DIN EN ISO 7539-9:2021-11 (E)

Corrosion of metals and alloys - Stress corrosion testing - Part 9: Preparation and use of pre-cracked specimens for tests under rising load or rising displacement (ISO 7539-9:2021)

Contents

Page

European foreword 3

Foreword 4

1 Scope 5

2 Normative references 5

3 Termsanddefinitions 5

4 Principle 6

5 Specimens 7
5.1 General 7
5.2 Specimen design 8
5.3 Stress intensity factor considerations 15
5.4 Specimen preparation 19
5.5 Specimen identification 21

6 Initiation and propagation of fatigue cracks 22

7 Procedure 23
7.1 General 23
7.2 Environmental considerations 24
7.3 Environmental chamber 24
7.4 Environmental control and monitoring 25
7.5 Selection of initial K value prior to dynamic loading 26
7.6 Determination of KISCC .....
7.6.1 General 26
7.6.2 Determination schedule 26
7.6.3 Validation of test results 28
7.7 Determination of crack velocity 29

8 Test report 29

Annex A (informative) Determination of a suitable displacement rate for determining KISCC from constant displacement rate tests 31

Annex B (informative) Determination of crack growth velocity 33

Annex C (informative) Information on indirect methods for measuring crack length (see also ISO 21153) 34

Bibliography 36