Activities for lab tests: Working plan

Draft

Setting base parameters for equipment

basic settings of "ISO 11998" - equipment (reciprocating scrub testing machine)

scrub rate: 37± 2 scrub cycles/min (back and forth)

stroke length: 300 ± 10 mm

mass of scrub pad holder (downward force on the sample): 135 ± 1 g

• test sample size: e.g. 150 x 100

• wipe speed: e.g. 15 m/s

• wiper load: e.g. 20 g/cm

wiper blade type: e.g. CR-type

reversal point of the wiper have to be on the test sample

Definition of test mixture with artificial dirt

Mixture according ISO 9616, composed by volume:

- 92,5% water (with a hardness of less than 205 mg/l after evaporation);
- 5% aqueous saturated salt (sodium chloride) solution;
- 2,5 % dust (type ISO 12103-1 A4)



Activities for lab tests: Working plan

Definition of wipe conditions

Classification of wipe conditions based on experience

basic wipe condition	realistic	frequency of occurrence	severity of condition
dry without dirt	✓	0	0
wet without dirt	✓	+	0
wet with dirt	✓	+++	+
dry with dirt	✓	+	+++

Legend: - not occurring / no effect; o rare / small; + occurring / with effect

Diagra

based on frequency & severity suitable test conditions for starting wiper test evaluation

List of extreme conditions based on questionnaire

- testing of pre-aged samples
- wiping in cross direction
- wiping at different conditions



Activities for lab tests: Working plan

Development of an equipment description

- Analysis of equipment, equipment check, further optimization of the equipment
- Output to an equipment manufacturer
- Adaption of the test-equipment

Definition and procedure of tests

- with base conditions
- with extreme conditions
- round robin tests

Analysis of the sample parts and comparison of the results

- base conditions vs. extreme conditions
- round robin tests
- wiper lab tests vs. on-road tests



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Activities for lab tests: Working plan

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Definition of the lab test (equipment and conditions) for approval

Procedure round robin tests according defined lab test

- · Investigation of test reproducibility
- Investigation of samples made of different materials and with different coatings
- Definition of criteria/critical values for windshields of plastic glazing

Correlation of test results with wiper lab tests

- Definition of tests and test conditions
- Definition of criteria for windshields of plastic glazing

Summary of the results

Proposal to the UNECE, GRSG, IGPG



Dram **Activities for lab tests: Timeline** First results **Analysis Proposal** Start round Correlation **Definition of the** οf to UNECE, robin of the of results Decision to lab test subgroup 1 samples GRSG, to on-road start the and according (equipment, from tests **IGPG** subgroup 2 defined test tests activities conditions) 08/13 12/13 02/14 04/14 10/12 04/13 06/13 **Baseline Development test equiment with Optimization Summary of** study of manufacturer of test the results currently equipment used test equipment First round robin Round robin according (base conditions) defined test: Definition different materials, for initial different coatings **Tests with** test (base extreme parameters conditions Analysis of the samples, mixtures, correlations of results conditions from lab tests and on-**Definition of lab test** road tests for approval **Initial tests** for equipment check

