DIN ISO 362-1:2017-10 (E)

Measurement of noise emitted by accelerating road vehicles - Engineering method - Part 1: M a nd N categories (ISO 362-1:2015)

Contents

Page

National foreword 4

National Annex NA (informative) Bibliography 5

Foreword 6

Introduction 7

1 Scope 8

2 Normative references 8

3 Terms and definitions 9

4 Symbols terms and abbreviated terms 13

5 Specification of the acceleration for vehicles of categories M1 and M2 having a maximum authorized mass not exceeding 3 500 kg and of category N1 16
5.1 General 16
5.1.1 Applicability and conditions 16
5.1.2 Calculation of total engine power 16
5.1.3 Battery state of charge 17
5.2 Calculation of acceleration 17
5.2.1 Calculation procedure for vehicles with manual transmission, automatic transmission, adaptive transmission, and continuously variable transmission (CVT) tested with locked gear ratios 17
5.2.2 Calculation procedure for vehicles with automatic transmission, adaptive transmission, and CVT tested with non-locked gear ratios 17
5.3 Calculation of the target acceleration 18
5.4 Calculation of the reference acceleration 18
5.5 Partial power factor kP 19

6 Instrumentation 19
6.1 Instruments for acoustical measurement 19
6.1.1 General 19
6.1.2 Calibration 19
6.1.3 Compliance with requirements 19
6.2 Instrumentation for speed measurements 20
6.3 Meteorological instrumentation 20

7 Acoustical environment, meteorological conditions, and background noise 20
7.1 Test site 20
7.2 Meteorological conditions 21
7.3 Background noise 21

8 Test procedures 22
8.1 Microphone positions 22
8.2 Conditions of the vehicle 22
8.2.1 General conditions 22
8.2.2 Test mass of the vehicle 22
8.2.3 Tyre selection and condition 25

8.3 Operating conditions 25
8.3.1 Vehicles of categories M1 and M2 having a maximum authorized mass not exceeding 3 500 kg and category N1 25
8.3.2 Vehicles of category M2 having a maximum authorized mass exceeding 3 500 kg, and categories M3, N2 and N3 28
8.4 Measurement readings and reported values 32
8.4.1 General 32
8.4.2 Data compilation 32
8.4.3 Vehicles of categories M1 and M2 having a maximum authorized mass not exceeding 3 500 kg and category N1 33
8.4.4 Vehicles of category M2 having a maximum authorized mass exceeding 3 500 kg and categories M3, N2, and N3 33
8.5 Measurement uncertainty 34

9 Test report 34

Annex A (informative) Technical background for development of vehicle noise test procedure based on in-use operation in urban conditions 36

Annex B (informative) Measurement uncertainty -- Framework for analysis according to ISO/IEC Guide 98-3 (GUM) 58

Annex C (informative) Flowchart of the procedure for categories M1 and M2 having a maximum authorized mass not exceeding 3 500 kg and category N1 61

Annex D (informative) Flowchart for vehicles of category M2 having a maximum authorized mass exceeding 3 500 kg and categories M3, N2, and N3 with locked gears 66

Annex E (informative) Flowchart for vehicles of category M2 having a maximum authorized mass exceeding 3 500 kg and categories M3, N2, and N3 with non-locked gears 67

Annex F (informative) Flowchart for vehicles of category M2 having a maximum authorized mass exceeding 3 500 kg and categories M3, N2, and N3 with no rotational engine speed available 69

Annex G (informative) Indoor test operation 70

Bibliography 73