WORKING DOCUMENT ON

Possible requirements for non-household washing machines, non-household textile dryers and non-household dishwashers

Outline of Technical update of Mandate M/495 to be addressed to CEN/CENELEC
The current status of standardisation activities for:

Non-household washer-extractors and textile dryers:

a) Proposals for standards for "commercial" washing machines and dryers standard are nearly finished (CENELEC).

b) Proposals for standards for tunnel washers, "industrial" washing machines (above 40 kg) and "industrial" dryers are in preparation (ETCT).

Non-household dishwashers:

c) Proposals for standards for non-household single tank dishwashers are in preparation (CENELEC TC59x SWG2.1). The standard developed does not apply to water change dishwashers, nor to single tank dishwashers equipped with conveyor belts.

d) Status of proposals for standards for non-household multi tank dishwashers is unclear (CENELEC).

On the basis of this document and of the input of the Ecodesign Consultation Forum, the Commission will prepare a technical update to Mandate M/495 under the Ecodesign Directive, specifying the desired content and timeframe of the work harmonising standards applicable to test procedures of non-household laundry equipment and dishwashers.

1. **PARAMETERS TO BE CONSIDERED IN FUTURE TEST STANDARDS FOR NON-HOUSEHOLD WASHING MACHINES:**

**Related to ecodesign requirements:**

a) $EC_{WE<40}$ is the Energy Consumption of a non-household washer-extractor of max 40 kg in kWh/kg (final energy)

b) $EC_{WE>40}$ is the Energy Consumption of a non-household washer-extractor of 40 kg or more in kWh/kg (final energy)

c) $EC_{TW}$ is the Energy Consumption of a non-household tunnel washer as declared by manufacturer for standard rating conditions in kWh/kg (final energy)

d) rated capacity of the washing machine

e) $WC_{WM,w}$ is the specific washing water consumption of the washing cycle

f) $WC_{WM,R}$ is the specific rinsing water consumption of the rinsing cycle

g) $WC_{WM}$ is the specific water consumption of the complete cycle

h) $WP$ is the measured Washing Performance, which is the average of the reflectance values of the test strip after completion of the test cycle.

**Related to standard rating conditions:**

i) Minimum washing temperature

j) Cycle duration

k) Capacity

l) Load type

**Related to test conditions:**

m) Ambient temperature;

n) Water inlet temperature;

o) Drum temperature at start of test;

p) Rated capacity
q) Program  
r) Productivity (kg/hr);  
s) program duration (min);  
t) Water hardness;  
u) Type and dosage of detergent;  
v) number of test runs

2. **PARAMETERS TO BE DESCRIBED IN FUTURE TEST STANDARDS FOR NON-HOUSEHOLD TEXTILE DRYERS:**

Related to ecodesign requirements:

- a) $EC$ is the specific energy consumption for standard rating conditions (in kWh/kg, final energy)
- b) rated capacity of the drier, expressed in kg/cycle
- c) drying programme duration
- d) productivity

Related to standard rating conditions:

- e) initial moisture content
- f) maximum temperature of process air*
- g) final moisture content (related to bone dry)
- h) Load Type
- i) textile surface temperature) controlled

Related to test conditions:

- j) Ambient temperature;
- k) Air humidity;
- l) Filling mode;
- m) Machine temperature at start of test;
- n) Selection of program;
- o) Rated capacity;
- p) Productivity (kg/hr);
- q) Program duration / cycle time;
- r) Load (material, types, etc.).
- s) number of test runs required

3. **PARAMETERS TO BE DESCRIBED IN FUTURE TEST STANDARDS FOR NON-HOUSEHOLD DISHWASHERS:**

Related to ecodesign requirements:

- a) $EC_{W,C,WW}$ is the energy consumption for standard rating conditions in kWh/100 dishes (final energy)
b) $EC_{STWW}$ is the Energy Consumption for standard rating conditions in kWh/100 dishes (final energy)

c) $EC_{MTWW}$ is the Energy Consumption for standard rating conditions in kWh/100 dishes (final energy)

d) $c$ is the rated capacity of the dishwasher

e) $W_{WW}$ = the water consumption of the dishwasher equal to washing 100 dishes

f) $CP_{WW}$ = Cleaning Performance of a non-household dishwasher for standard rating conditions, in %

Related to standard rating conditions:

g) Cleaning temperature

h) Cleaning cycle duration

i) Last fresh water rinse temperature

Related to test conditions:

j) Ambient temperature;

k) Air humidity;

l) Water inlet temperature and hardness;

m) Filling mode;

n) Machine temperature at start of test;

o) Selection of program;

p) Rated capacity;

q) Productivity (kg/hr);

r) Program duration / cycle time;

s) Type and dosage of detergent;

t) Load (material, types, etc.).

u) Productivity: for water change, and single tank and multi tank dishwashers, with or without conveyor belts

v) Number of test runs required for establishing values