

**PLUGS AND SOCKET-OUTLETS FOR HOUSEHOLD
AND SIMILAR PURPOSES**

Prepared by:	Ramiro Sanches	Verified by:	Glauca Nahun
Approved by:	Marcos Zevzikovas	Approval Date:	June/27/2008

TÜV Rheinland do Brasil

1 – OBJECTIVE

This document introduces complementary criteria of the "Product Certification Rule" - RC-002 for the granting and maintenance of license of use of Conformity Mark, according to SBAC, INMETRO and TÜV Rheinland do Brasil Ltda.

2 – FIELD OF APPLICATION

It is applicable to all companies in the segment - plugs and fixed or portable socket-outlets for alternating current (a.c.) only, with or without earthing contact, incorporated or not in cord sets and cord extension sets, with a rated voltage greater than 50V but not exceeding 250V and a rated current equal or lower than 20A, intended for household and similar similar purposes, either indoors or outdoors, henceforth called simply "Plugs and Socket-outlets for Household and Similar Purposes," - which request the granting of license to use the Brand, according to SBAC.

Note: Certification for selling products in Brazil in the scope of the Inmetro Decree 85, 04/03/2006 and Resolution 02 of 09/06/2007 is mandatory, so the products that do not fit in these requirements cannot be sold in Brazil.

Products that do not fin in the requirements of the Inmetro Decree 85, 04/03/2006 and Resolution 02 of 09/06/2007 may be certified on a voluntary basis, but not on standard ABNT NBR NM 60884-1 30/11/2004, but in one of those standards: IEC 60884-1 07/2006 or NM 60884-1 30/09/2004, for commercialization outside Brazil, since complying all the requirements of this CRC.

3 – COMPLEMENTARY DOCUMENTS

CONMETRO Administrative Rule No.02 de 06/09/2007

INMETRO Administrative Rule No. 27 de 18/02/2000

INMETRO Administrative Rule No. 085 of 04/03/2006

INMETRO Administrative Rule No. 081 of 03/10/2008

INMETRO Administrative Rule No. 136 of 10/04/2001

INMETRO Administrative Rule No. 73 of 03/29/2006

PI-028 – Technical Committees – Formation and Prerogatives

NBR 5426:1985 Sampling Plans and Procedures in the Inspection by Attributes – Procedure

ABNT NBR 60884-1:2004 Plugs and Outlets for Domestic and Similar Uses – Part 1: General Requirements

IEC 60884-1:2006 Plugs and socket-outlets for household and similar purposes – Part 1: General requirements

NM 60884-1:2004 Plugs and Outlets for Domestic and Similar Uses – Part 1: General Requirements

NBR 14136:2002 Plugs and Socket-Outlets for Household and Similar Purpose not exceeding 20A/250V in Alternate Current – Standardization

NBR ISO 9000:2005 Quality Management Systems - Fundamentals and vocabulary

NBR ISO 9001:2000 Quality Management Systems – Requirements

ABNT ISO/IEC Form 2:2006 Standardization and Related Activities - General vocabulary

4 – PLUG AND SOCKET-OUTLET SAMPLING AND TESTS

4.1 – INITIAL TESTS

4.1.1 – Initial tests are the type tests prescribed in standard ABNT NBR NM 60884-1 with the adjustments established in this Complement.

Note: Certifiable plug and outlet standards are those indicated in item 6. These standards are considered in the dimensional evaluations and wherever the test requires.

4.1.2 – The number of parts necessary for the performance of type tests is prescribed in standard ABNT NBR NM 60884-1, as a proof. The same number of parts shall be retained simultaneously for counter-proof and for the witness.

4.1.3 – Accessories may be considered in the same family if the following conditions are kept:

4.1.3.1 – For a set of fixed socket-outlets to be considered in the same family, the following requirements shall, necessarily, be complied with:

- the same basic project (the number corresponding to the standard sheet in item 6, except as to the presence of earthing contact);
- same contacts;
- same materials (base, cover, contact, etc.) and
- same contact housing

For same family of fixed socket-outlets the following variations are acceptable:

- type of assembly as seen in ABNT NBR NM 60884-1;
- installation method as foreseen in ABNT NBR NM 60884-1;
- existence of shutters;
- existence of earthing contacts;
- colors;
- types of terminals and
- coating plates.

4.1.3.2 – For a set of portable socket-outlets and plugs to be considered of the same family, it must necessarily comply with the following requirements:

- same basic project (number corresponding to the standardization sheet in item 6);
- same type of contacts;
- same materials (base, insertion, contacts or pins, etc.);
- same methods of fixing conductors and pins, and
- same type of terminals.

For same family of portable outlets and plugs the following variations are acceptable:

- cable type;
- cable section;
- cable exiting angle;
- pin types (solid or not, with insulating sleeves or not), and
- colors.

Note: Rewirable and non-rewirable accessories cannot be considered of the same family.

4.1.4. – Sample selection for initial tests must be performed by TÜV, following a minimum quantity for the tests, according to tables A.1 and A.2.

Note: In case of prototypes, the manufacturer may collect and forward the necessary samples to the Laboratory or to TÜV, by common agreement between them and under TÜV's responsibility. The prototype approval in the initial tests does not exempt TÜV from validating the products after starting operation in the line of production.

4.1.5 – In case of nonconformities in the initial tests, the manufacturer shall make the necessary adjustments, after which new samples may be collected by TÜV.

Table 4.1 – Mandatory Samples for the Tests

Sections and Subsections		Fixed Outlets	Portable Outlets	Plugs
6	Ratings	A	A	A
7	Classification	A	A	A
8	Marking	A	A	A
9	Checking of dimensions	ABC	ABC	ABC
10	Protection against electric shocks	ABC	ABC	ABC
11	Provision for earthing	ABC	ABC	ABC
12	Terminals and terminations	ABC ^{a)}	ABC	ABC
13	Construction of fixed socket-outlets	ABC ^{b)}	----	----
14	Construction of plugs and portable socket-outlets	----	ABC ^{b)}	ABC ^{b)}
15	Interlocked socket-outlets	ABC	ABC	ABC
16	Resistance to ageing, protection provided by enclosures, and resistance to humidity	ABC	ABC	ABC
17	Insulation resistance and electric strength	ABC	ABC	ABC
18	Operations of earthing contacts	ABC	ABC	ABC
19	Temperature rise	ABC	ABC	ABC
20	Breaking capacity	ABC	ABC	ABC
21	Normal operation	ABC	ABC	ABC
22	Force necessary to withdraw the plug	ABC	ABC	----
23	Flexible cables and their connections	----	ABC ^{c)}	ABC ^{c)}
24	Mechanical strength	ABC ^{d) e)}	ABC ^{d)}	ABC ^{f)}
25	Resistance to heat	ABC	ABC	ABC
26	Screws, current-carrying parts and connections	ABC	ABC	ABC
27	Creepage distances, clearances and distances through	ABC	ABC	ABC

**PLUGS AND SOCKET-OUTLETS FOR HOUSEHOLD
AND SIMILAR PURPOSES**

	sealing compound			
28.1	Resistance to abnormal heat and to fire	DEF	DEF	DEF
28.2	Resistance to tracking ^{g)}	DEF	DEF	DEF
29	Resistance to rusting	ABC	ABC	ABC
30	Additional tests on pins provided with insulating sleeves	----	----	GHI ^{h)}
	TOTAL	06	06	09

Capital letters identify the different test specimens to be tested

- a) Supplemental samples are used for the 12.3.10 test, five additional samples of terminals without screws are used for the 12.3.11 tests and supplemental samples are used for the 12.3.12 test.
- b) Supplemental samples of membranes are necessary for the 13.22 and 13.23 tests.
- c) Supplemental samples are needed for the 23.2 and 23.4 non-rewirable accessories of each type of cable and nominal section.
- d) Supplemental samples are needed for the 24.8 test for shutters.
- e) Supplemental samples are needed for the 24.14.1 and 24.14.2 tests
- f) Supplemental samples are needed for the 24.10 tests for plugs.
- g) Supplemental samples may be necessary.
- h) Supplemental samples are needed for the 30.2 and 30.3 tests for plugs with insulating sleeves.

Table 4.2 – Additional tests in view of variation in the families

Variation in the same family	Fixed socket-outlets	Portable socket-outlets	Plugs
Type of assembly	sections 8, 13, 24, 25, 26, 27, 28, 29	---	---
Installation method	sections 8, 13, 24, 26, 27, 28, 29	---	---
Existence of shutters	sections 10, 21, 24, 28, 29	sections 10, 21, 24, 28, 29	---
Type of terminal	sections 12, 19, 20, 21, 22, 24, 26, 29	sections 12, 19, 20, 21, 22, 24, 26, 29	sections 12, 19, 20, 21, 24, 26, 29
Cover-plates	sections 8, 16, 24, 28	---	---
Cable type	---	sections 14, 23, 27	sections 14, 23, 27
Cable section	---	sections 8, 14, 19, 20 ^{a)} , 21 ^{b)} , 22, 23, 27	sections 8, 14, 19, 20 ^{a)} , 21 ^{b)} , 23, 27

**PLUGS AND SOCKET-OUTLETS FOR HOUSEHOLD
AND SIMILAR PURPOSES**

Cable exiting angle	---	sections 8, 14, 23, 24, 27	sections 8, 14, 23, 24, 27
Pin types and numbers (solid or not, either with insulating sleeves or not)	---	---	sections 9, 14, 19, 20, 21, 23, 24, 27, 30
Colors	section 28	section 28	section 28
<p>a) The accessory must be tested only in the cable section corresponding to its nominal current. If the accessory of the same nominal current is constructed with different cable sections, this must be tested with the smallest declared section;</p> <p>b) The accessory must be tested only in the cable section corresponding to the larger declared nominal current.</p>			

4.2 – SURVEILLANCE TESTS

Surveillance tests are performed as follows:

4.2.1 – Representative samples of the production shall be subjected to surveillance tests. From each certified fundamental project samples at least one model shall be collected, considering the totality of surveillance tests to be carried out.

4.2.2 – Surveillance tests shall be carried out every six (6) months after the license is granted for the use of Conformity marks. TÜV may perform tests in shorter periods provided they are justified by changes in the production process or complaints about the product.

4.2.3 – In each sampling the surveillance test and verifications must be performed according to ABNT NBR NM 60884-1, indicated below:

- a) Ratings (section 6);
- b) Classification (section 7);
- c) Marking (section 8);
- d) Checking of dimensions (section 9);
- e) Flexible cables and their connection (section 23).

4.2.4 – Besides the tests and verification defined in subitem 4.2.3, the additional tests and verification indicated below, according to ABNT NBR NM 60884 -1 shall be carried out:

- a) 1st semester: Operation of earthing contacts (section 18); Temperature rise (section 19); Breaking capacity (section 20); Normal operation (section 21); Force necessary to withdraw the plug (section 22); Mechanical strength (section 24).
- b) 2nd semester: Interlocked socket-outlets (section 15); Resistance to ageing, protection provided by enclosures, and resistance to humidity (section 16); Insulation resistance and electric strength (section 17); Resistance of insulating material to abnormal heat, to fire and to tracking (section 28);
- c) 3rd semester: Resistance to heat (section 25); Screws, current-carrying parts and connections (section 26); Creepage distances, clearances and distances through sealing compound (section 27); Resistance to rusting (section 29); Additional tests on pins provided with insulating sleeves (section 30); Operation of earthing contacts (section 18); Temperature rise (section 19); Breaking capacity (section 20); Normal operation (section 21); Force necessary to withdraw the plug (section 22);
- d) 4th semester: Protection against electric shocks (section 10); Provision for earthing (section 11); Terminals and terminations (section 12); Construction of fixed socket-outlets (section 13); Construction of plugs and portable socket-outlets (section 14); Resistance of insulating material to abnormal heat, to fire and to tracking (section 28).

4.2.5 – At the end of the 4 semester cycle, a new sequence of tests and verification shall be started, as described in subitems 4.2.3 and 4.2.4.

4.2.6 – Should any nonconformity be noted in some of the surveillance tests, this must be repeated in two samples, counter-proof and witness for the nonconforming attribute, and any nonconforming finding shall not be admitted.

Note: In case TÜV deems pertinent, and in agreement with the manufacturer, the nonconformity shall be confirmed without the performance of counter-proof and witness.

4.2.7 – At the time of confirmation of nonconformity in any of the surveillance tests, TÜV shall immediately suspend the license for use of the Conformity mark, requesting the manufacturer the corresponding treatment, with the definition of corrective actions and terms of implementation.

**PLUGS AND SOCKET-OUTLETS FOR HOUSEHOLD
AND SIMILAR PURPOSES**

Note: In case the nonconformity found does not put user security at risk, under TÜV's analysis and responsibility, the manufacturer shall not have its license of the Conformity mark suspended, provided TÜV guarantees, through corrective actions, the elimination of the nonconformity in the products existing in the market and the implementation of these actions in the line of production.

4.2.8 – The handling of follow up tests as well as the collection of samples must be carried out under TÜV's responsibility, and the samples taken from commercial stores and from the manufacturer's shipping department, alternatively, following a minimum quantity for the performance of tests, planning for counter-proof and witness.

4.2.9 – In case there are changes in materials or in the project during the certification surveillance, additional tests related to the change implemented shall be performed, at TÜV's discretion.

4.3 – EXTRAORDINARY TESTS

TÜV, at their discretion, may request extraordinary tests in follow up samples, scheduled or not, out of the conditions established in previous items of this CRC.

4.4 – BATCH TYPE TESTS

4.4.1 – Batch type tests are those established in subitem 4.1.1

4.4.2 – To perform batch type tests the requirements established in subitems 4.1.2 and 4.1.3 of this CRC shall be followed

4.4.3 – The quantity of samples needed to perform batch type tests is the double of that required in ABNT NBR NM 60884-1. Counter-proof and witness samples are not collected.

4.4.4 – Batch type tests shall not present nonconformities.

4.4.5 – In case of occurrence of nonconformities, the batch shall be disapproved for certification purposes.

4.5 – BATCH INSPECTION TESTS

4.5.1 – Besides the type tests described in item 4.4 of this CRC, TÜV shall perform, under their responsibility, the following batch inspection tests, in samples collected according to NBR 5426, with a double sample plan – normal, general inspection level I and NQA of 0.25:

- a) Insulation resistance and electric strength (section 17) and Resistance to ageing, protection provided by enclosures, and resistance to humidity (section 16);
- b) Resistance of insulating material to abnormal heat, to fire and to tracking (section 28).

4.5.2 – Batch inspection tests shall be performed following ABNT NBR NM 60884-1, using total samples collected, divided into equal parts for each one of the verification tests, not being admitted any nonconformities.

4.5.3 – Batch inspection tests shall not present nonconformities.

4.5.4 – In case of occurrence of nonconformities the batch shall be disapproved for certification purposes.

5 – FACTORY INSPECTION

5.1 – The initial and periodical evaluation of the manufacturing quality control system, shall be carried out by TÜV.

5.2 – The initial and periodical evaluation of the manufacturing quality control system, must verify the compliance with the requirements listed below, as to the applicable scope of the Manufacturing Quality Management System:

1. Control of records (item 4.2.4)
2. Production Control (items 7.5.1 and 7.5.2);
3. Product identification and traceability (item 7.5.3);
4. Product preservation (item 7.5.5);
5. Measurement and monitoring device control (item 7.6);
6. Product monitoring measurement (item 8.2.4);
7. Nonconforming product control (item 8.3);
8. Corrective action (item 8.5.2);
9. Preventive action (item 8.5.3);

All above verification shall be performed based on items of NBR ISO 9001:2000 standard and factory inspection reports CIG 22 and 23 criteria.

5.3 – In the initial and periodical evaluation of the manufacturing quality control system, the routine tests foreseen below and their results performed by the manufacturer, shall be verified.

5.3.1 – Safety-related routine tests for factory-wired portable accessories (according to Attachment A of ABNT NBR NM 60884-1).

Test	Number of poles	
	2	More than 2
a) Polarized system, phase (L) and neutral (N) – correct connection	X	X
b) Earth continuity	---	X
c) Short-circuit/wrong connection and reduction of creepage distance and clearances between phase (L) or neutral (N) to earth (⏚)	---	X

5.3.2 – Routine tests (NQA and NI, according to the manufacturer's procedure and under its responsibility):

- a) Checking of dimensions (section 9 of the standard);
- b) Pull test, torque and flexing test (section 23 of the standard);
- c) Resistance to heat (section 25 of the standard);
- d) Temperature rise (section 19 of the standard);
- e) Force necessary to withdraw the plug (section 22 of the standard);
- f) Insulation resistance and electric strength (section 17 of the standard);
- g) Resistance of insulating material to abnormal heat, to fire and to tracking (section 28 of the standard).

5.4 – The manufacturer shall keep record of the tests performed in 5.3, indicating product type, test date, manufacturing location (if manufactured in different places), quantity tested, number or defects and actions taken, meaning, destroyed or repaired.

5.5 – The manufacturer shall perform functional verification in the test equipment of 5.3.1, before and after each period of utilization and for ongoing utilization at least once every 24 hours.

During the verification, the equipment must show that it points out defects when accessories recognized as defective are tested or when defects are simulated.

The test equipment shall be calibrated at least once a year.

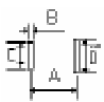
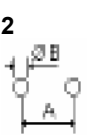
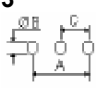

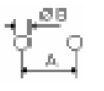
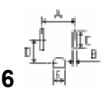
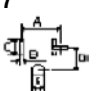
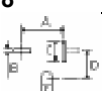
Records of verification tests and of all interventions that are deemed necessary shall be kept.

5.6 – In case the manufacturer has a certified quality management system by an OCS (System Certification Organization) accredited by INMETRO, according to NBR ISO 9001, TÜV shall analyze the documentation pertaining to the quality management system certification, thus guaranteeing that the requirements described above have been appraised with attention to the product to be certified. Otherwise, TÜV shall verify the compliance with requirements described in subitems 5.2, 5.3 and 5.4.





5.7 – The periodical evaluation of the manufacturing quality management system shall be carried out, at least, once every six (6) months after the granting of license for use of the Conformity mark.

PLUGS AND SOCKET-OUTLETS FOR HOUSEHOLD
AND SIMILAR PURPOSES

6 – DIMENSIONS ADMITTED

Plug	Engraving for rewirable plugs(1)	Reference Standard	Characteristics	Dimensions (mm)					
				A	B	C ⁽²⁾	D ⁽²⁾	E	F ⁽³⁾
1 	15A 250V~ or 15A 250 V a.c	IEC 60906- 2/97	2P 15A 250V~ Polarized	12.7+/- 0.13	1.52+/- 0.13	From 6.1 to 6.6	From 7.79 to 8.17	-----	From 15.88 to 18.24
		Nema WDI/74 (A1-15) IEC 60083/75 (A1-15)		12,700+/- 0.127	From 1.40 to 1.65	From 6.1 to 6.6	From 7.79 to 8.17	-----	From 15.88 to 18.24
2 	10A 250V	NBR 14136/98	2P 10A 250V	19.0+/-0.2	4.00+/- 0.06	-----	-----	-----	19.0 (+0.7/- 0)
	25A 250V	EN 50075/90	2P 2.5A 250V	Base 18.0 a	4.00+/- 0.06	-----	-----	-----	19.0+/- 0.5
3 	10A 250V~or 10A 250V a.c	CEI 23-16 (S11)	2P+T 10A 250V~	19.0+/-0.2	4.00+/- 0.06	9.5+/- 0.1	-----	-----	19.0+/- 0.5
4 	16A 250V~or 16A 250V a.c	IEC 60083/75 (c2b)	2P+T 16A 250V~	19.0+/-0.2	4.80+/- 0.06	32.0 (+0.5/- 0)	-----	-----	19.0+/- 0.5
5 	16A 250V	IEC 60083/75	2P 16A 250V~	19.0+/-0.2	4.80+/- 0.06	-----	-----	-----	19.0+/- 0.5
	20A 250V	NBR 14136/98	2P 20A 250V~	19.0+/-0.2	4.80+/- 0.06	-----	-----	-----	19.0 (+0.7/- 0)
6 	15A 250V~or 15A 250V a.c	IEC 60083/75 (A5-A15) Nema WDI/74 (5- 15)	2P+T15A 250V	12,700+/- 0.127	From 1.40 to 1.65	From 6.1 to 6.60	From 11.76 to 12.01	From 4.67 to 4.83	Live Min: 15.88 Earth Max: 21.41
7 	20A 250V~or 20A 250V a.c	IEC 60083/75 (A5-A20) Nema WDI/74 (5- 20)	2P+T20A 125V	15,470+/- 0.254	From 1.40 to 1.65	From 6.10 to 6.60	From 11.76 to 12.01	From 4.67 to 4.83	Min Vivo: 15.88 Max Terra: 21.41
8 	20A 250V~or 20A 250V a.c	IEC 60083/75 (A6-A15) Nema WDI/74 (6- 15)	2P+T20A 250V	15,470+/- 0.254	From 1.40 to 1.65	From 6.10 to 6.60	From 11.76 to 12.01	From 4.67 to 4.83	Live Min: 15.88 Earth Max: 21.41

**PLUGS AND SOCKET-OUTLETS FOR HOUSEHOLD
AND SIMILAR PURPOSES**

9 	20A 250V~or 20A 250V a.c	IEC 60083/75 (A10- A20) Nema WDI/74 (10-20)	2P+N20A 250V	30°	From 7.80 to 8.18	From 1.78 to 2.03	11,100+/- 0.127	9,530+/- 0.127	Live Min: 17.45 Max Neutral: 22.23
10 	10A 250V~or 10A 250V a.c	NBR 14136/98	2P+T10A 250V~	19.0+/- 0.2	4.00+/- 0.06	9.5+/- 0.1	3.00+/- 0.15	-----	19.0 (+0.7/-0)
11 	20A 250V~or 20A 250V a.c	NBR 14136/98	2P+T20A 250V~	19.0+/- 0.2	4.80+/- 0.06	9.5+/- 0.1	3.00+/- 0.15	-----	19.0 (+0.7/-0)
12 	20A 250V~or 20A 250V a.c	-----	2P+T20A 250V	30°	From 7.80 to 8.18	From 1.78 to 2.03	11,100+/- 0.127	9,530+/- 0.127	Live Min: 17.45 Earth Max: 22.23

(1) For non-rewirable plugs, the current marking should be as specified by the manufacturer, not exceeding the values for rewirable plugs, limited to the values established in the tests column of the section 7.2, item 21, or the current marking value must not exceed the lowest value among the configuration of the plug and the capacity of the cable (current tested).

For voltage engraving in non-rewirable plugs, the marks shall be 127V, 220V or 250V;






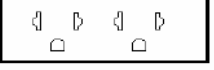
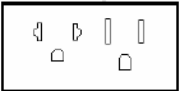




(2) For nonpolarized plugs the dimension "D" is equal to the dimension "C";




(3) Pin length;

***In plug No. 12 the earthing symbol shall be marked

Note: The plugs configurations 2a, 5b, 10 and 11 are related to the Brazilian standard NBR 14136 standard, which will be exclusive configuration on the dates specified by Resolution No. 2.

**PLUGS AND SOCKET-OUTLETS FOR HOUSEHOLD
AND SIMILAR PURPOSES**

OUTLET CONFIGURATION				
OUTLET	ENGRAVING FOR BRAZIL	REFERENCE STANDARD CHARACTERISTICS	CONNECTIBLE PLUGS	
1	 10A 15A 250V ~ or 10A 15A 250V a.c	2PU 10/15A 125/250V~	1 and 2	
2	 16A 250V ~ or 16A 250V a.c	2PU T 16A 250V	1, 2, 4 and 5	
3	 16A 250V ~ or 16A 250V a.c	2P T 16A 250V	2, 3, 4 and 5	
4	 10A 15A 250V ~ or 10A 15A 250V a.c	2PU T 10/15A 125/250V~	1, 2 and 6	
5	 15A 250V ~ or 15A 250V a.c	2 x 2P+T 15A 125V~	1 and 6	
6	 10A 15A 250V ~ or 10A 15A 250V a.c	2 x 2PU+T 10/15A 125/250V~	1, 2 and 6	
7		a) 10A 15A 250V ~ or 10A 15A 250V a.c	a) 2PU+T 10/15A 125/250V ~	a) 1, 2 and 6
		b) 15A 250V ~ or 15A 250V a.c	b) 2P+T 15A 125V~	b) 1 and 6
8	 10A 250V ~ or 10A 250V a.c	2P 10A 250V~	2	
9	 10A 250V ~ or 10A 250V a.c	2P+T 10A 250V~	2 and 10	
10	 20A 250V ~ or 20A 250V a.c	2P 20A 250V~	2 and 5	
11	 20A 250V ~ or 20A 250V a.c	2P +T 20A 250V~	2, 5, 10 and 11	

12		20A 250V ~ or 20A 250V a.c	2P +T 20A 125V~	7
13		20A 250V ~ or 20A 250V a.c	2P +T 20A 250V~	8
14		20A 250V ~ or 20A 250V a.c	2P +T 20A 125/250V~ 2P +N 20A 125/250V~	9 and 12

Note: The outlets configurations 8, 9, 10 and 11 are related to the Brazilian standard NBR 14136 standard, which will be exclusive configuration on the dates specified by Resolution No. 2

7 – ADJUSTMENTS TO ABNT NBR NM 60884-1:2004

(Differences in relation to Standard NBR NM 60884-1:2004 are included in blue)

7.1 - Inmetro Decree No. 27 of 18/02/200 determines the following:

- a) Ferrous materials should not be used in conducting electrical current.
- b) The products scope of this CRC should have the indication marks of tension in Voltage (V), Power in Watt (W) or the current in Ampères (A), and also manufacturer identification.

7.2 – Replace table 20 of ABNT NBR NM 60884-1:2004, which deals with the relationship between nominal characteristics and the section of non-rewirable plug conductors and portable outlets, with the following table:

**PLUGS AND SOCKET-OUTLETS FOR HOUSEHOLD
AND SIMILAR PURPOSES**

RATING OF ACCESSORY	Non-rewirable Fixed Accessories		Rewirable Accessories		Non-rewirable socket-outlets portable			Non-rewirable plugs		
	TEST CURRENT (A)		TEST CURRENT (A)		SECTION (mm ²)	TEST CURRENT (A)		SECTION (mm ²)	TEST CURRENT (A)	
	ITEM 19	ITEM 21	ITEM 19	ITEM 21		ITEM 19	ITEM 21		ITEM 19	ITEM 21
2,5A 250 V (excluded 130V)								Tinsel Type 0.5 0.75 1	1 2.5 4 4	1 2.5 2.5 2.5
10A 250 V (excluded 130V)	16	10	14	10	0.75 1 1.5	10 12 16	10 10 10	0.5 0.75 1	3 (2.5) 10 12	3 (2.5) 10 10
15A 250V	21	15	19	15	1.5	16	15	Tinsel Type 0.5 0.75 1.0 1.5	1 3 10 12 15	1 3 10 12 15
16A 250V (excluded 130V)	22	16	20	16	1,5 (excluded 1)	16 (excluded 12)	16 (excluded 12)	Tinsel Type 0.5 0.75 1.0 1.5	1 3 (2.5) 10 12 16	1 3 (2.5) 10 12 16
20A 250V	27.5	20	25	20	2.5	20	20	Tinsel Type 0.5 0.75 1.0 1.5 2.5	1 3 10 12 16 25	1 3 10 12 16 20

**PLUGS AND SOCKET-OUTLETS FOR HOUSEHOLD
AND SIMILAR PURPOSES**

NOTES:

- 1). Tinsel cords and flexible cables having a nominal cross-sectional area of 0,5mm², are allowed in lengths up to 2 m only.
- 2). Plugs and connectors incorporated in cord sets are tested as specified in the respective relevant standard (this standard for plugs and the IEC 60320 series for connectors) each accessory being tested independently.
- 3). In case the non-rewirable plug is marked with a nominal current value lower than the value of the test current indicated for item 21, then item 21 test shall be performed with the marked value of the current.

- excluding the lines corresponding to 6A 130V/250V, 16A, 440V, 20A, 250V and 32A 130V/250V/440V.

7.3 – For non-rewirable accessories the ball pressure tests (section 25.2 of the Standard) shall be performed at 125°C only in parts that retain current-carrying parts.

7.4 – The conformity with the test described in item 24.2, it should be verified as follows: After the test, the samples shall not display any deterioration, as established by this Standard, specifically:

- no part shall have become detached or loosened;
- the pins shall not have become so deformed that the plug cannot be introduced into a socket-outlet complying with the relevant standard sheet;
- the pins shall not turn when a torque of 0.4Nm is applied, first in one direction for 1 minute and then in the opposite direction for 1 minute.

Note 1: If the pin show any movement in its axle (rotation) that may compromise the flexible cable connection, the conformity with this complement is verified through the measurement of difference in voltage drop obtained before and after the torque application. The limit for approval of voltage drop difference is 10mV (measured under direct current).

Note 2: the torque shall be applied on the pin base. In item 23.4 of the Standard, the term “voltage drop” shall be interpreted as being the difference in voltage measurement before and after the flection test.

The conformity with the test described in item 24.5 shall be verified as follows:

After test the plug must allow full insertion, without any preparation or arrangement, into a certified outlet, adequate to the plug.

7.5 – In relation to item 25 of ABNT NBR NM 60884-1:2004, make the adjustments described below:

- 1) replace subitem “b” of item 25, with: for portable accessories, with the exception of parts eventually covered by subitem “a”, by the tests in 25.1, 25.2 and 25.4 and, with the exception of accessories made of natural or synthetic rubber or a mixture of both, by the test of 25.3;
- 2) Replace the first paragraph in item 25.2 with: the parts of insulating material necessary to retain current-carrying parts and protection parts, as well as parts of the front surface zone of thermoplastic material, 2mm wide, surrounding the phase and neutral pin entry holes of socket-outlets, and in the case of non-rewirable plugs, in the area of 2mm around the pins, shall be subjected to a ball pressure test, using the apparatus shown in figure B.38, with the exception of insulating parts that in a receptacle bear the grounding terminals which are subjected to the test in item 25.3;
- 3) For non-rewirable plugs the test in 25.3 is not applicable.

8 – CERTIFICATION IDENTIFICATION IN THE AMBIT OF SBAC

The manufacturer and importer of the plug and sockets for domestic use and analog, must follow the following guidelines for using the conformity label:

A.1. Conformity label on the packages

- On the package, the label can be printed or it can be a tag, with indelible characteristics. The dimensions must be followed.
- The conformity label, whose focus is the security, should be the "yellow label". However, it is permitted to use the black and white version.
- On individual product packages, the "yellow label" should be used. But in cases where there is no enough space on the package, is allowed to use the "compact label", (model 2) without the word "Segurança" (Safety). In this case, it will be possible to print the word "Segurança" (Safety) to the right or left side of the label, as the model below, is the minimum size of the dimensions is 11mm in width, and the text type to use the word "Segurança" (Safety) must follow the model.
- On collective product packages, used for packaging the individual product packages properly identified, should be used the "yellow label" or the "compact label" (Model 2), it is also allowed the use of the "compact label" (Model 2) without the word "Segurança" (Safety), or the use of the sentence stating "this pack contains certified products".



Pantone 1235

- 100%
- 80%

CMYK

- C0 M27Y76 K2
- C0 M20Y75 K2

Minimum size

50 mm



Shades of Gray

- 100%
- 90%
- 70%



Single color

**PLUGS AND SOCKET-OUTLETS FOR HOUSEHOLD
 AND SIMILAR PURPOSES**



Pantone 1235

- 100%
- 80%

CMYK

- C0 M27 Y76 K2
- C0 M20 Y75 K2

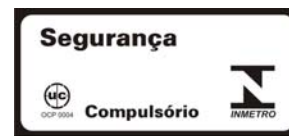


Shades of Gray

- 100%
- 90%
- 70%

Minimum size

50 mm



Single color



Compact Label, Model 2.



Compact label with the word “Segurança” (Safety) in the right or left side.

A.2. Conformity label on the products

a) On the product, when the compliance label is a tag, case it does not fit in the front of the plugs and sockets, it can be on other parts of the product

b) On products where there is enough space for the use of the "compact label" or where the it is recording directly on the product using a mold, it is allowed to use the "compact label" without the word "Segurança" (Safety).

c) On the product, it is allowed to use the "compact label" with minimum size smaller than 11mm, considering the appropriate proportions to identify with the product line evaluated under Brazilian System to Conformity Assessment - SBAC.



Compact Label, Model 2.



Compact Label without the Word "Segurança" (Safety).

UC LOGO: Can only be used by customers who have used in their products and packaging, before 2007.

9 – REVISION STATUS

Item 2 – Field of Application

Item 3 – Complementary Documents

Item 6 – Dimensions Admitted

Item 7 – Adjustments to ABNT NBR NM 60884-1:2004

Item 8 – Certification Identification in the Ambit of SBAC