

EEDAL'06

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Updating the European performance standard
for washing machines

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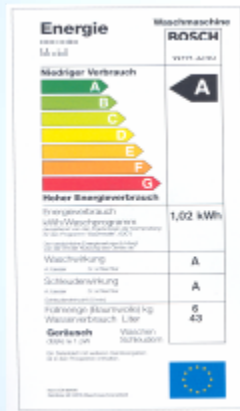
Performance Standard – Energy Label



- IEC60456



- EN60456
„Clothes washing machines for household use.
Methods for measuring the performance”.



- Council Directive 92/75/EEC
- Commission's Directive 95/12/EC

EN60456 – 2nd edition

- IEC / Cenelec
Round Robin Test 2004/2005
„CLS-Ringtest“
- 25 European labs participated
- Final report was published in 2006
- New Reference Machine Wascator CLS approved
- Amendment for EN60456
- Repeatability / Reproducibility

CENELEC TC 59X WG1

- WG1 Washing machines and tumble dryers
- New sub-groups were set up last year

SWG 1.6 Future standard

SWG 1.7 Spinning efficiency accuracy

SWG 1.8 Rinsing performance

IEC 60456 5th edition -> impact on EN60456

- Stain strip: + Sebum, add. aged Red Wine
- Reference machine: CLS
- Detergent / Dosage / Water Hardness
- Load size & Loading
- Rinsing Performance: improved method

EU Workshop June 30th 2005

- “We are in time for a new EN and a new label.”
- Cotton 60°C and Cotton 40°C are mostly used programmes
- Lower load sizes than maximum capacity
- Rinsing performance: Soluble and Insoluble
- ...

Energy: Cotton 60°C – Cotton 40°C

- Cotton 60°C – Cotton 40°C

Energy Consumption [kWh]
for machine A and B (RRT 2004)

Machine / Cycle	Mean	Min	Max	s_r	s_R
A 60	0,952	0,888	1,008	0,029	0,042
A 40	0,654	0,612	0,722	0,021	0,036
B 60	0,998	0,927	1,079	0,030	0,051
B 40	0,638	0,584	0,671	0,014	0,034

Rinsing: Improved test procedure

- Rinsing performance – improved test procedure
- RRT 2004:
Repeatability seems to be much better than reproducibility
- CENELEC RRT 2005/2006
Robustness of alkalinity measurement:
Titration results show good reproducibility and repeatability
Load factor needs more investigation

Summary

- IEC 60456 5th edition -> EN60456
- Timeline for IEC60456
- EN60456 Common Modifications
- European Energy Label