



LABORATORY REPORT

Hot-scratch test 7710Z-TVA-9000 6-14: 2015-11

automotive interior panels

PROCESSING

- ▶ Laboratory-Services Leipzig
Commercial order XXXX
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- ▶ Processing from 2020-06-08 until 2020-06-12
- ▶ Report completed on 2020-06-12

CUSTOMER

- ▶ GWP mbH
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- ▶ Order-#: 000000
- ▶ Contact person: Mr. Schurig
- ▶ Customer project-code: Honda XXX

SAMPLES

The following samples have been submitted to GWP for evaluation. GWP had no influence on the selection of samples.

receipt	GWP-#	description	remark
02.06.2020	0001.01	interior panel door	Heat resistance H0_1000 h, hot-scratch, 4 x 10 x 0,5 cm
02.06.2020	0002.01	instrument panel	Heat resistance H0_1000 h, hot-scratch, 4 x 10 x 0,5 cm

METHODS & MATERIAL

Devices:	#870, Erichsen Lineartester 249; #351 Heraeus Kelvitron T6060 oven
Modus:	50 mm/s speed, 9.8 N downforce, blade according to Honda 7710Z-TVA-9000 6-14: 2015-11
Specification:	Honda 7710Z-TVA-9000 6-14: 2015-11
Sample preparation:	preparation of parts by cutting, preparation of 2,3 mm cut for test initial condition by grinding
Sample conditioning:	80 °C for > 30 minutes by means of #351, immediate transfer to #870 for scratching
Test room conditions:	22 °C, 54 % rH
Person in charge:	Dr. Christian Schurig
Internal auditor:	Silke Schindler

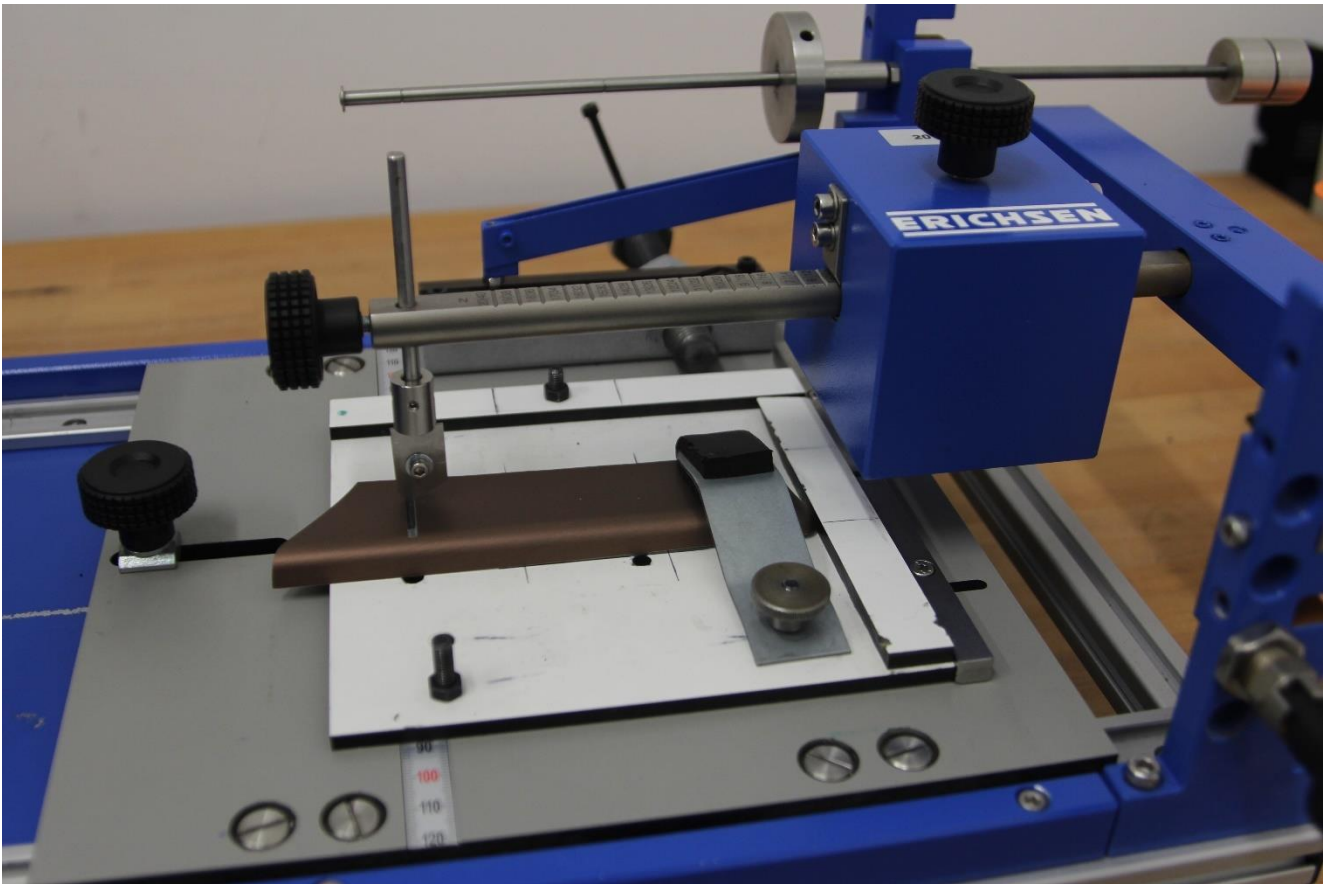


Fig. 1: Experimental set-up for hot-scratch test according to Honda 7710Z-TVA-9000 6-14: 2015-11

RESULTS

The following table shows the results of the samples tested in initial condition. The test was performed on 2020-06-09. The scratch-marks were evaluated according to Honda 7710Z-TVA-9000 6-14 grading scheme. Each sample was scratched 3 times consecutively. Afterwards the 3 scratches were graded individually and a mean value along with the standard deviation was computed for every sample. Representative images of selected samples can be found in the image appendix.

sample	description	scratch-mark 1	scratch-mark 2	scratch-mark 3	arithmetic mean	standard deviation
0001.1	interior panel door	3	3	3	3	0
0002.1	instrument panel	4	4	4	4	0

The following table shows the results of the samples tested after humidity aging. The test was performed on 2020-06-11. The scratch-marks were evaluated according to Honda 7710Z-TVA-9000 6-14 grading scheme. Compared to the initial state no remarkable changes were detectable.

sample	description	scratch-mark 1	scratch-mark 2	scratch-mark 3	arithmetic mean	standard deviation
0001.1	interior panel door	3	3	3	3	0
0002.1	instrument panel	4	4	5	4	0.6

The following table shows the results of the samples tested after heat aging for 1000 h. The test was performed on 2020-06-12. The scratch-marks were evaluated according to Honda 7710Z-TVA-9000 6-

14 grading scheme. Compared to the initial state no remarkable changes were detectable, except for the instrument panel part, which showed a better performance (see Image Appendix).

sample	description	scratch-mark 1	scratch-mark 2	scratch-mark 3	arithmetic mean	standard deviation
0001.1	interior panel door	3	3	3	3	0
0002.1	instrument panel	5	5	5	5	0

AUTHORSHIP

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internal review

All results solely consider the measured samples. This report is only to be distributed completely and unchanged. Changes or partly distribution require the approval of GWP mbH.

IMAGE APPENDIX

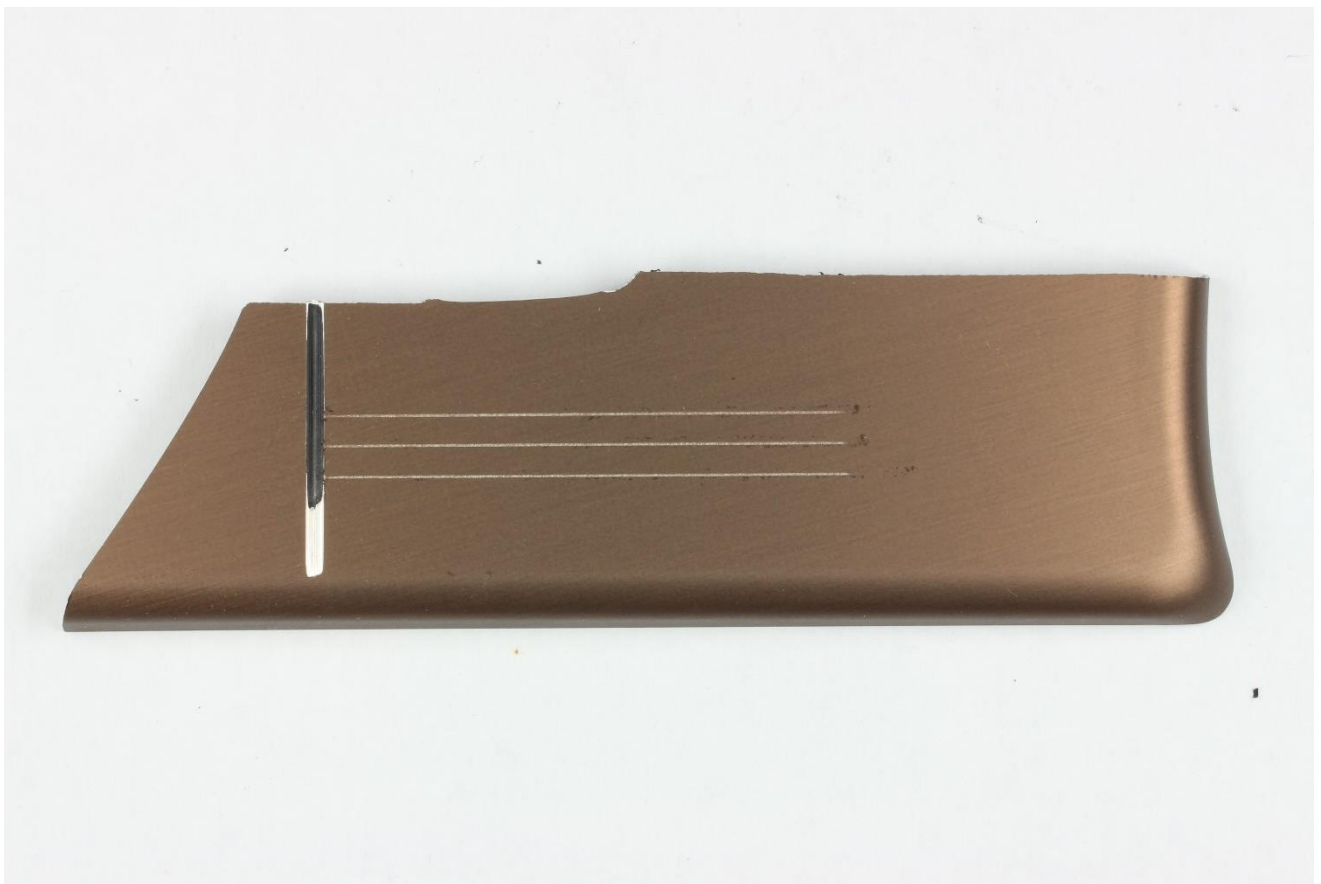


Fig. 3: Sample 0001.1 initial condition after hot-scratch test



Fig. 2: Sample 0001.2 heat aged after hot-scratch test