

Safety of household and similar electrical appliances —

Part 2-77: Particular requirements for pedestrian controlled mains-operated lawnmowers

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National foreword

This British Standard is the official English language version of EN 60335-2-77:2000. It was derived by CENELEC from IEC 335-2-77:1996. It supersedes BS 3456 Part 2: Section 2.32:1974 which will be withdrawn on 2003-01-01.

The CENELEC common modifications have been implemented at the appropriate places in the text and are indicated by a sideline in the margin.

The UK participation in its preparation was entrusted by Technical Committee CPL/61, Safety of household electrical appliances, to Subcommittee CPL/61/23, Lawnmowers, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

From 1 January 1997, all IEC publications have the number 60000 added to the old number. For instance, IEC 27-1 has been renumbered as IEC 60027-1. For a period of time during the change over from one numbering system to the other publications may contain identifiers from both systems.

Cross-references

Attention is drawn to the fact that CEN and CENELEC Standards normally include an annex which lists normative references to international publications with their corresponding European publications. The British Standards which implement these international or European publications may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 55 and a back cover.

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Part 2-77: Particular requirements for pedestrian controlled
mains-operated lawnmowers
(IEC 60335-2-77:1996, modified)

Sécurité des appareils électrodomestiques
et analogues
Partie 2-77: Règles particulières pour
les tondeuses à gazon fonctionnant
sur le réseau et à conducteur à pied
(CEI 60335-2-77:1996, modifiée)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke
Teil 2-77: Besondere Anforderungen
an handgeführte netzbetriebene
Rasenmäher
(IEC 60335-2-77:1996, modifiziert)

This European Standard was approved by CENELEC on 2000-01-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of the International Standard IEC 60335-2-77:1996, prepared by SC 61F, Safety of hand-held motor-operated electric tools, of IEC TC 61, Safety of household and similar electrical appliances, together with common modifications prepared by the Technical Committee CENELEC TC 61F, Hand-held and transportable electric motor-operated tools, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 60335-2-77 on 2001-01-01.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2001-05-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2003-01-01

This standard has to be used in conjunction with EN 60335-1, Safety of household and similar electrical appliances, Part 1: General requirements. It was established on the basis of the 1994 edition of that standard.

This part 2 supplements or modifies the corresponding clauses of EN 60335-1, so as to convert it into the European Standard: Safety requirements for pedestrian controlled mains-operated lawnmowers.

When a particular subclause of part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. When this standard states “addition”, “modification” or “replacement”, the relevant text of part 1 is to be adapted accordingly.

This European Standard has been prepared under a mandate given to CEN and CENELEC by the European Commission and the European Free Trade Association and supports the essential health and safety requirements of the Machinery Directive.

Compliance with the clauses of EN 60335-1 together with this part 2 provides one means of conforming with the essential health and safety requirements of the Directive.

Specific requirements for the reduction for the risk arising from noise and vibration through the design of the tool are not given as this reflects the current state of the art. As with any standard technical progress will be kept under review so that any developments can be taken into account.

Warning: Other requirements and other EC Directives can be applicable to the products falling within the scope of this standard.

NOTE 1 In this standard the following print types are used:

- Requirements proper;
- *Test specifications*
- Explanatory matter.

Words in **bold** in the text are defined in clause 2. When a definition of part 1 concerns an adjective, in this part the adjective and the associated noun are also in bold.

NOTE 2 Subclauses and figures which are additional to those in part 1 are numbered starting from 101. Annexes which are additional to those in part 1 are lettered AA, BB, etc.

NOTE 3 The references of subclauses, notes, figures and annexes which are additional to those of IEC 60335-2-77 are prefixed with the letter Z.

Endorsement notice

The text of the International Standard IEC 60335-2-77:1996 was approved by CENELEC as a European Standard with agreed common modifications

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SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –

Part 2: Particular requirements for pedestrian controlled mains-operated lawnmowers

1 Scope

This clause of part 1 is applicable except as follows:

1.1 *Replacement:*

This standard deals with the safety of **pedestrian controlled** mains-operated electrical, **cylinder** or **rotary lawnmowers** designed primarily for use around the home or for similar purposes, their **rated voltage** being not more than 250 V single phase.

This standard does not apply to **lawn trimmers, lawn edge trimmers, lawn edgers, flail mowers, sickle-bar mowers**, or agricultural **mowers**.

This standard is not applicable to **rotary lawnmowers** for which the **cutting means** is a generally circular central drive unit on which is mounted, either one or more non-metallic filaments or one or more non-metallic, pivotally mounted cutting elements. These cutting elements rely on centrifugal force to achieve cutting, with the kinetic energy of a single cutting element not exceeding 10 joules.

This standard does not in general take into account

- the use of appliances by young children or infirm persons without supervision;
- playing with the appliance by young children.

2 Definitions

This clause of part 1 is applicable except as follows:

2.2.9 *Replacement:*

normal operation: Operation of the appliance under the following conditions: the appliance is operated at **rated voltage** with the load necessary to attain **rated power input**.

- 2.101 **blade**: Term used in warnings and instructions to denote **cutting means** (see 2.104).
- 2.102 **braking system**: A combination of one or more brakes and related means of operation and **control**.
- 2.103 **control**: A means or device which controls the operation of the appliance or any specific operating function thereof.
- 2.104 **cutting means**: The mechanism used to provide the cutting action of a **lawnmower**.
- 2.105 **cutting means enclosure (housing)**: The part or assembly which provides the protective means around the **cutting means**.
- 2.106 **cutting means tip circle**: The path described by the outermost point of the **cutting means** as it rotates about its shaft axis.
- 2.107 **cutting positions**: Any height setting of the **cutting means** designated by the manufacturer for cutting grass.
- 2.108 **cutting width**: The width of cut measured across the **cutting means** at right angles to the direction of travel and calculated from the dimensions of the **cutting means** or the diameter(s) of the **cutting means tip circle(s)**.
- 2.109 **cylinder mower**: A **lawnmower** with one or more **cutting means** rotating about a horizontal axis to provide a shearing action with a fixed cutter bar or knife.
- 2.110 **discharge chute**: An extension of the **cutting means enclosure** from the **discharge opening**, generally used to control the discharge of material from the **cutting means**.
- 2.111 **discharge opening**: A gap or opening in the **cutting means enclosure** through which grass may be discharged.
- 2.112 **flail mower**: A grasscutting appliance with a multiplicity of free-swinging cutting elements that rotate about an axis parallel to the cutting plane and cut by impact.
- 2.113 **grass catcher**: A part or combination of parts which provide a means for collecting grass clippings or debris.
- 2.114 **guard**: A part of the appliance or a component incorporated to provide protection for the operator and/or bystander.
- 2.115 **handle**: All parts likely to be hand-held for guiding the appliance in **intended use**.
- 2.116 **hit**: The test projectile passing completely through all layers of the target material.
- 2.117 **hover mower**: A **lawnmower** which uses a cushion of air instead of wheels as a ground support.

2.118 **intended use:** Any use of the appliance which is reasonably foreseeable, as described in the user instructions, and which is consistent with such activities as cutting grass, starting, stopping, or connecting to (or disconnecting) from a **power source**.

2.119 **lawn edger:** A powered appliance suitable for cutting lawn and soil, usually in a vertical plane.

2.120 **lawn edge trimmer:** A powered grasscutting appliance for trimming lawn edges, usually in a vertical plane.

2.121 **lawnmower (mower):** A grasscutting appliance where the **cutting means** operates in a plane approximately parallel to the ground and which uses the ground to determine the height of cut by means of wheels, air cushion or skids, etc., and which utilises an electric motor for a **power source**.

2.122 **lawn trimmer:** A powered grasscutting appliance where the operator determines the plane of operation of the **cutting means** and the height of cut, possibly assisted by a wheel or skid, etc.

2.123 **maximum operating motor speed:** The highest motor speed obtained when adjusted in accordance with the manufacturer's specifications and/or instructions, with the **cutting means** engaged.

2.124 **mowing attachment:** A **cutting means** designed to be easily detached from the appliance, generally to allow the appliance to be used for other purposes.

2.125 **mulching mower:** A **rotary mower** without **discharge openings** in the **cutting means enclosure**.

2.126 **no-load:** The minimum load attainable at **rated voltage** (for **cylinder mowers** there is no cylinder to fixed cutter bar or knife contact).

2.127 **operator control:** Any **control** requiring operator actuation to perform specific functions.

2.128 **operator presence control:** A **control** designed so that it will automatically interrupt power to a drive when the operator's actuating force is removed.

2.129 **operator zone:** The operator zone for persons operating a **lawnmower** is presented in figure 101.

2.130 **parking brake:** A device incorporated in the appliance which, when operated, prevents the appliance from moving from a stationary position and remains applied without the operator present.

2.131 **pedestrian controlled mower:** A grasscutting appliance, either pushed or self-propelled, normally controlled by the operator walking behind the unit.

2.132 **power source:** A motor which provides mechanical energy for linear and/or rotational movement.

2.133 **rotary mower:** A **lawnmower** in which the **cutting means**, cutting by impact, rotates about an axis (axes) normal to the cutting plane.

2.134 **service brake:** The designated primary means for decelerating and stopping a machine from its ground travel speed.

2.135 **sickle bar mower:** A **lawnmower** which uses a **power source** to reciprocate a knife or knives to provide a shearing action with a stationary cutter bar or movable knife.

2.136 **stopping time:** The time elapsed between the instant when the actuator is released and the instant at which the appliance or component comes to a stop.

2.137 **throw line (cylinder mowers):** The steepest line in a vertical plane, tangential to the periphery of the cutting cylinder in the direction of rotation, which does not intersect a **guard** or portion of the appliance. (See figure 110.)

2.138 **thrown object hazard:** The potential for injury caused by object(s) propelled by the moving **cutting means**.

2.139 **traction drive:** The means (system) used to transmit power from the **power source** to the ground drive means.

2.2101 **grass catcher adaptor:** A device to modify a **lawnmower** from a non-collecting type to a collecting type.

3 General requirement

This clause of part 1 is applicable.

4 General conditions for the tests

This clause of part 1 is applicable except as follows:

4.5 Addition:

*During the tests, the **cutting means** are adjusted and lubricated in accordance with the manufacturer's instructions specific to the test.*

NOTE – For example, **cylinder mower cutting means** may not be able to run for extended periods at normal adjustment because of lack of lubrication, etc., normally provided by the grass.

4.6 Addition:

Electronic speed **control** devices are set for the highest speed.

5 Void

6 Classification

This clause of part 1 is applicable except as follows:

6.1 Replacement:

Appliances shall be of one of the following classes with respect to protection against electric shock: **class II** or **class III**.

Compliance is checked by inspection and by the relevant tests.

6.2 Addition:

Appliances shall be at least IPX4.

7 Marking and instructions

This clause of part 1 is applicable except as follows:

7.1 Replacement:

Appliances shall be marked with the

- **rated voltage** or **rated voltage range** in volts;
- symbol for nature of supply, unless the **rated frequency** is marked;
- **rated power input** in watts or kilowatts or **rated current** in amperes;
- name, trade mark or identification mark of the manufacturer or responsible vendor;
- model or type reference;
- symbol for **class II construction**, for **class II appliances** only;
- IP number according to degree of protection against ingress of water, other than IPX0;
- manufacturer's address or country of origin;
- any mandatory mark showing compliance with legislation by reference to this standard.

Compliance is checked by inspection.

NOTE 1 The first numeral of the IP number need not be marked on the appliance.

NOTE 2 Additional markings are allowed provided they do not give rise to misunderstanding.

NOTE 3 If components are marked separately, the marking of the appliance and that of the components are to be such that there can be no doubt with regard to the marking of the appliance itself.

Marking giving cautionary information shall be located as close as practical to the relevant hazard. Such marking shall be in one of the official languages of the country in which the machine is to be sold or appropriate pictograms/symbols in contrasting colours shall be used. If the marking is cast, embossed or stamped, colours are not required.

A warning shall be located in a position easily visible to the operator indicating (in words or pictograms/symbols):

WARNING:

KEEP BYSTANDERS AWAY

SWITCH OFF AND REMOVE PLUG FROM MAINS BEFORE ADJUSTING, CLEANING OR IF THE CORD IS ENTANGLED OR DAMAGED.

READ THE INSTRUCTIONS SHEET.

KEEP THE SUPPLY FLEXIBLE CORD AWAY FROM THE CUTTING BLADES.

If pictograms are used they shall be as shown in annex ZAA for the text indicated.

For **rotary mowers**:

- the **cutting means** shall be marked for identification;
- if a **grass catcher adaptor** is used, instructions shall be affixed to the **lawnmower** near the **discharge opening** and to the **grass catcher adaptor** stating that the **lawnmower** shall not be operated without either the entire **grass catcher** or the **guard** in place.

7.9 *Modification:*

Replace the first paragraph by the following:

Operator controls as described in 20.101.1, other than those whose purpose is obvious, shall have the function, direction and/or method of operation clearly identified by a durable label or mark.

7.12 *Replacement:*

An instruction sheet shall be supplied with the appliance.

The instructions shall include:

- a) Those warnings required to be marked on the appliance together with further explanation, where appropriate.
- b) Instructions for the proper assembly of the appliance for use, if the appliance is not supplied in a completely assembled form.
- c) Instructions for proper adjustment of the appliance, including a warning of the danger of rotating **blade(s)**; for example: "Caution – Do not touch rotating blade".
- d) Instructions for the safe operation of the appliance, including a recommendation that the appliance should be supplied via a Residual Current Device (RCD) with a tripping current of not more than 30 mA.
- e) Instructions on the operation of all **controls**.
- f) Advice on the use, type and the maximum length of extension cord to be used. (Not lighter than required by 25.7.)
- g) Instructions for fitting and use of attachments, if any.
- h) The substance of the following, where appropriate:
 - 1) *Training*
 - Read the instructions carefully. Be familiar with the controls and the proper use of the appliance.
 - Never allow children or people unfamiliar with these instructions to use the appliance. Local regulations may restrict the age of the operator.
 - Never mow while people, especially children, or pets are nearby.
 - The operator or user is responsible for accidents or hazards occurring to other people or their property.
 - 2) *Preparation*
 - While mowing, always wear substantial footwear and long trousers.
 - Do not operate the appliance when barefoot or wearing open sandals.
 - Thoroughly inspect the area where the appliance is to be used and remove all stones, sticks, wires, bones, and other foreign objects.

- Before using, always visually inspect to see that the blades, blade bolts and cutter assembly are not worn or damaged. Replace worn or damaged blades and bolts in sets to preserve balance.
- On multi-bladed appliances, take care as rotating one blade can cause other blades to rotate.

3) Operation

- Mow only in daylight or in good artificial light.
- Avoid operating the appliance in wet grass, where feasible.
- Always be sure of your footing on slopes.
- Walk, never run.
- For wheeled rotary mowers, mow across the face of slopes, never up and down.
- Exercise extreme caution when changing direction on slopes.
- Do not mow excessively steep slopes.
- Use extreme caution when reversing or pulling the appliance towards you.
- Stop the blade(s) if the appliance has to be tilted for transportation when crossing surfaces other than grass, and when transporting the appliance to and from the area to be mowed.
- Never operate the appliance with defective guards or shields, or without safety devices, for example deflectors and/or grass catchers, in place.
- Switch on the motor according to instructions and with feet well away from the blade(s).
- Do not tilt appliance when switching on the motor, except if the appliance has to be tilted for starting. In this case, do not tilt it more than absolutely necessary and lift only the part which is away from the operator. Always ensure that both hands are in the operating position before returning the appliance to the ground.
- Do not put hands or feet near or under rotating parts. For rotary mowers, keep clear of the discharge opening at all times.
- Never pick up or carry an appliance while the motor is running.
- Pull the plug from the socket:
 - . whenever you leave the machine;
 - . before clearing a blockage;
 - . before checking, cleaning or working on the appliance;
 - . after striking a foreign object. Inspect the appliance for damage and make repairs as necessary;
 - . if the appliance starts to vibrate abnormally (check immediately).

4) Maintenance and storage

- Keep all nuts, bolts, and screws tight to be sure the appliance is in safe working condition.
- Check the grass catcher frequently for wear or deterioration.
- Replace worn or damaged parts for safety.

- For cylinder mowers, be careful during adjustment of the appliance to prevent entrapment of the fingers between moving blades and fixed parts of the appliance.
- For rotary mowers, ensure that only replacement cutting means of the right type are used.

8 Protection against access to live parts

This clause of part 1 is applicable except as follows:

8.2 Addition:

For **class II rotary mowers**, access to the surface of **basic insulation** or metal parts separated from **live parts** by **basic insulation** shall be permitted when the **cutting means** is removed if a **tool** is required for its removal.

9 Starting of motor-operated appliances

9.1 Motors shall start under all normal voltage conditions which may occur in use.

Centrifugal and other automatic starting switches shall operate reliably and without contact chattering.

*Compliance is checked by starting the appliance three times, at **no-load**, at a voltage equal to 0,85 times **rated voltage** or the lower limit of the **rated voltage range**, with any **control device** set at maximum speed.*

*For the test the **cutting means** are adjusted according to the manufacturer's instructions related to this test.*

The appliance shall operate in such a way that safety is not affected.

10 Power input and current

This clause of part 1 is applicable except as follows:

10.1 is not applicable

11 Heating

This clause of part 1 is applicable.

12 Void

13 Leakage current and electric strength at operating temperature

This clause of part 1 is applicable.

14 Void

15 Moisture resistance

This clause of part 1 is applicable except as follows:

15.1.2 Addition:

Appliances fitted with an appliance inlet or cable coupler shall be tested with the appropriate mating connector in place.

Air filters are not removed.

16 Leakage current and electric strength

This clause of part 1 is applicable except as follows:

16.3 Addition:

*Insulation equivalent to **supplementary insulation** provided to comply with 22.35 shall be tested in accordance with the requirements for **supplementary insulation**.*

17 Overload protection of transformers and associated circuits

This clause of part 1 is applicable.

18 Endurance

18.101 Appliances shall be so constructed that, in **intended use**, there will be no electrical or mechanical failure that might impair compliance with this standard. The insulation shall not be damaged and contacts and connections shall not have worked loose as a result of heating, vibration, etc.

Moreover, overload **protective devices** shall not operate under **intended use** conditions.

Compliance is checked by the tests of 18.102

18.102 *The appliance is operated at **no-load**, series motors being supplied at a voltage such that the rotating speed is the same as that obtained at **rated voltage** and under **normal operation**. The appliance is operated for 48 h, reduced by the running time necessary for the tests of clauses 11 and 13.*

Appliances are operated continuously, or for a corresponding number of periods, each period being not less than 8 h.

*During the test, replacement of carbon brushes is allowed and the appliance is lubricated as in **intended use**.*

18.103 During the tests of 18.102, overload **protective devices** shall not operate.

After the tests of 18.102, the appliance shall withstand the tests of 16. Connections, **handles, guards**, brush-caps and other fittings or components shall not have worked loose, and there shall be no deterioration impairing safety in **intended use**.

19 Abnormal operation

This clause of part 1 is applicable except as follows:

19.7 Addition:

This test is not made on appliances with flexible or freely pivoting **cutting means** mounted on a generally circular drive unit.

20 Stability and mechanical hazards

This clause of part 1 is applicable except as follows:

20.2 Replacement:

To prevent unexpected operation which may result in a hazard, only manually reset cut-outs and those requiring the operating **control** to be released are allowed.

All power driven components except the **cutting means** and the ground-contacting parts of power propelled mowers shall be guarded to prevent contact with these parts during normal operation.

All apertures and safety distances shall conform to 4.5.2 and 4.5.3 of EN 294:1992 unless otherwise specified in this standard.

Rotating covers or discs shall have a continuous unbroken or smooth surface.

Guards shall be provided to prevent accidental contact with hazardous servicing points when the machine is serviced as recommended by the manufacturer.

Where a **guard** is designed to be opened or removed and which exposes a hazard, a safety sign warning of the hazard shall be located on the **guard** or adjacent to the hazard.

All **guards** shall be permanently attached to the machine and shall not be detachable without the use of **tools**. The opening of **guards**, except for the following, shall require the use of a **tool**:

- a) the opening or removal of interlocked **guards** which disable the protected moving parts;
- b) the opening of hinged, self-closing **guards** for grass **discharge chutes**.

Compliance is checked by inspection and measurement.

20.101 **Control**

20.101.1 *General*

The **controls** shall accommodate the 5th to 95th percentile adult operator as specified in ISO 3411.

The following are not **operator controls**:

- height of cut setting;
- fixed cutter bar or knife (on-cut) setting or adjustment on **cylinder mowers**;
- **grass catcher** discharge arrangements;
- cable restraint/guides.

The location and range of movement of **operator controls** shall be convenient to the operator and shall remain within the anthropometric dimensions given in figure 101. The operating range of less frequently used **operator controls** may be extended by allowing the operator's trunk, when standing with both feet on the ground, to articulate within the confines of the **operator zone** (for example to lean forward until contacting the **handle** in any of the operating positions).

20.101.2 *Operator presence control*

Appliances shall be fitted with a device on the control **handle** which will automatically stop **cutting means** rotation when the operator's hands are removed from the **handle**. This may be accomplished either by stopping the drive motor or by an intermediate **cutting means** clutch/brake mechanism. For starting **cutting means** rotation the **control** shall require two separate and dissimilar actions. If these actions are to be carried out by using the same hand then the actions shall be totally distinct to prevent accidental switch-on.

For **hover mowers** for which there is no instruction to tilt when starting, the switch-on of the **blade** shall not require either hand to cross the centre line of the **operator zone**.

20.101.3 *Traction drive*

For appliances with **traction drive**:

- the **control** for **traction drive** shall automatically stop or disengage the **traction drive** when the operator leaves the normal operating position;
- the reverse function of the **traction drive control** shall require continuous activation in the direction of travel;
- it shall be possible to engage or disengage the **traction drive** when the **cutting means** is operating.

20.102 *Braking requirements*

20.102.1 *General*

Appliances shall not require an excessive force to hold the appliance stationary on a slope.

Appliances requiring additional means, i.e. a **service brake** or **parking brake** system, shall meet the requirements of 20.102.2 and 20.102.3

The appliance shall be equipped with the tyres provided by the manufacturer having the least tread area in contact with the test surface.

If steering-assist brakes are also used as **service brakes**, it shall be possible to connect them in a way that they apply both brakes with equal force.

For appliances without braking means, compliance is checked as follows:

Tests are carried out with the appliance facing directly up and directly down a 30 % (16,7°) slope. A force of not more than 220 N, applied at or below the centre of gravity and directly up and down the slope, shall be required to hold the appliance stationary.

20.102.2 **Service brake**

*Test stops are conducted on a substantially level (not to exceed 1 % gradient), dry, smooth, hard surface roadway of concrete (or equivalent test surface). When testing an appliance with separate clutch and brake **control means**, the clutch shall be simultaneously disengaged with brake engagement. Tests are carried out with the appliance in both forward and reverse directions at the maximum ground speed attainable.*

*Using the **braking system** provided, the appliance shall stop within a distance of 0,19 m for each 1 km/h.*

20.102.3 **Parking brake**

*A **parking brake** shall be provided on appliances requiring a **service brake**.*

*The **parking brake** may be in combination with the **service brake**.*

*An automatic **parking brake**, when provided, shall be activated when the **operator presence control** is released.*

*Tests are conducted on a 30 % slope with a coefficient of friction such that the appliance does not slide down the slope. The appliance is positioned on the slope with its **parking brake** engaged and locked, transmission in neutral and the motor switched off. The appliance is tested both with its front downhill and its rear downhill.*

*The appliance shall not move down the slope and the force required to engage and unlock the **parking brake** shall not exceed 220 N.*