

Intertek

NOM – 003 – SCFI – 2000

**Electrical Products Safety
Specification**

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Intertek

**INFORMATION
REGARDING GROUPING
PRODUCTS FOR
CERTIFICATION UNDER
OFFICIAL MEXICAN
STANDARD**

NOM – 003 – SCFI – 2000



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Family of Products.

Pursuant to section XV, Art. 1 of the Policies and Procedures for the evaluation of Conformity, a Family of Products is a group of products of the same type where the variations are of an aesthetic or exterior nature, yet preserve the design characteristics to ensure compliance with the relevant NOM,

Specific Criteria to Define Families According to NOM – 003 – SCFI – 2000.

Product models are considered to be within the family as long as they meet the following conditions:

1.- Specific Criteria to Define Major Appliance Families

1.1.- A/C.

a).- Same device class:

- Class 0
- Class 0I or I
- Class II

b).- Same type(s) of controls: (electromechanic or electronic)

c).- Same type and capacity of the compressor (working principle, voltage, current and power rating)

d).- For devices using transformers or ballasts having the same rating (voltage, current, or power and transformation ratio)

e).- Same cabinet material: (plastic, material, etc.)

f).- Same type and capacity of ventilator motor (working principle, power, current and power rating)

g).- Same type of condenser cooling:

- ventilation.
- water

h).- Same type of heating (same capacity of the heating element).

1.2.- Electric water heaters.

a).- Same device class:

- Class 0
- Class 0I or I
- Class II

- b).- Same type(s) of controls: (electromechanic or electronic)
- c).- Same type and capacity of heating element
- d).- Same type of thermal isolation:
 - Fiberglass.
 - Polyurethane.

1.3.- Freezers.

- a).- Same device class:
 - Class 0
 - Class 0I or I
 - Class II
- b).- Same type(s) of controls: (electromechanic or electronic)
- c).- Same type and capacity of the compressor (working principle, voltage, current and power rating)
- d).- For devices using transformers or ballasts having the same rating (voltage, current, or power and transformation ratio)
- e).- Same cabinet material: (plastic, metal, etc.)
- f).- Same type of thawing:
 - Manual.
 - semiautomatic.
 - automatic.
- g).- Same type and capacity of condenser (working principle, power, current and power rating)
- h).- Same type and capacity of evaporation ventilator motor (working principle, power, current and power rating)
- i).- Same operation position:
 - Horizontal
 - Vertical

1.4.- Water dispensers or water coolers / water heaters.

- a).- Same device class:
 - Class 0
 - Class 0I or I
 - Class II
- b).- Same type(s) of controls: (electromechanic or electronic)
- c).- Same type and capacity of the compressor (working principle, voltage, current and power rating)
- d).- For devices using transformers or ballasts having the same rating (voltage, current, or power and transformation ratio)
- e).- Same cabinet material: (plastic, metal, etc.)
- f).- Same capacity of the heating element.

The most representative power regulator for the family, i.e. the one with greater capacity, and lower power voltage (regardless of connection type: Star, Delta, etc.) must be checked at the laboratory . This applies to 3-phase regulators

7.- Criteria for grouping decorative lamps.

In the case of decorative lighting, in order for several models to be considered part of the same family all must come from the same manufacturer and meet the following requirements:

- Same power rating
- Same frequency.
- Same wire diagram.
- Same type and material of the lamp socket.
- Same type of lam (light bulb)
- Same gage of the feed wire

In the case of lamps of fluorescent light:

- Same type of attachment or application (table, floor, fixed).
- Same type of ballast

The representative models to be sent for laboratory tests will be those that have the smallest support area and the highest height.

Minimum information required for the grouping of the family of lamps:

Height, base diameter, models, material and type of lamp socket, material description (base, body and lamp screen), type of bulb, (incandescent, fluorescent, halogen, etc) number of bulbs, type of attachment, (ceiling, wall, table, floor, etc) power rating V., power rating W conductor gage.

- e).- In case of accessories, they must have the same operation characteristics. (electric, non.electric mechanical, same workload, same sizes, if applicable, etc).
- f).- Isolating, thermal and electric material may be of a different type, as long as it is shown that their characteristics are appropriate to their operation ability. The above may be checked through complementary heating tests, humidity chamber, dielectric strength and isolation resistance.
- g).- Mechanical attachment systems may be of a different type as long as the same strength can be assured.
- h).- Light indicators, switches and timers are allowed to be included as model variations, as long as they do not represent electrical risks in the products and other elements comprising them, as per the established criteria. Differences must be covered with complementary tests for electric shock, heating, humidity, dielectric strength and construction.
- i).- The number of speeds and direction of turn can be varied, as long as the maximum power is always the same and the speed driving system is the same.
Products are not considered to be in the same family when they do not meet one or more of the applicable criteria for the aforesaid family..
The number of models belonging to a same family that can be certified for the same cost is unlimited, and is only restricted by compliance of the criteria herewith

6.- Criteri for grouping families of power regulators.:

Voltage power regulators are grouped according to the technology involved in their design, the capacity and number of phases being managed. The gruping is left as follows:

By Capacity:

Up to 5000 VA

Greater than5000 V A and up to 10 000 V A

Greater than1000 V A and up to 25 000 V A

Greater than25 000 V A

1.5.- Electric stove.

- a).- Same device class:
 - Class 0
 - Class 0I or I
 - Class II
- b).- Same type(s) of controls: (electromechanic or electronic)
- c).- Same type and capacity of the compressor (working principle, voltage, current and power rating)
- d).- For devices using transformers or ballasts having the same rating (voltage, current, or power and transformation ratio)
- e).- Same number of stovetop heating elements.
- f).- Same number of oven heating elements

1.6.- Laundry washers.

- a).- Same device class:
 - Class 0
 - Class 0I or I
 - Class II
- b).- Same type(s) of controls: (electromechanic or electronic)
- c).- Same type and capacity of the compressor (working principle, voltage, current and power rating)
- d).- For devices using transformers or ballasts having the same rating (voltage, current, or power and transformation ratio)
- e).- Same cabinet material: (plastic, metal, etc.)

1.7.- Dishwasher.

- a).- Same device class:
 - Class 0
 - Class 0I or I
 - Class II
- b).- Same type(s) of controls: (electromechanic or electronic)
- c).- Same type and capacity of the compressor (working principle, voltage, current and power rating)
- d).- For devices using transformers or ballasts having the same rating (voltage, current, or power and transformation ratio)
- e).- Same cabinet material: (plastic, metal, etc.)

1.8.- Refrigerators.

- a.- Same device class:
 - Class 0
 - Class 0I or I
 - Class II
- b).- Same type(s) of controls: (electromechanic or electronic)
- c).- Same type and capacity of the compressor (working principle, voltage, current and power rating)
- d).- For devices using transformers or ballasts having the same rating (voltage, current, or power and transformation ratio)
- e).- Same cabinet material: (plastic, metal, etc.)
- f).- Same type of thawing:
 - manual.
 - semiautomatic.
 - automatic.

1.9.- Refrigerator/freezer.

- a).- Same device class:
 - Class 0
 - Class 0I or I
 - Class II
- b).- Same type(s) of controls: (electromechanic or electronic)
- c).- Same type and capacity of the compressor (working principle, voltage, current and power rating)
- d).- For devices using transformers or ballasts having the same rating (voltage, current, or power and transformation ratio)
- e).- Same cabinet material: (plastic, metal, etc.)
- f).- Same type of thawing:
 - Manual.
 - Semiautomatic.
 - Automatic.

1.10.- Electric clothes dryer.

- a).- Same device class:
 - Class 0
 - Class 0I or I
 - Class II
- b).- Same type(s) of controls: (electromechanic or electronic)
- c).- Same type and capacity of the compressor (working principle, voltage, current and power rating)

5.- Criteria for grouping families of appliances and the like, except for major appliances, minor appliances, electrical devices and tools.

The following are the criteria applied to electrical products, which due to their characteristics must follow the Official Mexican Standard NOM-003-SCFI-1993, except for devices such as major appliances, minor appliances, electrical machines and tools. as they have specific characteristics, already addressed in other parts of this document.

Two or more products may be considered to be in the same family as long as they meet the following criteria.

- a).- Same components in the electrical circuit in type, working principle and design, where the power and the current rating may vary within the following intervals, and considering as the baseline the model with the highest power, or current and applying the limit downward

Power Interval	Variation	Variation In current
1-20 W	50 %	25 %
21-60 W	40 %	20 %
61-140 W	30 %	15 %
141-300 W	25 %	13 %
301-1000 W	20 %	10 %
1001-10000 W	10 %	5 %
10001-20000 W	5 %	3 %

- b).- Metal parts for plastic parts may be changed as long as consideration is given to the degree of protection against heating, ground failure and electrical strength.
- c).- Covers or housings must be identical or similar, No covers with different types of air slots. When relevant, differences in slot size may be assessed by a complementary test for shock, mechanical risk and overheating..
- d).- Products may vary their power rating within the interval indicated in a) as long as the quality does not change and the type of isolating materials used in the electric components from one model to another does not change, accessories included.

The electric wire diagram must specify very clearly all the elements that comprise it.

- b).- The voltage interval where the tools can be grouped for one same family shall be of a power rating $\pm 10\%$ considering power rating as standard power, or 127 V ~, 220 V ~, 220 V 3~, etc.
- c).- A variation of up to $\pm 30\%$ in the power usage or $\pm 15\%$ current is allowed, taking as a reference an intermediate conventional value between the applicant and the certification entity.
- d).- No changes are accepted in the primary activity of the device., i.e., devices will be included in the family when the primary function, for which they are designed, is the same. E.g., Drillers cannot be grouped together with emery polishers..
- e).- Tools that change from plastic parts to metallic parts cannot be grouped together. In its normal work, at the attachment points and support.
- f).- For tools with the same type of motor, but different levels of isolation, (class 0, 01 I or II) they can be grouped in the same family only if a sample of every class can be tested.
In case of requiring the extension of a certificate for a device with a certain type of isolation different to the already certified ones, the sample to be included in the grouping will be tested. To this effect, partial proofs of heating, ground fault, isolation strength and dielectric strength.
- g).- Tools cannot be grouped to be installed in a workbench with portable tools. If any tool is fixable, but because of its dimensions can be easily operated manually, then it shall be considered as portable.
- h).- Electrical accessories are not included in the grouping, Accessories are the devices designed to couple the tool, this has no cost and the main activity of the device is not changed.

d).- For devices using transformers or ballasts having the same rating (voltage, current, or power and transformation ratio)

e).- Same cabinet material: (plastic, metal, etc.)

f).- Same capacity of the heating element

Should there exist any variation in any of the critical components, an additional test array certificate by an authorized laboratory shall be submitted. Complementary tests deemed necessary shall be determined by the certification entity.

2.- Specific criteria to define families of minor home appliances.

Two or more minor may be considered to be in the same family as long as they meet the following criteria:

- a).- Drives and heating elements in the electrical circuit must be identical, in type, operation principle and design.
- b).- Light indicators, switches and timers are allowed to be included as model variations, as long as they do not represent electrical risks in the products and other elements comprising them, as per the established criteria. Differences must be covered with complementary tests for electric shock, heating, humidity, dielectric strength and construction.
- c).- Color variation and esthetical changes are allowed.
- d).- Covers or housings must be identical or similar, No covers with different types of air slots. When relevant, differences in slot size may be assessed by a complementary test for shock, mechanical risk and overheating.
- e).- Metal parts for plastic parts may be changed as long as consideration is given to the degree of protection against heating, ground failure and electrical strength.
- f).- In case of accessories, they shall have the same characteristics of operation (electrical or mechanical).
- g).- Isolating, thermal and electric material may be of a different type, as long as it is shown that their characteristics are appropriate to their operation ability. The above may be checked through complementary heating tests, humidity chamber dielectric strength and isolation resistance
- h).- Mechanical attachment systems may be of a different type as long as the same strength can be assured.

i).- Same components in the electrical circuit in type, working principle and design, where the power and the current rating may vary within the following intervals.

Power Interval	Variation	Variation In current
1-20 W	50 %	25 %
21-60 W	40 %	20 %
61-140 W	30 %	15 %
141-300 W	25 %	13 %
301-1000 W	20 %	10 %
1001-10000 W	10 %	5 %
10001-20000 W	5 %	3 %

j).- Same device class, class 0, class 0I or I, class II.

k).- Same type of control, electromechanical control, electronic control

3.- Criteria specified to define grouping of electrical machines. .

Electrical machines are the following:

- a).- Same type of product (plugs, switches, outlets, lamp holders, thermomagnetic switches, etc).
- b).- Internal, external or electric circuit components may be similar or equal, but must have the same working principle, operation capacity may change in Amps, according to the ranges and conditions indicated in d) herein.
- c).- Light indicators, switches and timers are allowed to be included as model variations, as long as the machines do not represent electrical risks in the products and other elements comprising them, as per the established criteria.
- d).- The family includes models as per the following chart.:

 1 up to 20 A 21 up to 50 A 51 up to 100 A greater than 100 A

125/250 V Family 1
 277/347 V Family 2
 347/600 V Family 3
 277/480 V Family 4
 120/208 V Family 5

The family covers the capacity of operation in current (from 1 A to > 100 A) but the representative sample of greater amperage at every interval shall be tested to ensure that the family meets the Standard of reference.

e).- In regard to materials, the following applies:

External and internal changes of material are allowed, so long as they meet the standards of reference, by showing a representative sample of every type of material that is to be certified. By defining four types of material, thermofixed, thermoplastic, metal and porcelain, and in the case of metal, reference shall only be made of the material covering the product.

In regard to thermomagnetic switches, two or more product types may belong to the family, as long as the following is met:

- i) The family may include 1, 2 3 pole switches, as long as the tested product is the 3—pole product or the one with the greater number of poles, as it is the most critical in the heating test.
- ii) Same type and size of framework for 1, 2 and 3 poles, respectively.
- iii) Same components of the electrical circuit allowing varying the physical dimensions, according to the operation capacity.
- iv) Same external material (covers).
- v) Same internal materials (insulation and thermal).
- vi) Same voltage and range of voltage rating.
- vii) Same range of current rating defined according tot he type and size of the framework.

In order to certify a family of products, the series of complementary tests necessary to cover the allowed variations according to the criteria above must be submitted.

4.- Specific criteria to define families of electric tools.

a).- Tools cannot be grouped in a family that show differences regarding the type of electric components, such as motor, capacitor with startup function, heating elements and transformers. Primary electric devices are not: the capacitor with filter function, the type of switch, the speed driver device and turn direction.