



Exploration & Production

GENERAL SPECIFICATION

HVAC

GS EP HVA 010

Selection of Stainless Steel Grade for HVAC Equipment
--

01	10/2009	Updating of "Reference documents"
00	10/2007	First issue
Rev.	Date	Notes



Contents

1. Scope	3
2. Reference documents.....	3
3. Definitions.....	4
4. Choice of stainless steel grade.....	5



1. Scope

The purpose of this specification is to define the choice of stainless steel grade for the *HVAC* equipment to avoid or to reduce the corrosion due to the ambient conditions.

This specification is only applicable when stainless steel is required by specification(s) or by data sheet.

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.

Order of precedence of documents is defined in **GS EP HVA 100**.

Notes:

- In case of discrepancy between documents (whatever the documents and/or whatever origins), the most expensive solution must be quoted by the *BIDDER*. During the studies (Basic Engineering and/or Detailed Engineering) *CONTRACTOR*(s) shall raise the discrepancy in question to the *COMPANY*'s *HVAC SPECIALIST* who will then review and advise which document(s) is (are) to be specified for the project.
- The *HVAC VENDOR* or *CONTRACTOR* may propose proven improvements to the reference documents but must obtain written approval of the *COMPANY* prior to implementation.
- An International Standard is a good "engineering practice" which shall be recognised and taken into consideration by *VENDOR*, *SUPPLIER*, *MANUFACTURER* and/or *CONTRACTOR*. If required, the translation of the standards must be included into *HVAC* scope.
- The latest revision of Standards, codes, regulations and the published errata if any must be used and applied by *VENDOR*, *SUPPLIER*, *MANUFACTURER* and *CONTRACTOR*.

Standards

Reference	Title
ASTM A 240/A 240M	Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications

**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
GS EP HVA 000	List of HVAC specifications
GS EP HVA 100	Basis of design
GS EP HVA 801	Terminology, definition, abbreviations

3. Definitions

Condensation: presence of water on the surface of equipment, due to the fact that the surface temperature of the equipment is lower than the dew point temperature of ambience.

Note: The surface temperature is not only resulting from thermal conduction, but also includes the natural/forced convection and thermal radiation.

Geographic Criterion: value associated to site where the equipment is installed. The *Geographic Criterion* is symbolized by the two characters "GC". The value assigned to the *Geographic Criterion* defines the choice of stainless steel grade. This value can be 0 or 1.

The value of the *Geographic Criterion* GC is mentioned within the *HVAC* basis of designed of the Project.

Ratio FA/BA: corresponds to the percentage of fresh air volume relative to the supply air volume.

4. Choice of stainless steel grade

The choice of stainless steel grade must be made in accordance with the context which it is used and with the environment conditions.

When stainless steel is required, the following rules must be applied to select the stainless steel grade. The grade choice must depend on:

- The location of the Project: a *geographic criterion* is indicated within the *HVAC* basis of design document dedicated to the Project

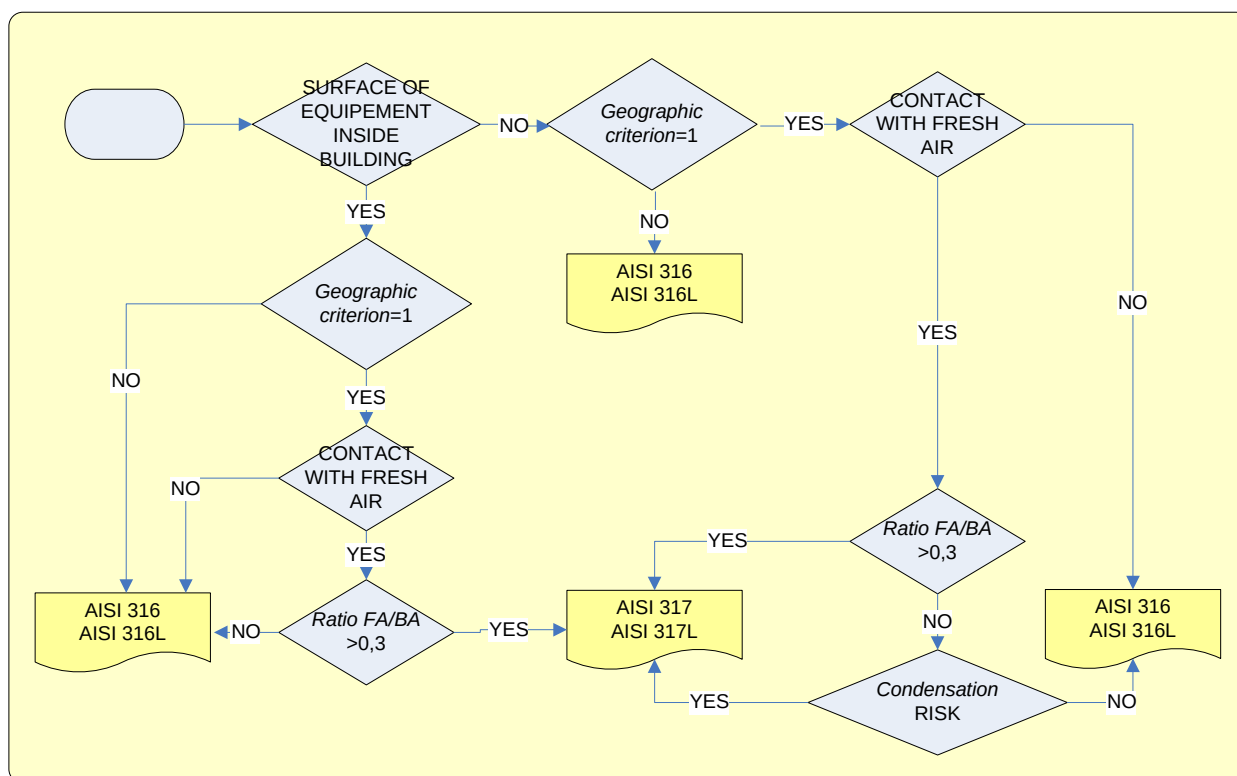
When the *geographic criterion* is not indicated in the *HVAC* basis of design document dedicated to the Project, a GC value equal to 1 must be applied for the Projects located in the following areas:

- South-East Asia (Brunei, Indonesia, Malaysia, Myanmar, Thailand, ...) (offshore Projects or Projects located at less than 5 km from sea)
- Arabic-Persian Gulf (offshore Projects or Projects located at less than 5 km from sea).

For Projects located in other areas, in absence of information in the *HVAC* basis of design document dedicated to the Project, the GC value must be equal to 0.

- The location of concerned equipment: (indoor or outdoor)
- The fact that equipment is exposed to a corrosive atmosphere.

The following chart shall be used by the *CONTRACTOR* to select the appropriate stainless steel grade:



Note: 316L or 317L are required if welding must be performed on the equipment.