

| IEC62841_1E - ATTACHMENT | | | |
|--------------------------|--------------------|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |

| <p align="center">ATTACHMENT TO TEST REPORT IEC 62841-1</p> <p align="center">EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES</p> <p align="center">Electric Motor-Operated Hand-Held, Transportable Tools and Lawn and Garden Machinery - Safety -</p> <p align="center">Part 1: General requirements</p> | | | |
|--|--|--|--|
| Differences according to.....: EN 62841-1:2015 + AC.2015 + A11:2022 | | | |
| Attachment Form No.....: EU_GD_IEC62841_1E | | | |
| Attachment Originator : DEKRA Certification B.V. | | | |
| Master Attachment : 2022-09-02 | | | |
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| | CENELEC COMMON MODIFICATIONS (EN) | | – |
|----------|---|---|-----|
| 8 | MARKINGS AND INSTRUCTIONS | | – |
| 8.4 | Replace the 2nd paragraph with the following: | | – |
| | Markings specified in 8.2 and 8.3 are clearly discernible from the outside of the tool. | | P |
| | Other markings on the tool may be visible after removal of a cover, provided that the location of the markings is readily accessible. | | P |
| 8.14 | The words "Original instructions" appear on the language version(s) verified by the manufacturer or his authorised representative. | | P |
| | Where no "Original instructions" exist in the official language(s) of the country where the tool is to be used, a translation into that/those language(s) is provided by the manufacturer or his authorised representative or by the person bringing the tool into the language area in question. | | P |
| | The translations bear the words "Translation of the original instructions", and they are accompanied by a copy of the "Original instructions". | | N/A |
| 8.12 | Markings easily legible | | P |
| | Markings withstood durability test: - 15 s with water soaked cloth - 15 s with petroleum spirit soaked cloth | | P |
| | Signs are in contrast to their background, clearly legible from a distance of not less than 500 mm | | P |
| | Effect of normal use taken into account | | P |
| | Adhesive backing durable, meets requirements of Annex ZB or... | See Annex ZB | P |
| | ... withstands specified tests | See tables 8.12 A - D in report covering IEC 62841-1:2014 | N/A |

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| 8.14.2 Za) | The noise emission, which is measured in accordance with I.2 | | P |
| | A-weighted sound pressure level L_{pA} and its uncertainty K_{pA} , where L_{pA} exceeds 70 dB(A) L_{pA} [dB(A)] : K_{pA} [dB(A)] : | | N/A |
| | Where L_{pA} does not exceed 70 dB(A), this fact is indicated | See report 6137089.50A | P |
| | A-weighted sound power level L_{WA} and its uncertainty K_{WA} , where the A-weighted sound pressure level L_{pA} exceeds 80 dB(A); L_{WA} [dB(A)] : K_{WA} [dB(A)] : | See report 6137089.50A | P |
| | peak C-weighted instantaneous sound pressure value L_{pCpeak} , where this exceeds 63 Pa (130 dB in relation to 20 μ Pa) L_{pCpeak} (dB) : K_{pCpeak} (dB) : | | N/A |
| | The vibration total value and its uncertainty which is measured in accordance with I.3. | | P |
| | When the vibration total value exceeds 2,5 m/s ² , its value is given in the instructions. Work mode - vibration emission value a (m/s ²)..... : Uncertainty K (m/s ²)..... : | | N/A |
| | When the vibration total value does not exceed 2,5 m/s ² , this is stated. | See report 6137089.50A | P |
| | Information that the declared vibration total value has been measured in accordance with a standard test method and may be used for comparing one tool with another | | P |
| | Information that the declared vibration total value may also be used in a preliminary assessment of exposure. | | P |
| | A warning that the vibration emission during actual use of the power tool can differ from the declared total value depending on the ways in which the tool is used | | P |
| | A warning of the need to identify safety measures to protect the operator that are based on an estimation of exposure in the actual conditions of use (taking account of all parts of the operating cycle such as the times when the tool is switched off and when it is running idle in addition to the trigger time). | | P |
| 18 | ABNORMAL OPERATION | | |

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| 18.8.1 | In Table 4, replace the table footnote by the following: * Performance levels are to be specified in the relevant part of EN 62841-2, EN 62841-3 or EN 62841-4. | | P |
| | Delete the 5th paragraph and the subsequent NOTE 3. | | P |

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| 21 | CONSTRUCTION | | - |
| 21.18.1 | delete the 2nd paragraph. | | P |
| 21.18.1.Z1 | Unless hand-held tools are equipped with a momentary power switch without lock-on device, voltage recovery following an interruption of the supply do not give rise to a hazard. | | N/A |
| | The relevant part of EN 62841-2 specifies if this subclause applies and gives specific requirements. | | N/A |
| 21.18.2.1 | Unless transportable tools are equipped with a momentary power switch without lock-on device, voltage recovery following an interruption of the supply do not give rise to a hazard. | | N/A |
| | The relevant part of EN 62841-3 specifies if this subclause applies and gives specific requirements. | | N/A |
| 21.Z1 | Noise reduction of tools as an integral part of the design process achieved by particularly applying measures at source to control noise, such as example EN ISO 11688-1:2009 | | P |
| | Success of the applied noise reduction measures assessed based on the actual noise emission values, measured in accordance with I.2, in relation to other machines of the same type with comparable non acoustical technical data | | P |
| 21.Z2 | Vibration at the handles kept as low as possible without unduly affecting the performance or the ergonomics (weight, handling, etc.) of the tool. | | P |
| | Vibration reduced by the application of engineering measures as given in CR 1030-1:1995 | | P |
| | Success of the applied vibration measures is assessed by comparing the vibration levels for the tool, measured in accordance with I.3, with those for other tools of the same type and with a comparable specification and performance. | | P |

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| ANNEX E | METHODS OF APPLYING ISO 13849-1 TO POWER TOOLS | | - |
| | (Void) | | |

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| ANNEX I | MEASUREMENT OF NOISE AND VIBRATION EMISSIONS | | – |
| | Replace the title of Annex I by the following ANNEX I – (NORMATIVE) | | P |
| I.2 | Noise test code (grade 2) | | P |
| I.2.Z1 | Noise reduction | See 21.Z1 | – |
| I.2.1 | General | | – |
| | The noise emission determined by using a machine which has design and technical specifications replicating the machine concerned. | | P |
| | The overall noise can be divided into the pure machine noise and the noise generated from the processed workpiece. | | P |
| | The load conditions for particular tools are therefore specified in the relevant part of IEC 62841-2, IEC 62841-3 or IEC 62841-4. | | P |
| I.2.2 | Sound power level measured according to ISO 3744 | | P |
| I.2.2.2 | Hand-held power tools | | P |
| | For all hand-held power tools, the sound power level is determined by using a hemispherical / cylindrical measurement surface according to Figure I.2. | | P |
| I.2.2.3 | For all transportable power tools, the sound power level is determined by using a cubic measurement surface according to Figure I.3. | | N/A |
| I.2.2.4 | The sound power level of lawn and garden machinery is determined as specified in the relevant part of IEC 62841-4. | | N/A |
| I.2.3 | Emission sound pressure level determination | | – |
| I.2.3.1 | The A-weighted emission sound pressure level of hand-held tools at the work station L_{pA} according to ISO 11203:2009 with $L_{pA} = L_{WA} - Q$, in dB where $Q = 8$, in dB. | | P |
| | If required, L_{pCpeak} is measured at each of the five measurement positions specified in I.2.2 | | P |
| I.2.3.2 | The A-weighted emission sound pressure level of transportable tools at the work station, L_{pA} , is determined according to ISO 11201, grade 2. | | N/A |
| | If required, the C-weighted peak emission sound pressure level L_{pCpeak} is measured at the same operator's position as the A-weighted sound pressure level L_{pA} . | | N/A |
| I.2.3.3 | The emission sound pressure level of lawn and garden machinery is determined as specified in the relevant part of IEC 62841-4. | | N/A |

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| I.2.4 | Installation and mounting conditions of the power tools during noise tests | | – |
| | The power tool under test is new and equipped with accessories which affect the acoustic properties, as recommended by the manufacturer. | | P |
| | Prior to commencing testing, the power tool (including any required ancillary equipment) is set up in a stable condition in accordance with the manufacturer's instructions for safe use. | | P |
| | A hand-held tool is held by the operator or suspended in such a way as to correspond to normal use, as specified in the relevant part of IEC 62841-2 | | P |
| | A transportable tool is so positioned, either placed on the test bench of Figure I.1 | | N/A |
| | Lawn and garden machinery is used and positioned as specified in the relevant part of IEC 62841-4. | | N/A |
| I.2.5 | Operating conditions | | – |
| | Tools are tested under the two operating conditions "no-load" or "load" as appropriate for the type of tool and specified in the relevant part of IEC 62841-2, IEC 62841-3 or IEC 62841-4. | | P |
| I.2.6 | Measurement uncertainties | | – |
| | Uncertainties according to standard determined, recorded and reported | | P |
| I.2.7 | Information and deviations are recorded. | | P |
| I.2.8 | Information to be reported | | P |
| | - reference to this noise test code / basic standard | | P |
| | - description of the power tool; | | P |
| | - description of mounting and operating conditions | | P |
| | Sound power level L_{WA} (dB(A)).....: | See report 6137089.50A | P |
| | Sound pressure level L_{PA} (dB(A)).....: | See report 6137089.50A | P |
| | C-weighted peak emission sound pressure level L_{pCpeak} (dB).....: | | P |
| I.2.9 | Declaration and verification of noise emission values | | P |
| | Sound power level L_{WA} (dB(A)).....: | See report 6137089.50A | P |
| | Sound pressure level L_{pA} (dB(A)).....: | See report 6137089.50A | P |
| | C-weighted peak emission sound pressure level L_{pCpeak} (dB).....: | | N/A |
| I.3 | Vibration | | – |
| I.3.Z1 | Vibration reduction | See 21.Z2 | P |
| I.3.1 | Vibration measurement – General | | P |

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| | Details for particular types of tools are given in the relevant part of IEC 62841-2, IEC 62841-3 or IEC 62841-4. | | P |
| | The vibration total value may be determined by using the measurements from a machine which has design and technical specifications replicating the machine concerned. | | P |
| I.3.2 | Symbols | | - |
| I.3.3 | Characterization of vibration | | - |
| I.3.3.1 | Direction of measurement | | - |
| | Directions may be defined in the relevant part of IEC 62841-2, IEC 62841-3 or IEC 62841-4. | | P |
| | If not defined the three orthogonal directions X, Y and Z as shown in Figure I.4. are related | | P |
| I.3.3.2 | Location of measurement | | - |
| | The measurement positions for particular types of tools are specified in the relevant part of IEC 62841-2, IEC 62841-3 or IEC 62841-4. | | P |
| I.3.3.3 | Magnitude of vibration | | - |
| I.3.3.4 | Combination of vibration directions | | - |
| I.3.4 | Instrumentation requirements | | - |
| | The vibration measurement equipment is in accordance with ISO 8041. | | P |
| | Instrumentation for measuring other parameters whose characteristics are not covered by ISO 8041, is specified in the relevant part of IEC 62841-2, IEC 62841-3 or IEC 62841-4. | | P |
| I.3.4.2 | Transducers | | - |
| I.3.5 | Testing and operating conditions of the tool | | - |
| I.3.5.1 | Replace the 4th paragraph with the following: | | P |
| | When the test procedure is not provided in a relevant part of EN 62841-2, EN 62841-3 or EN 62841-4, an operating condition is specified that is reproducible and representative of the noisiest operation in typical usage of the machine. | | P |
| | The vibration test may simulate a single phase of a task or a working cycle, consisting of a set of operations where the operator is being exposed to vibration. | | P |
| | However, the operating condition for the noise emission test is, if practicable, also used for the vibration test. | | P |
| I.3.5.2 | Attachment, workpiece and task | | - |
| | Details for task and workpiece are given in the relevant part of IEC 62841-2, IEC 62841-3 or IEC 62841-4. | | P |

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| I.3.5.3 | Operating conditions | | - |
| | The relevant part of IEC 62841-2, IEC 62841-3 or IEC 62841-4 describes the modes of operation and the calculation of the declared emission value. | | P |
| I.3.5.4 | Operator | | - |
| I.3.6 | Measurement procedure and validity | | - |
| I.3.6.1 | Reported vibration values | | - |
| | Details are specified in the relevant part of IEC 62841-2, IEC 62841-3 or IEC 62841-4. | | P |
| | Work mode - vibration emission value a (m/s^2).....: | See report 6137089.50A | P |
| | Uncertainty K (m/s^2).....: | See report 6137089.50A | P |
| I.3.6.2 | Declaration of the vibration total value | | P |
| | If required by the relevant part of IEC 62841-2, IEC 62841-3 or IEC 62841-4, the work mode description corresponding to the vibration emission is stated next to each declared value. | | P |
| | Work mode - vibration emission value a (m/s^2).....: | See report 6137089.50A | P |
| | Uncertainty K (m/s^2).....: | See report 6137089.50A | P |
| I.3.7 | Measurement report | | - |
| | The report includes the following information: | | P |
| | a) reference to this standard | | P |
| | b) specification of the machine | | P |
| | c) attachments or accessories; | | P |
| | d) operating and testing conditions | | P |
| | e) measuring institution | | P |
| | f) date of measurement | | P |
| | g) instrumentation | | P |
| | h) position and fastening of transducers, measuring directions and individual vibration values when relevant | | P |
| | i) the arithmetic mean total vibration a_h , for each operator the total vibration value a_{hv} and the three single axes weighted acceleration values a_{hw} . It is good practice to report all the measured values | | P |
| | j) the uncertainty K of the vibration total value a_h . | | P |
| | Any deviations from the vibration test code in this standard is reported together with the technical justification for such deviations. | | P |

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| ANNEX K | BATTERY TOOLS AND BATTERY PACKS | | |
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| K8.14.2 Z1 | For battery tools with integral battery: instruction, how the integral battery can be removed safely from the tool after the tool's end of life, and information about the type of battery such as Li-Ion, NiCd and NiMH. | | N/A |

| ANNEX L | BATTERY TOOLS AND BATTERY PACKS PROVIDED WITH MAINS CONNECTION OR NON-ISOLATED SOURCES | | |
|-----------------|---|--|----------|
| K8.14.2 Z1 | For battery tools with integral battery: instruction, how the integral battery can be removed safely from the tool after the tool's end of life, and information about the type of battery such as Li-Ion, NiCd and NiMH. | | N/A |
| | | | |
| ANNEX ZB | DURABILITY REQUIREMENTS FOR ADHESIVE LABELS | | - |
| ZB.1 | This annex covers adhesive-attached labels for use as permanent nameplates or markers | | P |
| ZB.2 | Performance | | - |
| ZB.2.1 | Labels applied or bonded to representative test surfaces and exposed to the applicable conditions described in ZB.5 show permanence and legibility as per Table ZB.1. | | P |
| | Visual examination The labels are viewed with normal vision from a distance of (500 ± 50) mm | | P |
| | A label shall adhere to the test surface without any significant curling or loosening around the perimeter greater than 10 % of the label area, or other indication of loss of adhesion such as wrinkles or bubbles. It shall not excessively craze, shrink more than 10 % of the label area or slip from its original position on the test panel more than 5 mm. | | P |
| | Overlamination, if present, shows no separation, excessive darkening or shrinkage of more than 10 % of the label area | | P |
| | Printing legible, no significant deterioration of legibility such as fading or bleeding; significant change in print colours to be noted | | P |
| | Legibility test Printed surfaces of labels are rubbed with thumb or finger back and forth ten times with a downward force of approximately 18 N and then examined for legibility as in the visual examination. | | P |

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| Clause | Requirement + Test | Result - Remark | Verdict |
| | Subsurface printed labels and labels in which printing is protected by an overlamination are not subject to the legibility test | | P |
| | Printing legible, no significant deterioration or blurring of legibility | | P |
| | Defacement test Labels are scraped back and forth ten times across printed areas and edges, with a downward force of between 7,2 N and 9 N using the edge of a 1,65 mm to 2,5 mm thick steel blade held at a right angle to the test surface, the portion of the blade contacting the test surface having a radius of curvature of 25 mm to 33 mm and the edges of the blade being rounded to a radius of 0,41 mm ± 0.08 mm | | P |
| | Label, including overlamination or overprint coating, if present, remains in place and is not torn, uplifted, or otherwise damaged | | P |
| | Scratching or defacement of unprotected printing, either text or background, is not considered a noncompliance. | | P |
| | Adhesion test (see ZB.6) Test conducted if it is possible to remove test strips from surfaces | | P |
| | If removal as described in ZB.6 is not possible because of breaking, tearing, or excessive rigidity of the label material, adhesion is determined by attempting to remove the entire sample by hand. | | P |
| | Average quantitative adhesion value not less than 0,088 N/mm width at any point | | P |
| | Adhesion not less than 0,0175 N/mm at any point | | P |
| | In case it is not possible to separate test strips from the surface, sample shows good adhesion to the surface when removal by hand is attempted | | P |
| ZB.2.2 | If after any exposure condition the test surface excessively warps, bubbles, deteriorates, melts, chips, or otherwise renders it impossible to determine compliance of the label with the requirements of this Annex, the evaluation of the sample applied to the test surface is considered to be inconclusive. | | P |

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| ZB.2.3 | Samples are representative of the construction of the label to be tested. Significant construction variables such as top-surface or subsurface printing; top coating; face stock; overlamination or adhesive thickness range; partial adhesive coverage; differing types or colours of similar face stock or adhesive (for example, clear, pigmented, or metallized); and alternative printing processes and inks (including floodcoating for subsurface printed constructions) are represented in the samples provided. | | P |
| ZB.2.4 | The minimum recommended sample size is 50 mm x 50 mm | | P |
| ZB.3 | Test surfaces | | – |
| ZB.3.1 | Test surface panels provided for each material on which the samples are to be tested | | P |
| | Panels are essentially flat, smooth, and rigid, and measure approximately 75 mm x 280 mm | | P |
| | Larger panels that can be cut, or smaller panels, if sufficient in number, may be used. | | P |
| | If samples are investigated for use on a curved surface, curved surfaces or tubing of representative radius are provided. | | P |
| | When samples are investigated for use on a textured surface, panels of the specific textured surface are provided. | | P |
| ZB.3.2 | Test surfaces is cleaned as described in ZB.3.3 to ZB.3.4, before the samples are applied | | P |
| ZB.3.3 | Test panel is repeatedly wiped with cheesecloth (bleached cotton gauze) dampened with denatured ethyl alcohol or isopropanol until it appears clean; surface then wiped once more, with the dampened cheesecloth turned to expose a clean area, and then allowed to dry in air for at least 1 min | | P |
| ZB.3.4 | If alcohol affects the surface or is not considered the solvent of choice for a particular test surface: | | P |
| | – An alternative solvent that does not affect the surface or leave a film is used; or | | P |
| | – A detergent and water solution is used, after which the surface is thoroughly rinsed with demineralized water, wiped with clean dry cheesecloth, and allowed to dry in air for 1 h | | P |
| ZB.4 | Application of labels to surfaces | | – |
| ZB.4.1 | Two or more samples of a particular construction are applied to one or more panels of a test surface material for each exposure. | | P |

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| | Separate panels used for each exposure; number of samples applied to a panel may vary, depending upon sample size, and panel size | | P |
| ZB.4.2 | Samples applied to the test surface panels are stored at (23 ± 5) °C and a relative humidity of 50 % \pm 20 % until they are subjected to the applicable exposure conditions. | | P |
| ZB.5 | Exposure conditions | | – |
| ZB.5.1 | Labels subjected to each of the conditions given in Table ZB.2: – 72 h in a standard atmosphere (as received); – 24 h in a standard atmosphere followed by immersion in demineralized water for $(48 \pm 0,5)$ h at (23 ± 2) °C (water immersion); – 24 h in a standard atmosphere followed by (240 ± 1) h in an air-circulating oven at the test temperature corresponding to the maximum temperature rating (elevated temperature); – 24 h in a standard atmosphere followed by $(7 \pm 0,25)$ h in a cold box maintained at the temperature (± 2) °C corresponding to the minimum temperature rating (low temperature) | | P |
| ZB.5.2 | Test temperatures applicable to the maximum temperature rating are given in Table ZB.3 | | – |
| ZB.5.3 | Labels are conditioned for at least 24 h in a standard atmosphere of (23 ± 2) °C and a relative humidity of 50 % \pm 10 % | | P |
| | Samples are then immersed in IRM903 lubricating oil for $(48 \pm 0,5)$ h | | P |
| | After being immersed, samples are evaluated in accordance with the water immersion exposure in Table ZB.2 for compliance with the requirements in Table ZB.1 except that label panels removed from the lubricating oil are permitted to drain up to 5 min before being evaluated | | P |
| | When exposure to the oil should be avoided, the legibility test (see Table ZB.1) is conducted using a thin, smooth-surfaced latex or nitrile rubber glove | | P |
| Z.6 | Adhesion test | | – |
| | Samples tested as specified | | P |

----- End -----