DIN EN 1793-6:2026-07 (E)

Road traffic noise reducing devices - Test method for determining the acoustic performance - Part 6: Intrinsic characteristics - 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 Symbols and abbreviations 14

5 Sound insulation index measurements 16
5.1 General principle 16
5.2 Measured quantity 17
5.3 Test arrangement 17
5.3.1 General 17
5.3.2 Tests on purposely built full-size test specimens 17
5.3.3 Tests on installed road traffic noise reducing devices 18
5.3.4 Non-flat, inclined or curved road traffic noise reducing devices 18
5.4 Measuring equipment 23
5.4.1 Components of the measuring system 23
5.4.2 Sound source 24
5.4.3 Test signal 25
5.5 Data processing 25
5.5.1 Calibration 25
5.5.2 Sample rate and filtering 25
5.5.3 Background noise 26
5.5.4 Measurement technique using nine microphones 27
5.5.5 Adrienne temporal window 28
5.5.6 Placement of the Adrienne temporal window 29
5.5.7 Low-frequency limit 30
5.6 Positioning of the measuring equipment 32
5.6.1 Selection of the measurement positions 32
5.6.2 Post measurements 32
5.6.3 Additional measurements 32
5.6.4 Reflecting objects 33
5.6.5 Safety considerations 33
5.7 Test specimen surface and meteorological conditions 33
5.7.1 Condition of the test specimen surface 33
5.7.2 Wind 33
5.7.3 Air temperature 33
5.8 Single-number rating 33
5.8.1 General 33
5.8.2 Acoustic elements 33
5.8.3 Posts 34
5.8.4 Global 34

6 Measurement uncertainty 35

7 Measuring procedure 35

8 Test report 36

Annex A (informative) Low-frequency limit and window width 38

Annex B (normative) Measurement uncertainty 43

B.1 General 43
B.2 Measurement uncertainty based upon reproducibility data 43
B.3 Standard deviation of repeatability and reproducibility of the sound insulation index 43

Annex C (normative) Template of test report on airborne sound insulation of road traffic noise reducing devices 46

C.1 General 46
C.2 Test setup (example) 48
C.3 Test object and test situation (example) 50
C.4 Results (example) 52
C.4.1 Part 1 - Results for `element' in tabular form 52
C.4.2 Part 2 - Results for `element' in graphic form 53
C.4.3 Part 3 - Results for `post' in tabular form 54
C.4.4 Part 4 - Results for `post' in graphic form 55
C.5 Uncertainty (example) 55

Annex D (normative) Indoor measurements for product qualification 58

D.1 General 58
D.2 Parasitic reflections 58
D.3 Reverberation time of the room 58

Bibliography 59