

# Proposal for IGPG: Wiper tests – Lab test for approval (Subgroup 2)

**Draft**

## Activities for lab tests: Working plan

### Setting base parameters for equipment

- basic settings of “ISO 11998” - equipment (reciprocating scrub testing machine)
  - scrub rate:  $37 \pm 2$  scrub cycles/min (back and forth)
  - stroke length:  $300 \pm 10$  mm
  - mass of scrub pad holder (downward force on the sample):  $135 \pm 1$  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)

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### Definition of wipe conditions

Classification of wipe conditions based on experience

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

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

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

List of extreme conditions based on questionnaire

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

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### 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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### 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

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## Activities for lab tests: Timeline

