



# THE WASH LAB

The laboratories for high quality testing of equipment, processes and material for washing, drying and dishwashing - both individual and standard testing



## Washing, Drying and Dishwashing

The Wash Lab conducts tests and studies of washing machines, tumble dryers, dishwashers and similar equipment. We have more than 20 years of experience in testing of machines and materials.

## Quality Control

The Lab's tests are subject to Danish Technological Institutes Quality Control and essential test areas are accredited by DANAK. We also participate in international ring-tests with other laboratory's to ensure repeatable and reproducible test results.

## Clients and Services

Our clients include manufacturers, dealers, organisations, consumers, institutions, and State and Government authorities. Tests are conducted in accordance with international methods, such as IEC or EN standards, and the European Commission's Directives for Energy Labeling. For special needs, for example in

product development where the standard is not current with the newest technology, we work closely with our client to set up new testing methods.

## Individual Solutions

The Lab performs routine jobs as well as jobs that require individual adaptation and special test equipment. Our experience also give us the necessary background for assessing the ease of handling



servicing of products along with their owner manuals.

We also carry out activities on re-

search and development projects and contribute to the expediency of standards for both consumers and manufacturers.

Our participation in standardization and method development guarantees that our tests are conducted using the latest guidelines and up-to-date information.

## Confidentiality and Openness

Test results are the property of the client. Testing and test results are handled confidentially. Clients are welcome to be present during testing. Our ambition is to be a competent, efficient and inspirational service partner.

## Testing

The parameters of each test are continually registered in our data processing system. Vital test equipment is regularly calibrated and checked. It is also possible to perform ad hoc control of all testing systems with independent reference equipment.

# TECHNICAL SPECIFICATIONS



## The Lab's Testing Options

The Lab is equipped with a climate control system that allows regulation of temperature and humidity to fit the conditions of each individual test. We have 14 fully-equipped testing stations. Our voltage regulator ensures requirements are met, for example 230 volts, 50 Hz. Water may be prepared using district water with approx. 20 dH hardness, mixed with demineralized (reverse osmosis) water to the desired level of hardness. Water can also be prepared using demineralized water with the addition of salts to the desired level of hardness, for example following the IEC 60734 standard.

Apart from electrical energy, we are also equipped to test machines with other energy sources: Gas in several forms, for example natural-gas, heated water delivered at a given temperature for washing machines and dishwashers, or simulated district heating delivered to machines with heat exchangers.

## Washing Machines

The Lab tests washing machines according to, for example IEC/EN 60456 for washing performance temperature, spinning performance, spin speed, rinsing efficiency, as well as use of time, energy and water. A standard reference washing machine is used as the basis for determining wash and rinse performance. Removal of soil is measured with an advanced spectrophotometer. A standard wash load and detergent supplied by, among others, WFK in Germany, and standard soiled test trips supplied by e.g. EMPA in Switzerland are used for testing.

## Tumble Dryers

When drying performance, use of energy and time is being determined, tumble dryers may be tested according to IEC/EN 61121.

## Dishwashers

Dishwashers may be tested according to the European Standard EN 50242 for washing performance, drying performance as well as use of energy, water and time. Here, a standard reference machine is also used. Electronically controlled ovens are used for drying the soiled tableware according to the EN standard.

## Standardization Work

The Wash Lab is represented in the following International and European and Danish Standardization Committees and Working Groups:  
IEC TC 59 SC 59 A Electric Dishwashers • IEC TC 59 SC 59 A WG 2 Dishwasher Tests • IEC TC 59 SC 59 D Home Laundry Appliances • IEC TC 59 SC 59 D / MT 14 Maintenance Team for IEC 61121 Tumble Dryers • IEC TC 59 SC 59 D / MT 15 Maintenance Team for IEC 60456 Washing Machines • IEC C 59 SC 59 D / WG 18 Uncertainty Assessment • IEC TC 59 SC 59 D / AWG 17 Global application of IEC 60456  
CLC/TC59X Consumer Information Related to Household Electrical Appliances • CLC/TC59 WG 1 Wash/Tumble Drying • CLC/TC59 WG 2 Dishwashing • S-559 Electric Household Appliance Performance, as well as sub-committees that cover the above-mentioned • S 222, especially AG 8, which is a subgroup for ISO TC 30 Measurement of Fluid Flow in Closed Conduits • CEN TC 92 Water Meters and OIML recommendations (legal metrology) particularly on Oil, Water, Gas, and District Heating Testing.

## Contact

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