

**ADAPTORS FOR PLUGS AND SOCKETS**

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| Approved by:   | Nelson Coelho    | Approval Date: | 20/07/2016     |

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## 1 – OBJECTIVE

This document presents the complementary criteria of the “Rule of Certification of Product” – 700-RC-001 for the Program of Evaluation of the Conformity of Plugs’ and Sockets’ Adaptors, focusing the safety, by means of mechanism of compulsory certification, for the grant and maintenance of the license for the use of the Conformity Marking of the Brazilian System of Conformity Evaluation - “BSCE”, Inmetro and TÜV Rheinland do Brasil Ltda., taking aim for safer protection of the citizen.

## 2 – FIELD APPLICATION

It applies for all the companies in the segment – Plugs’ and Sockets’ Adaptors that apply for the grant of the license for the use of the Conformity Marking in the BSCE.

## 3 – COMPLEMENTARY DOCUMENTS

INMETRO rule nº 324 from August 21<sup>st</sup>, 2007

INMETRO rule nº 251 from September 15<sup>th</sup>, 2009

INMETRO rule nº 82 from March 10<sup>th</sup>, 2008

INMETRO rule nº 271 from June 21<sup>st</sup>, 2011

INMETRO rule nº 322 from June 21<sup>st</sup>, 2012

INMETRO rule nº 335 from August 29<sup>th</sup>, 2011

700.PI-2 – Technical Commission Constitution and Attributions

ABNT NBR 14936:2006 - Plugs and socket-outlets for household and similar purposes - adaptors - Particular requirements

ABNT NBR NM 60884-1:2004 - Plugs and socket-outlets for household and similar purposes Part 1: General requirements

NBR 14136:2002 - Plugs and socket-outlets for household and similar purposes - Standardization

NBR 5426:1985 - Sampling plans and procedures for inspection by attributes - Procedure

NBR ISO 9000:2005 - Quality systems - Fundamentals and vocabulary

NBR ISO 9001:2000 - Quality management systems - Requirements

ABNT ISO/IEC Guia 2:2006 - Standardization and related activities - General vocabulary

ABNT NBR ISO/IEC 17025:2005 - General requirements for the competence of testing and calibration laboratories

ABNT NBR 5410:2004 - Electrical installations of buildings - Low voltage

## 4 – DEFINITIONS

For the purpose of this Complement (CRC), are adopted the definitions of 4.1 to 4.5, complemented by those contained in the Rule of Certification (700-RC-001) and in the standard ABNT NBR 14936:2006.

### 4.1 – Commerce

Place where the products are made available to the consumers.

### 4.2 – Manufacturer

Legal entity that carries out the process of assembly of adaptors.

### 4.3 – Model

Product of designation or unique trademark.

### 4.4 – Data sheet

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## ADAPTORS FOR PLUGS AND SOCKETS

Relatório fornecido pelo solicitante da certificação contendo as características do produto a ser certificado devendo conter, no mínimo, a marca do produto, modelo e croqui com especificação dos componentes internos.

### 4.5 – Family

Set of models such characteristics, included in the data sheet, are equal, differing just as the product design.

### 5 – MECHANISM OF THE CONFORMITY EVALUATION

**5.1** – The mechanism to evaluate the product conformity object of this RC and CRC, Plugs' and Sockets' Adaptors, is the compulsory certification.

**5.2** – The RC and CRC establish 2 (two) distinct models of certification for the obtainment of the authorization for the use of the Seal of Identification of the Conformity, should the applicant opt for one them:

a) **Model with evaluation of the Quality Management System and the Production Process of Product and Product Tests**

This model consists in Evaluation and approval of the Quality Management System of the manufacturing process, used in repeated process of serial production, with third party audits in the manufacturer and tests on the samples taken in the production and in the commerce.

b) **Model with Lot Certification**

This model is based on method “go, not go”, for the certification of each lot, and must be applied to isolated lots of production unique or intermittent with large intervals of period, with few or no recognized control during the process of manufacturing.

**5.3** – It is the responsibility of the applicant to formalize with TÜV the model that will be used for the certification of its products.

### 6 – SAMPLING AND TESTS ON ADAPTORS, FOR THE MODEL OF CERTIFICATION ESTABLISHED IN 5.2 a.

#### 6.1 – Initial tests

##### 6.1.1 – Type Tests

The type tests are conducted by TÜV and must be carried out by laboratories accredited by INMETRO.

##### 6.1.2 – Definition of the tests to be carried out

The type tests are all those described in the standard ABNT NBR 14936:2006 with the adjustments established in the Annex D of this CRC.

**6.2 – The adaptors can be considered in the same family if the following conditions are kept:**

**6.2.1 – For one set of adaptors be considered in the same family must, necessarily, fulfill the following requirements:**

- a) same basic design (according to the standard sheet in the Annex C of this CRC);
- b) same type of contacts;
- c) same materials (base, insert, contact or pins etc);
- d) same method of fixation of the contacts and pins.

**6.2.2 – For one same family of adaptors the following variations are accepted:**

- a) existence of shutters;
- b) existence of earthing contact;
- c) types of pins (solid or not, with insulating sleeves or not); and
- d) colors.

#### 6.3 – Definition of the laboratory

The requirements for the selection of the laboratory are the Accreditation and the International Recognition, according to item 9.2 of the 700-RC-001.

#### 6.4 – Definition of the sampling

The collect of samples for the type tests must be carried out by TÜV, obeying one minimum quantity for the tests performance, according to the tables A.1 and A.2, of this CRC.

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**Note:** In case of prototypes, the manufacturer can collect and send the necessary samples to the Laboratory / TÜV, through agreement between them, and under responsibility of TÜV. The approval of prototype on the type tests does not exempt TÜV of validating the products in the beginning of the production line operation.

**Table A.1 – necessary samples for the tests**

| Sections and Subsections |   | Socket side of the adaptors | Plug side of the adaptors |
|--------------------------|---|-----------------------------|---------------------------|
| 6                        | Ratings   | A                           | A                         |
| 7                        | Classification  | A                           | A                         |
| 8                        | Marking   | A                           | A                         |
| 9                        | Checking of dimensions  | ABC                         | ABC                       |
| 10                       | Protection against electric shock                                     | ABC                         | ABC                       |
| 11                       | Provision for earthing  | ABC                         | ABC                       |
| 14                       | Construction of plugs and portable socket-outlets                     | ABC                         | ABC                       |
| 15                       | Interlocked socket-outlets  | ABC                         | ABC                       |
| 16                       | Resistance to ageing, to harmful ingress of water and to humidity     | ABC                         | ABC                       |
| 17                       | Insulation resistance and electric strength                           | ABC                         | ABC                       |
| 18                       | Operation of earthing contacts  | ABC                         | ABC                       |
| 19                       | Temperature rise  | ABC                         | ABC                       |
| 20                       | Breaking capacity   | ABC                         | ABC                       |
| 21                       | Normal operation  | ABC                         | ABC                       |
| 22                       | Force necessary to withdraw the plug                                  | ABC                         |                           |
| 24                       | Mechanical strength   | ABC a)                      | ABC b)                    |
| 25                       | Resistance to heat  | ABC                         | ABC                       |
| 26                       | Screws, current-carrying parts and connections                        | ABC                         | ABC                       |
| 27                       | Creepage distances, clearances and distances through sealing compound | ABC                         | ABC                       |
| 28.1                     | Resistance to abnormal heat and to fire                               | DEF                         | DEF                       |
| 28.2                     | Resistance to tracking (c)  | DEF                         | DEF                       |
| 29                       | Resistência à ferrugem  | ABC                         | ABC                       |
| 30                       | Additional tests on pins provided with insulating sleeves             |                             | GHI d)                    |
|                          | <b>Total</b>  | <b>06</b>                   | <b>09</b>                 |

**The capital letters identify the different test pieces to be tests** a) Additional samples are necessary for the tests of 24.8 for shutters. b) Additional samples are necessary for the tests of 24.10 for the plug side of the adaptor. c) Additional samples can be necessary for the tests of 28.2. d) Additional samples are necessary for the tests of 30.2 and 30.3 for the plug side of the adaptor provided with insulating sleeves. Note: additional samples are necessary for adaptors whose socket side accept more than one configuration of plug

Table A.2 – additional tests due to the family variations

| Variation in the same family   | Socket side of the adaptors | Plug side of the adaptors                  |
|--|-----------------------------|--|
| Existence of shutters  | sections 10, 21, 24, 28, 29 |  |
| Types and numbers of pins (solid or not, with insulating sleeves or not) |                             | sections 9, 14, 19, 20, 21, 23, 24, 27, 30 |
| Colors   | section 28                  | section 28                                 |

### 6.5 – Initial audit

TÜV must carry out the initial audit having as reference the annex A of this CRC, and:

- TÜV must check the documentation (original) previously sent, focusing to validate the data presented and evaluate the conformity of the process against the normative requirements;
- TÜV must check the treatment of the non-conformity in the initial evaluation;
- After the initial audit, and the initial test, having non-conformity, the auditor and audited discuss about the possible action lines to be adopted to eliminate them;
- The Technical Commission from TÜV carries out the last analysis of the collected information during the previous steps and recommend or not the certification.

In case of occurrence of non-conformities during the type tests, the manufacturer must carry out the necessary adjustments and after, new samples can be collected by TÜV.

### 6.6 – Issue of the certificate of conformity

Fulfilled all the requirements required in the RC-002 and in this CRC and checked the conformity of the plugs' and sockets' adaptors on the tests, TÜV submits the process to the Technical Commission that must express its comments consultively about the grant of the certification.

**6.6.1** – The certification must be only granted to the applicant that has in its process all the non-conformities eliminated.

**6.6.2** – Being the product conform, TÜV must formalize the grant of the authorization for the use of the Seal of Identification of Conformity, for the model(s) of product(s) that fulfill(s) the criteria established in the 700-RC-001 and in this CRC.

**6.6.3** – The license for the use of the Conformity Marking for plugs' and sockets' adaptors is of 2 years.

Note: The first validity term can have adjustment in order to allow that in the validity term date, all the activities established for the period are concluded. For example: when the company is already a customer with other issued certificates and/or in reason of the dates established for the scheduled audits.

### 6.7 – Maintenance Evaluation

#### 6.7.1 – Planning of the Maintenance Evaluation

The planning of the maintenance evaluation must include all the activities described below, establishing the periodicity, the frequency of the activities and the sampling:

- The periodical evaluations (audits, tests, technical visits, or others) that will be performed, indicating their characteristics and respective periodicities;
- The periodical tests to be required, must be indicated the sampling and the periodicity, defined in the scope of the Technical Commissions, considering the control of process established in the manufacturing, the tests carried out by the manufacturer, the technical standards, or others;
- The acceptance quality level for the analysis of the test results;
- The conditions (proof, counterproof, witness, or others) for the emission of the judgement by evaluator side as the conformity of the products by him evaluated.

## 6.7.2 – Maintenance tests

### 6.7.2.1 – Definition of tests to be carried out

The maintenance tests are carried out as follow:

**6.7.2.1.1** – The maintenance tests must be carried out for each 6 (six) months, after the grant of the authorization for the use of the Seal of Identification of the Conformity. TÜV will be able to carry out tests in smaller periods since justified by changed in the productive process or denunciation of the product.

**6.7.2.1.2** – At each one of the samplings of maintenance, must be always carried out the tests and the verifications, according to ABNT NBR 14936:2006, indicated as follow:

- a) marking;
- b) ratings; and
- c) checking of dimensions.

**6.7.2.1.3** – Beyond the tests and verifications established in the subitem 6.7.2.1.2, must be carried out additionally, when applicable, the tests and verifications, as ABNT NBR 14136:2006, indicated as follow:

- a) **1º semester:** operation of earthing contacts; temperature rise; breaking capacity; normal operation; force necessary to withdraw the plug, mechanical strength;
- b) **2º semester:** interlocked socket-outlets; resistance to ageing, protection provided by enclosures, and resistance to humidity; insulation resistance and electric strength, resistance of insulating material to abnormal heat, to fire and to tracking;
- c) **3º semester:** resistance to heat; screws, current-carrying parts and connections; creepage distances, clearances and distances through sealing compound; resistance to rusting; additional tests on pins provided with insulating sleeves; operation of earthing contacts; temperature rise; breaking capacity; normal operation; force necessary to withdraw the plug;
- d) **4º semester:** protection against electric shock; provision for earthing; construction of plugs and portable socket-outlets, resistance of insulating material to abnormal heat, to fire and to tracking; classification.

**6.7.2.1.4** – At the end of the cycle of four semesters, must be initiated one new sequence of tests and verifications, as described in the subitems 6.7.2.1.2 and 6.7.2.1.3.

### 6.7.2.2 – Definition of the laboratory

The requirements for the selection of the laboratory are the Accreditation and the International Recognition, as item 9.2 of 700-RC-001.

### 6.7.2.3 – Definition of the sampling of maintenance

Representative samples of production must be submitted to the maintenance tests. From each certified basic design must be collected samples in the commerce at least one model per each family, considering the totality of the tests of maintenance to be carried out.

## 6.7.3 – Audit of maintenance

The audit of maintenance must be carried out for each 6 (six) months, after the grant of the authorization for the use of the Seal of Identification of the Conformity. TÜV will be able to carry out audits in smaller periods since justified by changes in the productive process or denunciation of the product.

**6.7.3.1** – TÜV must proceed, at least, the following steps:

- a) The documentation analysis (original) previously sent, particularly as to its availability, organization and retrieval;
- b) Treatment of non-conformities in the evaluation of maintenance;
  - After the audit and the tests of maintenance, having non-conformity, the auditor and the audited talk about possible lines of action to be adopted, proposed by the audited, for the elimination of it.
- c) Communication of the results of the evaluation of the maintenance.

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### 6.7.4 – Emission of the certificate of the maintenance of the conformity

Fulfilled all the requirements established in the 700-RC-001 and in this CRC and checked the conformity of the plugs' and sockets' adaptors on the tests, TÜV submits the process to the Technical Commission that must recommend the renewal of the authorization for the use of the Seal of Identification of the Conformity.

**6.7.4.1** – The recommendation of the Technical Commission does not exempt TÜV of responsibilities of the granted certifications.

**6.7.4.2** – Being the product conform and not having non-conformities in the quality management system of the applicant, TÜV must renew the authorization for the use of the Seal of Identification of the Conformity, for the model(s) of product(s) that fulfill(s) the criteria established in the RC and in this CRC.

**6.7.4.3** – The occurrence of failure of the product on the maintenance tests of the certification will impair the immediate suspension of the authorization for the use of the Seal of the Identification of the Conformity for the failed model and the withdrawn of the product in the commerce.

#### **6.7.4.4 – Commission of Certification**

**TÜV Rheinland do Brasil Ltda constitutes and keeps working a Commission of Certification according to the procedure 700-PI-002, under consulting purpose, that must be gather together, at maximum every three months, in order to analyses critically the issued certificates, renewed, suspended, cancelled or cancelled in this period.**

**The Commission of Certification has the permanent and consulting purpose. Their function is to analyse the processes of certification.**

**Their composition includes people representant of class entities, consumers and of neutral organizations, among others, recognized by their representativity and/or capacity in their area of actuation.**

**The opinion of the Commission of Certification has consulting purpose and, it does not exempt TÜV Rheinland do Brasil Ltda responsibility on the issued certificates, kept or renewed.**

### 6.7.5 – Treatment of the deviates in the process of conformity evaluation

#### **6.7.5.1 – Treatment of non-conformities in the maintenance process**

Identified any non-conformity in any maintenance test, it must be repeated on two samples new, counterproof and witness, for the attribute non-conform, not being allowed the identification of any non-conformity.

**Note:** If TÜV judges relevant, and in accordance with the manufacturer, the non-conformity will be able to be confirmed without the performance of the tests on the counterproof and witness.

**6.7.5.2** – When the confirmation of the non-conformity, TÜV will suspend immediately the authorization for the use of the Seal of Identification of the Conformity, requesting the manufacturer the relevant treatment, with the definition of the corrective actions and the deadlines for the implementation.

#### **6.7.6 – Treatment of non-conform products in the market**

**6.7.6.1** – The conduction of the maintenance tests, as well as the collect of the samples, must be performed under the responsibilities of TÜV, being the samples withdrawn only in the market, obeying one minimum quantity for the performance of the tests, considering counterproof and witness.

**6.7.6.2** – If the found non-conformity does not put under risk the safety of the user, under analysis of TÜV, the manufacturer can not have suspended its authorization for the use of the Seal of Identification of the Conformity, since that assures TÜV, through the corrective actions, the correction of the non-conformity on the products existing in the market and the implementation of these actions in the production line.

### **7 – Model with Certification of Lot, ESTABLISHED IN 5.2b.**

The criteria and requirements for the certification per lot see the INMETRO rule nº 324 from 21/08/2007, Item 6.2.

### **8 – TREATMENT OF COMPLAINTS**

The applicant / manufacturer must make available one systematic for the treatment of complaints of its customers, including the following requirements, depending the specificities of the object of the program:

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**8.1** – One Policy of Complaints Treatment, signed by the chief executive, that evidence that the company:

- a) To make worth and to give effective treatment to the complaints presented by its customers;
- b) Knows and commits itself to fulfill and is submitted to the penalties established in the laws (Law nº 8078/1990, Lei nº 9933/1999 etc.);
- c) To stimulate and to analyze the results, as well as takes the necessary actions, in reason of statistics of the received complaints;
- d) To define responsibilities as to the complaints treatment;
- e) To pledge itself to answer Inmetro any complaint that even it has received and in the term by him established one person or one team formally designated, duly competent and free for the due treatment to the complaints.

**8.2** – Development of the program of training for the person or team responsible for the treatment of the complaints, as well as for the others involved, contemplating at least the following topics:

- a) Rules and standards applicable to the products, processes, services, people or management system;
- b) Notions about the Laws 8.078, from September 11<sup>th</sup>, 1990, that establishes the protection of the consumer and other providences; and 9.933, from December 20<sup>th</sup>, 1999, that establishes the competences of Conmetro and of Inmetro, establishes the rate of metrological services, and other providences;
- c) Notions of interpersonal relationship;
- d) Policy of Treatment of Complaints; and
- e) Procedure for the Treatment of the Complaints.

**8.3** – When relevant, separated installations and of easy access for the customers that wish to formulate complaints, as well as to indicative signs and posters stuck stimulating the complaints and informing about how and where to complain;

**8.4** – Procedure for the Treatment for the Complaints, that must contemplate one simple form of register of the customer complaint, as well as to the traceability, investigation, answer, resolution and closing of the complaint;

**8.5** – Due records of each one of the complaints presented and treated;

**8.6** – Map that allows to visualize easily the situation (example: in analysis, progress, current situation, solved etc) of each one of the complaints presented by the customers in the last 18 months;

**8.7** – Statistics that evidence the number of complaints formulated in the last 18 months and the average time of resolution;

**8.8** – Biannual performance of the critical analysis of the statistics of the received complaints and evidences of implementation of the correspondent corrective actions, as well as to the improvement opportunities.

## 9 – SEAL OF IDENTIFICATION OF THE CONFORMITY

**9.1** – For the effect of the development of the seal of identification of the conformity were observed the advices of the Inmetro rule nº 73/2006.

### 9.2 – Specification

The Seal of Identification of the Conformity, defined in the Annex B in this CRC, has the purpose to indicate that the Adaptors are in accordance with NBR 14936:2006, according to the processes of certification established in this CRC.

**9.2.1** – The adaptors must have the Seal of Identification of the Conformity on the primary product and on the package, if existing, as established in the Annex B in this CRC.

## 10 – AUTHORIZATION FOR THE USE OF THE SEAL OF IDENTIFICATION OF THE CONFORMITY

The grant of the authorization for the use of the Seal of Identification of the Conformity is performed when the adaptor is in accordance with the criteria defined in the RC and CRC.

**10.1** – The authorization for the use of the Seal of Identification of the Conformity will have its validity bounded up with the register granted, when applicable.

**10.2** – In case of application for the extension of the scope of the authorization for the use of the Seal of Identification of the Conformity, the relevant adaptors to it, only will be able to be commercialized from the moment when TÜV approve the extension.

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**10.2.1** – When the applicant wishes to extend the authorization for the additional models of the same basic design of a product, of one same plant, fulfilling the same technical standards, can apply for to TÜV the extension of it.

**10.2.1.1** – The application must be done for one determinate model and for a same plant.

**10.2.1.2** – When the applicant changes the place or to make in more than one local keeping the same project of the product, fulfilling the same technical standards, can apply for to TÜV the extension of the certification, performing the evaluation of the quality system of the factory and the maintenance tests.

**10.3** – Grant of the Authorization

The Grant of the authorization for the use of the Seal of Identification of the Conformity will obey the criteria described in the subitem 10.3.1.

**10.3.1** – The instrument that grants the authorization for the use of the seal of identification of the conformity must contain, at least, the data established in the subitem 5.2 of the RC.

**10.3.2** – Maintenance of the Authorization

The maintenance of the authorization for the use of the Seal of Identification of the Conformity is conditioned to the absence of non-conformity during the evaluation of maintenance, as described in the subitems 6.7.2 and 6.7.3, in this CRC.

**10.3.3** – Suspension or cancellation of the Authorization

The suspension or the cancellation occurs when anyone of the requirements of the subitems 6.7.2, 6.7.3 e 6.7.5, of this CRC are not being fulfilled.

**10.3.3.1** – The certified company that stops definitely the manufacturing or importation of adaptors, must communicate this fact immediately to TÜV.

**10.3.3.2** – Face to this communication TÜV must schedule one extraordinary audit for the verification and register of the following requirements:

- a) how many and when was made the last lot of production;
- b) available material in stock for the new productions;
- c) quantity of the finished product in stock and the forecast of the certified company for that this lot be consumed;
- d) if the requirements established in this rule were fulfilled since the last maintenance audit;

**10.3.3.3** – TÜV must also schedule the process closing tests. These tests are all those established in the standard ABNT NBR 14936:2006.

**10.3.3.4** – If the result of these tests presents any non-conformity, TÜV, before to consider cancelled the process, will request the certified company the relevant treatment, defining the disposals and the deadlines of implementation.

Note: if the found non-conformity does not put under risk the safety, under analysis and responsibility of TÜV, will be able to cancel the process without the necessity of the certified company to take any action on the products that are in the commerce.

**10.3.3.5** – Once concluded the steps above, TÜV notifies the cancellation of the authorization for the use of the seal of identification of the conformity as to its Technical Commission and Inmetro.

**10.3.3.5.1** – In case of suspension or cancellation of the certificate / register, when applicable, by unfulfilling of anyone of the requirements established in the RC and CRC, will be the authorization for the use of the Seal of Identification of the Conformity under the same condition.

## **11 – PENALTIES**

The non-observance of the prescriptions established in the RC and in this CRC will impair the application of the penalties established in the article 8<sup>o</sup> of the law n<sup>o</sup> 9933, from December 20<sup>th</sup>, 1999.



**12 – REVISIONS MADE**

| Date       | Revision  | Responsible          |
|------------|---|----------------------|
| 31/05/2011 | - General review in accordance with Inmetro Ordinance No. 251 of 2009. Item 6.6.4 and note.   | Gabriela Halphen     |
| 23/08/2013 | Change the number of the documents  | Gabriela Halphen     |
| 03/08/2015 | Change of the item 6.7.4.4 - COMMISSION OF CERTIFICATION, with regard to the systematic of realization of the certification commission.   | Ana Paula<br>Tamasia |
| 20/07/2016 | Deleted the INMETRO rule nº 73 from March 29, 2006 and INMETRO rule nº 27 from February 18, 2000, included INMETRO rule nº 335 from August 29, 2011 and updated the code of the procedure 700.PI-028 – Constitution and Attributions of the Technical Commissions | Nelson Coelho        |

## ADAPTORS FOR PLUGS AND SOCKETS

### ANNEX A – REQUIREMENTS FOR THE EVALUATION OF THE QUALITY MANAGEMENT OF THE FACTORY

**A.1** – The evaluation, initial and periodic, of the quality management system of the manufacturing, must be performed by TÜV.

**A.2** – The evaluation, initial and periodic, of the quality management system of the manufacturing must check the fulfilling to the requirements listed below, when applicable, in the scope of the quality management system of the manufacturer:

- 1 Control of records (\*) fulfills to the subitem 4.2.4 of the Standard
- 2 Control of production (\*) fulfills to the subitems 7.5.1 and 7.5.2 of the Standard
- 3 Identification and traceability (\*) fulfills to the subitem 7.5.3 of the Standard
- 4 Preservation of the product -(\*) fulfills to the subitem 7.5.5 of the Standard
- 5 Control of monitoring and measuring equipment (\*) fulfills to the subitem 7.6 of the Standard
- 6 Monitoring and measurement of product (\*) fulfills to the subitem 8.2.4 of the Standard
- 7 Control of nonconforming product (\*) fulfills to the subitem 8.3 of the Standard
- 8 Corrective action (\*) fulfills to the subitem 8.5.2 of the Standard
- 9 Preventive action (\*) fulfills to the subitem 8.5.3 of the Standard

**(\*) Note:** for this evaluation, must be used, as reference, the content presented in NBR ISO 9001:2000 Quality Management Systems – Requirements.

**A.3** – Routine tests (AQL and IL according to the procedure of the manufacturer and under its responsibility):

- a) Dimensional checking, as Annex C;
- 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) with no needs of performing the previous tests;
- 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).

**A.4** – The manufacturer must keep the records of the performed tests in A.3, indicating the product type, date of test, manufacturing local (if made in different places), quantity tested, number of failures and taken actions, i.e., destructed or repaired.

**A.5** – If the manufacturer has the quality management system certified by one CBS (Certification Body of Systems) accredited by Inmetro, according to NBR ISO 9001, with audit conducted by Lead Assessor registered in BSCE, TÜV must analyzes the documentation related to the certification of the quality system, assuring that the requirements described above were evaluated focusing the product to be certified. Otherwise, TÜV must check the fulfilling to the requirements described in the subitems A.2, A.3 and A.4.

**A.6** – The periodic evaluation of the quality management system of manufacturing must be performed, at least, once for each 6 (six) months after the grant of the authorization for the use of the Seal of Identification of the Conformity.

ANNEX B – IDENTIFICATION OF THE CONFORMITY IN THE AMBIT OF BSCE

The manufacturer and the importer of adaptors, must follow the guidelines for the use of the seal of identification of the conformity:



B.1 – Seal of Identification of the Conformity on the Package






Pantone 1235

-  100%
-  80%

CMYK

-  C0 M27 Y76 K2
-  C0 M20 Y75 K2

Grayscale

-  100%
-  90%
-  70%



Minimum size

50 mm





Pantone 1235

- 100%
- 80%

CMYK

- C0 M27 Y76 K2
- C0 M20 Y75 K2



Grayscale

- 100%
- 90%
- 70%



Minimum size  
50 mm



One color

- a) On the package, the seal can be printed or can be used one label, with characteristics of indelibility and permanence, since obey the minimum dimensions established as specifications below;
- b) The black and white version can be used on the package only if the package has a similar color to the colored seal;
- c) The minimum size for the Inmetro logo on the seals is 5mm. This way, it is obligatory to fulfill this minimum limit, beyond the established proportions for the logos presented and the words that the seal must contain.
- d) The use of the colors on the seals has the purpose of differentiate the focus of the Program. This way, the seal of one Program, whose focus is safety, must be in yellow. However, as described in the item a, it is possible to use the version "One color", i.e., the seal can be of the same color of the package, by previous approval of the Quality Directorship.

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**B.2 – Seal of Identification of the Conformity on the Product**

- a) On the product, when the identification of the conformity is printed or inserted by means of seal, if it does not fit on the frontal part of the adaptor, can be put on the other parts of it;
- b) On the product, although preferably must be used the colored seal, is allowed the use of the version in black and white and the reduced version as below.



Maximum reduction











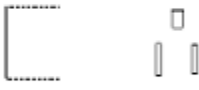


Maximum reduction



**LOGO UC:** Can be used only by customers that have already used it, on their products and packages, before 2007.




- c) On the product, if there is no space, it will be allowed only the marking of Inmetro and Certification Body logos, being respected the minimum dimension of 11mm of width.

ANNEX C – TABLES

| Table 1 - Configuration of the adaptor's socket side for the systems conversion        |                                 |                        |
|--|---------------------------------|------------------------|
| Socket side  | MARKING                         | Plug side (as table 3) |
| 1     | 10A 250V~<br>or<br>10A 250Vc.a. | 1*                     |
| 2     | 15A 250V~<br>or<br>15A 250Vc.a. | 3                      |
| 3     | 10A 250V~<br>or<br>10A 250Vc.a. | 2*                     |
| 4     | 16A 250V~<br>or<br>16A 250Vc.a. | 4                      |
| 5   | 10A 250V~<br>or<br>10A 250Vc.a. | 2*                     |
| 6   | 16A 250V~<br>or<br>16A 250Vc.a. | 4                      |
| 7   | 10A 250V~<br>or<br>10A 250Vc.a. | 2*                     |
| 8   | 15A 250V~<br>or<br>15A 250Vc.a. | 4                      |
| 9   | 15A 250V~<br>or<br>15A 250Vc.a. | 4                      |
| 10  | 10A 250V~<br>or<br>10A 250Vc.a. | 1                      |
| 11  | 20A 250V~<br>or<br>20A 250Vc.a. | 3                      |





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Table 1 - Configuration of the adaptor's socket side for the systems conversion (continuation)

| socket side  | marking                         | Plug side (as table 3) |
|--|---------------------------------|------------------------|
| 12  | 20A 250V~<br>OR<br>20A 250Vc.a. | 4                      |
| 13  | 20A 250V~<br>OR<br>20A 250Vc.a. | 4                      |
| 14  | 20A 250V~<br>OR<br>20A 250Vc.a. | 4                      |

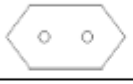
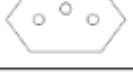


\* Applies the item D.2 of the annex D

Table 2 - Configurations of the Multiple Adaptor's socket side



| Socket Side   | Marking                         | Characteristics of the Standard of Reference | Plug side (as table 3) |
|---|---------------------------------|--|------------------------|
| 1  | 10A 250V~<br>OR<br>10A 250Vc.a. | 2P 10A 250V~                                 | 1                      |
| 2  | 10A 250V~<br>OR<br>10A 250Vc.a. | 2P+T 10A 250V~                               | 2                      |
| 3  | 20A 250V~<br>OR<br>20A 250Vc.a. | 2P 20A 250V~                                 | 3                      |
| 4  | 20A 250V~<br>OR<br>20A 250Vc.a. | 2P+T 20A 250V~                               | 4                      |

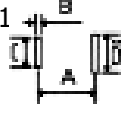
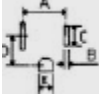
According to ABNT NBR 14136

Table 3 - Configurations of the Adaptors' Plug side

| Plug side   | Marking                         | Characteristics of the Standard of Reference | Standard of Reference |
|---|---------------------------------|--|-----------------------|
| 1  | 10A 250V~<br>OR<br>10A 250Vc.a. | 2P 10A 250V~                                 | NBR 14136<br>2002     |
| 2  | 10A 250V~<br>OR<br>10A 250Vc.a. | 2P+T 10A 250V~                               | NBR 14136<br>2002     |
| 3  | 20A 250V~<br>OR<br>20A 250Vc.a. | 2P 20A 250V~                                 | NBR 14136<br>2002     |
| 4  | 20A 250V~<br>OR<br>20A 250Vc.a. | 2P+T 20A 250V~                               | NBR 14136<br>2002     |

Conversion of systems (reverse) - see tables 4 and 5

| Table 4 - Configurations of the socket side of the adaptors for the conversion of the systems (reverse) |                                 |   |                                  |                        |
|---|---------------------------------|---|----------------------------------|------------------------|
| Socket Side   | Marking                         | Characteristics of the Reference Standard | Reference Standard               | Plug side (as table 5) |
| 15                     | 15A 250V~<br>Or<br>15A 250Vc.a. | 2P 15A 250V~                              | ABNT NBR 14136/2002<br>Figure 10 | 1                      |
| 16                     | 15A 250V~<br>Or<br>15A 250Vc.a. | 2P+T 15 <sup>a</sup> 250V~                | ABNT NBR 14136/2002<br>Figure 6  | 2                      |

| Table 5 - Configurations of the plug side of the adaptors for the conversion of the systems (reverse) |                                 |                         |                           |                 |                         |                         |                              |                         |   |
|---|---------------------------------|-------------------------|---------------------------|-----------------|-------------------------|-------------------------|------------------------------|-------------------------|---|
| Plug Side   | Marking <sup>(1)</sup>          | Reference Standard      | Characteristics           | A               | B                       | C <sup>(1)</sup>        | D <sup>(1)</sup>             | E                       | F <sup>(2)</sup>                                |
| 1                   | 15A 250V~<br>or<br>15A 250Vc.a. | IEC 60906-2/97          | 2P 15A 250V~<br>Polarized | 12,7+/-<br>0,13 | 1,52+/-<br>0,13         | From<br>6,1 to<br>6,6   | From<br>7,79 to<br>8,17      | -                       | From<br>15,88<br>to<br>18,24                    |
|   |                                 | Nema WD1/74<br>(A1-15)  |                           | 12,7+/-<br>0,27 | From<br>1,40 to<br>1,65 | From<br>6,10 to<br>6,60 | From<br>7,79 to<br>8,17      | -                       | From<br>15,88<br>to<br>18,24                    |
| 2                  | 15A 250V~<br>or<br>15A 250Vc.a. | IEC 60083/75<br>(A5-15) | 2P+T 15A<br>250V~         | 12,7+/-<br>0,27 | From<br>1,40 to<br>1,65 | From<br>6,10 to<br>6,60 | From<br>11,76<br>to<br>12,01 | From<br>4,67 to<br>4,83 | Live<br>min.<br>15,88<br>Earth<br>max.<br>21,41 |

(1) For non-polarized plugs, the dimension "D" is equal to the dimension "C";

(2) Pins length;



## ADAPTORS FOR PLUGS AND SOCKETS

### ANNEX D – CONSIDERATION TO THE STANDARD ABNT NBR 14936:2006

**D.1** – For the non-rewirable accessories, the ball pressure test (section 25.2 of the standard) will be performed at 125°C only on the parts that support live parts.

**D.2** – All and any adaptor in which the socket side allows the insertion of plug with rated current superior to the adaptor's plug side, this must be tested, applying the maximum current allowed in the configuration of the adaptor, keeping the smaller current for the adaptor's marking.

**D.3 – The conformity to the test described in the item 24.2 must be checked through the following way:** After the test, the samples must not present any damage, in accordance with the established by this standard. In particular:

- a) none part must have released or loosened;
- b) the pins must be not deformed in such a way that the plug can not be inserted in one socket in accordance with the relevant standard sheet;
- c) the pins must not rotate when is applied a torque of 0,4Nm, first in one direction during 1 min and later in the opposite direction during 1 min.

**Note:** 1) If the pin presents any movement of its axe (turn) that can implicate the connection, the conformity of this requirement is checked through the measurement of the difference of the voltage drop obtained before and after the application of the torque. The limit for this approval of the difference of the voltage drop is of 10mV (measured in d.c.); 2) The torque must be applied on the pin base.

The conformity with the test described in the item 24.5 must be checked in the following way:

After the test, the plug must allow its total insertion, with preparation or arrangement, in one certified socket, suitable to the plug.

**D.4 – With respect to the item 25 of the ABNT NBR NM 60884-1:2004, to do the adjustments as described:**

- 1) Replace the align "b" of the item 25, by: for the portable accessories, except for the parts eventually covered by the align a), by the tests of 25.1, 25.2 and 25.4 and, except for the made accessories in natural or synthetic rubber or mix of both, by the test of 25.3;
- 2) Replace the first paragraph of the item 25.2 by: the parts of insulating material that support the current carrying parts and parts of the protection circuit, as well as the parts of the thermoplastic material located on the frontal surface in one region of 2 mm of width around the entry line and neutral pins holes of the sockets and in case of non-rewirable plugs in the region of 2 mm around the pins, must be submitted to the ball pressure test, by means of the device represented in the figure B.38, except for the insulating parts that in one box support the earthing terminals, that are submitted to the test of 25.3;