



Exploration & Production

GENERAL SPECIFICATION

HVAC

GS HVA 801

Terminology, definitions, abbreviations
--

02	10/04	General Updating
01	12/03	Change of Group name and logo
00	10/02	First issue
Rev.	Date	Notes



Contents

1. Scope	3
2. Reference documents.....	3
3. Terminology.....	4
3.1 Verbs	4
3.2 Definitions	4
4. Abbreviations	11



1. Scope

This document defines the different terms used inside all *HVAC* documents, whatever the type, and used for documents, drawings, and during meetings regarding that project. Definition of terms given through this specification prevails above any other definition.

When definitions are given in another document, those definitions are only available for comprehension of that document.

Note : in case of discrepancy between *HVAC* documents (whatever the document) and other document (standards, professional documents, regulations, codes, other documents, *COMPANY's* documents, technical specification, ...), the more restrictive requirement must be used.

Within *HVAC* documents, expression in CAPITAL CHARACTERS AND *ITALIC* are defined within this "Terminology, definitions and abbreviations" specification.

When other words require a definition only for using within a document, the definition is given in a paragraph of that document and the defined word 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.

Standards

Reference	Title
Not applicable	

Professional Documents

Reference	Title
Not applicable	

Regulations

Reference	Title
Not applicable	

Codes

Reference	Title
Not applicable	



Other documents

Reference	Title
Not applicable	

Total General Specifications

Reference	Title
Not applicable	

3. Terminology

3.1 Verbs

There are four types of statements in these documents :

- “must”
- “shall”
- “should”
- “may”

They have to be understood as follow :

- **must:** is to be understood as mandatory, without deviation.
- **shall:** is to be understood as mandatory. Deviating from a “shall” statement requires derogation approved by the *COMPANY* and by *HVAC* Company’s Specialist.
- **should:** is to be understood as strongly recommended to comply with the requirement of the specification. Alternatives shall provide a similar level of quality, same function, same cost of maintenance. The alternatives shall be documented.
- **may:** is used when alternatives are equally acceptable.

3.2 Definitions

- **ACCOMMODATION:** space used as public or private rooms, cabins, offices, hospitals, cinemas, games and hobby rooms hairdressing saloons and pantries without cooking appliances.
- **AIR VOLUME CHANGE:** defines the number of volumes of air which must be replaced during a given time. The blown air can be recycled air from other rooms, except when this air polluted. This parameter shall be usually expressed in volume per hour (Vol/h); that meaning volume of concerned room / hour,
- **AIR CONDITIONING:** defines the equipment requested to maintain one or several of the following criteria inside a room : temperature, relative humidity, dust quantity and particles sizes, gas quantity, pressure. These parameters are controlled within limits prescribed for the enclosure to be air-conditioned.

- **AIR VELOCITY:** (through cooling coil and / or heating coil): air velocity across the coil calculated in taken into account the air free passing section through the coil, in the section of a coil row, (front surface of piping, front surface of fins and their protection must be deduced from the finned front surface of the coil).
- **APPROVED:** means approved in writing, including subsequent confirmation of previous verbal approvals.
- **AREA:** for the purpose of this project, an area is a three-dimensional region or space.
- **AUTHORITY:** means a statutory body responsible for the regulation of specific codes, standards and practices.
- **CAPITAL SPARES:** means expensive or long delivery time spares required preventing operational failure that may have heavy financial consequences. They are part of the scope of supply of the related equipment and only concern vital and critical
- **CERTIFYING AUTHORITY:** means an independent third party organisation that reviews, tests and certifies designs and equipment.
- **CHECK POINT:** a check point is associated to a construction phase. At this period of the construction, *CONTRACTOR* and / or *MANUFACTURER* have to inform the *COMPANY* that the equipment concerned by the check point can be pre-commissioned for the part of equipment which is issued. *COMPANY* has to be informed by a fax or e-mail, one month before the date of check point.
- **COMMISSIONING:** means the final verification that the systems fulfil their designed purpose and intended services. Commissioning will comprise operational testing under real or simulated conditions for systems or part-systems.
- **COMPANY:** see official definition inside the CONTRACT.
- **CONSTRUCTION SPARES:** means spares as estimated required preventing any delay or pause in the construction/installation works as a consequence of a failure in quantity and/or quality of materials and/or items of equipment.
- **CONTRACTOR:** see official definition inside the CONTRACT.
- **DESIGN POINT:** data which must be used for calculation notes, selection, balancing, adjustment during commissioning, *FAT*. The data is a physical characteristic of machine, equipment, basis of design resulting or not from calculation in accordance with "Basis of design" specification, including over-design as defined by specifications.
- **DESIGN VALUES:** equivalent to *DESIGN POINT*.
- **DIFFUSER:** device which ensures an air distribution inside a room.
- **DISCREPANCY** (applicable for shut-off damper, fire damper): information issued from position switches indicating that damper is open and closed in the same time.
- **DRY BULB TEMPERATURE:** temperature indicated by a dry temperature-sensing element shielded from the effects of radiation.
- **EMERGENCY SHUT-DOWN:** control action undertaken to shut-down process or equipment in response to an hazardous situation.
- **ENGINEERING:** company working for studies under control of the *COMPANY* or under the control of *CONTRACTOR*.

- ESD: EMERGENCY SHUT-DOWN :control action undertaken to shut-down equipment or process in response to an hazardous situation.
- ESSENTIAL HVAC system: two simultaneous principles define this system:
 - The failure of one component of the *HVAC* system does not affect the performances of the *HVAC* system, in terms of temperature, pressure, humidity, air filtration (particles and gas),
 - The maintenance of a component of the *HVAC* system does not affect the performances of the *HVAC* system, in terms of temperature, pressure, humidity, air filtration (particles and gas),

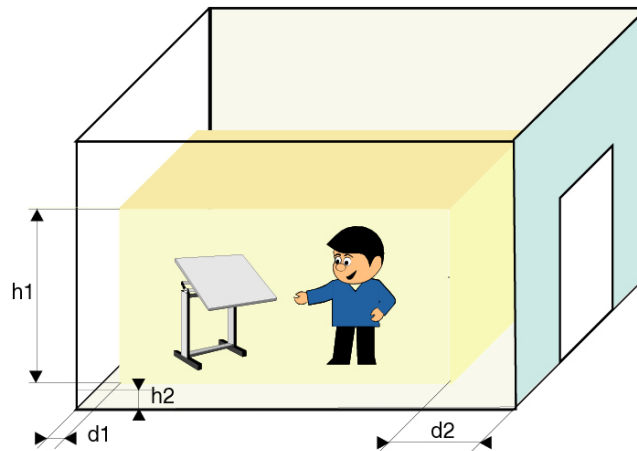
Ducting has to be considered as out of the system when examination of these two principles.
- EXHAUST AIR: air moved from the room to outside of building by fan. The volume moved from the room must not be used again and must not be blown to an other room.
- FACTORY ACCEPTANCE TESTS: checking and performances measurement realised by the MANUFACTURER of an equipment to ensure that the indicated values within specifications and drawings are reached. Dynamic tests are included within *FAT*. These last are realised under *COMPANY* and / or *ENGINEERING* supervision.
- FAILURE: improper performance of a device or equipment item that prevents completion of its design function.
- FINAL DOCUMENTATION: means a collection of documents and drawings that convey the Project closeout documentation requirements as defined by the *COMPANY*.
- FIRE DAMPER: Equipment installed on a ducting to isolate a part of ducting in case of fire. The isolating is applicable to the fire and the gas. The acceptable leakage of the fire damper is defined within paragraphs regarding the fire dampers.
- FIRE & GAS SYSTEM: the safety system which monitors the temperature or / and energy flux, the concentration of flammable or / and toxic gases and initiates relevant actions at pre-determinate levels.
- FRESH AIR: Fresh air is air coming from outside of building. This air must not be polluted by gas and must be filtered.
- HVAC: Heating, ventilation and air conditioning.
- HVAC CONTRACTOR: Company which built *HVAC* installation as per detail engineering produced by the *HVAC ENGINEERING* and checks the selected equipment before to buy it.
- Note: *HVAC CONTRACTOR* and *HVAC ENGINEERING* can be the same company or must be two different companies as per *COMPANY* requirements.
- HVAC ENGINEERING: Company which produces the *HVAC* basic engineering and / or produces the detail engineering.
- Note: *HVAC CONTRACTOR* and *HVAC ENGINEERING* can be the same company or must be two different companies as per *COMPANY* requirements.
- GAZ DAMPER: Equipment installed on a ducting to avoid the gas transfer from a part of ducting to an other part of this ducting. The acceptable leakage of the gas damper is defined within paragraphs regarding the gas dampers.

- **GRILLE:** device which ensures an air collect from a room and which is connected to a return air ductwork.
- **INFORMATION :** analog or digital value provided by a control system, a PLC, and generally speaking by an electrical or pneumatic instrument.
- **LEVEL OF VOLTAGE:**

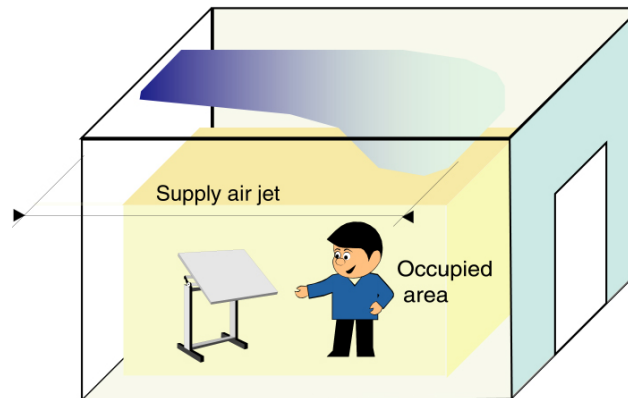
Terminology in this file	Terminology in French regulation	AC volts	DC volts
VLV	TBT	$U \leq 50$	$U \leq 120$
LV	BT	$50 < U \leq 500$	$120 < U \leq 750$
MV	MT	$500 < U \leq 1\,000$	$750 < U \leq 1\,500$
HV	HTA HTB	$1\,000 < U \leq 50\,000$ $U > 50\,000$	$1\,500 < U \leq 75\,000$ $U > 75\,000$

- **MANUFACTURER:** Company which builds a material or a package.
- **NOMINAL DESIGN POINT:** physical characteristic of a machine or of equipment, resulting from calculation in accordance with basis of design, without taking into account the over-design resulting from "Basis of design" specification.
- **NORMAL HVAC system:** two independent principles define this system:
 - The failure of one component of the *HVAC* system can affect the performances of the *HVAC* system, in terms of temperature, pressure, humidity, air filtration (particles and gas),
 - The maintenance of a component of the *HVAC* system can affect the *HVAC* system, in terms of temperature, pressure, humidity, air filtration (particles and gas),
- **OCCUPIED AREA** (for grilles and air diffusers): corresponds to the three dimensional space where a man is likely to be in usual conditions. The following values limit the occupied area :

	Usual value (in meter)	Tolerance
Height from floor	h1: 1.8	1.3 to 2 m
	h2: 0.1	0 to 0.2 m
Distance from walls	d1: 0.5	0.25 to 0.75 m
	d2: 1	0.5 to 1.5m



- **OVERPRESSURE:** artificial ventilation of an enclosed area to maintain that area at a pressure above the atmospheric pressure.
- **OWNER:** means the "OWNER OF FIELD".
- **PACKAGE:** equipment constituted by assembling of components on a skid and built in factory by a *VENDOR* or a *MANUFACTURER*.
- **REDUNDANCY:** the existing of more than one means of performing a required function.
- **RELATIVE HUMIDITY:** ratio, in humid air, expressed as a percentage of the water vapour actual pressure to the saturated vapour pressure at the same *DRY BULB TEMPERATURE*.
- **SUB-CONTRACTOR:** see official definition inside the *CONTRACT*.
- **SUMMER:** corresponds to the period of the year during which refrigeration is necessary to obtain the requested temperature inside a room.
- **SUPPLIER:** Company which builds a material or a package.
- **SUPPLY AIR JET DIMENSION:** corresponds to the diffuser air jet length where the air velocity is 0,2 to 0,25 m/s.
- **SHUT-OFF DAMPER:** equipment used to manually or automatically isolate a part of a ducting. A shut-off damper can only be positioned on fully open or on fully closed.
- **VENDOR:** a party which bids to enter into and/or which has entered into an agreement with the *CONTRACTOR* for the supply of goods and services in connection with the work.
- **VENTILATION:** provision of air to an enclosed space, sufficient for the needs of the occupants and / or for the process.
- **WALL:** a partition between two spaces, whatever its position (horizontal, vertical, tilted). Outdoor has to be considered as a space.



- $WIND_{1hr}$: corresponds to the wind velocity at an altitude of 10 meters above the floor or above sea (depending on building location, over the considered duration (1hr for this case)).
- WINTER: corresponds to the period of the year during which heating is necessary to obtain the requested temperature inside a room.
- WORKING POINT: physical characteristic of machine, equipment, measured during FAT and / or on site (during commissioning). This reading including tolerances, must be in accordance with the *DESIGN POINT*.

Engineering	HVAC CONTRACTOR	MANUFACTURER or Commissioner
Nominal Design Point: (e.g.) 100 kW	Tolerance due to installation: (e.g.) $\pm 5\%$ (including tolerances on readings, etc.)	Tolerance due to the fabrication: (e.g.) $\pm 3\%$
Over-design(s): (e.g.) +10%		
Design Point: $100 + \frac{100 \times 10}{100} = 110 \text{ kW}$	CONTRACTOR order to MANUFACTURER: $110 + \frac{110 \times 5}{100} + \frac{110 \times 3}{100} = 119 \text{ kW}$	
Reading values		
During FAT:	On site:	
Measured value: 120 kW Taking into account the installation, measurement tolerances, etc. Then the capacity can be comprised between: $120 - \frac{120 \times 3}{100} = 116,4 \text{ kW}$ and $120 + \frac{120 \times 3}{100} = 123,6 \text{ kW}$ Conclusion: Equipment is refused, capacity could be inferior to CONTRACTOR order.	Measured value: 114 kW Taking into account the installation, measurement tolerances, etc. Then the capacity can be comprised between: $114 - \frac{114 \times 5}{100} = 108,3 \text{ kW}$ and $114 + \frac{114 \times 5}{100} = 120,7 \text{ kW}$ Conclusion: Equipment is refused, capacity could be inferior to CONTRACTOR order.	
Measured value: 127 kW Taking into account the installation, measurement tolerances, etc. Then the capacity can be comprised between: $127 - \frac{127 \times 3}{100} = 123 \text{ kW}$ to $127 + \frac{127 \times 3}{100} = 130 \text{ kW}$ Equipment is accepted: capacity is superior to CONTRACTOR order.	Measured value: 127 kW Taking into account the installation, measurement tolerances, etc. Then the capacity can be comprised between: $127 - \frac{127 \times 5}{100} = 120 \text{ kW}$ and $127 + \frac{127 \times 5}{100} = 133 \text{ kW}$ Equipment is accepted: capacity is superior to CONTRACTOR order.	

This principle must be applied for equipment which require maximum value concerning the *DESIGN POINT* and the *WORKING POINT*.

4. Abbreviations

Abbreviation	Means :
AC	Alternative current
AHU	Air handling unit(s)
CWU	Chilled water unit
D&ID	Duct Instrument Diagram
ESD	Emergency shut-down
FAT	Factory acceptance tests
F&G	Fire & gas
HMI	Human machine interface
HP	High pressure
HV	High voltage
HVAC	Heating, ventilation and air conditioning
HVAC CC	<i>HVAC</i> control cabinet
HVAC MCC	<i>HVAC</i> motors control centre
ICSS	Integrated Control and Safety System
I/O	Input / Output
KOM	Kick-off meeting
LED	Light Emitting Diode
LP	Low pressure
LV	Low voltage
MCC	Motors control centre
ME	Maintenance Engineering
MTO	Material take-off
MV	Mean voltage
NC	Normally closed
NDT	Non Destructive Testing
NO	Normally open
OC	Operator console
P&ID	Pipe Instrument Diagram
PC	Personal computer
PLC	Programmable logic controller
PWHT	Post Weld Heat Treatment



Exploration & Production

General Specification

Date: 10/04

GS HVA 801

Rev: 02

Abbreviation	Means :
QC	Quality control
SOD	Shut-off damper
UPS	Un-interruptible power supply
VDRS	Vendor documents request schedule
VDS	Vendor documents schedule
VDT	Validation design test
VLV	Very low voltage
VDU	Video display unit
WPS	Weld Procedure Specification