





Ecolabel for retreated tires

PE-145.04

Date: Dec.2011

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## 0 Introduction

ABNT's Environmental Labeling program has been developed to support a continuing effort for improving and/or maintaining environmental quality via reduced energy and material consumption, along with the minimization of pollution impacts brought on through production, use and final disposal of products and services.

This document has been prepared based on an overview concerning the life cycle evaluation of the product, according to the requirements of the standard ABNT NBR ISO 14024, for type I ecolabelling programs, and in information on specifications for similar products from other environmental ecolabelling programs developed by other members of the Global Ecolabelling Network (GEN).

## 1 Objective

This procedure establishes the requirements that the product "retreated tires", available on the Brazilian market, shall adhere to in order to obtain a license for the use of the ABNT Environmental Quality Mark (ABNT Ecolabel).

## 2 Normative references

The documents listed below contain dispositions which, when cited in this text, constitute valid requirements for this procedure. The editions indicated were valid at the time of this publication. Because the documents are subject to revision, it is recommended to those who use this procedure investigate the utilization of the most recent edition of the documents indicated. ABNT maintains a registry of all valid documents.

- ABNT NBR ISO 14001:2004 - Environmental management systems - Requirements with guidance for use
- ABNT NBR ISO 14020:2002 - Environmental labels and declarations - General principles
- ABNT NBR ISO 14024:2004 - Environmental labels and declarations - Type I environmental labelling - Principles and procedures
- ABNT NBR ISO 14040:2001 - Environmental management - Life cycle assessment - Principles and framework
- PG-11:2009 - General Procedure for ABNT Environmental Quality Label
- PG-12:2009 - Guidelines for preparing ABNT Environmental Quality Label criteria
- Regulation Inmetro 444:2010 - Conformity Assessment requirements for tires retreating
- Regulation CONAMA 416/2009 - Prevention of environmental degradation due to unusable tires and its adequate destination
- NM 225:2000 - Minimum criteria for the selection of tires for retreat and repair



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### **3 Definitions**

#### **3.1 Type I ecolabelling program**

Voluntary third party program, based on multiple criteria, that grants a license that authorizes the use of environmental labels on products, indicating the environmental preference of a product within a specific product category, based on life cycle considerations (ABNT NBR ISO 14024).

#### **3.2 Life cycle evaluation (LCE)**

LCE considers the environmental impacts along the product's life (from cradle to grave) since the extraction of raw materials to manufacture, use and final disposition. The general categories of environmental impacts to be considered include the exhausting of resources, the human health and the ecological consequences.

#### **3.3 Retreated tire**

Used tire that has undergone the process of reutilization of its carcass with the specific purpose of increasing its useful life, such as:

- a) Recap: process through which a used tire is remanufactured replacing its tread;
- b) Retrad: process through which a used tire is remanufactured replacing its tread and shoulders; and
- c) Remold: process through which a used tire is remanufactured replacing its tread, shoulders and all its sidewall surface.

(Regulation CONAMA nº 416/2009, article 2<sup>nd</sup>, paragraph IV)

#### **3.4 Environmentally adequate disposal**

“Environmentally adequate disposal of unusable tires: technical procedures in which the tires are adulterated its original form and that its elements are reused, recycled or processed by other(s) technique(s) permitted by the competent environmental authorities, noting the valid legislation and specific operational rules to avoid damage or risk to public health and safety, and minimize adverse environmental impacts.”

(Regulation CONAMA nº 416/2009, article 2º, paragraph VI)

### **4 Acronyms**

The acronyms used in the text of this procedure are the following:

- ABNT - Brazilian Association for Technical Standards
- LCE - Life cycle evaluation
- CT - Technical Coordination
- GSI - Systems Certification Management
- ISO - International Organization for Standardization
- GEN - Global Ecolabeling Network



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- FISPQ - Information Sheet for Chemical Products
- IBAMA - Brazilian Institute for Environment and Renewable Natural Resources
- CTC - Certification Technical Committee

## 5 Scope of products

The scope of product category which this product is part of is the "Rubber products".

## 6 Technical criteria

### 6.1 Fitness to purpose

The product shall be suitable for its intended purpose. Certain quality and durability patterns may be inherent to the product itself.

The reformer shall follow the NM 225:2000 that establishes minimum conditions for the classification (acceptance) of tires for remanufacture.

The adequacy of the retreating process shall be proved through the test of speed under load, performed according to the regulation Inmetro number 444, of 19 November 2010.

In case the product is destined to exportation, it shall comply to requirements of the Standards and/or regulations applicable and required in the target market.

### 6.2 Criteria for raw material

#### 6.2.1 Criteria for tread (grooved or not):

- a) The content of Lead (Pb) and Cadmium (Cd) in impurities of zinc oxid shall comply to the limits established below:

Heavy metals	Limits
Lead (Pb)	0,10%
Cadmium (Cd)	0,005%

The compliance to this requirement can be demonstrated through one of the following options:

- ⇒ Test certificate issued by the suppliers of zinc oxid, proving the maximum content established;
- ⇒ Tests results issued by laboratories selected according to item 8 of this procedure. The content of lead and cadmium shall be measured through atomic absorption;
- ⇒ Calculations demonstrating that the content of Pb and Cd of the zinc oxid in the final product complies to the requirements;
- ⇒ Test results in the tread (grooved or not) demonstrating the compliance to the following requirements:



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Heavy metals	Limits
Lead (Pb)	0,00155%, in weight, per kilogram of tread
Cadmium (Cd)	0,000155%, in weight, per kilogram of tread

If the ZnO is purchased from several suppliers, the totality, measured through the annual average of the impurities of Pb and Cd per mass unit of ZnO shall comply to the requirement.

- b) The total quantity of protection agents that are added to the tread (antiozonants and antioxidants) shall be between 1 and 3 phr (parts per hundred parts of rubber). The compliance to this requirement can be demonstrated through a declaration issued by the tread (grooved or not) supplier, specifying the quantity of antiozonants and antioxidants present in the formulation of the tread.

### **6.3 Criteria for retreating process**

**6.3.1** The benzene must not be used in the steps of tire retreat. The reformer shall prove the compliance to this requirement through the FISPQ or a declaration of no use of this substance. The presence of benzene as a contaminant in the finished product (for example, vulcanizing cement) is accepted in a percentage not exceeding 0.05% v/v.

**6.3.2** The reformer shall ensure that the Volatile Organic Compounds (VOC), emitted in the retreating process, are not released to the atmosphere.

The reformer shall ensure the protection of the people involved in activities potentially emitting of VOC.

**6.3.4** The reformer shall not stock tires in open areas and shall have measures to avoid the proliferation of vectors. The reformer shall periodically spray its location with insecticide.

**6.3.5** The reformer shall prioritize the use of fuels from natural resources in its boiler, instead of fossil fuels.

**6.3.6** The reformer shall prioritize the use of automatic extractor fans for collecting rubber residues, caused during the tire scratching out, stocking it in a adequate local for further environmentally correct destination.

**6.3.7** The reformer shall prioritize the use of automatic machine for cleaning tires, banishing the use of products based on polluting paints, in the phase of finishing and cleaning of retreated tires.

**6.3.8** The reformer shall assure the periodic calibration of all machines and equipments, as well as prioritize the implementation of natural lighting systems in order to reduce the use of energy sources.

### **6.4 Criteria for final product**

**6.4.1** The reformer shall inform his customers the correct way of using the product:

- a) When receiving the tires, to store them in a fresh and dry place, away from solar rays or petroleum derived products;



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- b) The tires have to be of the same brand, measure, number of reformations, structure and load capacity when applied in a double way;
- c) Do not subject the tires to pressures or loads above the specified in its sides;
- d) To remove the tires and send them to reformation when presenting groove depth at the TWI using limit of 1,6mm (Resolution of Contran);
- e) To keep the speed under control, always respecting the limits, and avoiding unnecessary hard accelerations;
- f) To use high gear whenever possible, avoiding the high engine speeds;
- g) The maintenance of the vehicle must always be on time;
- h) To observe the right tire pressure, as well as the alignment.

## **6.5 Criteria for disposal**

**6.5.1** The reformer must inform his clients the places of service of pickup/reception of tires considered useless for reformation.

It is recommended that the reformer is co-responsible for the environmentally sound disposal for carcasses that will not be reformed. The reformer should send the useless tires for final destination according to one of the options listed below:

- a) Works for slope stabilization;
- b) Asphalt enriched with rubber tires;
- c) Drainage of Landfill gas;
- d) Fuel for cement kilns.

Obs: any other way of destination has to be submitted to ABNT for evaluation.

The reformer must have documents that prove the final disposal of tires, when the reformer is responsible for the disposition.

## **6.8 Criteria for distribution**

### **6.8.1 Own transport**

The manufacturer shall implement a Program for optimization of transport logistics of product transportation. This program should establish the consumption reduction of fossil fuels, with targets set and monitored monthly.

In case the manufacturer has fueling stations in its own facilities to supply fuel for its own use, containment/prevention measures and emergency procedures for leakage, fires and explosions, have to be taken.

The vehicles have to be kept with their engines set so as to reduce fuel consumption and emissions.

The reformer must plan to replace its fleet of vehicles to cleaner fuels (natural gas or biodiesel, for instance).



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### 6.8.2 Transportation outsourced

The reformer shall qualify his providers of transport services based on criteria that include environmental aspects considering, at least, the following: emissions control, regular maintenance program, legal documentation for the transportation of chemicals (if necessary), environmental license, regularity certificate, periodic training to employees.

All the transportation companies have to be in compliance to CONTRAN (ANTT).

### 6.9 General environmental criteria

- a) The reformer shall establish a program for continual reduction of energy and water consumption and a process to control and review the reduction goals. The reformer shall establish a program for reuse the water used in cooling systems, steam generation, as well as cleaning and sanitizing of machinery, equipment, transfer pipes and hoses, among others;
- b) The effluents generated in the process/facilities shall be treated before thrown on water bodies according to the applicable legislation. The reformer shall prove the compliance to this requirement through periodic tests performed in laboratories selected according to item 8 of this procedure.

Under decision of ABNT, during the audits samples may be collected from the effluents for testing performance.

- c) The reformer shall establish a program for reduction on waste generation and for adequate disposal of the waste generated, including recyclables. All waste (rubber, cardboard, plastic, unusable tires and other products to be destined to recycling) shall be classified according to ABNT NBR 10004 (or similar standard in the country audited) and it shall be assured that all dangerous byproducts are segregated and appropriate measures are taken for recycling/reuse (if applicable) or adequate disposal;
- d) The reformer shall qualify their suppliers of raw materials and services. The qualification criteria shall consider, but not to be limited to, the following items:
  - ⇒ Periodic training of employees considering aspects related to environmental care;
  - ⇒ Environmental management system for the scope of product/service rendering;
  - ⇒ Selective collection at the facility;
  - ⇒ Preventive maintenance of machines, equipments and vehicles;
  - ⇒ Control of separation and identification of waste;
  - ⇒ Internal systematic for identification and traceability of the waste collected/treated and its final destination;
  - ⇒ Business license;
  - ⇒ Operation license or similar;
  - ⇒ Regularity certificate – IBAMA;

Suppliers that comply to these criteria shall be prioritized;

- e) The reformer shall encourage their distributors (if any) to comply to the same environmental requirements established for the suppliers qualification (see item “d” above); the reformer shall



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keep stored the valid IBAMA's Federal Technical Register and the Operation License of all the environmental service renders;

- f) If the reformer uses to store products that are hazardous or harmful to the environment, standards and legislation applicable to health, safety and environment have to be followed. The MSDS (material safety data sheets) shall be located close to the chemical product eventually stored;
- g) The reformer shall plan the implementation of a Environmental Management System according to the standard ABNT NBR ISO 14001 (if still does not have it).

## **7 Compliance to legal requirements**

### **7.1 Compliance to environmental requirements**

The reformer shall comply (or exceed) the applicable environmental legislation and regulation, on federal, state and municipal levels, considering inclusively, but not limited to, aspects related to the emissions, effluents and waste. Whenever a manufacturer operates in a foreign jurisdiction, the Environmental regulations of that jurisdiction apply.

### **7.2 Compliance to labor, anti-discriminatory and safety regulations.**

The reformer shall demonstrate that all employees are covered by a labor situation in accordance to Brazilian law, either by CLT or other type of employment contract legally accepted. It must be demonstrated Compliance to federal, state or municipal terms on the Occupational Safety and health of the worker. Whenever a manufacturer operates in a foreign jurisdiction, the regulations on non-discrimination, occupational health and safety and labor laws of that jurisdiction apply.

## **8 Using test laboratories**

**8.1** ABNT is responsible for selecting the laboratory to perform the tests which will be used in the process of concession and maintenance of ABNT's Environmental Quality Mark – ABNT Ecolabel.

**8.2** When using laboratories accredited by Inmetro or accredited by Accreditation Bodies from other Countries with which Inmetro has mutual recognition agreement, the laboratories need not to be evaluated.

**8.3** When non accredited laboratories are used, they shall be evaluated in accordance to item 7.5 of PG-11.0A - General Procedure for ABNT Environmental Quality Label.

**8.4** In case of using a first part laboratory (laboratory owned by a manufacturer), ABNT shall accompany the execution of all tests for concession and maintenance of certification, regardless the laboratory is accredited or not.

## **9 Description of certification process**

### **9.1 Documentation**

The manufacturer shall forward the documents listed below to ABNT for a document analysis:

- a) Detailed specification of each product to be certified;



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- b) Copy of the Company' social contract registered under Commercial Official Department;
- c) Documentation of the Environmental Management System certificate or product, if existing (copy of the certificate);
- d) Plant of the site;
- e) Update geographic location (specifying the area surrounding the site - rivers, conservation areas, communities, industries, among others);
- f) List of main raw materials used in the production process;
- g) List of key inputs that are necessary for the completion of the production process;
- h) Environmental Licenses;
- i) Schematic flowchart of the production process, from the entry of raw materials to the output of finished product;
- j) Internal flow of water, energy, waste, effluents and emissions, regarding the manufacture of the product object of the concession.

## **9.2 Preliminary analysis**

The documentation will be analyzed by ABNT to verify its adequacy and content, resolving any eventual outstanding together with the manufacturer.

## **9.3 Pre-audit (optional)**

After approval of the documents presented, ABNT will carry out a pre-audit at the manufacturer's facilities, with the following objectives:

- a) Evaluate the manufacturer's location and the specific conditions of the local;
- b) Verify the manufacturer's preparation level for the certification audit;
- c) Evaluate the manufacturer's understanding considering the criteria that must be complied with in order to obtain the certification;
- d) Collect necessary information related to the processes and manufacturer's location, legal and regulatory aspects;
- e) Evaluate the allocation of resources for the certification audit, as well as facilitate the certification audit planning.

## **9.4 Certification audit**

Once all irregularities and outstanding issues have been eliminated from the documents and having found solutions for any comments made during the pre-audit, the certification audit will take place and shall encompass the following aspects:

## **9.5 Evaluation of projects**

ABNT will evaluate at the manufacturers facilities if the products to be certified are being manufactured in accordance with the projects/specifications that have been presented, along with the manner in which the manufacturer controls the production process in order to ensure compliance to the requirements.



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## **9.6 Evaluation of the compliance to performance criteria and legal requirements**

ABNT will verify if the manufacturer's products and/or processes of the reformer, which are the object of certification, are in compliance to the requirements established on items 6 and 7 of this procedure, through documents, interviews, production process accompaniment, records, etc.

For the criteria that cannot be evaluated during the audit, for example those that require laboratory tests for evidence, the reformer must demonstrate how it manages its production process as well as its relationship with suppliers, distributors and/or customers, in order to comply to the criteria. For these cases, under decision of ABNT, during the audits samples may be collected for testing in laboratories selected in accordance with item 8 of this procedure.

## **9.7 Tests**

### **9.7.1 Sample collection**

The samples collected for testing by ABNT must consist of first sample, counter-sample and control sample. Samples will be sealed by ABNT. The identification of the seals will be recorded in the sample collection form. The test samples shall be sent to the laboratory designated by ABNT, accompanied by a copy of the sample collection form. Counter-sample and control sample shall be stored by the manufacturer for purposes of possible disputes. The manufacturer must take care to preserve the seals of the samples sent to the laboratory as well as those stored for the purpose of possible disputes.

The tests shall be performed for each production unit.

### **9.7.2 Initial quality evaluation**

To approve the concession of ABNT Environmental Quality Mark, the samples tested shall succeed in the tests specified in item 6 of this procedure, as well as the assessment of the requirements in items 6 and 7 shall demonstrate compliance throughout the process.

In case of failure in any of the tests performed during this phase, the product certification will not be granted until the resolution of the problem.

After implementation of the corrective actions, ABNT will schedule a new samples collection and the completion of new tests. In this case, the number of samples shall be double the initial sampling. If the test samples are approved, the certification is then granted for the product.

## **9.8 Certification concession**

When all the previous steps have been completed, CT issues a conclusive opinion and send the process to GSI for analysis. In case of approval by GSI, ABNT will issue the ABNT Environmental Mark Certificate, which is the license for use of the label on the product (Ecolabel).

In case of failure, the reasons will be communicated to the reformer so that the necessary corrective actions are taken and the product can return to the certification process. The corrective actions as well as the actions taken to return to the certification process shall be agreed with ABNT.

## **10 Description of certification maintenance process**

After the concession of the Certification, ABNT shall carry out the control activities in order to verify the reformers' maintenance of the technical/organizational conditions which gave origin to the certification.



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This verification will be completed through maintenance audits and may also, under decision of ABNT, require sample collection for testing.

#### **10.1 Maintenance audits**

The audits will be held in periods previously agreed to by the reformer and the periodicity will be annual. In these audits the following aspects will be considered:

#### **10.2 Evaluation of projects/specifications**

ABNT will verify at the reformer's facilities, whether the certified products continue to be manufactured according to the originally presented projects/specifications.

#### **10.3 Evaluation of the compliance to the performance criteria and legal requirements**

ABNT will verify if the reformer's certified product and/or processes continue to comply to the requirements established in items 6 and 7 of this procedure. The requirements which cannot be evaluated during the audit, for example those which need to be tested in a laboratory to demonstrate compliance, the reformer shall demonstrate the way in which the production process is controlled, as well as its relationship with suppliers, distributors and customers, in order to comply to these requirements.

#### **10.4 Tests**

##### **10.4.1 Sample collection**

The samples for testing shall be composed of first sample, counter-sample and control sample. The samples shall be sealed by ABNT. The identification of the seals will be registered on the sample collection form. The first sample shall be sent to the testing laboratory indicated by ABNT, accompanied by a copy of the sample collection form. The counter-sample and control sample shall be stored by the reformer for the purpose of possible dispute. The reformer shall take the necessary precaution measures in order to preserve the seals on the samples sent to the testing laboratory, as well as those stored for the purpose of possible dispute.

The tests shall be performed for each production unit. The test results will be sent to the reformer by ABNT. In the event of non-compliance in tests (non-fulfillment of some established requirement) the reformer must submit an action plan within 15 days for evaluation of ABNT.

##### **10.4.2 Conformity evaluation**

For the certification maintenance, the tested samples shall succeed the tests related to in item 6 of this procedure, as well as the evaluation of the requirements established in items 6 and 7 shall demonstrate conformity throughout the entire process.

In case of failure in any tested product during this phase, the certification of the non conforming product will be suspended until the problem is resolved.

After the implementation of the corrective actions, ABNT shall schedule a new audit and sample collection for testing. In case the manufacturer do not present any non-conformity and the tested samples succeed, the manufacturer will be allowed to use the ABNT Conformity Mark on the product.

After this audit the test sampling for this product will happen biannual basis until its conditions have reached the conformity originally demonstrated, when then the sampling period will return to be annual.



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### **10.5 Recognition Agreements**

As set out in paragraph 15 of PG-11, the process of maintenance of certification can be changed based on the content of any agreements for cooperation or mutual recognition.

### **10.6 Production control**

During the audits, the reformer shall demonstrate to ABNT how the production process is controlled so as to maintain the product in conformity to the criteria established in this procedure. This scheme will be subject to ABNT's approval and may be considered as a non-conforming item if not approved.

## **11 Criteria modifications**

If after the concession of ABNT Environmental Quality Mark, or during the process of concession, changes occur in the established criteria for the certification of the product, ABNT will concede a period of time during which the certified manufacturers will be allowed to adequate the products to the modified requirements.

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