

# COMPARATIVE PERFORMANCE TESTS IN THE LIGHT OF ECOLABELLING REQUIREMENTS

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- EU Ecolabel
  - Launched in 1992
  - EU members, also accepted in Norway, Iceland, Liechtenstein
  
- Nordic Ecolabel
  - Established 1989
  - the official Ecolabel of the Nordic countries

➔ Consumers have a choice

# INTRODUCTION – WHY COMPARATIVE PERFORMANCE TESTS

- A lot of requirements/criteria to achieve the Ecolabel
  - Example for Cleaning Products:

EU Ecolabel	Nordic Ecolabel
Toxicity	Environmental Requirements
Biodegradability of surfactants	<b>Effectiveness</b>
Excluded or limited substances and mixtures	Packaging and user instructions
Fragrances	Quality and regulatory requirements
Volatile organic compounds	Marketing
Phosphorus	
Packaging Requirements	
<b>Fitness for use</b>	
User instructions	
Information appearing on the EU Ecolabel	
Professional training	

# COMPARATIVE PERFORMANCE TESTS- HARD SURFACE CLEANERS

- All Purpose Cleaners / Floor Cleaners
- Kitchen Cleaners
- Glass Cleaners
- Bathroom / Sanitary Cleaners
- Toilet Cleaners

# COMPARATIVE PERFORMANCE TESTS- ALL PUPOSE CLEANERS / FLOOR CLEANERS

- EU-Ecolabel Criteria says about performance tests:
  - “For all-purpose cleaners, only fat-removing effects must be documented.“
  - “The cleaning ability must be equivalent to or better than that of a market-leading or generic reference product, approved by a competent body. “
  - “Tested in their pure form”
  
- Nordic Ecolabel says about performance tests:
  - Tested on its fat removing effects
  - The comparative product :recently purchased; a product intended for the same area of use; belongs to the same product category
  - “lowest recommended dose for the product and the recommended dose for the comparative product “
  - Also against Water

## COMPARATIVE PERFORMANCE TESTS- ALL PUPOSE CLEANERS / FLOOR CLEANERS

- EU-Ecolabel Criteria performance tests:
  - carried out in accordance to the “Recommendation For The Quality Assessment Of All Purpose Cleaners (version 10-2004)” issued by the IKW
  
- Nordic Ecolabel Criteria performance tests:
  - No official IKW-Method for diluted usage of products
  - Based on internal Method in accordance to IKW recommendation

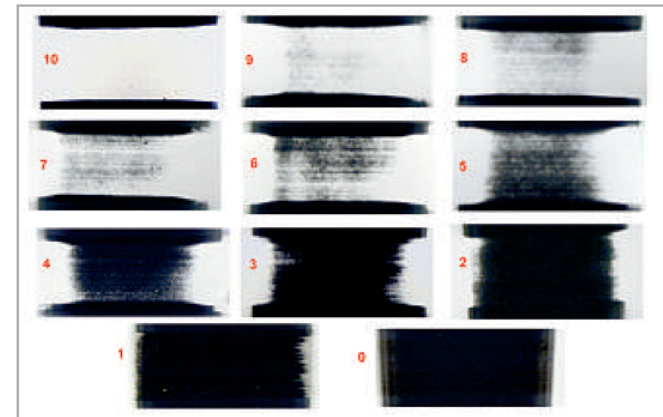
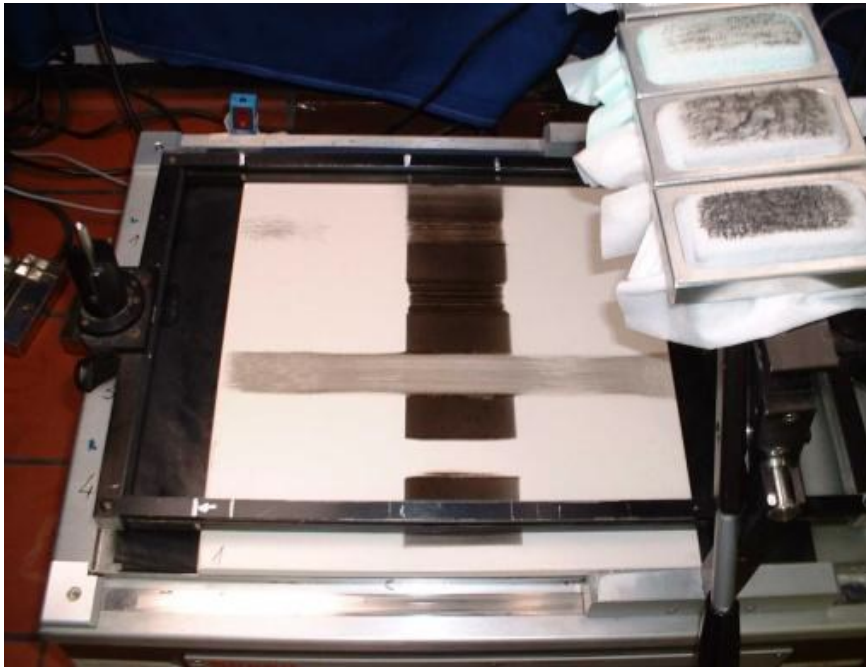
# COMPARATIVE PERFORMANCE TESTS- ALL PUPOSE CLEANERS / FLOOR CLEANERS

- EU-Ecolabel Criteria performance tests:
  - Soil: Peanut oil 75 %; Kaolin 23 %; Carbon black 2 %
    - Diluted with 80% of isopropanole and sprayed on white floor tiles
  - Soiled tiles are aged at 100°C for 24h in an oven
  - Stored for 24h at room temperature
  
- Nordic Ecolabel Criteria performance tests:
  - Soil: Aged sunflower oil, Humus, Carbon Black, Iron Oxide, Cement Silica and Clay
  - Soiled tiles are aged at room temperature for 24h



# COMPARATIVE PERFORMANCE TESTS- ALL PUPOSE CLEANERS / FLOOR CLEANERS

- Cleaning Process – Test Conditions:
  - Equipment: Sheen Wet Abrasion Scrub Tester REF 903 PG
  - Visual Evaluation



# COMPARATIVE PERFORMANCE TESTS- KITCHEN CLEANERS

- EU-Ecolabel Criteria says about performance tests:
  - “For all-purpose cleaners, only fat-removing effects must be documented.”
  - “The cleaning ability must be equivalent to or better than that of a market-leading or generic reference product, approved by a competent body. “
  - “Tested in their pure form”
  
- Nordic Ecolabel says about performance tests:
  - Tested on its fat removing effects
  - The comparative product :recently purchased; a product intended for the same area of use; belongs to the same product category
  - Ready to use products -> neat usage
  - Also against Water

## COMPARATIVE PERFORMANCE TESTS- KITCHEN CLEANERS

- EU-Ecolabel and Nordic Ecolabel Criteria performance tests:
- carried out in accordance to the “Recommendation For The Quality Assessment Of All Purpose Cleaners (version 10-2004)” issued by the IKW
- Same procedure as for APC EU-Ecolabel criteria

# COMPARATIVE PERFORMANCE TESTS- GLASS CLEANERS

- EU-Ecolabel Criteria says about performance tests:
  - “For window cleaners, stripe-less drying must be documented. “
  - “The cleaning ability must be equivalent to or better than that of a market-leading or generic reference product, approved by a competent body. “
  
- Nordic Ecolabel says about performance tests:
  - “fat and Particulate matter“
  - The comparative product :recently purchased; a product intended for the same area of use; belongs to the same product category
  - Against Water

# COMPARATIVE PERFORMANCE TESTS- GLASS CLEANERS

- EU-Ecolabel Criteria performance tests:
  - Streaks and drops formation
  - carried out in accordance to the “Recommendation For The Quality Assessment Of All Purpose Cleaners (version 10-2004)” issued by the IKW
  
- Nordic Ecolabel Criteria performance tests:
  - Cleaning performance
  - No official IKW-Method for determining the cleaning performance of glass cleaners
  - Based on internal Method

## COMPARATIVE PERFORMANCE TESTS- GLASS CLEANERS

- EU-Ecolabel Criteria performance tests:
  - Dried cloths are fastened on to the scrub tester
  - Impreganted with defined amount of cleaner
  - Sheen produces forward and backward movements
  - After five wipes per tile, drying of the tiles and visual evaluation

# COMPARATIVE PERFORMANCE TESTS- GLASS CLEANERS

- Streaks and Drops formation Test Conditions:
  - Equipment: Sheen Wet Abrasion Scrub Tester REF 903 PG
  - Visual Evaluation:
    - **Streaks formation (streaks intensity and density)**

- 0 = no streaks formation
- 1 = a few streaks formation
- 2 = average streaks formation
- 3 = strong streaks formation
- 4 = very strong streaks formation

- **Drops formation (number, size and intensity of drops)**

- 0 = no drops formation
- 1 = a few drops formation
- 2 = average drops formation
- 3 = strong drops formation
- 4 = very strong drops formation



## COMPARATIVE PERFORMANCE TESTS- GLASS CLEANERS

- Nordic Ecolabel Criteria performance tests:
  - Soil: Soil Nicotine Condensate, Vegetable Oil, Blue Colorant (for visualisation)
  - Cigarettes are smoked under defined conditions
  - Nicotine condensate extracted
  - Aged vegetable oil and nicotine condensate are mixed together
  - Sprayed onto the tile, aged under defined conditions
  - Cleaning starts on Sheen Scrub Tester
  - Visual Evaluation



# COMPARATIVE PERFORMANCE TESTS- GLASS CLEANERS

- Cleaning Process – Test Conditions:
  - Equipment: Sheen Wet Abrasion Scrub Tester REF 903 PG

# COMPARATIVE PERFORMANCE TESTS- SANITARY CLEANERS, BATHROOM CLEANERS, TOILET CLEANERS

- EU-Ecolabel Criteria says about performance tests:
  - “For bathroom cleaners, both limesoap and limescale removal shall be documented.”
  - “For acidic toilet cleaners, only limescale removal shall be documented.”
  - “The cleaning ability must be equivalent to or better than that of the generic reference detergent” -> IKW Reference Cleaner with pH 3.5 for bathroom cleaners; pH 2.2 for toilet cleaners
  
- Nordic Ecolabel says about performance tests:
  - Lime soap and limescale
  - The comparative product :recently purchased; a product intended for the same area of use; belongs to the same product category
  - Also against Water

# COMPARATIVE PERFORMANCE TESTS- SANITARY CLEANERS, BATHROOM CLEANERS, TOILET CLEANERS

- EU-Ecolabel and Nordic Ecolabel Criteria about performance tests:
- Carried out in accordance to the “Recommendation For The Quality Assessment of Bathroom Cleaners (version 2002)” issued by the IKW
- Carried out in accordance to the “Recommendation For The Quality Assessment of Acidic Toilet Cleaners (version 1999)” issued by the IKW

# COMPARATIVE PERFORMANCE TESTS- SANITARY CLEANERS, BATHROOM CLEANERS, TOILET CLEANERS

- EU-Ecolabel and Nordic Ecolabel Criteria performance tests: -> Lime Scale Removal Test

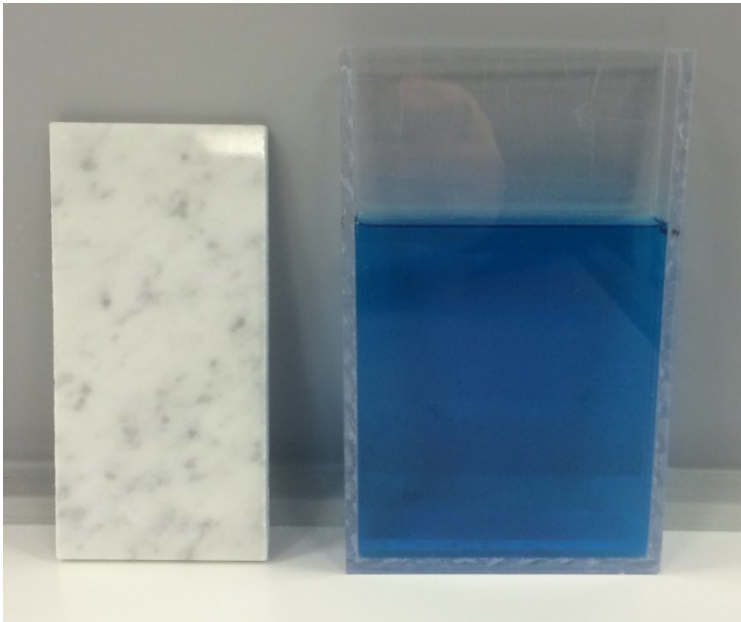
Marble Tiles are rinsed off under running water, dried and weighted

A safety glass box is prepared, filled with defined amount of cleaner

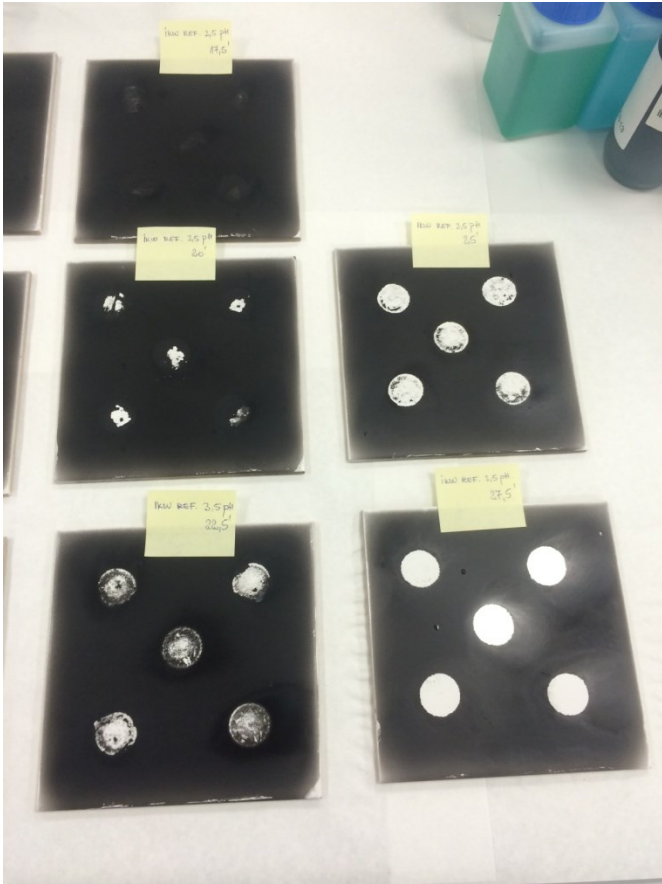
The whole marble tile is immersed into the cleaner:

- Bathroom cleaner for 10 minutes (horizontal conditions)
- Toilet cleaners for 10 seconds. After soaking time, the tile is placed in a vertical stand for 10 minutes (vertical conditions)

- Tiles are brushed, dried and weighted again
- Lime scale removal: determining by difference in the weight



## COMPARATIVE PERFORMANCE TESTS- SANITARY CLEANERS, BATHROOM CLEANERS, TOILET CLEANERS



- EU-Ecolabel and Nordic Ecolabel Criteria performance tests:
- Soap Scum Removal
- Soil: a calcium stearate suspension of composition:
  - Ethanol, calcium stearate, water, pigment
- Compounds are mixed and applied on tiles via airbrush
- Dried at room temperature
- Dried in oven at 180°C
- Undiluted cleaner is dropped on tile
- Exposure time up to 30 minutes
- Stopped until cleaning performance  $\geq 90\%$
- Visual evaluation

# COMPARATIVE PERFORMANCE TESTS- HAND DISHWASHING DETERGENTS

- EU-Ecolabel Criteria says about performance tests:
  - “The cleaning ability and cleaning capacity must be tested”
  - The cleaning ability and cleaning capacity must be equivalent to or better than that of the generic reference detergent (...)“ ->IKW Reference Hand Dishwashing Liquid
  
- Nordic Ecolabel says about performance tests:
  - “The test must be capable of generating results that provide a measure of capacity, i.e. how long the dishwashing detergent lasts”
  - “The test must be capable of generating results that provide a measure of cleaning ability.”
  - Also against Water

## COMPARATIVE PERFORMANCE TESTS- HAND DISHWASHING DETERGENTS

- EU-Ecolabel Criteria performance tests:
  - Carried out in accordance to the “Recommendation For The Quality Assessment of Hand Dishwashing Detergents (version 2002)” issued by the IKW
- Nordic Ecolabel says about performance tests:
  - Carried out in accordance to the “Recommendation For The Quality Assessment of Hand Dishwashing Detergents (version 2002)” issued by the IKW
- Plus visual evaluation

## COMPARATIVE PERFORMANCE TESTS- HAND DISHWASHING DETERGENTS



- EU-Ecolabel and Nordic Ecolabel Criteria performance tests:
  - Plates are soiled with soil
    - Two types of soil: Starch based Soil and Fat based soil
  - Washing Solution prepared:
- Cleaning Procedure Starts:
  - Plates are immersed into solution
  - 20 circular movements on the front side of the plate
  - 10 circular movements on the back side of the plate
  - Until foam layer does not close anymore
- Visual Evaluation of plates (only for Nordic Ecolabel):
  - Rating scale 5= completely clean; 1= fatty coating more than 200mm<sup>2</sup>



# COMPARATIVE PERFORMANCE TESTS- AUTOMATIC DISHWASHING DETERGENTS

- EU-Ecolabel Criteria says about performance tests:
  - “The product shall have a satisfactory washing performance at the recommended dosage according to the standard test developed by IKW”
  - “the result shall be better than or identical to the reference detergent”
  - Reference detergent IEC 436, Type B
- Nordic Ecolabel says about performance tests:
  - Standard test for dishwasher detergents developed by IKW (German Industrial Association of the Manufacturers of Toiletries and Detergents). The product must meet the Pass/Fail level requirements, see Appendix 7.

# COMPARATIVE PERFORMANCE TESTS- AUTOMATIC DISHWASHING DETERGENTS

- EU-Ecolabel and Nordic Ecolabel Criteria performance tests:
- “Methods for Ascertaining the Cleaning Performance of Dishwasher Detergents (Part B, updated 2005)” issued by the IKW

# COMPARATIVE PERFORMANCE TESTS- AUTOMATIC DISHWASHING DETERGENTS

- EU-Ecolabel and Nordic Ecolabel Criteria performance tests: soil classes of the IKW Test Method (bleachable, amylase specific, protease specific)

Programm: 55°C Universal Plus at  $9 \pm 1$  °d

Soils:

Visual Grading:

- Dried starch soil (amylase specific): Oat Flakes
- Burned Protein Soil (protease specific): Minced Meat 120°C
- Burned Protein Soil(Protease-Specific) : Minced Meat 200°C
- Burned Protein Soil (Protease- and alkali-Specific): Milk
- Bleachable soil: Tea

Gravimetric:

- Dried Soil (Protease-Specific): Egg/Milk
- Dried Soil (Protease-Specific): Egg Yolk
- Dried Starch Soil (Amylase-Specific): Mix Starch



## COMPARATIVE PERFORMANCE TESTS- LAUNDRY DETERGENTS

- EU-Ecolabel Criteria says about performance tests:
- “The product shall comply with the performance requirements as specified for the relevant product type according to the EU Ecolabel laundry detergents performance test’s latest version“
- Nordic Ecolabel says about performance tests:
- Appendix 6 of Version 7.6; 15 December 2011 – 31 December 2017

# COMPARATIVE PERFORMANCE TESTS- LAUNDRY DETERGENTS

- Stain Removal Test
  - Measurement of stains before and after wash
- Degree of Whiteness (for heavy duty detergents)
  - Measurement of Y-Value before and after wash
- Colour Maintainance
  - Measurement before and after wash

THANK YOU VERY MUCH FOR  
YOUR ATTENTION!

WHEN YOU NEED TO BE SURE

