



Test report



DAP-PL-3460.99

Alternating climate test at bullet proof window

for PG Products Indústria e Comércio de Vidros Ltda

Offernumber: 20052278
Ordernumber: 48603
Referencenumber: 10058696

19.04.2006

Summary			
Specification:	Alternating climate test BMW PrV 303.4 b		
Testing period:	04.04.06 – 14.04.06		
Test parts:	1 windshield– B4- sample for ballistic test, Code PBBMW5 1 left front door - SG2B4- sample for ballistic test, Code PDEBMW5 1 right front door - B4- sample for ballistic test , Code PDDBMW5 3 B4- 300 sample 300mm x 300mm- sample for ballistic test, Code B4 300 3 B6- 300 sample 300mm x 300mm- sample for ballistic test, Code B6 300		
Test part number:	-		
Description of test:	Alternating climate test according to test specification BMW PrV 303.4b		
Target:	At this test, proof the temperature-resistant from the windows.		
Result:	It was no damages and discoloration at the test parts. The test parts are OK.		
Conclusion /measures:			
Test realisations:	Hr. Plutat	Bertrandt	Tel. 089/ 31 60 89-202
Coordination:	Hr. Haupt	PG Products Ltda	Tel. 040/ 32 52 76 06

Customer:

Customer: PG Products Indústria e Comércio de Vidros Ltda.
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Contractor:

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Contact person:

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The test report has been passed over to the client by Mr. Merz on behalf of the contractor.



First Name, Surname, Customer

The client Mr. Haupt confirms receipt of the test report.



First Name, Surname, Contractor

Munich, 19.04.2006

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1 Description of test

Alternating climate test according to test specification BMW PrV 303.4b

2 Test Parts

- 1 windshield– B4- sample for ballistic test, Code PBBMW5
- 1 left front door - SG2B4- sample for ballistic test, Code PDEBMW5
- 1 right front door - B4- sample for ballistic test , Code PDDBMW5
- 3 B4- 300 sample 300mm x 300mm- sample for ballistic test, Code B4 300
- 3 B6- 300 sample 300mm x 300mm- sample for ballistic test, Code B6 300

3 Test set up

Climatic chamber: CTS CW 22m³



Picture 1: test set up in climatic chamber

3.1 Test Equipment

The windows were fixture in installation position in the climatic chamber.

3.2 Measuring tools

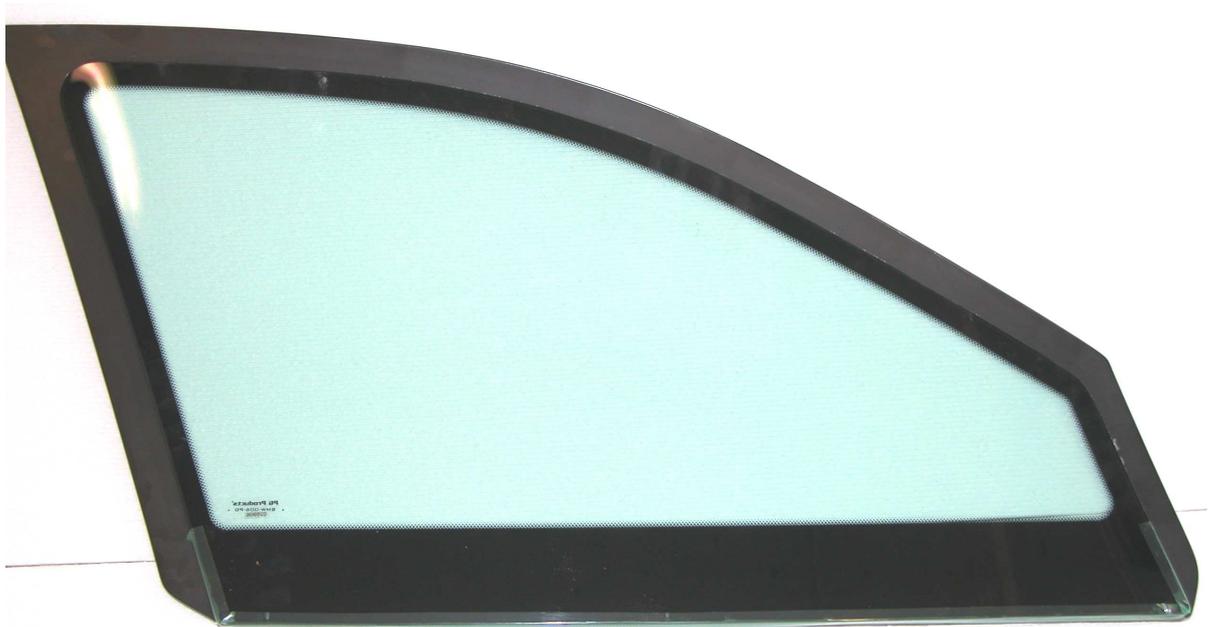
Climatic chamber 22m³ (0001 Mi 0058): Temperature: +/- 1,3°C
Humidity: +/- 1,5%

4 Test sequence

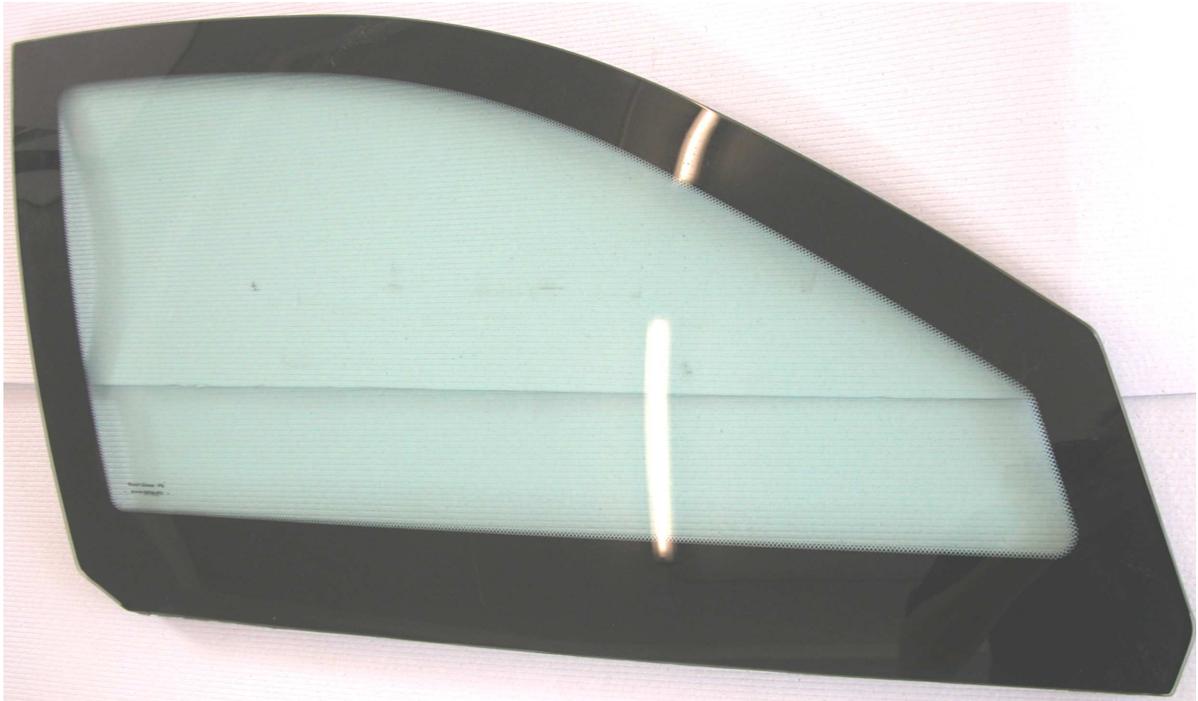
We proofed the test parts before beginning the test. Afterwards the windows were fixture in installation position in the climatic chamber. Proof the test parts after test.

5 Result

It was no damages and discoloration at the test parts. The test parts are OK.



Picture 2: left front door - SG2B4- sample for ballistic test, Code PDEBMW5 after Test



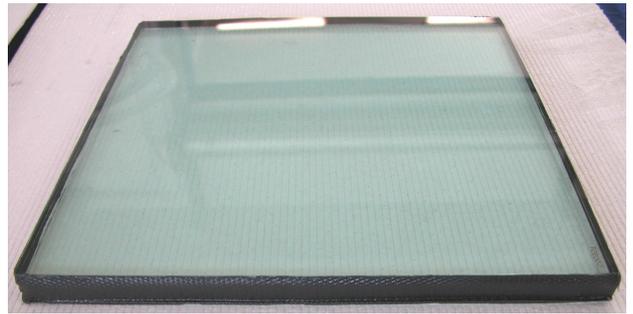
Picture 3: right front door - B4- sample for ballistic test , Code PDDBMW5 after test



Picture 4: windshield- B4- sample for ballistic test, Code PBBMW5 after Test



Picture 5: B4- 300 Code B4 300 after test



Picture 6: B4- 300 Code B4 300 after test



Picture 7: B4- 300 Code B4 300 after Test



Picture 8: B6- 300 Code B6 300 after Test



Picture 9: B6- 300 Code B6 300 after Test



Picture 10: B6- 300 Code B6 300 after Test

6 Diagram

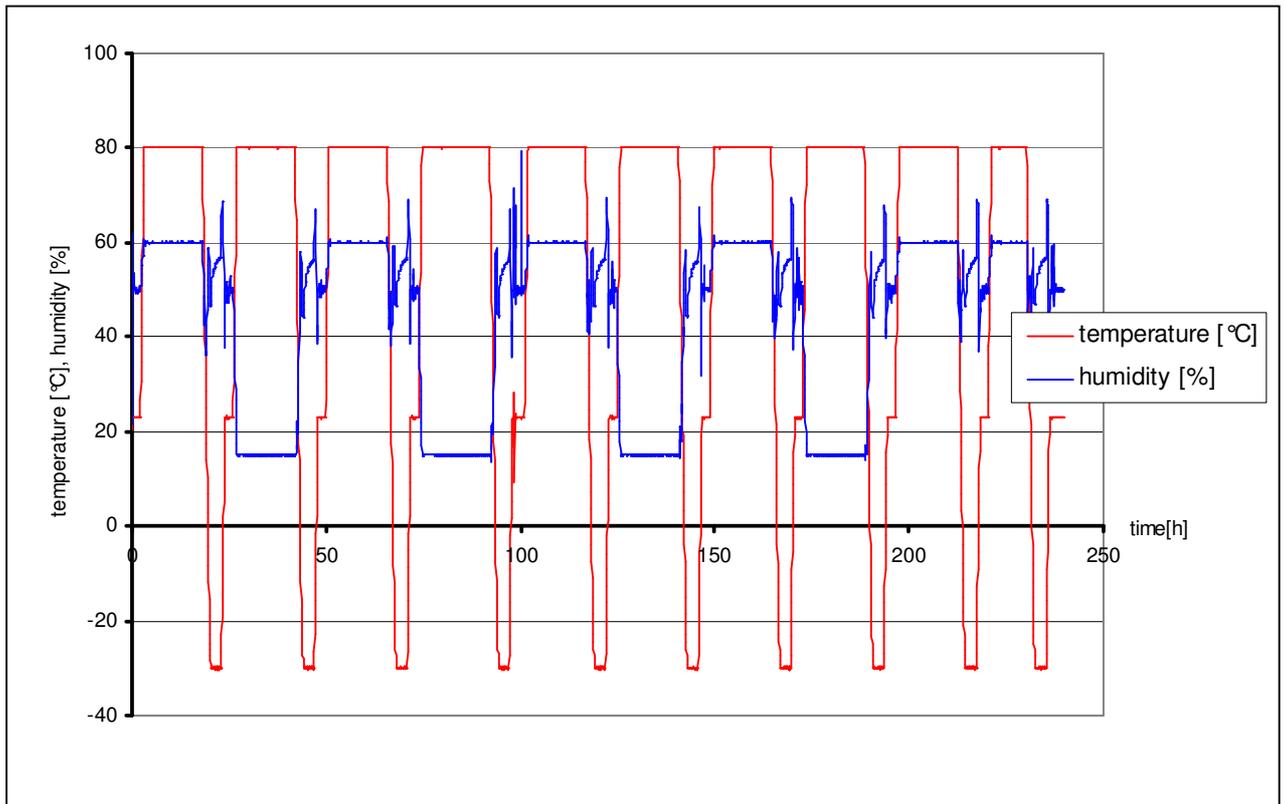


Diagram 1: climatic chamber recording