DIN EN 1793-6:2018-08 (E)

Road traffic noise reducing devices - Test method for determining t he acoustic performance - Part 6: Intrinsic characteristics - In situ values of airborne sound insulation under direct sound field conditions

Contents

Page

European foreword 4

Introduction 6

1 Scope 8

2 Normative references 8

3 Terms and definitions 8

4 Sound insulation index measurements 13
4.1 General principle 13
4.2 Measured quantity 13
4.3 Test arrangement 14
4.4 Measuring equipment 19
4.4.1 Components of the measuring system 19
4.4.2 Sound source 19
4.4.3 Test signal 19
4.5 Data processing 20
4.5.1 Calibration 20
4.5.2 Sample rate 20
4.5.3 Background noise 21
4.5.4 Scanning technique using a single microphone 21
4.5.5 Scanning technique using nine microphones 21
4.5.6 Adrienne temporal window 22
4.5.7 Placement of the Adrienne temporal window 23
4.5.8 Low frequency limit and sample size 24
4.6 Positioning of the measuring equipment 25
4.6.1 Selection of the measurement positions 25
4.6.2 Post measurements 26
4.6.3 Additional measurements 26
4.6.4 Reflecting objects 26
4.6.5 Safety considerations 26
4.7 Sample surface and meteorological conditions 27
4.7.1 Condition of the sample surface 27
4.7.2 Wind 27
4.7.3 Air temperature 27
4.8 Single-number rating 27
4.8.1 General 27
4.8.2 Acoustic elements 27
4.8.3 Posts 28
4.8.4 Global 28

5 Measurement uncertainty 29

6 Measuring procedure 29

7 Test report 29

Annex A (informative) Categorization of single-number rating 31

Annex B (informative) Guidance note on use of the single-number rating 32

Annex C (informative) Measurement uncertainty 33

C.1 General 33
C.2 Measurement uncertainty based upon reproducibility data 33
C.3 Standard deviation of repeatability and reproducibility of the sound insulation index 33

Annex D (informative) Template of test report on airborne sound insulation of road traffic noise reducing devices 36

D.1 General 36
D.2 Test setup (example) 38
D.3 Test object and test situation (example) 39
D.4 Results (example) 42
D.4.1 Part 1 - Results for `element' in tabular form 42
D.4.2 Part 2 - Results for `element' in graphic form 43
D.4.3 Part 3 - Results for `post' in tabular form 44
D.4.4 Part 4 - Results for `post' in graphic form 45
D.4.5 Part 5 - Results for global condition (average of `element' and `post') in tabular form 46
D.4.6 Part 6 - Results for global condition (average of `element' and `post') in graphic form 47
D.5 Uncertainty (example) 47

Bibliography 50