

# DIN EN 15503:2016-04 (E)

## Garden equipment - Garden blowers, vacuums and blower/vacuums - Safety (includes Amendment A2:2015)

### Contents

Page

European foreword.....	5
Introduction .....	6
1 Scope.....	7
2 Normative references.....	7
3 Terms and definitions .....	8
4 List of significant hazards .....	10
5 Safety requirements and/or protective measures .....	11
5.1 General.....	11
5.2 All machines.....	12
5.3 Hot parts guarding.....	12
5.4 Fan housing strength and rigidity.....	13
5.4.1 Requirements .....	13
5.4.2 Fan housing strength and rigidity test of hand-held and backpack powered machines ...	13
5.5 Structural integrity of vacuums .....	13
5.5.1 Requirements .....	13
5.5.2 Structural integrity test .....	13
5.6 Handles and controls .....	14
5.6.1 Controls.....	14
5.6.2 Handles .....	14
5.6.3 Harness for machines other than those with back-pack power unit .....	15
5.7 Starting device.....	15
5.8 Noise .....	15
5.8.1 Reduction by design and protective measures .....	15
5.8.2 Reduction by information .....	16
5.8.3 Noise emission measurement.....	16
5.9 Vibration .....	16
5.9.1 Reduction by design and protective measures .....	16
5.9.2 Reduction by information .....	16
5.9.3 Vibration measurement.....	16
5.10 Protection from exhaust fumes.....	16
5.11 Electrical requirements .....	16
5.11.1 General.....	16
5.11.2 Ignition circuit.....	16
5.12 Fuel tank openings.....	17
5.13 Additional requirements for back-pack powered units .....	17
5.13.1 Handgrip.....	17
5.13.2 Back-pack support and harness .....	17
6 Information for use .....	17
6.1 Instruction handbook.....	17
6.2 Marking.....	19
6.3 Warnings .....	19
6.4 Durability of markings and warnings .....	20
Annex A (normative) Noise test code - Engineering method (Grade 2 of accuracy) .....	22

<b>A.1</b>	<b>General .....</b>	<b>22</b>
<b>A.2</b>	<b>Machine conditions.....</b>	<b>22</b>
<b>A.3</b>	<b>Mounting and orientation of the machine.....</b>	<b>22</b>
<b>A.3.1</b>	<b>Mounting of the machine on the test fixture.....</b>	<b>22</b>
<b>A.3.2</b>	<b>Orientation of the machine for the A-weighted sound power level measurement .....</b>	<b>23</b>
<b>A.3.3</b>	<b>Position of the microphone for the A-weighted sound pressure level measurement.....</b>	<b>23</b>
<b>A.4</b>	<b>Test procedure .....</b>	<b>24</b>
<b>A.4.1</b>	<b>General .....</b>	<b>24</b>
<b>A.4.2</b>	<b>Idling .....</b>	<b>25</b>
<b>A.4.3</b>	<b>Racing.....</b>	<b>25</b>
<b>A.5</b>	<b>Information to be reported.....</b>	<b>25</b>
<b>A.5.1</b>	<b>General .....</b>	<b>25</b>
<b>A.5.2</b>	<b>Machine under test.....</b>	<b>25</b>
<b>A.5.3</b>	<b>Acoustic environment.....</b>	<b>25</b>
<b>A.5.4</b>	<b>Instrumentation.....</b>	<b>25</b>
<b>A.5.5</b>	<b>Acoustical and other data .....</b>	<b>25</b>
<b>A.5.6</b>	<b>Calculated equivalent sound levels for work cycles .....</b>	<b>27</b>
<b>A.6</b>	<b>Declaration of noise emission data .....</b>	<b>28</b>
<b>Annex B</b> (normative)	<b>Measurement of vibration values at the handles.....</b>	<b>29</b>
<b>B.1</b>	<b>General .....</b>	<b>29</b>
<b>B.2</b>	<b>Measurement direction and location .....</b>	<b>29</b>
<b>B.3</b>	<b>Adjustment of the machine before test.....</b>	<b>29</b>
<b>B.4</b>	<b>Test procedure .....</b>	<b>30</b>
<b>B.4.1</b>	<b>General .....</b>	<b>30</b>
<b>B.4.2</b>	<b>Idling .....</b>	<b>30</b>
<b>B.4.3</b>	<b>Racing.....</b>	<b>30</b>
<b>B.5</b>	<b>Information to be reported.....</b>	<b>30</b>
<b>B.5.1</b>	<b>General .....</b>	<b>30</b>
<b>B.5.2</b>	<b>Machine under test.....</b>	<b>30</b>
<b>B.5.3</b>	<b>Instrumentation.....</b>	<b>30</b>
<b>B.5.4</b>	<b>Vibration and other data.....</b>	<b>31</b>
<b>B.5.5</b>	<b>Calculation of equivalent vibration total values .....</b>	<b>31</b>
<b>B.6</b>	<b>Declaration and verification of vibration values .....</b>	<b>32</b>
<b>Annex C</b> (informative)	<b>Examples of safety signs General .....</b>	<b>34</b>
<b>Annex D</b> (normative)	<b>Tortuous path test.....</b>	<b>36</b>
<b>D.1</b>	<b>Requirements.....</b>	<b>36</b>
<b>D.2</b>	<b>Test procedure .....</b>	<b>36</b>

D.3	Test acceptance.....	39
Annex ZA (informative)	Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC.....	40
Bibliography.....		41