



QM025
Quality JSF program

Revision: 05
Date: 29 August 2012

Approval:
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JSF Criticalities and CTE / CTM Characteristics

Revision status

The latest revision of this document may be confirmed by viewing the Fokker Landing gear (FLG) website at: <http://www.fokker.com/Supplier-Management>
Questions regarding this document should be directed to the FLG procurement department.

Appendices

Appendix 1: Example CTE report / list

Introduction

In the JSF program Criticalities and CTE/CTM Characteristics (Critical To Engineering / Critical To Manufacturing Characteristics) are used. Criticalities lay down the influence of a product on the condition of the aircraft. CTE/CTM's lay down the influence of the variations of the features of a material or part on product fit, performance, service life, or manufacturability.

1) JSF Criticalities

1.1 Identification on the drawing

Parts for the JSF program can have one of the following criticalities:

Safety critical: An equipment part that contributes to a safety critical function, and whose failure alone results in the loss of the air vehicle, major system damage (greater than \$1,000,000), death, severe injury or occupational illness, or severe environmental damage.

Durability critical: An equipment part which failure alone, or frequent failure amongst many air vehicles, would generate major economic impact on air system performance by: a) requiring costly maintenance, part repair, and/or replacement to assure continued performance, or b) causing the air vehicle(s) to be down for extended periods of time for repair.

Other / Expendable: Other / Expendable part includes all components of a system not classified as safety critical, mission critical, or durability critical. The failure of these components could be handled during routine maintenance and would not impact mission, safety, or operational readiness.

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1.2 Handling of Criticalities

The term “Safety critical”, “Durability critical”, or “Expendable” shall be specified and placed on all documents, including electronic documents.

Marking of parts shall be done as specified on the drawing.

Manufacturing plans for Safety Critical parts shall always be approved by Fokker Landing Gear B.V, formally known as Stork SP Aerospace B.V..

2) JSF CTE/CTM Characteristics

2.1 Definition of CTE/CTM Characteristics

CTE/CTM Characteristics for a part, subassembly or system are those selected geometrical, material properties, functional and/or cosmetic features, which are measurable, whose variation control is necessary in meeting Customer requirements and enhancing Customer satisfaction. Further it is a feature whose variation has a significant influence on product fit, performance, service life, or manufacturability.

CTE/CTM Characteristics can be handled as KC’s in accordance with the latest revision of SAE AS9103 “Variation Management of Key Characteristics”.

2.2 Identification on the drawing

2.2.1 All CTE/CTM Characteristics are mentioned on the drawing.

2.2.2 CTE/CTM Characteristics shall be implemented in the manufacturing planning, listing how the CTE/CTM Characteristics shall be measured, the frequency of measuring and the method how the results shall be recorded.

2.3 Handling of CTE/CTM Characteristics

2.3.1 For all parts ordered by the purchase order a 100% inspection or measurement of the CTE/CTM Characteristics are required, without any exceptions.

2.3.2 All measurements or inspections of CTE/CTM Characteristics shall be recorded¹ on a measuring report (see appendix 1 for an example).

2.3.3 Manufacturers shall submit the measuring reports together with the products. Measuring reports shall provide traceability to the manufactured (serialized) part. In case of measurement or inspection of non-serialized parts; all parts shall be measured or inspected. It is allowed to record all measurements or inspections on one report, without a link to each specific single part.

¹ Recorded means:

- In case of an inspection: OK or ACCEPTED is allowed to be recorded
- In case of a measurement: record the measured actual value.



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Appendix 1, Example CTE report/list

EXAMPLE CTE report / list:

Partnumber :	<i>Drawing Nr</i>	Revision	<i>Drawing rev.</i>	FLG order:	<i>Ordernr.</i>
Part name :	<i>Title</i>	Serial nr.	<i>Serial / batch</i>	Date :	<i>Date</i>

Optional fields in case supplier prefers to add supplier internal numbers

CTE	B/P zone	Requirement (imperial)	Measured (imperial)	Accept	Remarks
1	1C1	Ø1,0±0,01	Ø1,005	Y	
2	1D6	Ø1,5±0,1	Ø1,75	N	Add NCR number
3	2A3	0,5625-24UNJEF-3A	N/A	Y	Measured with go-no go gauge
4	-	Check paint coverage	N/A	Y	Visual check
5	1G6	45HRc min	47-48-47 HRc	Y	Mean value > 45HRc
6	1A3	Do not break edge, remove burr (3 locations)	N/A	Y	Visual check
	1C4			Y	Visual check
	1D2			Y	Visual check
Supplier Quality name and signature:					

- Examples of measurements / inspections stated on drawings are:
 - Check hardness → report actual value;
 - Check dimension → report actual value;
 - Check Strength → report actual value;
 - Check presence of → OK or ACCEPTED.
- The CTE list of several parts may be combined, in that case a clear link shall be present between serial number and measurement, like adding a column serial nr to the table
- In case of an accept "NO" reference to the FLG NCR number is required
- In case no value can be noted, note N/A and add clarification in remarks column.
- In case a CTE is applicable to multiple locations all locations need to be addressed in the CTE list.
Multiple CTE Characteristics in the same B/P zone must all be separately recorded on the measuring report
- Imperial dimensions are leading; therefore the CTE list should contain at least the imperial values. The addition of extra columns with metric values is permitted for information.