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**Certification Rule Complement-  
Automotive Safety Glasses**

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**1 OBJECTIVE**

This document presents the supplementary criteria to the "Product Certification Rule" - RC-001 for the Automotive Safety Glasses Conformity Assessment Program, focusing on safety, through the compulsory certification mechanism, for the concession and maintenance of license for the use of the SBAC, Inmetro and TÜV Rheinland do Brasil Ltda Conformity Mark, aiming at greater citizen protection.

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### **2 TERMS AND ABBREVIATIONS**

CRC	Certification Rule Complement
ABNT	Brazilian Association of Technical Standards
CONTRAN	National Transit Council
CTB	Brazilian Traffic Code
NBR	Brazilian Standard
RTQ	Technical Regulation of Quality
CB	Certification Body

### **3 FIELD OF APPLICATION**

It applies to all companies in the segment - Automotive Safety Glasses that request the granting of a license for the use of the SBAC Conformity Mark.

### **4 DEFINITIONS**

For the purposes of this CRC, the following definitions are adopted, supplemented by those contained in the external reference documents in item 20, in the Technical Quality Regulation for Automotive Safety Glasses and in the Certification Rule - RC-001.

#### **Family**

Automotive glass, from the same production process and the same manufacturing unit, whose nominal thickness ranges, in millimeters, are divided as follows:

For laminated safety glass (VSL):

- VSL family - I:  $e \leq 5,5$  mm;
- VSL family- II:  $5,5 \text{ mm} < e \leq 6,5$  mm;
- VSL family - III:  $e > 6,5$  mm.

For tempered safety glass (VST):

- VST family - I:  $e \leq 3,5$  mm;
- VST family- II:  $3,5 \text{ mm} < e \leq 4,5$  mm;

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- VST family- III:  $4,5 \text{ mm} < e \leq 6,5 \text{ mm}$ ;
- VST family- IV:  $e > 6,5 \text{ mm}$ .

### **5 CONFORMITY ASSESSMENT MECHANISMS**

The mechanism to evaluate the conformity of the product object of this CRC, Automotive Safety Glasses is the certification.

This CRC establishes two (2) different certification models, being up to the supplier to choose one of them:

#### **A. Certification Model 5**

Initial evaluation consisting of tests on samples taken from the manufacturer including audit of the Quality Management System - QMS, followed by periodic maintenance evaluation through product sampling in the trade, to carry out the conformity assessment activities and audit of the QMS.

#### **B. Certification Template 1b - Batch test.**

This model is based on the "pass, don't pass" method for certification of each batch, and should be applied to isolated batches of single or intermittent production at long intervals of time, with little or no recognized control during the manufacturing process.

It is the responsibility of the applicant to formalise with TÜV the model to be used for the certification of their products.

### **6 CERTIFICATION MODEL 5**

#### **Initial Assessment**

#### **Application for Certification**

The supplier shall submit a formal request to the TÜV, providing the documentation described in the RGCP, in addition to the descriptive memorial of each family of the product to be certified, containing its specifications and application in the product.

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### **Analysis of the Application and Documentation Conformity**

The criteria for the analysis of the application and the compliance of the documentation shall follow the requirements established in RGCP.

### **Initial Audit of the Management System**

The criteria for the initial audit of the management system shall follow the requirements established in RGCP.

### **Initial Test Plan**

The criteria of the initial test plan shall follow the requirements established in RGCP.

### **Definition of the tests to be performed**

Initial tests shall follow those set out in Tables 1 or 2 of this CRC.

**Table 1 - Tests for Laminated Safety Glass (VSL).**

Test	Procedure		Acceptance Criterion
	Normative Basis	Item of the standard	RTQ item
Light transmission (transmittance)	ABNT NBR 9491	4.7	6.3
Pigmentation Range		4.4	6.4
*Optical Distortion Determination		4.8	6.5
*Secondary Image Separation		4.9	6.6
*Phanton Impact Resistance		4.6.3	6.2
*227 g steel ball impact resistance at a temperature of +40 ± 2oC		4.6.1.2	6.2

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*227 g steel ball impact resistance at a temperature of -20 ± 2oC		4.6.1.2	6.2
**Impact resistance with 227 g steel ball at room temperature 20 ± 5oC		4.6.1.3	6.2
*Impact resistance with steel ball of 2260 g		4.6.2	6.2
Resistance to radiation		4.10	6.7
Resistance to humidity		4.11	6.8
Resistance to high temperature		4.12	6.9
Abrasion resistance test		4.13	6.10

\* only for laminated glass for windshield

\*\* only for laminated glass other than windscreens

Table 2 - Tests for toughened safety glass (TST).

Test	Procedure		Acceptance Criterion
	Normative Basis	Item of the Standard	
			RTQ item
Light transmission (transmittance)	ABNT NBR 9503	4.7	6.3
Burst test - Safety against splinters	ABNT NBR 9492	4.5	6.1
227 g steel ball impact resistance	ABNT NBR 9494	4.6.1	6.2

### Definition of Sampling

The criteria for defining the sample must follow the requirements established in RGCP.

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The TÜV must take samples randomly in the production process of the product requested, provided that the product has already been inspected and released by the factory quality control, or in the shipping area in packages ready for sale.

For product testing, the TÜV should collect samples according to Table 3 or Table 4.

**Table 3 - Distribution of samples for the VSL tests.**

TESTS	SAMPLING		
	TEST	COUNTER TEST	WITNESS
Light transmission (transmittance)	4 units of safety glass	4 units of safety glass	4 units of safety glass
Pigmentation range			
*Determination of optical distortion			
*Secondary image separation			
*Phanton impact resistance	4 pieces of safety glass (from previous sample)	4 pieces of safety glass (from previous sample)	4 pieces of safety glass (from previous sample)
*Impact Resistance with 227g steel ball at temperature of $+40 \pm 2^{\circ}\text{C}$	10 specimens, with length and width of $300 +10 -0$ mm, and thickness within the tolerance	10 specimens, with length and width of $300 +10 -0$ mm, and thickness within the tolerance	10 specimens, with length and width of $300 +10 -0$ mm, and thickness within the tolerance
*227 g steel ball impact resistance at a temperature of $-20 \pm 2^{\circ}\text{C}$	10 specimens, with length and width of $300 +10 -0$ mm, and thickness within the tolerance	10 specimens, with length and width of $300 +10 -0$ mm, and thickness within the tolerance	10 specimens, with length and width of $300 +10 -0$ mm, and thickness within the tolerance
**227 g steel ball impact resistance at an ambient temperature of $20 \pm 5^{\circ}\text{C}$	8 specimens, with length and width of $300 +10 -0$ mm, and thickness within the tolerance	8 specimens, with length and width of $300 +10 -0$ mm, and thickness within the tolerance	8 specimens, with length and width of $300 +10 -0$ mm, and thickness within the tolerance
*Impact resistance with steel ball of 2260 g	12 specimens, with length and width of $300 +10 -0$ mm, and thickness within the tolerance	12 specimens, with length and width of $300 +10 -0$ mm, and thickness within the tolerance	12 specimens, with length and width of $300 +10 -0$ mm, and thickness within the tolerance
Resistance to radiation	3 specimens, with $300 +10$ mm $-0$ mm x $76 +10$ mm $-0$ mm,	3 specimens, with $300 +10$ mm $-0$ mm x $0 76 +10$ mm $-0$ mm,	3 specimens, with $300 +10$ mm $-0$ mm x $0 76 +10$ mm $-0$ mm,

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	and thickness within tolerance	and thickness within tolerance	and thickness within tolerance
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\* only for laminated glass for windshield

\*\* only for laminated-glass panes other than for windscreens

**Table 4 - Distribution of samples for the VST tests.**

TESTS	SAMPLING		
	TEST	COUNTER TEST	WITNESS
Light transmission (transmittance)	4 safety glass	4 safety glass	4 safety glass
Burst test - Safety against shrapnel	8 for flat safety glazing and 24 for curved safety glazing	8 for flat safety glazing and 24 for curved safety glazing	8 for flat safety glazing and 24 for curved safety glazing
Impact resistance with 227 g steel ball	6 safety glass	6 safety glass	6 safety glass

All tests, measurements, inspections and simulations of use shall be performed on the proof sample. In case of failure of the proof sample, the supplier may choose to use the counterproof / or witness, submitting it only to the test(s) where there was failure.

In case of failure of the witness sample, the supplier may choose to treat the non-conformities. In this case, the supplier shall demonstrate the effectiveness of the corrective actions by presenting new samples for proof, counterproof and witness for the repetition of all tests.

### **Definition of the Laboratory**

The criteria for laboratory definition shall follow the requirements established in RGCP.

### **Treatment of Non-Conformities in the Initial Evaluation Stage**

The criteria for treatment of non-compliances in the initial assessment stage shall follow the requirements established in RGCP.

### **Issuance of the Certificate of Conformity**

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The criteria for issuing the Certificate of Conformity shall follow the requirements established in RGCP. The Certificate of Conformity shall be valid for 3 (three) years.

In the Certificate of Conformity, the family models shall be noted as follows:

Brand	Model (Trade name of the model and commercial reference codes, if available).	Description (Technical description of the model, containing at least) - type (tempered or laminated) - thickness	Commercial barcode (where present) of all versions.
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### **Maintenance Assessment**

After the Certificate of Conformity has been granted, TÜV carries out Certification follow-ups to verify whether the technical and organizational conditions which led to the initial granting of certification continue to be met.

### **Maintenance Auditing**

The criteria for the maintenance audit shall follow the requirements established in RGCP. The Maintenance Audit should be completed within 18 (eighteen) months from the date of issuance of the certificate.

### **Maintenance Test Plan**

The criteria for the maintenance test plan shall follow the requirements established in RGCP. The maintenance tests shall be concluded within 18 (eighteen) months after the granting of the Certificate of Conformity, for each certified family. In addition, maintenance tests shall also be performed whenever there are facts that recommend their performance before this period.

### **Definition of the Tests to be Performed**

The maintenance tests shall follow the same requirements established in the initial tests definition sub-item of this CRC.

### **Definition of Maintenance Sampling**



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The sample units of the finished product shall be collected in trade, and shall comply with the requirements established in RGCP and shall follow the same requirements established in the sub-item of definition of sampling of the initial tests of this CRC.

### **Definition of the Laboratory**

The criteria for laboratory definition shall follow the requirements established in RGCP

### **Treatment of non-compliances in the stage of Maintenance Assessment**

The criteria for treatment of non-compliances in the stage of maintenance assessment shall follow the requirements established in RGCP.

### **Maintenance Confirmation**

The criteria for maintenance confirmation shall follow the requirements established in RGCP.

### **Recertification Assessment**

The criteria for the recertification assessment are established in RGCP. The Recertification Assessment shall be carried out every 3 (three) years, and shall be completed by the expiry date of the Certificate of Conformity.

## **7 CERTIFICATION MODEL 1B.**

### **Initial Assessment**

#### **Certification Request**

The supplier shall submit a formal request to the TÜV, providing the documentation described in the RGCP, in addition to showing the identification of the batch size of the family to be certified.

Note: The certification batch is composed of products of the same family, even if from different manufacturing batches. It is the responsibility of the TÜV to identify the size of the certification batch, based on the definition of family established in this CRC.

#### **Application and Documentation Review**

The criteria for the analysis of the application and documentation shall follow the requirements established in RGCP.

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**Test Plan**

The criteria of the test plan shall follow the requirements established in RGCP.

**Definition of tests to be conducted**

The tests shall follow the same requirements established in the initial tests definition sub-item of this CRC.

**Definition of Sampling**

Sampling criteria shall follow that established in RGCP. The TÜV is responsible for witnessing the collection of samples of the object to be certified.

Sample size, per family, should be determined according to ABNT NBR 5426 norm, with a simple sampling plan, normal distribution, inspection level S1, and AQL of 2.5.

Upon collecting the sample, the TÜV shall prepare a sampling report, detailing the date, place, identification of the batch collected, and the conditions under which it was obtained, as established in the RGCP.

**Definition of the laboratory**

The definition of the laboratory shall follow the requirements established in RGCP.

**Issuance of the Certificate of Conformity**

The criteria for issuing the Certificate of Conformity shall follow the conditions described in RGCP. In the Certificate of Conformity, the models of the family shall be noted according to the requirements described below:

Brand	Model (Trade name of the model and commercial reference codes, if available).	Description (Technical description of the model, containing at least) - type (tempered or laminated) - thickness	Commercial barcode (where present) of all versions.
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### **8 COMPLAINT TREATMENT**

The criteria for handling complaints shall follow the requirements established in RGCP.

### **9 ACTIVITIES CARRIED OUT BY CB ACCREDITED BY IAF MLA MEMBER**

The criteria for activities performed by CB accredited by an IAF MLA member shall follow the requirements established in RGCP.

### **10 TRANSFER OF CERTIFICATION**

The criteria for certification transfer shall follow the requirements established in RGCP.

### **11 CLOSE OF CERTIFICATION**

The criteria for closure of the certification shall follow the requirements established in RGCP.

### **12 CONFORMITY IDENTIFICATION MARK**

The general criteria for the Compliance Identification Mark are contemplated in RGCP.

The Compliance Identification Mark shall be affixed on the certified product as set forth in Annex III.

### **13 AUTHORIZATION FOR USE OF THE SEAL OF CONFORMITY IDENTIFICATION**

The criteria for the authorization of the use of the Compliance Identification Mark shall follow what is established in RGCP.

### **14 RESPONSIBILITIES AND OBLIGATIONS**

The criteria for responsibilities and obligations shall follow the requirements established in RGCP.

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**15 MARKET MONITORING**

The criteria for market monitoring shall follow the requirements established in RGCP.

**16 PENALTIES**

The criteria for application of penalties shall follow the requirements established in RGCP.

**17 COMPLAINTS AND SUGGESTIONS**

The criteria for denunciations, complaints and suggestions shall follow the requirements established in RGCP.

**18 HISTÓRICO DE REVISÃO**

Revision	Changes	Date	Responsible
0	Translation of document CRC-M0401 Rev.0 to English version	20.04.2021	Débora Reis

**19 RELATED DOCUMENTS**

- RC-001\_EN - Product and Mobility Certification Rule

**20 EXTERNAL REFERENCE DOCUMENTS**

ABNT Standard NBR 9491:2015

Safety glass for road vehicles - Requirements.

Resolution Contran No. 254 of 2007.

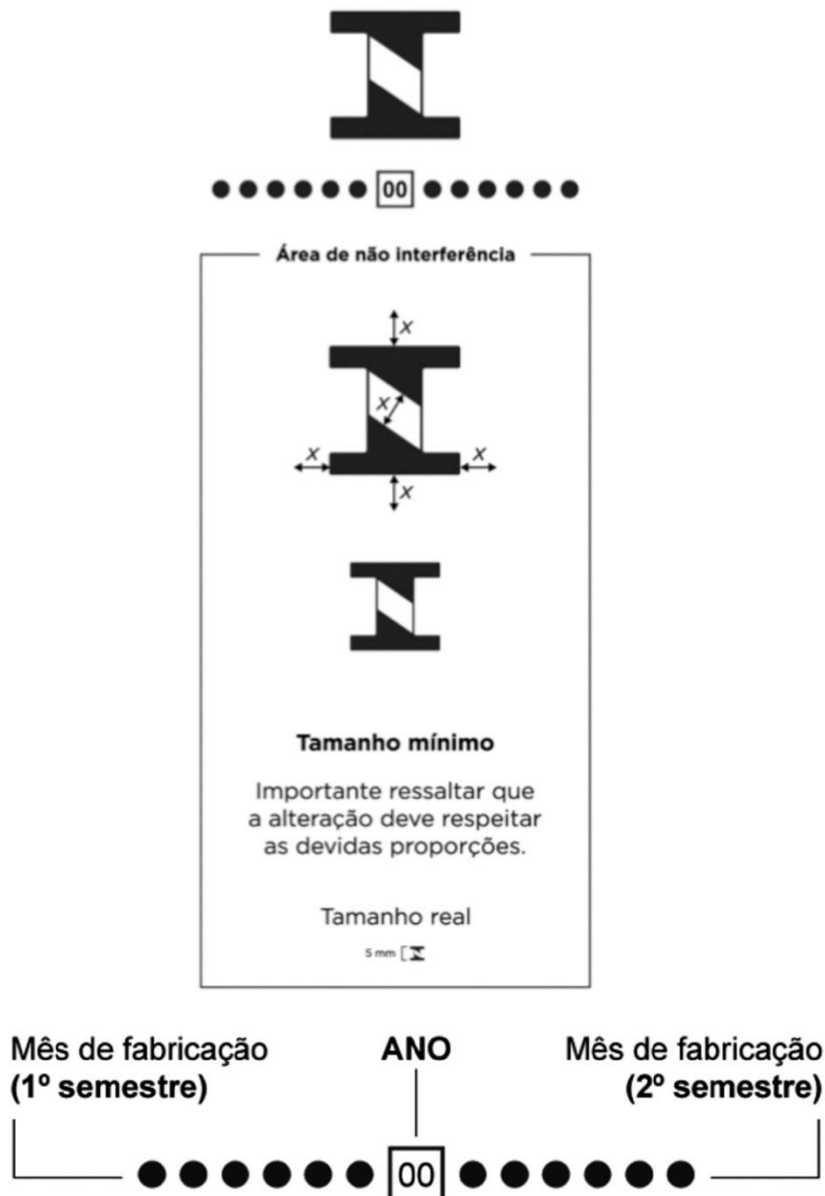
Establishes requirements for safety glass and criteria for application of inscriptions, pictograms and films in the glazed areas of motor vehicles, according to item III of Article 111 of the Brazilian Traffic Code - CTB.

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**ANEXO III – CONFORMITY IDENTIFICATION MARK**

The Compliance Identification Mark shall be silk-screened on the glass or equivalent technology, provided that it is permanent and indelible.

The minimum size of the symbol "I" on the Conformity Identification Mark shall be at least 5 mm.



For indication of the year, the 2-digit numbering should be used.

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For indication of months, tables A.1 and A.2 shall be checked.

**Table A.1 - Indication of months for the first semester:**

The dots should be to the left of the number indicating the Year.



**Table A.2 - Indication of months for the second semester:**

Dots should be to the right of the number indicating the Year.

Dots to the left shall not appear.



Example (for illustrative purposes only):

Date of manufacture

**Year:** 2021

**Month:** March (1st semester)

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