The following differences exist in the countries indicated below.
– 3.1.9: The conditions of normal operation are different for soldering guns and plastic-cutting tools (USA).
– 6.1: Class 0 appliances are allowed if their rated voltage does not exceed 150 V and class 0I appliances are allowed (Japan).
– 6.1: Class 0 soldering irons are allowed if their rated power input does not exceed 18 W (Poland).
– 6.1: Class I dehorning tools are allowed. Class 0 appliances are allowed if their rated voltage does not exceed 150 V and they are for indoor use only (USA).
– 11.7: The test for firelighters is different (USA).
– 11.8: The modification does not apply (USA).
– 21.101: The drop test is different (USA).
– 24.1.3: Switches are tested for 6 000 cycles of operation (Canada and USA).
– 25.7: Lighter cords are allowed (USA).
– 25.7: The modification does not apply (Japan).
– 25.8: Shorter supply cords are allowed for class II dehorning tools (USA).

1. Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of **portable electric heating tools** and similar appliances, their **rated voltage** being not more than 250 V.

Appliances not intended for normal household use, but which nevertheless may be a source of danger to the public, such as appliances intended to be used by laymen in shops, in light industry and on farms, are within the scope of this standard.

Appliances that may also be used when mounted on a support are within the scope of this standard.

NOTE 101 Examples of appliances that are within the scope of this standard are

– branding tools;
– burning-in pens;
– conduit-soldering tools;
– dehorning tools;
– desoldering irons;
– firelighters;
– glue guns;
– heat guns;
– household film-welding appliances;
– paint strippers;
– plastic-cutting tools;
– soldering guns;
– soldering irons;
– stripping pliers;
– thermoplastic conduit-welding tools.

As far as is practicable, this standard deals with the common hazards presented by appliances which are encountered by all persons in and around the home. However, in general, it does not in general take into account

– persons (including children) whose
- physical, sensory or mental capabilities; or
- lack of experience and knowledge

prevents them from using the appliance safely without supervision or instruction;
children playing with the appliance.

NOTE 102 Attention is drawn to the fact that

– for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements may be necessary;

– in many countries additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour and similar authorities.

NOTE 103 This standard does not apply to

– hand-held motor-operated electric tools (IEC 60745);

– transportable motor-operated electric tools (IEC 61029);

– appliances intended exclusively for industrial purposes;

– appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas);

– tools using high-frequency heating other than **induction soldering irons**;

– arc-welding equipment.

2. **Normative references**
3. **Definitions**

This clause of Part 1 is applicable except as follows.

3.1.9 Replacement:

normal operation

Operation of appliances under the following conditions

Appliances having a stand are operated on the stand, unless otherwise specified.

Other appliances are operated in accordance with the instructions, unless otherwise specified.

4. **General requirement**
5. **General conditions for the tests**
6. **Classification**
7. **Marking and instructions**

7.12 Addition:

The instructions for appliances having a separate stand and not incorporating a biased-off switch shall include the substance of the following:

WARNING: This tool must be placed on its stand when not in use.

8. **Protection against access to live parts**
9. **Starting of motor-operated appliances**

Not Applicable

10. **Power input and current**
11. **Heating**

11.2 Modification:

Appliances are tested away from the walls of the test corner.

11.8 Modification:

The temperature rise limit specified in Table 3 for pure mica and tightly sintered ceramic material is increased to 600 K.

12. **Void**
13. **Leakage current and electric strength at operating temperature**
14. **Transient overvoltages**
15. **Moisture resistance**
16. **Leakage current and electric strength**
17. **Overload protection of transformers and associated circuits**
18. **Endurance**

Not Applicable

19. **Abnormal operation**

19.2 Replacement:

Appliances are operated under the conditions specified in Clause 11 but supplied at 0.94 times rated voltage.

19.3 Replacement:

The test of 19.2 is repeated but with the appliance supplied at 1.06 times rated voltage.

20. Stability and mechanical hazards

20.1 Addition:

Hand-held appliances are subjected to the test while placed on their stands.

21. Mechanical Strength

21.1 Addition:

For hand-held appliances, compliance is also checked by the tests of 21.101.

21.101 The supply cord of hand-held appliances is cut to a length of 100 mm, measured from the point where the cord, or cord guard, enters the appliance.

The appliance is dropped from a height of 1 m on to a hardwood base having a thickness of 50 mm.

This test is carried out five times, the appliance positioned so that its major axis is horizontal and so that a different part of the appliance is exposed to the impact each time.

The appliance is then dropped five times with its major axis vertical and with tips of soldering irons, or corresponding parts of other appliances, pointing downwards.

The appliance shall not be damaged to such an extent that compliance with this standard is impaired; in particular live parts shall not become accessible.

22. Construction

22.101 Hand-held appliances intended to be used away from a workshop shall incorporate a stand.

NOTE 1 Examples of appliances intended to be used away from a workshop are

– branding tools;
– conduit-soldering tools;
– dehorning tools;
– heat guns;
– paint strippers.

Hand-held appliances intended to be used on a table or similar surface shall incorporate a stand or be provided with a separate stand.

NOTE 2 Examples of appliances intended to be used on a table or similar surface are

– burning-in pens;
– desoldering irons;
– firelighters;
– soldering irons.

These requirements do not apply to appliances complying with test of Clause 11 without a stand.

Compliance is checked by inspection and by the test of Clause 11.

23. Internal wiring

24. Components

24.1.3 Addition:

Switches incorporated in the hand-held part of appliances not intended exclusively for household use are subjected to 50 000 cycles of operation.

25. Supply connection and external flexible cords

25.5 Addition:

Type Z attachment is allowed for

– class III appliances;

– other appliances, unless they have a polyvinyl chloride sheathed cord and the temperature rise of accessible metal parts exceeds 75 K.

25.7 Addition:

Light polyvinyl chloride sheathed cords may be used for class III appliances and other handheld appliances, regardless of the mass of the appliance.

Polyvinyl chloride sheathed cords may be used for hand-held appliances having a rated power input not exceeding 100 W and a mass not exceeding 100 g, and for appliances provided with a biased-off switch, regardless of the temperature rise of external metal parts.

NOTE 101 The mass is determined without the supply cord.

25.15 Modification:

Instead of the first line in Table 12, the following applies for hand-held appliances.

Mass of the appliance *kg*	***Pull force*** *N*	***Torque*** *Nm*
≤ 0,3	*15*	*0,05*
> 0,3 and ≤ 1,0	*30*	*0,1*

26. Terminals for external conductors

27. Provision for earthing

27.2 Addition:

NOTE 101 Class II soldering irons and class II soldering guns used for soldering electronic equipment may have an equipotential bonding terminal for which the dimensional requirements are not applicable.

28. Screws and connections

29. Clearances, creepage distances and solid insulation

29.3 Replace the second dashed item of the test specification by the following:

– an electric strength test in accordance with 29.3.2, if the insulation consists of more than one separate layer, other than flakey material similar to natural mica, or by

29.3.2 Addition:

If natural mica in thin sheet form is used,

– for supplementary insulation, there shall be at least six layers, and any three layers together shall withstand the electric strength test of 16.3 for supplementary insulation;

– for reinforced insulation, there shall be at least ten layers, and any five layers together shall withstand the electric strength test of 16.3 for reinforced insulation.

30. Resistance to heat and fire

30.2.2 is applicable

31. Resistance to rusting

32. Radiation, toxicity and similar hazards

Annex A

(informative)

Routine tests

A.2 Electric strength test

Addition:

An electric strength test is carried out between the input and output circuits of appliances incorporating a safety isolating transformer, the test voltage being

– 2 000 V, for heating tools having a rated voltage not exceeding 150 V;

– 2 500 V, for other heating tools.