

GENERAL SPECIFICATION

HVAC

GS EP HVA 410

HVAC Equipment FACTORY COMPLIANCE TESTS
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01	07/2012	Update following the EP reorganization, March 2011
00	01/2011	First issue
Rev.	Date	Purpose of the revision

Owning entity: DEV/TEC	Managing entity: DEV/TEC/MTH
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1. Scope

The present specification defines the reference documents and the procedures for *HVAC* equipment *FACTORY COMPLIANCE TESTS (FCT)*.

These procedures are only applicable to *HVAC* equipment listed in the present specification. For *HVAC* equipment (or piece of equipment) which is not listed in this specification but which is submitted to *FCT*, *CONTRACTOR* is in charge to develop and to submit a dedicated procedure to Company.

The words and expressions in CAPITAL characters and *italic* are defined inside the general specification **GS EP HVA 801**.

When other words require a definition only to be used in the present document, then the definition is given in a dedicated paragraph of the present document and the defined word, when used, is marked in small and *italic* letters.

2. Reference documents

The reference documents listed below form an integral part of this General Specification. Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the EFFECTIVE DATE of the CONTRACT.

Equipment and installations shall be in accordance with (by order of precedence):

1. The country local regulations where equipment and/or installations shall be operated
2. Total General Specifications as listed in **GS EP HVA 000**
3. The International Standards
4. The French Regulation (when Country local regulation does not exist).

International System of Units (SI) shall be used.

Notes:

- In case of discrepancy between documents the more stringent requirements shall apply.
- The *HVAC VENDOR* or *CONTRACTOR* may propose proven improvements to the reference documents but shall obtain written approval of the Company prior to implementation.
- An International Standard is a good "engineering practice" which shall be recognized and taken into consideration by *VENDOR*, *SUPPLIER*, *MANUFACTURER* and/or *CONTRACTOR*. If required, the translation of the standards shall be included into HVAC scope.
- The latest revision of standards, codes, regulations and the published errata if any shall be used and applied by *VENDOR*, *SUPPLIER*, *MANUFACTURER* and *CONTRACTOR*.

Some documents listed hereafter are issued from the French Government and are applicable to the basic engineering, detailed engineering and construction. *ENGINEERING*, *CONTRACTOR* are in charge to translate or to entrust the translation to specialist.

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External Documents

Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the effective date of this document.

Reference	Title
AICVF Codes	Association des Ingénieurs de Chauffage, Ventilation Français (All codes in accordance with equipment or part of <i>HVAC</i> installation designed)
ARI	Air Conditioning and Refrigeration Institute (All documents in accordance with equipment or part of <i>HVAC</i> installation designed)
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers (All documents in accordance with equipment or part of <i>HVAC</i> installation designed)
Directive 2004/108/EC dated 15 December 2004	Directive 2004/108/EC of the European Parliament and of the Council of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC Text with EEA relevance
Directive 2006/42/EC dated 17 May 2006	Directive 2006/42/EC of the European parliament and of the council on machinery, and amending Directive 95/16/EC
Directive 2006/95 dated 12 December 2006	Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits
Directive 94/9/EC, referred to a ATEX 100a / 95	Directive of the European parliament and the council on the approximation of the laws of the member states concerning equipment and protective systems intended for use in potentially explosives atmospheres
Directive 97/23/EC dated 29 May 1997	Directive 97/23/EC of the European Parliament and of the Council of 29 May 1997 on the approximation of the laws of the Member States concerning pressure equipment
Directive 98/37/EC dated 27 June 1988	Directive 98/37/EC of the European Parliament and of the Council of 22 June 1998 on the approximation of the laws of the Member States relating to machinery
EN 13053	Ventilation for buildings - <i>AIR HANDLING UNITS</i> - Rating and performance for units, components and sections
ISO 17025	General requirements for the competence of testing and calibration laboratories
ISO 5725-1	Accuracy (trueness and precision) of measurement methods and results. Part 1: General principles and definitions

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ISO 5725-2	Accuracy (trueness and precision) of measurement methods and results. Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method
ISO 5725-3	Accuracy (trueness and precision) of measurement methods and results. Part 3: Intermediate measures of the precision of a standard measurement method
ISO 5725-4	Accuracy (trueness and precision) of measurement methods and results. Part 4: Basic methods for the determination of the trueness of a standard measurement method
ISO 5725-5	Accuracy (trueness and precision) of measurement methods and results. Part 5: Alternative methods for the determination of the precision of a standard measurement method
ISO 5725-6	Accuracy (trueness and precision) of measurement methods and results. Part 6: Use in practice of accuracy values
EN 14511-1	Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling - Part 1: Terms and definitions
EN 14511-2	Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling - Part 2: Test conditions
EN 14511-3	Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling - Part 3: Test methods
EN 14511-4	Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling - Part 4: Requirements
NF EN 1886	Ventilation for buildings - <i>AIR HANDLING UNITS</i> -Mechanical performance

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Total General Specifications

Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published in the applicable yearly collection.

Reference	Title
GS EP HVA 000	List of HVAC specifications
GS EP HVA 231	Chilled water unit(s) (Water Cooled - Screw compressors)
GS EP HVA 801	Terminology, definitions, abbreviations

The Company General Specifications, other than "GS EP HVA XXX" **shall not be used** for the purpose of *FCT* of HVAC equipment.

3. Definitions

The following definitions have to be used in *FCT* report produced by the *MANUFACTURER*.

Measuring interval: set of values of quantities of the same kind that can be measured by a given measuring instrument or measuring system with specified instrumental uncertainty, under defined conditions.

Measurand: quantity intended to be measured.

Measured quantity value: quantity value representing a measurement result.

Measurement result: set of *quantity values* being attributed to a *measurand* together with any other available relevant information.

Quantity value: number and reference together expressing magnitude of a quantity.

4. Tools and spare parts lists

The tools and spare parts lists, for equipment start-up and 2 years maintenance have to be submitted before *FCT*, for the following item:

- *CHILLED WATER UNITS*.

5. Generalities

For equipment, or each piece of equipment, submitted to *FCT*, the *CONTRACTOR* is in charge of the *FCT* organization.

The necessary period to realize the *FCT* has to be taken into account during detailed engineering period in order that the *MANUFACTURER* deliver the equipment or piece of equipment in time, according to the detailed engineering, procurement, construction, pre-COMMISSIONING and COMMISSIONING project schedule.

The *FCT* date(s) has (have) to be defined by *MANUFACTURER* when sales contract is signed between purchaser and *MANUFACTURER*. This information shall be transmitted by *MANUFACTURER* to purchaser **and** to Company as per the following figure. Respect of this requirement is mandatory.