Report No.: 6176371.50C

ATTACHMENT to TRF IEC6284_2_3B			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT **IEC 62841-2-3** **EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES** **Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery** **Safety - Part 2-3: Particular requirements for hand-held grinders, disc-type polishers and disc-type sanders**			
Differences according to ..... :	EN IEC 62841-2-3:2021 + A11:2021 used in conjunction with EN 62841-1:2015 + AC:2015		
TRF template used ..... :	IECEE OD-2020-F2:2022, Ed. 1.2		
Attachment Form No. ..... :	EU_GD_IEC62841_2_3B		
Attachment Originator ..... :	DEKRA Certification B.V.		
Master Attachment..... :	2023-05-25		
	CENELEC COMMON MODIFICATIONS (EN)		—
8	**MARKINGS AND INSTRUCTIONS**		—
	Add the following to 8.14.2 Za): "6) A warning that grinding thin sheets of metal or other easily vibrating structures with a large surface can result in a total noise emission much higher (up to 15 dB) than the declared noise emission values. Such workpieces should as far as possible be prevented from emitting sound by suitable measures such as the application of heavy flexible damping mats. The increased noise emission is also to be considered for both the risk assessment of noise exposure and selecting adequate hearing protection."		P
19	**MECHANICAL HAZARDS**		—
	Replace the existing 19.104.2 with the following:		
19.104.2	The flange diameter for wheel Type 1 that are thicker than 5 mm is $D_f \geq 0{,}33D$.....:		N/A
	Flange diameter for wheel type 1 that are 5 mm or thinner and wheel types 6, 11, 27, 28, 29, 41 and 42 is $D_f \geq (20 \pm 1)$ mm - for 55 mm ≤ D < 80 mm or - for 80 mm ≤ D ≤ 105 mm for wheels with a bore diameter of 10 mm (3/8 inch UNC) .....:		N/A

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	Flange diameter for wheel type 1 that are 5 mm or thinner and wheel types 6, 11, 27, 28, 29, 41 and 42 is $D_f \geq (29 \pm 1)$ mm - for 80 mm ≤ D ≤ 105 mm for wheels with a bore diameter of 10 mm (3/8 inch UNC) .....:		N/A
	Flange diameter for wheel type 1 that are 5 mm or thinner and wheel types 6, 11, 27, 28, 29, 41 and 42 is $D_f \geq (41 \pm 1)$ mm - for 105 mm < D ≤ 230 mm.....:		N/A
	Flange diameter for wheel type 1 that are 5 mm or thinner and wheel types 6, 11, 27, 28, 29, 41 and 42 is $D_f \geq (41 \pm 1)$ mm - for 105 mm < D ≤ 230 mm.....:		N/A
	For wheel type 41 and diamond wheels, D_f may exceed the above values for inner flanges and outer flanges		N/A
	For all other wheel types, the D_f may exceed the above values for inner flanges only		N/A
	For wheel Types 27, 28 and 42: The outer dimensions of the outer flange is limited so that there is no interference with the depressed centre of wheels in accordance with ISO 603-14:1999 and ISO 603-16:1999 as illustrated in Figure Z101 with the dimensions *ØK, R* and *F* as specified in Table Z101.		N/A
21	**Construction**		—
	Replace the existing subclause 21.35 with the following:		—
21.35	Modification: This subclause is applicable only for…		—
	-.....disc-type sanders used exclusively for sanding wooden floors in accordance with 8.14.2 b) 107); and		N/A
	-.....grinders intended to be used with a wheel guard of Type E or Type F in accordance with 8.14.2 a) 101) and 8.14.2 b) 108).		N/A
ANNEX I	**MEASUREMENT OF NOISE AND VIBRATION EMISSIONS**		—
	Replace the title of Annex I with the following: **ANNEX I** **(NORMATIVE)** and delete the NOTE.		
I.2	**Noise test code (grade 2)**		—
I.2.3	**Emission sound pressure level determination**		—

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I.2.3.1	**Hand-held tools**		—
	Replace the first paragraph and NOTE 1 of the existing subclause I.2.3.1 with the following:		P
	The A-weighted emission sound pressure level at the work station, L_{pA}, is determined in accordance with EN ISO 11203:2009 as follows: $L_{pA} = L_{WA} - Q$; where Q = 8 dB.		P
	NOTE 1 This value of Q has been determined, during experimental investigations, to be applicable to hand-held power tools. The resulting A-weighted emission sound pressure level at the workstation is equivalent to the value of the surface sound pressure level at a distance of 0,7 m from the power tool. This distance has been chosen to give satisfactory reproducibility of results, and to permit comparison of the acoustic performance of different hand-held power tools, which do not, in general, have uniquely defined work stations. Under free field conditions, where it could be required to estimate the emission sound pressure level, $L_{pA,r1}$, at a distance r_1 in m from the geometric centre of the power tool, this can be done by applying the formula: $L_{pA,r1} = L_{pA} + 20 \lg \left(\frac{0,7}{r_1}\right)$ dB		P
I.2.4	**Installation and mounting conditions of the power tools during noise tests**		—
	Replace the existing subclause I.2.4 with the following:		—
	Addition: Angle grinders are suspended and fitted with an artificial wheel equivalent to the rated capacity as specified in Figure I.104 and Table I.102 for the application “grinding”. Straight grinders are suspended and fitted with an artificial wheel equivalent to the rated capacity as specified in Figure I.106 and Table I.105. Disc-type polishers are suspended and fitted with a lambswool polishing pad of rated capacity. Disc-type sanders are suspended and fitted with a sanding disc of rated capacity. For angle and vertical tools, the wheel or pad is horizontal. For straight tools, the wheel or pad is vertical.”	Disc-type sander	P
I.2.5	**Operating conditions**		—
	Addition: Grinders, disc-type polishers and disc-type sanders are tested at no-load.		P
I.3	**Vibration**		—
I.3.3.2	**Location of measurement**		—

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	Addition: Figures I.101 to I.103 show the positions for different types of tools.		P
	For vibration isolated stick type side handles, the transducer may alternatively be placed half way along the length of the handle. In this case, in order not to disturb the operator's normal grip, the transducer is placed inside the handle, without modifying the construction of the handle.		P
I.3.5.3	**Operation conditions**		—
	Addition: The weight of the tool as used in this subclause is considered the force caused by the mass of the tool in accordance with 5.17, but with the artificial wheel mounted.		P
I.3.5.3.101	**Grinding and cutting off applications**		—
	For tools intended for angle grinding that can also be used for other applications such as concrete grinding or cutting-off applications, the angle grinding application is considered to produce the highest vibration emission. Therefore, the tools is at least tested under load by using the artificial wheel for angle grinding under the conditions described below in Table I.101.		N/A
	Tools intended for straight grinding applications is tested under load by using the artificial wheel for straight grinding under the conditions described below in Table I.104.		N/A
I.3.5.3.102	**Polishing**		—
	Tools for polishing applications are tested under load and under the conditions described below in Table I.106.		N/A
I.3.5.3.103	**Disc-type sanding**		—
	Tools for disc-type sanding applications are tested under load and under the conditions described below in Table I.107.		P
	Operator		—
	Replacement: The vibration of the machine is influenced by the operators. The operators is be skilled enough to be able to hold the tool in a manner similar to that used in real grinding. Also the angle of attack should equal to that used in real grinding on a horizontal surface (e.g. for angle grinders 20° ± 5°).		P

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	The forces and torques applied to the handles influence the vibration. It is therefore important that the force and torque distribution between the handles equals that in real use.		P
	Reported vibration value		—
	Replacement of the third paragraph: If the coefficient of variation CV of the five vibration total values ahv, recorded for each series, is less than 0,15 or the standard deviation sN–1 is less than 0,3 m/s2, the results are accepted (the note in I.3.1 provides information on possible sources of errors of measurement). This requirement is not applicable for the measurement of ah,SG, ah,AG, ah,CO and ah,CG.		P
	Addition: The result ah for each operating mode measured is reported:		P
	- ..... $a_{h,SG}$ or $a_{h,AG}$ = mean vibration for straight grinding or angle grinding in accordance with I.3.5.3.101 .....:		N/A
	- ..... $a_{h,CO}$ = mean vibration for cutting off in accordance with I.3.5.3.101 .....:		N/A
	- ..... $a_{h,CG}$ = mean vibration for concrete grinding in accordance with I.3.5.3.101 .....:		N/A
	- ..... $a_{h,P}$ = mean vibration for polishing in accordance with I.3.5.3.102.....:		N/A
	- ..... $a_{h,DS}$ = mean vibration for disc-type sanding in accordance with I.3.5.3.103 .....:	See report 6176371.50A	P
	Underestimation of the vibration for tools equipped with technical means to automatically reduce unbalances is taken into account by multiplying the vibration values of such tools with a correction factor of 1,3.		
	In cases where the measurement was done at practical use with specific discs, information about the operating conditions (such as specification of the disc used, work piece material, feed force) is reported .....:		
I.3.6.2	**Declaration of the vibration total value**		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Addition: For angle grinders, the vibration total value of the handle with the highest emission and the uncertainty K is declared:		—
	the value of $a_{h,SG}$ or $a_{h,AG}$ with the work mode description “surface grinding”.		N/A
	In addition, the following applications may be reported, if measured:		P
	- ..... f or cutting-off applications, the value of $a_{h,CO}$ with the work mode description “cutting off” .....:		N/A
	- ..... f or concrete grinding applications, the value of $a_{h,CG}$ with the work mode description “concrete grinding” .....:		N/A
	- ..... f or polishing applications, the value of $a_{h,P}$ with the work mode description “polishing”:		N/A
	- ..... f or disc-type sanding applications, the value of $a_{h,DS}$ with the work mode description “disc sanding” .....:	See report 6176371.50A	P
	For tools intended only for one or more of the following applications in accordance with 8.14.1.101.2 a), the vibration total value of the handle with the highest emission and the uncertainty K is declared, as applicable:		—
	- ..... f or concrete grinding applications, the value of $a_{h,CG}$ with the work mode description “concrete grinding” .....:		N/A
	- ..... f or polishing applications, the value of $a_{h,P}$ with the work mode description “polishing”:		N/A
	- ..... f or disc-type sanding applications, the value of $a_{h,DS}$ with the work mode description “disc sanding” .....:	See report 6176371.50A	P
	In addition, the information is given in the instruction manual that other applications such as wire brushing, may have different vibration emission values.		P
ANNEX K	**BATTERY TOOLS AND BATTERY PACKS**		—
K.21	**Construction**		—
K.21.18.Z101	Add the following new subclause: Tools with an integral battery are either be equipped with…		—

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	- ..... an isolation device to prevent the risk of injury from mechanical hazards during servicing or user maintenance; or		N/A
	- ..... a disabling device that prevents unintentional starting of the tool.		N/A
	Isolation device …		—
	- ..... provides disconnection of all poles of the battery from the serviceable region of the tool;		N/A
	- ..... is equipped with an unambiguous indication of the state of the disconnection device which corresponds to each position of its manual control (actuator);		N/A
	- ..... is provided with protection against accidental reconnection.		N/A
	A disabling device may be achieved by any of the following:		—
	- ..... a self-restoring or non-self-restoring lock-off device where two separate and dissimilar actions are necessary before the motor is switched on (e.g. a power switch which has to be pushed in before it can be moved laterally to close the contacts to start the motor). It is not possible to achieve these two actions with a single grasping motion or a straight line motion;		N/A
	- ..... a removable disabling device provided with the tool where it is not possible for the tool to be operated when either applied or removed.		N/A
ANNEX L	**BATTERY TOOLS AND BATTERY PACKS PROVIDED WITH MAINS CONNECTION OR NON-ISOLATED SOURCES**		—
L.21	**Construction**		—
L.21.18.Z101	Add the following new subclause: Tools with an integral battery are either be equipped…		—
	- ..... with an isolation device to prevent the risk of injury from mechanical hazards during servicing or user maintenance; or		N/A
	- ..... with a disabling device that prevents unintentional starting of the tool.		N/A
	An isolation device ...		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- .....provides disconnection of all poles of the battery from the serviceable region of the tool;		N/A
	- .....is equipped with an unambiguous indication of the state of the disconnection device which corresponds to each position of its manual control (actuator);		N/A
	- .....is provided with protection against accidental reconnection.		N/A
	A disabling device may be achieved by any of the following:		—
	- .....a self-restoring or non-self-restoring lock-off device where two separate and dissimilar actions are necessary before the motor is switched on (e.g. a power switch which has to be pushed in before it can be moved laterally to close the contacts to start the motor). It is not possible to achieve these two actions with a single grasping motion or a straight line motion;		N/A
	- .....a removable disabling device provided with the tool where it is not possible for the tool to be operated when either applied or removed.		N/A

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