

Framework for testing performance for industrial and institutional laundry detergents

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0. Background

This test protocol serves as a proof to show compliance with the criterion "Fitness for use" of the Commission Decision 2017/1219 establishing EU Ecolabel criteria for "Industrial and Institutional Laundry Detergents".

The test is for products that fall under the scope of the product group "Industrial and Institutional Laundry Detergents". This means laundry detergents designed to be used by specialised personnel in industrial and institutional facilities and multi-component systems constituted of more than one component used to build up a complete detergent or a laundering program for an automatic dosing system.

The performance test can be conducted through a laboratory test or a user test. In addition to the performance test, it is the responsibility of the applicant to ensure that the detergent is safe to use on the intended use. The conditions for both types of test are described in the following sections.

1. Laboratory test

The laboratory test may be conducted by an external or internal laboratory, as long as it fulfils the requirements set out in Section 1.1. The test must be conducted with the recommended dosage for normal soiling, at the lowest recommended washing temperature, and with the highest water hardness at which the product may be used, per manufacturer specifications.

1.1 Laboratory requirements

The manufacturer's test laboratory or an external laboratory can be approved to conduct testing to document effectiveness of industrial and institutional laundry detergents if the following requirements are met:

- it must be possible for competent bodies to monitor the performance of testing (e.g. on-site visits to the laboratory),
- the testing should be performed preferentially by laboratories that meet the general requirements of EN ISO 17025 or equivalent,
- the EU Ecolabel Competent Body must have access to all data on the product (e.g. technical data sheets),
- whenever possible the samples must be made anonymous for the test laboratory (e.g. product A and product B).

- performance of the effectiveness test as well as the test method must be described in the quality control system.

Competent bodies shall preferentially recognise attestations which are issued by bodies accredited in accordance with the relevant harmonised standard for testing and calibration laboratories and verifications by bodies that are accredited in accordance with the relevant harmonised standard for bodies certifying products, processes and services. Accreditation shall be carried out in accordance with Regulation (EC) No 765/2008 of the European Parliament and of the Council.

1.2 Testing conditions

- The measurements must be performed on unlaundered and laundered test clothes. Evaluation of the test results shall be made by the laboratory and shall be clearly explained in the report.
- Test should be carried out under realistic conditions regarding soiling¹ and temperature (laboratory tests can also be accepted as long as it could be proven that the machine/model has predictive values toward reality). Possible examples of soiling can be PCMS-55 with 13 soils or Mon-AISE A²+B³ with 14 swatches. If appropriate, the normal soiling for testing laundry detergents (e.g. soil ballast fabric SBL 2004, i.e. 4 fabrics per 5 kg load) must be used. If a range of recommended dosages is given, the recommended dosage for normally soiled textiles and hard water should be used.
- The measurement of secondary effects such as bleaching effect, bleaching/damage factor, ash content, greying and fluidity increase can, for instance, be made with multi wash test clothes and analysed according to standard ISO 4312⁴ with at least 25 cycles.
- Examples of what may be used as wash test clothes are included in the following:
 - o WFK-PCMS-55 for industrial laundering processes, consisting of 13 different small dirt patches (WFK-Testgewebe GmbH, Germany)
 - o EMPA 102 consisting of 15 different fresh spots (Swiss EMPA-Test materials)
 - o wash cloths of DTI (Danish technology institute) for industrial washing processes or equivalent

1.3 Reference product

The reference product may be a product on the market or a generic formulation (for example the reference standard detergent IEC A* in IEC 60456) approved by the

1 Most used testing materials/soils in the institutional and industrial laundry detergents are: mineral oil (representing the industry), wine and cocoa (representing food/restaurants), sebum (representing body oils/hotels/hospitals), blood (representing hotels) and sometimes cosmetics (representing hotels)

2 Mon-AISE A includes wine, tea, coffee, fruit juice, chocolate, grass, mineral oil, make up

3 Mon-AISE B includes grass/mud, tomato, blood mustard, baby food and beef fat

⁴ ISO 4312:1989 Surface active agents - Evaluation of certain effects of laundering - Methods of analysis and test for unsoiled cotton control cloth

competent body. The test product and the reference product must be of the same product category (i.e. designed for the same use). The test product must show efficiency equal to or better than the reference product.

1.4 Documentation requirements

The applicant shall provide the following information to the competent body:

- type of stains that are representative for the kind of soil expected for the test product,
- information on the recommended dosage at the corresponding water hardness and the lowest recommended washing temperature at which the test product claims to be effective,
- results showing the test product's ability to remove soiling from textiles and the effectiveness of other products the detergent shall be used with (e.g. stain removers, softeners),
- information about the reference product against which the test product has been tested: recommended dosage for normal soil level, lowest temperature, highest water hardness temperature, date of purchase and date of testing,
- documentation confirming compliance with the laboratory requirements listed in Section 1.1.

2. User test

The user test must be conducted in at least 5 test centres selected and must comply with the following points:

2.1 Selection of the test centres

Responses must be obtained from at least 5 test centres representing a selection of customers.

2.2 Procedure, dosage and reference product

- The procedure and dosage must conform to the manufacturer's recommendations.
- The test period must continue for at least 4 weeks.
- The test product must be tested against a reference product. The reference product may be the product normally used by the user. Different reference products may be used at the different test centres.
- The test product must show efficiency equal to or better than the reference product.

2.3 Method

Every test centre must assess the effectiveness of the product or multi-component system, dosability, rinsing and solubility by answering questions related to the following aspects (or similar formulations):

- ability to launder lightly, moderately or heavily soiled articles,

- an assessment of primary laundering effects, such as dirt removal, stain removal capacity and bleaching effect,
- assessment of secondary laundering effects, such as greying of white washing, and colour-fastness and staining of coloured washing,
- assessment of the effect of the rinsing agent on drying, ironing or mangling of the washed articles, if used,
- assessment of the serviceability, such as dosing or solubility,
- how satisfied the test subject is with customer visiting arrangements.

2.4 Evaluation

Test centres must provide an assessment of the effectiveness of the test product, rated on a scale comprising at least three levels, for example, 'insufficiently effective', 'sufficiently effective' or 'very effective'. With regard to how satisfied the test centre is with visit reporting arrangements, the categories must be 'not satisfied', 'satisfied' and 'very satisfied'.

At least 5 test centres must submit responses. 100% of 5 test centres must rate the product as sufficiently effective or very effective on all points (see Section 2.3) and be satisfied or very satisfied with customer visiting arrangements.

2.5 Documentation requirements

The report shall include all raw data from the tests, the test procedure described in detail, as well as the following information:

- The way the test centres were selected, The description of the sampling method chosen and how it was performed,
- All raw data from the tests and the test procedure,
- All reply forms received from the test centres and the overall result on the washing performance of the user test specified in a table or a form. The responses must be rated in accordance with Section 2.4,
- Information on how satisfied the test centre is with customer visiting arrangements and the categories rated.

Annex 1: Example of reporting template

A template for reporting the description of the procedures and the results of the tests are available [here](#)

(<http://ec.europa.eu/environment/ecolabel/documents/performance%20test%20IILD.xlsx>). This template is not mandatory to show compliance with Criterion 6, "Fitness for use".