completed, the qualification procedure is articulated as follows:

- *For Brand Name (BN) companies, applicable steps of the software checking procedure and audit procedure shall be conducted (see IV.4 and IV.5).*
- *For Original Equipment Manufacturers (OEM), Eurovent Certita Certification checks the software compliance to general (see Certification Manual) and specific (see §IV.4a) requirements and its consistency with the declaration list. Then, Eurovent Certita Certification proceeds to selection based on the declaration list (see IV.2) and requests the performances declaration together with selected units delivery to the laboratory. The independent laboratory staff proceeds to product performance testing on the selected units according to the procedure detailed in §IV.3. A “test-check” (see IV.3d) is then performed by Eurovent Certita Certification to evaluate the test success. In the meantime, an auditor appointed by Eurovent Certita Certification shall audit each manufacturing site (see IV.5).*

If the aforementioned checks prove the compliance with the requirements specified in Operation Manual OM-9 and in Rating Standard RS/7/C/005, the certification is granted. If not, the procedure for failure treatment shall be applied.

When certified, all certified performances and characteristics are published on the Eurovent Certified Performance (ECP) website as specified in §V.1. Once the certificate is received, the participant is entitled to use the certification mark for this range according to applicable requirements (see V.2). It shall be obvious for which products the certification is granted.

III.3 Repetition procedure

Every year, Eurovent Certita Certification checks whether the certified products still fulfil the requirements:

- For Brand Name (BN) companies, applicable steps of the software checking procedure shall be conducted annually (see IV.4).
- For Original Equipment Manufacturers (OEM), repetition tests in the independent laboratory and software checking procedure shall be conducted annually.

When the participant facility presents an ISO 9001 certificate (Covering the manufacturing of products under the scope of this document) the audit is conducted by an auditor appointed by Eurovent Certita Certification every three years, otherwise the audit shall be conducted annually in compliance with the Certification Schedule (see APPENDIX A).

If the results of the aforementioned checks are in accordance with the requirements specified in Operation Manual OM-9 and Rating Standard RS/7/C/005, the certification is maintained for another campaign.

The company receives then a new certificate and the certified ranges are listed on Eurovent Certita Certification website. If not, failure treatment shall be applied.

III.4 Failure treatment

When a range fails to comply with the requirements of the Rating Standard RS/7/C/005, the failure treatment shall be applied. (See IV.6)

III.5 Challenge procedure

Under special conditions a challenge procedure may be carried out as described in the Certification Manual.

IV. OPERATION OF THE PROGRAMME

IV.1 Declaration of data

All characteristics shall be expressed in SI units. Maximum of 3 significant digits shall be used for air flow, capacity, and pressure drop.

Submittal of data shall be made by filling in the forms provided by Eurovent Certita Certification as .xls or .xlsx files. The forms shall be sent by e-mail to Eurovent Certita Certification within the time limits specified in Certification Schedule (see APPENDIX A).

Copies of the forms are part of this manual (see APPENDIX B):

- Declaration file (COIL-1) will be used
 - for manufacturing companies (Original Equipment Manufacturer – OEM) to declare ranges, Basic Model Groups (BMG) and technical data.
 - for Brand Name (BN) companies to identify the corresponding model number of the original equipment manufacturer

- Declaration file (COIL-2) will be used for performance declaration for the units selected.
- Technical data sheet (COIL-3) will be used to complete technical description of all components raw material or incoming goods for the units selected.

The applicant/participant shall inform Eurovent Certita Certification of any modification of the product range by updating the declaration file (COIL-1) and sending the updated selection software together with the software update record sheet (COIL-4). Non-compliance of the applicant/participant is considered as non-application of procedures (see IV.7).

Eurovent Certita Certification decides whether the modification is significant for the certified performance data or not. In the case of significant modifications Eurovent Certita Certification is entitled to request adequate tests to check the influence on performance data. This test shall not be considered as a repetition one.

Applicants/participants shall send to Eurovent Certita Certification the ISO 9001 certificate (Covering the manufacturing of products under the scope of this document) of their manufacturing place(s) if any.

Confidentiality of certification data: All data submitted to Eurovent Certita Certification will be held confidential except for information authorised to be published in the Eurovent Certified Performance website.

IV.2 Selection of units to be tested

a. Selection for qualifying procedure

Eurovent Certita Certification shall select, at random, units to be tested, on the basis of its evaluation of the declaration file communicated by the applicant. One unit per Basic Model Group (BMG) per manufacturing facility shall be selected. However, in total the maximum number of tested units is equal to ten (10).

This selection is conducted in order to cover the variations declared (see BMG definition in Rating Standard RS/7/C/005).

b. Selection for repetition procedure

For the repetition procedure, Eurovent Certita Certification shall select one (1) unit per manufacturing facility for testing.

c. Selection for penalty tests

Eurovent Certita Certification shall select units for penalty tests from the range which failed (see IV.6d). If this range is no longer produced in year N+1 (status "deleted" or "obsolete") then the selection will be made from the range which is the most similar to the one that failed.

IV.3 Tests at the independent laboratory

a. General

Within the programme, tests may be conducted under the following procedures:

- Scheduled tests in qualifying procedure
- Scheduled tests in repetition procedure
- Penalty test in repetition procedure
- Challenge procedure test

Tests shall be performed at the independent laboratory selected by Eurovent Certita Certification.

The laboratory shall have the responsibility of uncrating, handling, testing and re-crating the unit for shipment.

Before testing, the laboratory shall check the product dimensions against the values declared in the technical datasheet to ensure that the unit corresponds to the selection. The laboratory shall not perform the test and contact Eurovent Certita Certification who shall ask the applicant/participant to send a new unit in the following cases:

- one of the dimensions is not compliant with the technical datasheet (see Rating Standard RS/7/C/005 for tolerances);*
- the unit appears damaged (see IV.6b “Component failure”).*

Units shall be installed in the test facility in accordance with the manufacturer’s published installation instructions. The applicant/participant shall therefore provide the laboratory with full information about the installation.

The applicant/participant is allowed to witness the preparation and installation of the unit prior to the test, and upon request.

No applicant/participant’s personnel shall be present in the laboratory test facility during the tests.

If the test establishes that the unit fails to meet one or more of the requirements of the Rating Standard RS/7/C/005, the laboratory shall promptly notify Eurovent Certita Certification to receive instructions regarding further actions (see IV.6c).

b. Time limitation of acquisition and recovery of units

Deadline for delivery of units to the laboratory, together with the technical data sheet completed and the payment, is defined in the Certification Schedule (see APPENDIX A). For the qualifying procedure the deadline is specified in the notification received from Eurovent Certita Certification.

If elements are not delivered within the time limitations, it is considered as non-application of procedures (see IV.7).

Eurovent Certita Certification has discretion not to discontinue the certification when the applicant/participant provides a definite and acceptable date of supply.

The applicant/participant has to recover the products maximum six (6) working weeks after receiving the test reports and results. If the units are not recovered after this delay, the laboratory can destroy them and the corresponding invoice will be sent by Eurovent Certita Certification to the applicant/participant.

c. Test conditions

The tests shall be conducted at the conditions stated in Rating Standard RS/7/C/005.

d. Report of test results and test-check

Upon completion of the tests on each unit, the laboratory will send the complete report as a .pdf file to Eurovent Certita Certification.

Eurovent Certita Certification shall recalculate the values with the software according to the test operating conditions displayed in the test report (“test-check”). For each test, a performance item fails when the recalculated value and the measurement differ by more than the allowable tolerance (see Rating Standard RS/7/C/005).

When one or more performance items fail, the test status is considered **FAILED** and the failure treatment corresponding to unit failure (see IV.6c) shall be applied.

Eurovent Certita Certification will forward a copy of the report together with the test report result sheet (COIL-5) and, if applicable, the test rerate sheet (COIL-6) to the applicant/participant (see APPENDIX B).

IV.4 Software checking procedure

a. Specific requirements

In addition to the general software requirements which are described in the dedicated appendix of Certification Manual, the software must comply with the following:

- If the technical selection is protected by a username and/or password these shall be provided to the Eurovent Certita Certification representative without any expiry date.
- It is allowed to ask the location of the customer in the software, however all data provided by the software shall be the same whatever the location of the customer is.
- Vocabulary and units shall be in accordance with the present operational manual and the Rating Standard RS/7/C/005.
- The characteristics available for the model definition and selection shall be consistent with the declared data (available fin materials, thickness and spacing for a given fin configuration, available tube materials...etc.)
- It should be possible to select either the wet bulb temperature or the humidity ratio in addition to the dry bulb temperature to define the air side properties.
- It should be possible to define the volume flow rate as software input on the air side.
- The outputs must be at least displayed under the standard conditions. Standard air density is set at 1.20 kg/m³. Other values are authorized if accompanied by the underlying air density. The air density shall be clearly stated and present in the printouts.
- The software shall give a warning in case the result data run out of acceptable design limits (velocity too high or too low, etc...) defined by the applicant/participant.

b. Acquisition and initial check of the software

The software shall be sent together with all required data when the applicant subscribes for the qualification procedure. For the repetition procedure, the deadline for the delivery of the software to Eurovent Certita Certification is defined in the Certification Schedule (see APPENDIX A).

The software compliance to general (see dedicated chapter in the Certification Manual) and specific (see IV.4a) requirements is to be checked by Eurovent Certita Certification prior to selection.

Brand Name companies shall also send the operating version of the software to Eurovent Certita Certification to check the consistency with the OEM software version.

In case only in-house programmes are available, a person designated by Eurovent Certita Certification shall undertake himself the selection on site, during a specific visit for BN companies or the factory audit for OEM.

c. On-site checking of the software

The auditor appointed by Eurovent Certita Certification shall check the selection software consistency by selecting two (2) orders from the applicant/participant sales records. This check shall be conducted:

- *during factory audits for OEM;*
- *during the facility audit (where the orders to the customers can be accessed) for BN.*

Whenever possible, the facility audit for BN shall be scheduled once the OEM has undertaken the testing procedure and/or the OEM on-site checking of software has been performed in order to compare the BN software results to recent OEM software results. Otherwise the software will be checked against the results of campaign N-1.

Whenever possible, one of the checks shall be performed on an order under manufacturing (for OEM) or preparation (for BN) so that the entire composition and technical specifications can be checked on site. For the OEM, the other check shall be performed for a unit similar or identical to one of the production units selected for the test campaign.

The applicant/participant's representative shall fully inform the auditor by submitting all relevant assembly drawings, specifications and technical data sheets of the units under check.

For OEM, in case the products under manufacturing at the audit date do not fall into the certification programme scope, the auditor shall at least check the stock to verify that the raw material or incoming goods under common use in the factory are the same as that appearing in the declaration list.

The composition, technical specifications and performance from recalculation shall be the same as the one specified and announced to the customer. If one of the performance values obtained by the auditor differs by more than the acceptable tolerance, this is considered as a software consistency failure and the applicant/participant shall update his software according to the relevant procedure (see IV.6e). If in the meantime the applicant/participant has officially launched a new software version and recalculation is made with this version, deviations should be traceable in the software update record sheet (sheet COIL-4, see B.IV).

If it appears that different software had been used, this shall be considered as a non-respect of procedures (see IV.7).

Eurovent Certita Certification shall transmit to the applicant/participant the result of the on-site software check as a .pdf file.

IV.5 Audits

a. General

General audit requirements are stated in the Certification Manual.

The audit will consist of the on-site checking of software (see IV.4c) and the verification that the applicable requirements specified in paragraph IV.5b are fulfilled.

Whenever necessary, Eurovent Certita Certification has the right to ask an auditor to conduct an additional audit as well as to collect data directly from customer and perform extra checking of software.

If audits are not conducted within the time limitations specified in the notification received from Eurovent Certita Certification, it is considered as non-application of procedures (see IV.7).

In case of force majeure (e.g. accidents, labour disputes, natural events, acts of war) which would not allow Eurovent Certita Certification to perform a factory audit Eurovent Certita Certification can decide to replace it by another mean of verification, to postpone it within a reasonable deadline or to cancel it.

b. Audit requirements

During the audit, the auditor will:

- *check that the ECP mark is displayed on the units and on the documentation in compliance with the requirements specified in paragraph V.2;*
- *check the operating software consistency as per paragraph IV.4c;*
- *check that the products in the sales record are compliant with the declaration list;*
- *check that the corrective actions plan (see IV.5c) is completed or under implementation.*

The auditor will also perform a complete review of the quality management system to check that:

- *the suppliers are regularly evaluated and that the corresponding evaluations are recorded;*
- *the raw material or incoming goods conformity with the bill of material (BOM) specifications is regularly evaluated and that the corresponding evaluations are recorded;*
- *the manufacturing process key steps are submitted to a validation check which results are recorded*
 - *in particular, performing a coil leakage test is required on each produced unit. When the testing method used is not described in standard EN 13779:1999 its relevance shall be proven by the manufacturer;*
- *the factory personnel is qualified to perform the specific tasks if any;*
- *every product traceability is ensured;*
- *calibration of measuring devices is performed on a regular basis;*
- *production non-conformities are recorded and corrective actions initiated;*
- *customer complaints are registered and treated.*

c. Audit non conformity

After evaluation, a non conformity classified critical when the following cases are identified:

- *there is a significant risk regarding the product conformity with respect to applicable requirements;*
- *there is a significant risk regarding the quality management system ability to control the product conformity with respect to applicable requirements;*
- *a specific non-compliance already pointed out during a previous audit is observed again;*

Otherwise the non conformity is not-critical.

In case of non conformity, the applicant/participant shall be requested to provide Eurovent Certita Certification with a corrective actions plan within the deadline specified by the auditor (see also IV.6g for the audit failure treatment procedure).

IV.6 Failure treatment

a. Reasons of failure

The applicant/participant may examine the reasons of the failure.

b. Component failure

If the unit is damaged this is considered as a “component failure”. The laboratory shall immediately inform Eurovent Certita Certification who will notify the applicant/participant. The applicant/participant shall deliver within four (4) working weeks a new copy of the same model, which then shall be tested according to the availability of the laboratory.

c. Unit failure

For each failed test, the applicant/participant has four (4) working weeks from the notification of failure to select between the following alternatives:

- (1) Rerate the data by adapting the software to the test results within the following six (6) working weeks. The corrected software with its new version number shall be sent to Eurovent Certita Certification who will check the consistency of the modifications. If the new software is in accordance with all the measurements, the ranges are published on the ECP website with the new rating and certification is granted/maintained. After verification (“test-recheck”), if the software is still not in accordance with the test results the range shall be temporarily suspended until the software update proves consistency with the tests results.*
- (2) Ask for a second test on a new copy of the same model scheduled by Eurovent Certita Certification according to the availability of the laboratory. This request shall be accompanied by a cause analysis and a relevant corrective actions plan. If this second test is successful, no revision of selection software will be required, otherwise the data will have to be rerated and the software updated as explained in the rerating procedure (see IV.6f).*

In both cases, penalty tests will be requested as described in §IV.6d.

d. Penalty tests

In case of established failure, units for penalty tests (full tests) have to be selected from the range which failed (or equivalent), as follows:

- Two units in case of failure on capacity*
- One unit in case of failure on pressure drop (air side and/or fluid side)*

The penalty tests are full tests (tests performed for 6 standard conditions as per scheduled repetition tests), and shall be performed during the following repetition test campaign, in addition to scheduled repetition tests.

e. Software consistency failure

In case the software is proved inconsistent during the initial check or the on-site check, the applicant/participant shall update his software according to the Rerating procedure.

f. Rerating procedure

General Rerating procedure requirements are stated in the dedicated paragraph of the Certification Manual.

g. Audit failure

The applicant/participant shall resolve the non conformity within the time limitation agreed in the corrective actions plan.

In case of critical non conformity, the certification may be suspended/not granted until the critical non conformity resolution and the corresponding verification.

h. Repeated failures along the test campaigns

This section refers to the corresponding section of the Certification Manual.

IV.7 Non-application of procedures

The general consequences of non-application of procedures are described in the relevant paragraph of the Certification Manual.

V. PROMOTION OF THE PROGRAMME

Promotion of the programme shall be done in accordance with relevant sections of the Certification Manual.

V.1 By Eurovent Certita Certification

The certified data of the certified products are published on the Eurovent Certified Performance website: www.eurovent-certification.com .

Eurovent Certita Certification will supply, on request, to any interested party, the current status of any participant or of any range (new, deleted or obsolete).

The following data are published:

- Name of Company
- Trade or brand name
- Certificate number
- Range designation(s) and characteristics :
 - Tube outside diameter;
 - Tube arrangement :
 - pitch height : tube spacing (i.e perpendicular to the air flow)
 - pitch depth : row spacing (i.e in direction of the air flow)
 - tube alignment (in-line or staggered)
 - arrangement of coil in relationship to the direction of the airflow ;
 - minimum and maximum number of rows;
 - minimum and maximum number of tubes per row;
 - minimum and maximum finned length;
- Software name and version
- List of certified characteristics and performance items
- Production sites (city, country)

V.2 By Participants

The participating company shall indicate participation in the ECP programme for Forced Circulation Air Cooling and Heating Coils by the following means.

a. Display of Eurovent Certified Performance logo on production units

Each participant is entitled to display the Eurovent Certified Performance mark on each production unit of models which have been certified. The participant may affix the certification mark at any location thereon satisfactory to him. The Eurovent Certified Performance mark may be applied as part of nameplate of certified models providing it meets the requirements stated in Certification Manual.

The Eurovent Certified Performance mark shall conform to the design, minimum size and proportions as presented in the Certification Manual.

The Eurovent Certified Performance mark shall include in the dedicated area (see Certification Manual) the name of the relevant programme the product is certified for, i.e. "Forced Circulation Air Cooling and Heating Coils" or the corresponding short name "COIL". When the product is also certified under the HRS-COIL programme, the logo may comprise both programme short names upon authorisation by Eurovent Certita Certification.

b. Display of Eurovent Certified Performance logo on specification sheets, literature, software and advertising

The participating company shall indicate participation in the programme by displaying the appropriate Eurovent Certified Performance (ECP) mark on technical documentation as defined in the Certification Manual (electronic and printed catalogues, websites, on-line and off-line selection software, specification sheets), carrying ratings or claiming certification of certified models.

The ECP mark alone may be used in literature without certified performance data (general leaflets, advertising etc.).

Following the qualification procedure the basic range documentation literature shall be submitted for approval to Eurovent Certita Certification. It shall be the responsibility of the participant to ensure compliance of other published literature.

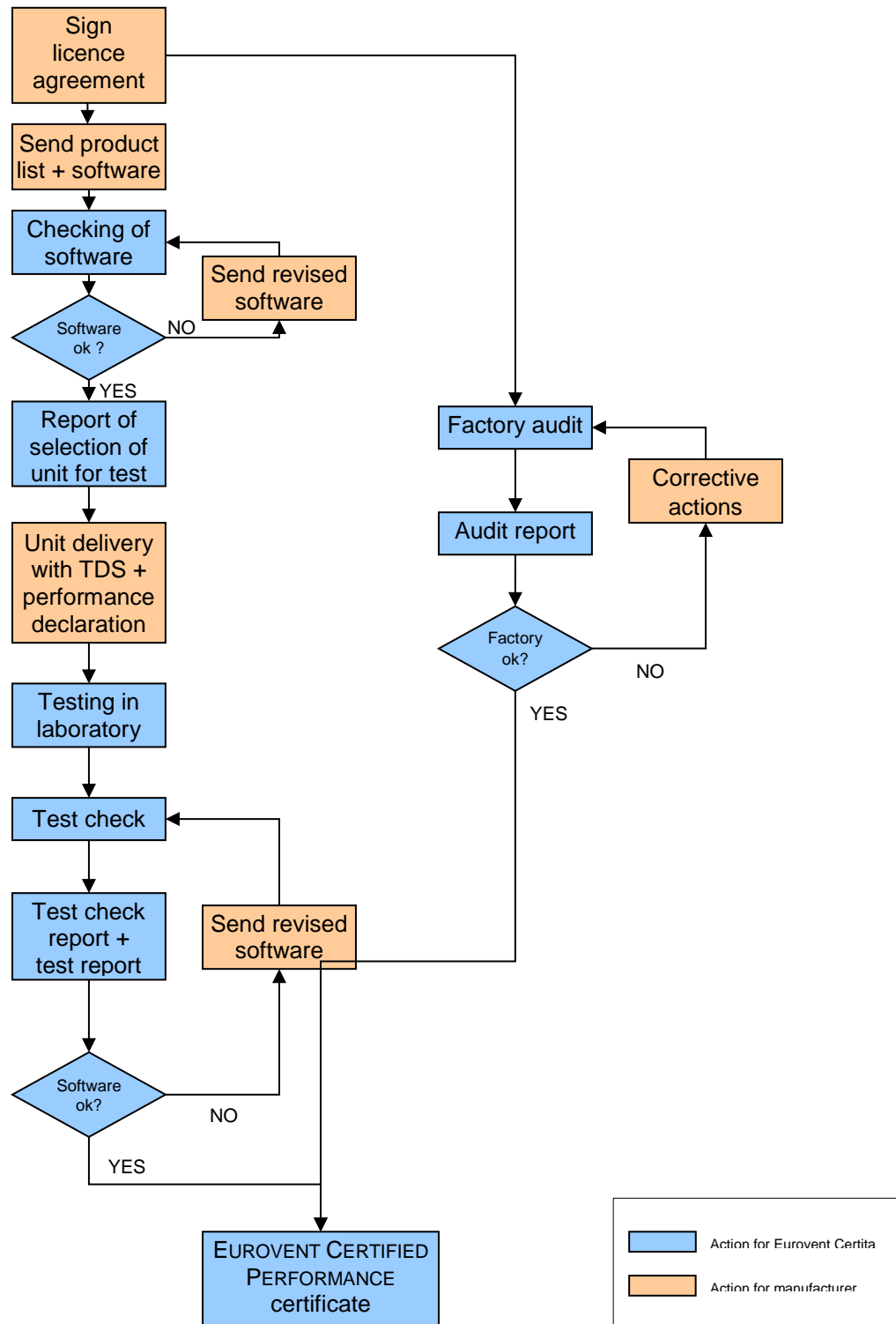
When used in literature containing the certified performance data (technical catalogues and leaflets) the ECP mark shall be used only on certified products. Non-certified products shall be clearly distinguished or presented in a separate document.

The ECP mark shall include in the dedicated area (see Certification Manual) the name of the relevant programme the product is certified for, i.e. "Forced Circulation Air Cooling and Heating Coils" or the corresponding short name "COIL". When the product is also certified under the HRS-COIL programme, the logo may comprise both programme short names upon authorisation by Eurovent Certita Certification.

APPENDIX A. CERTIFICATION PROCESS AND SCHEDULE

A.I. Qualification procedure

Figure 1 : Certification process for the qualification procedure



A.II. Repetition procedure

Table 1 : Certification schedule for the repetition procedure

Certification step	Deadline
Eurovent Certita Certification asks for update of declaration list, software and ISO 9001 certificate from the participant	30/11/n-1
The participant sends the up-dated products declaration list and software	31/12/n-1
Eurovent Certita Certification checks the software compliance to requirements. When the software does not meet the certification requirements the manufacturer has to correct it and send a new version. When the software meets the requirements the selection list is sent to the participant for performance declaration (form COIL-2).	31/01/n
The participant returns the completed performance declaration file and the software printouts for selected products	28/02/n
Product delivery + Technical data sheet transmission + payment are completed by the participant	31/03/n
All regular tests, and penalty tests when applicable, are completed and test reports sent by the laboratory to Eurovent Certita Certification	31/05/n
The auditor audits the participant's facility and checks the software consistency.	15/06/n
The participant sends the audit non conformity corrective actions plan when applicable	Deadline set up by auditor
Eurovent Certita Certification performs a "test-check" to verify that the software is in accordance with the test results. Eurovent Certita Certification forwards the test reports together with the "test-check" results to the participant.	30/06/n
The participant can ask for second tests before	31/07/n
The auditor evaluates the corrective actions plan relevance	31/07/n
Product delivery + Technical data sheet transmission + payment are completed by the participant for second tests (when applicable).	15/09/n
Rerated software is sent to Eurovent Certita Certification (when applicable).	15/09/n
Eurovent Certita Certification sends the diploma if all requirements are fulfilled.	31/10/n
Diploma validity	31/10/n+1
Second tests are completed and test reports sent by the laboratory to ECC (when applicable).	15/11/n
Eurovent Certita Certification verifies the software compliance with the second test results ("test-recheck") and forwards the second test report together with the "test-recheck" results to the participant (when applicable).	15/12/n
Final corrections of the software in case of second failure	31/12/n

APPENDIX B. FORMS

B.I. Form COIL-1: Product list declaration file

COIL - 2016 GENERIC													
Product Number	Master product number	Tested On	Rerated on	Created on	Last update on	Status	Participant Name	Product Name	Trade Name	Type of product	Range Name	BMG	
EUROVENT CERTITA CERTIFICATION information							NEW	XXXX COMPANY	acw 12-400	XXX-BUSI	C/W or H/W	ACR	HGT
							DEL	YYYY COMPANY	acw 12-401	YYY-BUSI		BXS	CDX
							OBS	ZZZ COMPANY	acw 12-402	ZZZ-BUSI		VTY	DWZ
TECHNICAL CHARACTERISTICS													
Range characteristics													
Pitch height (perpendicular to air flow)	Pitch depth (in direction of air flow)	Tube arrangement	Tube outside diameter	Air velocity at coil inlet Minimum	Air velocity at coil inlet Maximum	Fluid velocity Minimum	Fluid velocity Maximum	Number of rows Minimum	Number of rows Maximum	Number of tubes per row Minimum	Number of tubes per row Maximum		
mm	mm		mm	m/s	m/s	m/s	m/s						
		string		Decimal	Decimal	Decimal	Decimal	decimal	decimal	decimal	decimal	decimal	
participant information	participant information	staggered	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	
participant information	participant information	in-line	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	
participant information	participant information	staggered	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	
BMG characteristics													
Finned length Maximum	Tube type	Tube material category	Fin type	Reference fin spacing (RFS)	Fin material	Tube material	Tube wall thickness (main value only)	Fin thickness	Fin spacing	Production site character			
mm				mm			mm	mm	mm				
	string	string	string		string	string							
participant information	plain (smooth)	standard	flat	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	
participant information	inner-grooved	special	corrugated	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	
participant information	plain (smooth)	standard	louvered	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	

B.II. Form COIL-2: Performance ratings declaration file

COIL - 2016 GENERIC												
Product Number	Master product number	Tested On	Rerated on	Created on	Last update on	Status	Participant Name	Product Name	Trade Name	Type of product	Range Name	BMG
EUROVENT CERTITA CERTIFICATION information						NEW	XXXX COMPANY	acw 12-400	XXX-BUSI	C/W or H/W	ACR	HGT
						DEL	YYYY COMPANY	acw 12-401	YYY-BUSI		BXS	CDX
						OBS	ZZZ COMPANY	acw 12-402	ZZZ-BUSI		VTY	DWZ

TECHNICAL CHARACTERISTICS OF THE												
Range characteristics												
Pitch height (perpendicular to air flow)	Pitch depth (in direction of air flow)	Tube arrangement	Tube outside diameter	Air velocity at coil inlet Minimum	Air velocity at coil inlet Maximum	Fluid velocity Minimum	Fluid velocity Maximum	Number of rows Minimum	Number of rows Maximum	Number of tubes per row Minimum	Number of tubes per row Maximum	
mm	mm	string	mm	m/s	m/s	m/s	m/s	decimal	decimal	decimal	decimal	
participant information	participant information	staggere	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	
participant information	participant information	in-line	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	
participant information	participant information	staggere	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	participant information	

E PRODUCT												
BMG characteristics						Model characteristics						
Finned length Minimum	Finned length Maximum	Tube type	Tube material category	Fin type	Reference fin spacing (RFS)	Fin material	Tube material	Tube wall thickness (main value only)	Fin thickness	Fin spacing	No. of circuits	
mm	mm	string	string	string	mm	string	string	mm	mm	mm	String	
participant information	participant information	plain (smooth)	standard	flat	participant information	participant information	participant information	participant information	participant information	participant information	participant information	
participant information	participant information	plain (smooth)	special	corrugated	participant information	participant information	participant information	participant information	participant information	participant information	participant information	
participant information	participant information	plain (smooth)	standard	louvered	participant information	participant information	participant information	participant information	participant information	participant information	participant information	

COIL DESIGN						RATING INFORMATION					
Header inlet connection	Header outlet connection	Number of rows (deep)	Nb of tubes per row (high)	Finned length	Standard condition	Heat exchange fluid	Dry bulb air inlet temperature	Wet bulb air inlet temperature	Fluid temperature entering coil	Air velocity at coil inlet (target value)	Fluid velocity (target value)
mm	mm			mm			°C	°C	°C	m/s	m/s
		String	String	String	string	string	Decimal	Decimal	Decimal	Decimal	Decimal
participant information	participant information	participant information	participant information	participant information	EUROVENT CERTITA CERTIFICATION information						
participant information	participant information	participant information	participant information	participant information							
participant information	participant information	participant information	participant information	participant information							

USEFUL INFORMATION				PERFORMANCES OF THE PRODUCT		
Air velocity at coil inlet (real value)	Fluid velocity (real value)	q _{var} (air volume flow rate at standard conditions)	q _{vfluid} (exchange fluid volume flow rate)	Capacity	ΔP _{air} pressure drop on air side	DPw (Fluid pressure drop)
m/s	m/s	m ³ /h	m ³ /h	kW	Pa	kPa
Decimal	Decimal	Decimal	Decimal	Decimal	Decimal	Decimal
participant information	participant information	participant information	participant information	participant information	participant information	participant information
participant information	participant information	participant information	participant information	participant information	participant information	participant information
participant information	participant information	participant information	participant information	participant information	participant information	participant information

B.III. Form COIL-3: Technical data sheet (TDS)

COIL - 2016 GENERIC	Product Number	EUROVENT CERTITA CERTIFICATION information										
	Master product number	EUROVENT CERTITA CERTIFICATION information										
	Tested On	EUROVENT CERTITA CERTIFICATION information										
	Re-rated on	EUROVENT CERTITA CERTIFICATION information										
	Created on	EUROVENT CERTITA CERTIFICATION information										
	Last update on	EUROVENT CERTITA CERTIFICATION information										
	Status											
	Participant Name	YYYY										
	Product Name	M4035-15-module1-2										
	Trade Name	XXX										
	Type of product	XXX										
	Range Name	M4035-15										
	BMG	participant info										
	Software information	Software Name	<u>Software name</u>									
Software Version		<u>Software version</u>										
Software date of release		<u>Software date of release</u>										
TECHNICAL CHARACTERISTICS OF THE PRODUCT	Range	Pitch height (perpendicular to air flow)	mm	40	or photo of the coil face							
		Pitch depth (in direction of air flow)	mm	34,64								
		Tube arrangement		staggered								
		Tube outside diameter	mm	15								
		Air velocity at coil inlet Minimum	m/s	participant information								
		Air velocity at coil inlet Maximum	m/s	participant information								
		Fluid velocity Minimum	m/s	participant information								
		Fluid velocity Maximum	m/s	participant information								
		Number of rows Minimum		1								
		Number of rows Maximum		8								
		Number of tubes per row Minimum		8								
		Number of tubes per row Maximum		40								
		Maximum length	mm	300								
		Minimum finned length	mm	3150								
	BMG	Tube type		plain (smooth)								
		Tube material category		standard								
		Fin type		corrugated								
		Reference fin spacing (RFS)	mm	2,5								
	Model	Fin material		aluminium								
		Tube material		Copper								
		Tube wall thickness	mm	0,4								
		Fin thickness	mm	0,1								
			Fin spacing	mm	2,1							
	RATING INFORMATION	COIL DESIGN	No. of circuits		[to be filled in]							
			Header inlet connection	mm	[to be filled in]							
			Header outlet connection	mm	[to be filled in]							
			External (casing) dimensions		[to be filled in]							
			Number of rows (deep)		[to be filled in]							
Nb of tubes per row (high)				[to be filled in]						MP7 (only for qualification)	MP8 (only for qualification)	
Finned height			mm	[to be filled in]						ECC information	ECC information	
Finned length			mm	[to be filled in]						water	water	
TESTING CONDITIONS		Measuring point		MP1	MP2	MP3	MP4	MP5	MP6	ECC information	ECC information	
		Standard condition		ECC information	ECC information	ECC information	ECC information	ECC information	ECC information	ECC information	ECC information	
		Heat exchange fluid		water	water	water	water	water	water	ECC information	ECC information	
		Dry bulb air inlet temperature	°C	ECC information	ECC information	ECC information	ECC information	ECC information	ECC information	ECC information	ECC information	
		Wet bulb air inlet temperature	°C	ECC information	ECC information	ECC information	ECC information	ECC information	ECC information	ECC information	ECC information	
		Fluid temperature entering coil	°C	ECC information	ECC information	ECC information	ECC information	ECC information	ECC information	[to be filled in]	[to be filled in]	
		Air velocity at coil inlet (target)	m/s	ECC information	ECC information	ECC information	ECC information	ECC information	ECC information	[to be filled in]	[to be filled in]	
		Fluid velocity (target)	m/s	ECC information	ECC information	ECC information	ECC information	ECC information	ECC information	[to be filled in]	[to be filled in]	
USEFUL INFO		Air velocity at coil inlet (real)	m/s	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	
		Fluid velocity (real)	m/s	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	
		Q _{air} (air volume flow rate at standard conditions)	m ³ /h	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	
		Q _{fluid} (exchange fluid volume flow rate)	m ³ /h	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	
PERFORM		Capacity	kW	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	
		ΔP _{air} pressure drop on air side	Pa	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	
		DP _w (Fluid pressure drop)	kPa	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	[to be filled in]	

B.IV. Form COIL-4: Software update record sheet

COMPANY LOGO

XXXX Software name
Software update record sheet

Prepared by:

Software version	Revision date	Brief description of the update

B.V.Form COIL-5: Test report result sheet

REPORTING OF TEST RESULT						
Reference of testing unit						
CAPACITY KW						
Cooling	Declared	Measured	Re-calculated (SoftwareCheck)	Deviation	Tolerance	Results
SC1					-3%	PASSED
SC2					-3%	PASSED
SC3					-3%	PASSED
SC4					-3%	PASSED
SC5					-3%	PASSED
Average					-2%	PASSED
Heating	Declared	Measured	Re-calculated (SoftwareCheck)	Deviation	Tolerance	Results
SC6					-3%	PASSED
SC7					-3%	PASSED
SC8					-3%	PASSED
Average					-2%	PASSED
AIR SIDE PRESSURE DROP Pa						
Cooling	Declared	Measured	Re-calculated (SoftwareCheck)	Deviation	Tolerance	Results
SC1					20%	PASSED
SC2					20%	PASSED
SC3					20%	PASSED
SC4					20%	PASSED
SC5					20%	PASSED
Average					10%	PASSED
Heating	Declared	Measured	Re-calculated (SoftwareCheck)	Deviation	Tolerance	Results
SC6					20%	PASSED
SC7					20%	PASSED
SC8					20%	PASSED
Average					10%	PASSED
LIQUID SIDE PRESSURE DROP KPa						
Cooling	Declared	Measured	Re-calculated (SoftwareCheck)	Deviation	Tolerance	Results
SC1					20%	PASSED
SC2					20%	PASSED
SC3					20%	PASSED
SC4					20%	PASSED
SC5					20%	PASSED
Average					10%	PASSED
Heating	Declared	Measured	Re-calculated (SoftwareCheck)	Deviation	Tolerance	Results
SC6					20%	PASSED
SC7					20%	PASSED
SC8					20%	PASSED
Average					10%	PASSED
CONCLUSION OF TEST						
PASSED						

B.VI. Form COIL-6: Test rerate form

CERTIFICATION PROGRAMME FOR FORCED CIRCULATION AIR COOLING AND HEATING COILS

RESPONSE FORM AFTER FAILURE ON TESTED UNIT

This response form shall be sent back by *e-mail* to Eurovent Certita Certification within one month maximum.
Without news from you within this delay, we will rerate performances and our website will be automatically updated with rerated performances.
Our e-mail: ***technical@eurovent-certification.com***

Date : _____ Your name : _____ Signature :

According to the document OM-9-2016, you are asked to select one of the following alternatives :

Ask for a second test, i.e. on another unit of the same model.

Rerate the software in line with test results