

National Efficiency Standards and Specifications for Residential and Commercial Water-Using Fixtures and Appliances

Fixtures and Appliances	EPA Act 1992, EPA Act 2005 (or backlog NAECA updates)		WaterSense® or ENERGY STAR®		Consortium for Energy Efficiency	
	Current Standard	Proposed/Future Standard	Current Specification	Proposed/Future Specification	Current Specification	Proposed/Future Specification
Residential Toilets	1.6 gpf ¹		WaterSense 1.28 gpf with at least 350 gram waste removal ²		No specification	
Residential Bathroom Faucets	2.2 gpm at 60 psi ³		WaterSense 1.5 gpm at 60 psi (no less than 0.8 gpm at 20 psi) ⁴		No specification	
Residential Showerheads	2.5 gpm at 80 psi		No specification		No specification	
Residential Clothes Washers	MEF ≥ 1.26 ft ³ /kWh/cycle *No specified water use factor (Energy Independence & Security Act of 2007: As of January 1, 2011: MEF ≥ 1.26 ft ³ /kWh/cycle WF ≤ 9.5 gal/cycle/ft ³)	Proposed to DOE Asst. Sec. jointly by AHAM and efficiency advocates to be effective in 2011 MEF ≥ 1.26 ft ³ /kWh/cycle WF ≤ 9.5 gal/cycle/ft ³	ENERGY STAR (DOE) MEF ≥ 1.72 ft ³ /kWh/cycle; WF ≤ 8.0 gal/cycle/ft ³	Proposed to DOE Asst. Sec. jointly by AHAM and efficiency advocates to be effective July 1, 2009 MEF ≥ 1.8 ft ³ /kWh/cycle WF ≤ 7.5 gal/cycle/ft ³	Tier 1: MEF ≥ 1.80 ft ³ /kWh/cycle; WF ≤ 7.5 gal/cycle/ft ³ Tier 2: MEF ≥ 2.00 ft ³ /kWh/cycle; WF ≤ 6.0 gal/cycle/ft ³ Tier 3: MEF ≥ 2.20 ft ³ /kWh/cycle; WF ≤ 4.5 gal/cycle/ft ³	

¹ EPA Act 1992 standard for toilets applies to both commercial and residential models.

² See WaterSense HET specification at http://www.epa.gov/watersense/docs/spec_het508.pdf.

³ EPA Act 1992 standard for faucets applies to both commercial and residential models.

⁴ See WaterSense specification for lavatory faucets at http://www.epa.gov/watersense/docs/faucet_spec508.pdf.

National Efficiency Standards and Specifications for Residential and Commercial Water-Using Fixtures and Appliances

Fixtures and Appliances	EPA Act 1992, EPA Act 2005 (or backlog NAECA updates)		WaterSense® or ENERGY STAR®		Consortium for Energy Efficiency	
	Current Standard	Proposed/Future Standard	Current Specification	Proposed/Future Specification	Current Specification	Proposed/Future Specification
Residential Dishwashers ⁵	<p><i>Standard models:</i> EF ≥ 0.46 cycles/kWh</p> <p><i>Compact models:</i> EF ≥ 0.62 cycles/kWh</p> <p>*No specified water use factor</p> <p>(Energy Independence & Security Act of 2007: As of January 1, 2010</p> <p><i>Standard models:</i> 355 kWh/year WF ≤ 6.5 gallons/cycle</p> <p><i>Compact models:</i> 260 kWh/year WF ≤ 4.5 gallons/cycle)</p>	<p>New standards under development: DOE scheduled final action: March 2009; Stakeholder meeting held 4/27/2006</p> <p>Proposed to DOE Asst. Sec. jointly by AHAM and efficiency advocates to be effective in 2010</p> <p><i>Standard models:</i> 355 kWh/year (.62 EF + 1 watt standby) WF ≤ 6.5 gallons/cycle</p> <p><i>Compact models:</i> 260 kWh/year WF ≤ 4.5 gallons/cycle</p>	<p>ENERGY STAR (DOE)</p> <p><i>Standard models:</i> EF ≥ 0.65 cycles/kWh</p> <p><i>Compact models:</i> EF ≥ 0.88 cycles/kWh</p> <p>*No specified water use factor</p>	<p>Proposed to DOE Asst. Sec. jointly by AHAM and efficiency advocates to be effective in 2009</p> <p><i>Standard models:</i> 324 kWh/year (0.68 EF + 1 watt standby) WF ≤ 5.8 gallons/cycle</p> <p><i>Compact models:</i> 234 kWh/year WF ≤ 4.0 gallons/cycle</p>	<p><i>Standard models:</i></p> <p>Tier 1: EF ≥ 0.65 cycles/kWh; maximum 339 kWh/year</p> <p>Tier 2: EF ≥ 0.68 cycles/kWh; maximum 325 kWh/year</p> <p><i>Compact models:</i></p> <p>Tier 1: EF ≥ 0.88 cycles/kWh; maximum 252 kWh/year</p> <p>*No specified water use factor</p>	<p>In December 2006, CEE announced they will consider adding a water factor in future dishwasher specifications</p>

⁵ *Standard models:* capacity is greater than or equal to eight place settings and six serving pieces; *Compact models:* capacity is less than eight place settings and six serving pieces

National Efficiency Standards and Specifications for Residential and Commercial Water-Using Fixtures and Appliances

Fixtures and Appliances	EPAAct 1992, EPAAct 2005 (or backlog NAECA updates)		WaterSense® or ENERGY STAR®		Consortium for Energy Efficiency	
	Current Standard	Proposed/Future Standard	Current Specification	Proposed/Future Specification	Current Specification	Proposed/Future Specification
Commercial Toilets	1.6 gpf ⁶		No Specification ⁷		No specification	
Urinals	1.0 gpf		No specification		No specification	
Commercial Faucets	2.2 gpm at 60 psi NOTE: Superseded by national plumbing codes (UPC and IPC) for public lavatories: 0.5 gpm maximum. ⁸ 0.25 gallons per cycle for metering faucets		WaterSense specification applicable to private lavatories (e.g. hotel room bathrooms) ⁹ 1.5 gpm at 60 psi (no less than 0.8 gpm at 20 psi)		No specification	

⁶ EPAAct 1992 standard for toilets applies to both commercial and residential models.

⁷ No specification for flushometer valve toilets. WaterSense Specification (http://www.epa.gov/watersense/docs/spec_het508.pdf) applicable to tank type toilets found in some commercial applications.

⁸ In addition to EPAAct requirements, the American Society of Mechanical Engineers standard for public lavatory faucets is 0.5 gpm at 60 psi (ASME A112.18.1-2005). Public lavatory faucets are those intended for the unrestricted use of more than one individual (including employees) in assembly occupancies, business occupancies, public buildings, transportation facilities, schools and other educational facilities, office buildings, restaurants, bars, other food service facilities, mercantile facilities, manufacturing facilities, military facilities, and other facilities that are not intended for private use.

⁹ Specification for bathroom sink faucets and faucet accessories (e.g., aerators, flow regulators, laminar devices), applicable to some commercial situations (e.g., hotel room bathrooms). Not applicable to public lavatory faucets (see footnote 8).

National Efficiency Standards and Specifications for Residential and Commercial Water-Using Fixtures and Appliances

Fixtures and Appliances	EPA Act 1992, EPA Act 2005 (or backlog NAECA updates)		WaterSense® or ENERGY STAR®		Consortium for Energy Efficiency	
	Current Standard	Proposed/Future Standard	Current Specification	Proposed/Future Specification	Current Specification	Proposed/Future Specification
Commercial Clothes Washers (Family-sized)	MEF \geq 1.26 ft ³ /kWh/cycle; WF \leq 9.5 gal/cycle/ft ³	New standards under development: DOE scheduled final action: January 2010; Stakeholder meeting held 4/27/2006	ENERGY STAR (DOE) MEF \geq 1.72 ft ³ /kWh/cycle; WF \leq 8.0 gal/cycle/ft ³	Proposed to DOE Asst. Sec. jointly by AHAM and efficiency advocates to be effective July 1, 2009 MEF \geq 1.8 ft ³ /kWh/cycle WF \leq 7.5 gal/cycle/ft ³	Tier 1: MEF \geq 1.80 ft ³ /kWh/cycle; WF \leq 7.5 gal/cycle/ft ³ Tier 2: \geq 2.00 ft ³ /kWh/cycle; WF \leq 6.0 gal/cycle/ft ³ Tier 3: MEF \geq 2.20 ft ³ /kWh/cycle; WF \leq 4.5 gal/cycle/ft ³	

DOE: Department of Energy
 EPA: Environmental Protection Agency
 EPA Act 1992: Energy Policy Act of 1992
 EPA Act 2005: Energy Policy Act of 2005

EF: energy factor
 ft³: cubic feet
 gal: gallons
 gpm: gallons per minute

gpf: gallons per flush
 kWh: kilowatt hour
 MEF: modified energy factor
 MaP: maximum performance

NAECA: National Appliance Energy Conservation Act
 psi: pounds per square inch
 WF: water factor
 Updated Jan. 7, 2008
 Page 4

National Efficiency Standards and Specifications for Residential and Commercial Water-Using Fixtures and Appliances

Fixtures and Appliances	EPA Act 1992, EPA Act 2005 (or backlog NAECA updates)		WaterSense® or ENERGY STAR®		Consortium for Energy Efficiency	
	Current Standard	Proposed/Future Standard	Current Specification	Proposed/Future Specification	Current Specification	Proposed/Future Specification
Commercial Dishwashers	No standard		ENERGY STAR (EPA) Water Consumption; Idle Energy: <i>Under counter:</i> Hi Temp: ≤ 1.0 gal/rack; ≤ 0.9 kW Lo Temp: ≤ 1.70 gal/rack; ≤ 0.5 kW <i>Stationary Single Tank Door:</i> Hi Temp: ≤ 0.95 gal/rack; ≤ 1.0 kW Lo Temp: ≤ 1.18 gal/rack; ≤ 0.6 kW <i>Single Tank Conveyor:</i> Hi Temp: ≤ 0.70 gal/rack; ≤ 2.0 kW Lo Temp: ≤ 0.79 gal/rack; ≤ 1.6 kW <i>Multiple Tank Conveyor:</i> Hi Temp: ≤ 0.54 gal/rack; ≤ 2.6 kW Lo Temp: ≤ 0.54 gal/rack; ≤ 2.0 kW		No specification	

DOE: Department of Energy
 EPA: Environmental Protection Agency
 EPA Act 1992: Energy Policy Act of 1992
 EPA Act 2005: Energy Policy Act of 2005

EF: energy factor
 ft³: cubic feet
 gal: gallons
 gpm: gallons per minute

gpf: gallons per flush
 kWh: kilowatt hour
 MEF: modified energy factor
 MaP: maximum performance

NAECA: National Appliance Energy Conservation Act
 psi: pounds per square inch
 WF: water factor

National Efficiency Standards and Specifications for Residential and Commercial Water-Using Fixtures and Appliances

Fixtures and Appliances	EPAAct 1992, EPAAct 2005 (or backlog NAECA updates)		WaterSense® or ENERGY STAR®		Consortium for Energy Efficiency	
	Current Standard	Proposed/Future Standard	Current Specification	Proposed/Future Specification	Current Specification	Proposed/Future Specification
Automatic Commercial Ice Makers ¹⁰	No standard	Effective 1/1/2010 : Energy and condenser water efficiency standards vary by equipment type on a sliding scale depending on harvest rate and type of cooling (see link to additional information at end of this table)	No specification	ENERGY STAR (EPA) Effective 1/1/08 : Energy and water efficiency standards vary by equipment type on a sliding scale depending on harvest rate. Water cooled machines excluded from Energy Star (see link to additional information at end of this table)	Energy and water (potable and condenser) standards are tiered and vary by equipment type on a sliding scale depending on harvest rate and type of cooling (see link to additional information at end of this table)	
Pre-rinse Spray Valves	Flow rate ≤ 1.6 gpm (no pressure specified; no performance requirement)		No specification	Proposed ENERGY STAR specification abandoned after standard established in EPAAct 2005	No specification (program guidance recommends 1.6 gpm at 60 psi and a cleanability requirement)	

¹⁰ Optional standards for other types of automatic ice makers are also authorized under EPAAct 2005.

National Efficiency Standards and Specifications for Residential and Commercial Water-Using Fixtures and Appliances

Fixtures and Appliances	EPA Act 1992, EPA Act 2005 (or backlog NAECA updates)		WaterSense® or ENERGY STAR®		Consortium for Energy Efficiency	
	Current Standard	Proposed/Future Standard	Current Specification	Proposed/Future Specification	Current Specification	Proposed/Future Specification
Commercial Steam Cookers ¹¹	No standard		ENERGY STAR (EPA) <i>Electric:</i> 50% cooking energy efficiency; idle rate 400–800 Watts <i>Gas:</i> 38% cooking energy efficiency; idle rate 6,250–12,500 British thermal units/hour *No specified water use factor		<i>Electric:</i> 50% cooking energy efficiency; idle rate 400–800 Watts <i>Gas:</i> 38% cooking energy efficiency; idle rate 6,250–12,500 British thermal units/hour Water Use Factor (for both electric and gas models): Tier 1A: ≤ 15 gal/hr Tier 1B: ≤ 4 gal/hr	

¹¹ Idle rate standards vary for 3-, 4-, 5-, and 6-pan commercial steam cooker models.

National Efficiency Standards and Specifications for Residential and Commercial Water-Using Fixtures and Appliances

Information/materials on EPC Act 2005/NAECA standards:

Toilets and Faucets

http://www.eere.energy.gov/buildings/appliance_standards/residential/pdfs/plmrul.pdf (Page 13317)

Schedule for development of appliance and commercial equipment efficiency standards:

http://www.eere.energy.gov/buildings/appliance_standards/2006_schedule_setting.html

Commercial Clothes Washers and Dishwashers (agenda/presentations at 4/27/06 DOE public meeting on rulemaking):

http://www.eere.energy.gov/buildings/appliance_standards/residential/home_appl_mtg.html

Automatic Commercial Ice Maker Standards:

http://www.eere.energy.gov/buildings/appliance_standards/pdfs/epact2005_appliance_stds.pdf (Page 18)

Pre-rinse Spray Valves

http://www.eere.energy.gov/buildings/appliance_standards/pdfs/epact2005_appliance_stds.pdf (Page 10)

Information/materials on WaterSense specifications:

Toilets

<http://www.epa.gov/watersense/specs/het.htm>

Faucets

http://www.epa.gov/watersense/specs/faucet_background.htm

Information/materials on ENERGY STAR specifications:

Clothes Washers

http://www.energystar.gov/index.cfm?c=clotheswash.pr_crit_clothes_washers

Residential Dishwashers

http://www.energystar.gov/index.cfm?c=dishwash.pr_dishwashers

Commercial Dishwashers

http://www.energystar.gov/index.cfm?c=new_specs.comm_dishwashers

Automatic Commercial Ice Makers

http://www.energystar.gov/index.cfm?c=new_specs.ice_machines

Pre-rinse Spray Valves

http://www.energystar.gov/index.cfm?c=new_specs.spray_valves

Commercial Steam Cookers

http://www.energystar.gov/index.cfm?c=steamcookers.pr_steamcookers

DOE: Department of Energy
EPA: Environmental Protection Agency
EPC Act 1992: Energy Policy Act of 1992
EPC Act 2005: Energy Policy Act of 2005

EF: energy factor
ft³: cubic feet
gal: gallons
gpm: gallons per minute

gpf: gallons per flush
kWh: kilowatt hour
MEF: modified energy factor
MaP: maximum performance

NAECA: National Appliance Energy Conservation Act
psi: pounds per square inch
WF: water factor
Updated Jan. 7, 2008
Page 8

National Efficiency Standards and Specifications for Residential and Commercial Water-Using Fixtures and Appliances

Information/materials on CEE specifications:

Residential Clothes Washers

<http://www.cee1.org/resid/seha/rwsh/rwsh-main.php3>

Residential Dishwashers

<http://www.cee1.org/resid/seha/dishw/dishw-main.php3>

Commercial, Family-Sized Clothes Washers

<http://www.cee1.org/com/cwsh/cwsh-main.php3>

Commercial Ice-Makers

<http://www.cee1.org/com/com-ref/ice-main.php3>; Spec Table: <http://www.cee1.org/com/com-kit/ice-specs.pdf>

Pre-rinse Spray Valves

<http://www.cee1.org/com/com-kit/prv-guides.pdf>

Commercial Steam Cookers

<http://www.cee1.org/com/com-kit/sc-hc-specs.pdf>

DOE: Department of Energy
EPA: Environmental Protection Agency
EPAAct 1992: Energy Policy Act of 1992
EPAAct 2005: Energy Policy Act of 2005

EF: energy factor
ft³: cubic feet
gal: gallons
gpm: gallons per minute

gpf: gallons per flush
kWh: kilowatt hour
MEF: modified energy factor
MaP: maximum performance

NAECA: National Appliance Energy Conservation Act
psi: pounds per square inch
WF: water factor

Updated Jan. 7, 2008
Page 9