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So Many Water Efficiency Codes Standards & Programs
How to Choose

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Minimum Requirement Basis	Residential and/or Commercial	Format	Includes	Uses
IAPMO Green Plumbing & Mechanical Code Supplement (GPMCS)	Residential & commercial	Code	Water	Easy to adopt as overlay to any existing plumbing codes (resolve conflicting)
IAPMO WE-Stand	Residential & commercial	ANSI Standard	Water & Sanitation	Easy to adopt, (resolve conflicts)
ICC Green Construction Code (IgCC)	High-rise residential and commercial	Code	Water, energy & environment	Designed as overlay to ICC codes. Based on ASHRAE 189.1
ASHRAE 189.1	High-rise residential and commercial	ANSI Standard	Water, energy & environment	Easy to adopt (resolve conflicts)
ASHRAE 191.1	Commercial non-domestic use	ANSI Standard In-progress	Water	Work in-progress
WaterSense New Home	Residential	Specification for certification	Water	Similar to a standard. Uses certified professionals to inspect and certify. New version is in-progress

Points with Varying Compliance Basis	Residential and/or Commercial	Format	Includes	Uses
USGBC LEED-NC	Commercial and multi-family	Program w/ Prereqs.	Water, energy & environment	Everything in place for voluntary compliance
USGBC LEED-Homes	Single Family Residential	Program w/ Prereqs.	Water, energy & environment	Everything in place for voluntary compliance
Green Globes – Green Bldg Initiative 01-200XP	Commercial and multi-family	Program	Water, energy & environment	Everything in place for voluntary compliance
ICC 700 - NAHB Green Bldg Standard for Homes	Residential and some mixed-use buildings	Program w/ Prereqs.	Water, energy & environment	Everything in place for voluntary compliance

Water Use Rating Systems	Residential and/or Commercial	Format	Includes	Uses
Green Builder Coalition WRI Proprietary	SF and MF Homes	Comparison to minimum building code	Percentage of predicted water use to 2006 codes	Allows for relaxation of code requirements. Jurisdiction can choose % reduction
ResNet HERS H2O ANSI Standard In-progress	Single Family Residential ANSI Standard in progress	Comparison to 2006 minimum building code	Percentage of predicted water use to 2006 codes	Allows for relaxation of code requirements. . Jurisdiction can choose % reduction. No water re-use inputs yet.

Green Initiative	General Future Direction
IAPMO Green Plumbing & Mechanical Code Supplement (GPMCS)	No plans for new edition
IAPMO WE-Stand	Investigating Performance Path
ICC Green Construction Code (IgCC)	Better align with ASHRAE 189.1 & LEED
ASHRAE 189.1	Jurisdictional options, investigate water budgets for landscape – core/noncore
ASHRAE 191.1	Final phases of approval
WaterSense New Home	Investigating performance path
USGBC LEED-Homes	Investigating water budgets
Green Globes – GBI	Eliminated prerequisites, but . . .
ICC 700 - NAHB Green Bldg Standard	Rearrange points to add HW and altwater measures
Green Builder Coalition WRI	Improves as more data becomes available
ResNet HERS H2O	Finalizing algorithms

Landscape	ASHRAE 189.1	ICC IgCC	IAPMO, GPMCS and WE-Stand
Plant Selection	60% must be rainfall compatible, exception for < 12” annual rain	None (was 40% maximum turf)	None
Controllers	Smart Controller required NE : WaterSense	Weather based	Weather based, rain & moisture sensors
Emitter requirements	Matched heads, spray on turf only, max 0.5”/hr. on slopes	Matched heads, spray on turf only, max 0.5”/hr. on slopes, max 1”/hr. avg. for each zone	Max. 0.75”/hr on slopes,
Potable water use	Prescriptive option: restricted to 33% of landscape of non recreational use areas. Performance: 35% of ET calculations	50% potable water reduction from baseline	Where alternate water is available, potable water restricted to 25%.

Outdoor Water Features	ASHRAE 189.1	ICC IgCC	IAPMO, GPMCS and WE-Stand
Roofs	No potable water for roof cooling or vegetation	Meters reqd. (Once-through cooling prohibited)	(Once-through cooling prohibited)
Fountains	No potable water where altwater available, meters required,	Meters reqd. Altwater reqd. where available	Altwater reqd. where available,
Pools & spas	Re-use filter backwash, pressure gauge to determine backwash, splash trough returns water to pool.	Meter reqd.	Meter reqd. Heated pools and spas require cover,

HVAC	ASHRAE 189.1	ICC IgCC	IAPMO, GPMCS and WE-Stand
Cooling Towers	Meters on make-up & blow-down, controllers, overflow alarms, drift eliminators. Next edition has performance criteria of 2050 ppm TDS.	Meters on make-up & blow-down, controllers, overflow alarms, drift eliminators, discharge at appx. 1000 ppm,	Meters on make-up & blow-down, controllers, discharge at appx. 1000 ppm, drift eliminators, biocide, use altwater where available
Evaporative Coolers (swamp coolers)	(limited commercial application)	Max 4 gal/ton-hour, water use labeling, overflow alarm, auto shutoff, discharge at >6+hrs., visible discharge	No discharge at less than 1200 ppm TDS
Air Conditioning	In some climates – condensate recovery + re-use required from large systems (65,000+ Btu).		

PLUMBING: TOILETS & URINALS	ASHRAE 189.1	IgCC Green Code	IAPMO, GPMCS and WE-Stand
Residential toilets OR "private" setting in commercial – **FOM TYPE**	HET: 1.28gpf	HET: 1.28gpf	HET: 1.28gpf
Residential toilets – **TANK TYPE**	HET: 1.28gpf + WaterSense	HET: 1.28gpf + WaterSense	HET: 1.28gpf + WaterSense
Commercial toilets – "public" setting	HET: 1.28gpf	HET: 1.28gpf	HET: 1.28gpf
Commercial toilets "public" setting and **REMOTE**	Tank-type must comply with WaterSense	Tank-type must comply with WaterSense	1.6gpf
Flushing urinals	HEU: 0.5gpf + WaterSense	HEU: 0.5gpf + WaterSense	HEU: 0.5gpf + WaterSense
Non-water urinals	Permitted	Permitted	Permitted; requires water supply to nowhere, and upstream discharges to drain from other fixtures or fittings

PLUMBING: FAUCETS & SHOWERS	ASHRAE 189.1	IgCC Green Code	IAPMO, GPMCS and WE-Stand (draft)
Residential & commercial "private" lavatory faucets (gallons/minute)	1.5 gpm + WaterSense	1.5 gpm + Water-Sense	1.5 gpm + WaterSense
Commercial & non-residential "public" lavatory faucets (gals/min.)	0.5 gpm	0.5 gpm	0.5 gpm
Commercial kitchen & bar sink faucets (gallons per minute)	Hands-free in food prep area & in dish room of commercial kitchen		
Commercial metering faucets (gallons per cycle)	0.25 gpc	0.25 gpc	0.25 gpc
Residential kitchen faucets (gallons per minute)	1.8 gpm; allows temporary override to 2.2 gpm	2.2 gpm	1.8 gpm; allows temporary override to 2.2 gpm
Residential showerheads (gallons per minute)	2.0 gpm + WaterSense		2.0 gpm + WaterSense; shower valve must scald-protect at showerhead flow rate
Non-residential showerheads (gal/min)	2.0 gpm + WaterSense	2.0 gpm	

Commercial Food Service	ASHRAE 189.1	IgCC Green Code	IAPMO GPMCS and WE-Stand (draft)
Cubed ice makers	Energy Star (air cooled)	Energy Star (air cooled)	Energy Star (air cooled) + max. 20 g per 100 lbs. of ice
Flaked/Pellet Ice Makers			Energy Star (air cooled) + 14 g per 100 lbs. of ice
Connectionless steam cooker	2.0 g/hr/pan	2.0 g/hr/pan	2.0 g/hr/pan
Connected steam cooker (max gals per hour)		5.0 g per pan	1.5 g per pan; tempering water not required for discharges (per UPC)
Combination ovens	10g/hr/oven	3.5 g/hr/pan	1.5g/hr/pan in steamer mode; no water use allowed in convection mode; tempering water not required for discharges

Commercial Food Service +	ASHRAE 189.1	IgCC Green Code	IAPMO, GPMCS and WE-Stand (draft)
Dipper wells		1.0 gpm	Max flow per minute equal to the capacity of the DW, not to exceed 0.2 gpm
Food waste disposers		No load: 1.0gpm	No load: 1.0gpm
Food scrap collector or pulper		Full load: 8.0gpm	Full load: 8.0gpm
Pre-rinse spray valve	1.3gpm		2.0gpm with auto shut-off
Kitchen faucets	Hands-free in food prep area & in dish room of com-merc'l kitchen	1.3gpm with auto shut-off + WaterSense	1.3gpm with auto shut-off + WaterSense

Other	ASHRAE 189.1	IgCC Green Code	IAPMO, GPMCS and WE-Stand (draft)
Residential water softeners		Demand-initiated regeneration reqd; max water use 4.0g/1K grains removed; salt efficiency no less than 4000 grains of total hardness removed per pound of salt; NSF 44 listed; no brine discharge to a reclaimed water collection system	Permitted where water hardness ^{3} 8 grains/g; demand-initiated regen; max water use 5 g/1K grains of hardness removed; salt efficiency exceeding 3400 grains of total hardness removed per pound of salt; NSF 44 listed
Reverse osmosis water treatment system		NSF 58 listed; auto shut-off	NSF 58 listed; auto shut-off
Water-powered pumps		Water-powered sump pumps prohibited, except for emergency; emergency pumps shall be at least 67% efficient	Water-powered sump pumps prohibited, except for emergency; emergency pumps shall be at least 58% efficient
Automated vehicle wash facilities		50% water reuse; other water restricted as follows: In-bay-40g/vehicle; Conveyor & express type-35g/vehicle	Make-up water restrictions: In-bay-40g/vehicle; Conveyor & express type-35g/vehicle;
Self-service vehicle wash facilities		Spray wands: Maximum 3.0 gpm	spray wands & foamy brushes-3.0 gpm

Choices

Variables

- Water only or include energy and environment?
- Indoor and outdoor?
- ANSI credentials needed?
- Incentive program or code requirement?
- Residential and/or commercial?
- Landscape irrigation load?
- Who administers the initiative
- Ability to enforce

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