



Brazilian
National Committee
of the IEC



**BRAZILIAN COMMITTEE OF ELECTRICITY, ELECTRONICS,
LIGHTING AND TELECOMMUNICATIONS.**

EX REQUIREMENTS AND ACCESS TO MARKET IN BRAZIL

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ASSOCIAÇÃO IEX CERTIFICAÇÕES**



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Inmetro – National Institute of Metrology, Quality and Technology

<http://www.inmetro.gov.br>

INMETRO (National Institute of Metrology, Quality and Technology)

- Execute national policies in metrology and quality
- Verify compliance with the technical and legal standards, with regard to units of measurement, measurement methods, material measures, measuring instruments and products premeasured
- Increase the use of technical quality management in Brazilian companies

INMETRO (National Institute of Metrology, Quality and Technology)

- Plan and execute the activities of **accreditation of calibration laboratories and testing**, proficiency testing providers, **certification bodies**, inspection, training and other, needed to develop the infrastructure of technological services in the country
- Development of **conformity assessment programs in the areas of products**, processes, **services and personnel**, **compulsory or voluntary**, involving the adoption of regulations.



ACCREDITATIONS

The accreditation is held by the General Coordination for Accreditation (Cgcre) and represents the formal recognition of the competence of a laboratory or agency to develop conformity assessment tasks according to established requirements. Accreditation is carried out together with:

- a) **Product Certification Organization (OCP):** ABNT NBR ISO/IEC Guia 65;
- b) **Quality System Certification Organization (OCS):** ABNT NBR ISO/IEC 17021;
- c) **Test and Calibration Laboratories:** ABNT NBR ISO/IEC 17025.

PRODUCT CERTIFICATION ORGANIZATIONS ACCREDITED FOR HAZARDOUS LOCATIONS

Brazilian COs

TÜV RHEINLAND DO BRASIL

CENTRO DE PESQUISAS DE ENERGIA ELÉTRICA (CEPEL)

INSTITUTO DE ELETROTÉCNICA E ENERGIA (CERTUSP/IEE)

UL DO BRASIL CERTIFICAÇÕES

ASSOCIAÇÃO NCC CERTIFICAÇÕES DO BRASIL

BVQI DO BRASIL SOCIEDADE CERTIFICADORA

ASSOCIAÇÃO IEx CERTIFICAÇÕES

DET NORSKE VERITAS CERTIFICADORA

HOW TO IDENTIFY THE ACCREDITATION?



CGCRE logo
together with CO
logo in the
Product
Certificate



Conformity Assessment Rules (mandatory certification):

Inmetro Directive 179 as of May 18, 2010
Replacing the Directive 83) – Gases, Vapor
and Combustible dusts.



• **Directive 179 as of May 18, 2010**

Main Changes (improvements):

- Dust Atmospheres product certification become mandatory;
- EPL must be considered in markings;
- OCPs (COs) are authorized to accept the IECEx test results;
- Use of the newest IEC standards, already translated;
- Adoption of items based on EN 13980 / IECEx OD 005/V2 for Manufacturer Quality System audits;
- CSE – a new certification model;
- Criteria for the use of test laboratories.

STANDARDS

- **The Directive 179- 2010 makes reference to 40 standards (mainly Brazilian standards)**

Note: Including installations, quality system, terminology and others.

What are the main standards?

Title	IEC (Reference)	ABNT NBR IEC (No deviation)
General requirement	60079-0:2007	60079-0:2008
Flameproof enclosures 'd'	60079-1:2007	60079-1:2009
Electrical apparatus-Type of Protection "p"	60079-2:2007	60079-2:2009
Powder filling "q"	60079-5:2007	IEC Applies
Oil-immersion "o"	60079-6:2007	60079-6:2009
Increased safety "e"	60079-7:2006	60079-7:2008
Intrinsic safety "i"	60079-11:2006	60079-11:2009
Electrical apparatus with type of protection "n"	60079-15:2010	IEC Applies
Construction, test and marking of type of protection encapsulation "m" electrical apparatus	60079-18:2004	60079-18:2007

What are the main standards?

Title	IEC (Reference)	ABNT NBR IEC (No deviation)
Equipment repair, overhaul and reclamation	60079-19:2006	60079-19:2008
Intrinsically safe electrical systems	60079-25:2010	IEC Applies
Equipment with equipment protection level (EPL) Ga	60079-26:2006	60079-26:2008
Fieldbus intrinsically safe concept (FISCO)	60079-27:2008	60079-27:2010
Protection of equipment and transmission systems using optical radiation	60079-28:2006	60079-28:2010
Gas detectors - Performance requirements of detectors for flammable gases	60079-29-1:2007	60079-29-1:2008



Title	IEC (Reference)	ABNT NBR IEC (No deviation)
Electrical resistance trace heating: General and testing requirements	60079-30-1:2007	IEC Applies
Equipment dust ignition protection by enclosure "t"	60079-31:2008	60079-31:2012
Electrical apparatus for use in the presence of combustible dust: Type of protection "pD"	61241-4:2001	61241-4:2009
Electrical apparatus for use in the presence of combustible dust: Protection by intrinsic safety "iD"	61241-11:2006	IEC Applies
Electrical apparatus for use in the presence of combustible Dust: Protection by encapsulation "mD"	61241-18:2004	IEC Applies

National: ABNT NBR 15456:2007 – Liquid Combustible Dispensers

Certification Models:

- **Type tests, Quality System Evaluation and Surveillance**
- **Batch (Lot) Certification**
- **Special Situation for Imported Products (CSE)**

Type tests, Quality System Evaluation and Surveillance:

- Tests based on NBR IEC Standards (or IEC when NBR IEC is not published);
- Quality System (Initial Audit is required by the Brazilian CO): Emphasis in the product (based on EN 13980 / IECEX OD 005/V2);
- Surveillance (Periodic Audits): Can be considered the QAR issued under IECEX Scheme.

Batch (Lot) Certification:

- Common for small lots (the product sold is the product tested);
- Based on tests on 6% of the samples collected from the lot;
- There is no Quality System Assessment.

Special Situation for Imported Products (CSE):

- Applicable for small quantities or for Skids;
- Evaluation of the technical documentation provided (basically product certificate and quality system registration or equivalent, product description, manuals and the legal documents for importation);
- User Installations Guides and Warning Labels in Portuguese (Brasil)
- CO Inspection;
- There is no Quality System Assessment performed by the CO;
- Not applicable for all type of products and limited to **20 units** at every **6 months**;
- The product cannot be installed.

Special Situation for Imported Products – Restriction List:

- Installation accessories (cable-glands, sealing units, etc.)
- Luminaires
- Electronic ballasts
- Handlamps
- Floodlights
- Empty enclosures
- Junction boxes
- Solenoid valves
- Signaling and command components
- Motors

*Note: Such restrictions **doesn't apply** for Skids.*

Type tests, Quality System Evaluation and Surveillance

- **Technical Evaluation of the Product** - by the Brazilian CO;
- **Definition of the Test Lab** - by the Brazilian CO;
- **Test plan** - prepared by the CO and submitted to the Test Laboratory;
- **Initial Audit** - performed by the Brazilian CO (if the manufacturer is ISO 9001:2008 Registered, only the additional requirements are performed, based on the OD 005 and the Brazilian law of consumer protection);
- **For products already certified by the IECEx Scheme** - ExTR and QAR may be considered according to the Directive 179;
- **For products not certified by the IECEx Scheme** – Test Results from Test Lab accredited by an ILAC Full Member (same INMETRO accreditation scope/standards, may still be considered according to the Directive 179);
- **Certificate Validity:** Three years.

Quality System Evaluation

- **MANUFACTURERS ISO 9001:2008 REGISTERED**

- Registration must be recognized by INMETRO (IAF for example);
- Additional requirements must be audited – Annex B of the Inmetro Directive 179:2010 (Based on IECEx OD 005-V2);
- Surveillance frequency (announced): 18 months (if necessary, additional surveillance can be conducted without announcement);
- Additional tests can be required if non-conformities were observed during the audits (or other reasons defined in the Regulation, such: changes, complaints, etc.).

Quality System Evaluation

- Before Inmetro Directive 179:2010 there was no harmonized procedure adopted by the Brazilian COs to perform the Quality System audits (and surveillances);
- Brazilian COs didn't recognize results from each other;
- Based on the harmonization of the audit criteria, any CO are able to accept the audits performed by another one.

Criteria to use Test Labs

Criteria to choose the test laboratory

- **Priority** - Third Part Test Laboratories accredited by INMETRO for the HazLoc scope. In case of manufacturer test lab accredited, the Brazilian CO must witness;
- **Exceptionally** – Third Part Test Lab not accredited for HazLoc scope under CO evaluation (assessment) if identified one of the following criteria:
 - No test laboratory accredited for the specific scope;
 - Price issues;
 - Time frame issues;

Note: Qualified CO expert in ISO/IEC 17025 must perform the test lab assessment.

Criteria to use Test Labs

Must be followed the following order:

- Third part test laboratory accredited by INMETRO for HazLoc scope (general rule);
- Third part test laboratory accredited by INMETRO for other scope (witnessed by the CO);
- Third part test laboratory not accredited (witnessed by the CO);
- Manufacturer test laboratory (witnessed by the CO).

Test Results Conducted Abroad

For products already certified abroad, the tests performed by laboratories outside Brazil can be accepted if these laboratories are accredited by INMETRO or by some Accreditation Body that is recognized by INMETRO under a Mutual Recognition Agreement :

- a) Interamerican Accreditation Cooperation - IAAC*
- b) European Cooperation for Accreditation - EA*
- c) International Laboratory Accreditation Cooperation - ILAC*

Test Results Conducted Abroad

Brazilian COs are authorized to accept IECEx results:

- a) ExTRs issued by an ExTL, based on the IEC standards equivalent to the Brazilian standards editions;*
- b) QAR covering the types of protection related to the product under evaluation.*

Responsibilities:

- The requestor shall keep a record of all complaints related to the product covered by the certification, as well as the actions taken to meet the certifications requirements, making them available to the CO or Inmetro, when requested;
- Must be available a Police for Complaining Treatment signed by the legal representative;
- Knowledge about the consumer defense law;
- Knowledge about the Brazilian Directive and applicable standards, etc.

Marking on the Product

PRODUCT MARKING



Ex d IIC T5 Gb
CO Certificate Number

PACKING MARK





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THANK YOU!

See you in Fortaleza

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Associação IEx Certificações