DIN EN 13684:2010-04 (E)

Garden equipment - Pedestrian controlled lawn aerators and scarifiers - Safety (includes Amendment A3:2009)

Contents

Page

Foreword 4

0 Introduction 5

1 Scope 6

2 Normative references 6

3 Terms and definitions 7

4 List of significant hazards 9

5 Safety requirements and/or protective measures 12
5.1 General 12
5.2 %Power driven components and the tines& 12
5.3 Guard attachment 12
5.4 Hot exhaust surfaces 13
5.4.1 General 13
5.4.2 Test equipment and method of test 13
5.4.3 Test acceptance 13
5.5 Protection from exhaust fumes 13
5.6 Pressurised components 13
5.7 Liquid spillage 14
5.8 Controls 14
5.8.1 General 14
5.8.2 Identification of controls 14
5.8.3 Operator presence control 15
5.8.4 Traction drive 15
5.9 Electrical requirements 15
5.9.1 General 15
5.9.2 Low voltage battery circuits (not including magneto grounding circuits) 15
5.9.3 Terminals and uninsulated electrical parts 16
5.10 Stopping and starting 16
5.10.1 Engine 16
5.10.2 %Aerators - Tines& 16
5.11 Braking requirements 17
5.11.1 General 17
5.11.2 Service brake 17
5.11.3 Parking brake 17
5.12 Handles 17
5.12.1 Construction 17
5.12.2 Foot probe test 18
5.13 Thrown object hazard 18
5.13.1 General 18
5.13.2 Thrown object test 18
5.13.3 Test results 19
5.13.4 Test acceptance (pass/fail criteria) 19
5.13.5 Additional testing 19
5.14 Strength of tines and tine mountings 19
5.15 General construction -- Guarding and shielding 20
5.16 Noise 21

5.16.1 Noise reduction as a safety requirement 21
5.16.2 Verification of requirements on noise -- Noise measurement 22
5.17 Vibration 22
5.17.1 Reduction by design and protective measures 22
5.17.2 Reduction by information 22
5.17.3 Vibration measurement 22

6 Information for use 23
6.1 Instruction for use 23
6.2 Marking 24
6.2.1 Minimum marking 24
6.2.2 Warnings 24
6.2.3 Marking durability 25
6.2.4 Test 25

Annex A (normative) %Safety signs and symbols& 34

A.1 General 34
A.2 %Safety signs and symbols& 34

Annex B (informative) Safety instructions 36

B.1 General 36
B.2 Safe operation practices 36
B.2.1 Training 36
B.2.2 Preparation 36
B.2.3 Operation 37
B.2.4 Maintenance and storage 38

Annex C (normative) Noise test code -- Engineering method (grade 2) 39

C.1 Scope 39
C.2 A-weighted sound power level determination 39
C.3 A-weighted emission sound pressure level measurement 41
C.4 Requirements for test floor 41
C.4.1 Artificial surface 41
C.4.2 Natural grass 42
C.5 Installation, mounting and operating conditions 42
C.6 Measurement uncertainties and declaration of noise emission values 43
C.7 Information to be recorded and reported 43

Annex D (informative) Example of a material and construction fulfilling the requirements for an artificial surface 44

D.1 Material 44
D.2 Construction 44

Annex E (normative) Vibration 46

E.1 Quantities to be measured 46
E.2 Instrumentation 46
E.2.1 General 46
E.2.2 Fastening of transducer 46
E.2.3 Calibration 46
E.3 Measurement direction and measurement location 46
E.3.1 Measurement direction 46
E.3.2 Measurement location 47
E.4 Determination of working procedure 47
E.5 Measurement procedure 47
E.6 Determination of the measurement result 48

Annex ZA (informative) #Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC$ 49

Annex ZB (informative) #Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC$ 50

Bibliography 51