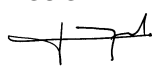


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DOC. No : QD N000N0804E01		Issue D		WBS. No : 320020007		<u>Distribution list</u>	
TITLE : CLASSIFICATION AND PROCEDURE FOR STRUCTURAL AND MECHANICAL PARTS							
<u>Summary :</u> This document deals with classification of structural and mechanical parts, for NH90 programme. Its aim is to define the principles, rules and procedures to be used for the classification of structural and mechanical parts. It presents: - the responsibilities - the criteria to be used by Engineering department for the classification of structural and mechanical parts. - the general rules and procedures to be applied for the activities of Design and Development.						NHI GMDGM ED OPS PRO QA AG PM TC QA EC PM TC QA ECD PM TC QA FK PM TC QA	
						<u>Programme Archives</u> Page 1	
SDRC/LF Prepared by (name) : Signature : Date : Approved by () : Signature : Date :							
<u>Delegated authority(ies)</u> Authorized by : Signature : Date :		MAZZUCHELLI SP 26/10/01 AG	SCHWARZE SP 26/10/01 EC	SCHWARZE SP 26/10/01 ECD	TER HAAR e-mail 26/10/01 FK	RUESKAMP SP 26/10/01 NHI	
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1. PURPOSE.

This document deals with classification of structural and mechanical parts, for NH90 programme.

Its aim is to define the principles, rules and procedures to be used for the classification of structural and mechanical parts.

It presents :

- the responsibilities.
- the criteria to be used by Engineering department for the classification of structural and mechanical parts.
- the general rules and procedures to be applied for the activities of Design and Development.

This document shall be considered as a "bridging" document as quoted in the Quality Assurance Plan QD N000N0801E01 § "Quality documents".

2. REFERENCE DOCUMENTS.

- ① Quality Assurance Plan: QD N000N0801E01
- ② Safety Plan: MD N000A0419E01
- ③ Classification of the parts (AG): NTA 0001/44
- ④ Classification on flight structure parts (EC/ECD): EP 04 06 and QD N000A0823E01
- ⑤ Classification of structural aerospace parts (FK): TH 1.185

3. RESPONSIBILITIES.

The Engineering department is responsible for the classification of parts and the definition of requirements.

The Production department is responsible for observance and compliance with technical requirements defined by Engineering and Quality Assurance departments.

Quality Assurance department is responsible to survey and verify the application of the procedures and the observance of the requirements.

4. CLASSIFICATION OF PARTS.

4.1 Definition of "Parts".

One piece, or two or more pieces joined together which are not normally subject to disassembly without destruction of designed use.

For their classification, the consequence on the aircraft and / or crew of the failure / damage of the part is regarded.



4.2 Safety Classes Definition.

Each part must be classified by the Engineering department according to the following:

Safety Class I.

All parts whose failure during ground or flight operation could cause catastrophic effect to the aircraft. This class is divided in two sub-classes :

- class **I_a** (Critical parts) : parts which have no additional margin in reference to the one required, in terms of fatigue safe service life or damage tolerance characteristics.
- class **I_b** (Important parts) : parts which have additional margin in reference to the one required, in terms of fatigue safe service life or damage tolerance characteristics.

Determination of additional margin

In accordance with Partner Companies classification criteria internal normative, refer to documents ③, ④, ⑤ quoted in the paragraph 2 "Reference documents"

Safety Class II (major events)

All parts whose failure would reduce the capability of the aircraft or the ability of the crew to cope with adverse operating conditions to the extent that there would be, for example, a significant reduction in safety margins or functional capabilities, a significant increase in crew workload, or in condition impairing crew efficiency, or discomfort to occupants possibly including injuries.

Safety Class III (minor events)

All parts which are not covered by Class I or Class II.

4.3 Requirements for classified parts.

Thanks to the safety classification and taking account of design characteristics, the classified parts will be submitted to specific requirements regarding procurement, manufacture, inspection and maintenance.

- For Class **I_a** parts, the "**Invariable Defined Process**" is required. Specific requirements shall be detailed in design documents.
- For Class **I_b** parts, the "**Invariable Defined Process**" is not mandatory. Specific requirements shall be detailed in design documents.
- For Class **II** and Class **III** parts, specific requirements may be detailed in design documents.



Note: Invariable Defined Process means that all or part of the manufacturing and inspection processes shall not be modified without the Quality Assurance and Engineering department approval. Each company shall define his own "Invariable Defined Process" in a specific document, including the invariable manufacturing and quality control parameters.

5. APPLICABLE RULES AND PROCEDURES.

The applicable rules and procedures are increasingly stringent for increasing safety classes, and are intended to ensure the required quality level for each class.

Traceability and marking is mandatory for all the Class **I_a** parts.

Traceability means that the part and the manufacturing condition must be traceable by documents back to the material batch.

5.1 Design.

All parts, welding and bonding assemblies, shall be classified from the first design stage in Class **I**, Class **II** or Class **III**.

Assemblies which can be dismantled (including riveted assemblies) must not be classified.

If the fatigue behaviour of an assembly is influenced by the assembling process, it is necessary to classify the assembly at the level of the most stringent detail part.

A Class **I** parts list shall be prepared and available at the Critical Design Review.

The safety class number of a part shall be indicated on design documents.

The safety class number of the assembly itself shall be indicated on assembly part list heading.

For Class **I_a** parts :

The following indications shall be marked on definition, production and quality documents :

- "Class **I_a**"
- "Invariable Defined Process"

Identification.

The identification of a part includes :

- the part number.
- an individual serial number or a batch number.
- the supplier identification.

For Class **I** parts;

- the safety class number shall be indicated on manufacturing, quality control and maintenance documents (Class **I_a** only)
- an individual serial number (or a batch number in case of parts too small to be individually marked) shall be affected for Class **I_a** parts and **for parts to be followed up during service life.**



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For Class II parts;

- a batch number is generally used, but an individual serial number may be requested by Engineering department.

5.2 Manufacturing of Class Ia parts

The Production department will have to observe the existing organization. This includes, writing and storage of manufacturing sheets, use of usual modification circuits, methods and means, and operator's check.

Manufacturing procedures, processes, operations or parameters, which are frozen, shall not be modified without the Quality Assurance and Design office approval.

Manufacturing follow up record sheets shall be stored for a period of the life cycle of the aircraft (and at least 30 years).

5.3 Quality Assurance.

Inspection methods are as described in the usual inspection documents. Every design characteristics is to be guaranteed.

Generally, inspection operations will be left to the Quality Assurance department appreciation.

Specific inspection operations may be required, by the Engineering department, especially for Class Ia and Class Ib parts.

Quality documentation may be necessary in some cases. Such documents may be required, by the Engineering department in accordance with the Quality Assurance department, especially for Class Ia and Class Ib parts.

5.4 Maintenance

Specific instruction may be reported in maintenance documents according to Engineering department requirements, especially for Class Ia parts.

All manufacturing procedures and process used for Class Ia parts repairing shall fulfill requirements applicable to Class Ia parts manufacturing.

5.5 Suppliers

Each Partner Company shall specify, in his subcontracts, the requirements concerning the classification of parts.

These requirements shall comply with the present document.