Test specification for CRES

OB_TG1_R009 rev. 0

Confidential

OPTIMAT BLADES

TG 1

Olaf Krause

DLR Knowledge Centre WMC ECN TU Delft KAPE CRES DEWI ECN UNIVERSITY OF PATRAS VUB

Change record

Issue/revision	date	Pages	Summary of changes
0	14.01.04	All	New document

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1 Introduction

This document describes the required tests, which have to be performed by CRES within Task Group 1 of the OPTIMAT BLADES project. These tests contain static and fatigue tests as well and are specified in the DPA [1] of Task Group 1.

2 General

The general testing procedures are described in the 'General test specification' [2] and have to be followed by CRES. The specific details for the necessary tests are given in the following chapter.

3 Experimental program

The foreseen tests are only conducted with the UD material and the OPTIMAT specimen using the 0° lay-up.

3.1 Static tests

Concerning the static tests, five tensile and five compressive tests according [2] are required.

3.2 Fatigue tests

3.2.1 Constant amplitude (CA)

The CA fatigue tests are required for three different R-ratios (R=0.1, R=-1, R=10) according [2]. In total, 25 specimens have to be tested. A detailed overview of the tests is given in Table 1.

R-ratio	Load Level	Specimens
-1	1	3
	2	3
	3	3
	4	1
0.1	1	3
	2	3
	3	3
10	1	2
	1	2
	1	2

Table 1: CA fatigue testing program

3.2.2 Variable amplitude (VA)

The specification of the VA tests is not yet available.

4 References

[1] Ch.W. Kensche et al., *Detailed plan of action Task Group 1*, DLR, doc. OB_TG1_O002 rev. 4, 17.02.2003

[2] Olaf Krause and Theodore P. Philippidis, *General Test Specification*, DLR, doc. OB_TC_R014 rev. 0, 07.01.2004