DIN EN 12082:2021-09 (E)

Railway applications - Axleboxes - Performance testing (includes Amendment :2021)

Contents

Page

European foreword 4

Introduction 5

1 Scope 6

2 Normative references 6

3 Terms and definitions 6

4 Symbols and abbreviations 8

5 Test specification 10
5.1 General requirements 10
5.2 Test specification content 10
5.2.1 General 10
5.2.2 Rig tests 10
5.2.3 Field test 11

6 Water tightness test 11

7 Rig performance test 12
7.1 General 12
7.2 Test execution 12
7.2.1 Test rig 12
7.2.2 Test parameters 13
7.3 Carrying out the test 14
7.3.1 Pre-test 14
7.3.2 Performance test 15
7.4 Acceptance criteria 15
7.4.1 Results obtained during the test 15
7.4.2 Results obtained after the test 16
7.5 Performance test report 16

8 Field test 17
8.1 General 17
8.2 Carrying out the test 17
8.3 Test parameters 18
8.4 Acceptance criteria 18
8.4.1 Results to be obtained at intermediate inspections during the test 18
8.4.2 Results to be obtained after the test 18
8.5 Field test report 18

Annex A (normative) Rig performance test 20

A.1 Schematic examples of test rigs 20
A.2 Temperature measurements 21
A.3 Grease sampling zones 23
A.4 Definition of forces 24
A.5 Definition of test cycles 24
A.5.1 Speed Classes and cumulative distances for testing 24
A.5.2 Conditions for sequenced tests 25

A.5.3 Particular conditions for similar rolling bearing(s), grease or box housing 25
A.6 Graphical presentation of test cycles 26
A.7 Temperature criteria 27
A.8 Mechanical and physico-chemical acceptance criteria 28
A.8.1 Mechanical criteria 28
A.8.2 Physico-chemical criteria 29
A.9 Reference to existing approval results 31
A.9.1 General 31
A.9.2 Preconditions for applicability of existing results 31

Annex B (informative) Sequenced performance tests 34

B.1 General 34
B.2 High Speed Train example 34
B.3 Passenger train example 36
B.4 Freight train example 37
B.5 Peri-urban train example 39

Annex C (normative) Water tightness test 41

C.1 General 41
C.2 Test conditions 41
C.3 Test procedure 42
C.4 Pass/fail criterion 42
C.5 Test report 42
C.6 Sketches 43
C.6.1 Classic application 43
C.6.2 Application with dynamic seals on both sides of the axlebox 44

Annex D (informative) Temperature evaluation examples 45

D.1 General 45
D.2 Nomenclature 45
D.3 Criterion A 45
D.4 Criterion B 46
D.5 Criterion C 46
D.6 Criterion D 47
D.7 Criterion E1 47
D.8 Criterion E2 47

Bibliography 49