



LEED for Homes, ENERGY STAR, and WaterSense

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Agenda

- WaterSense
- LEED for Homes
- ENERGY STAR v3
- Additional resources
- Q&A



WaterSense Homes vs. Multifamily

Single Family Homes

- Detached
- Attached side-by-side

Low-rise Multifamily

- 1-3 stories
- Stacked homes

All Other Multifamily (including mixed-use)

- 4+ stories stacked homes
- Independent heating, cooling, and water heating OR
- Central hot water system with 50% of the needs provided by alternative energies

Why Multifamily?

- Multifamily housing is growing tremendously
- Denver: 10th highest metro area for multifamily permitting (6/13-6/14) – Multifamily Executive
- Job growth
- Vacancy rate decline



WaterSense Specifics

- Fixtures
 - WS labeled: toilets, flushing urinals, bathroom sink
 - Kitchen faucet: max 2.2 gpm
 - Showers: WS labeled and restrictions if multiple showerheads in one compartment
- Documentation: spec sheets



WaterSense Specifics

- Hot water delivery: no more than 0.5 gallons of water in piping
- Recirc: demand-initiated only

Determining Volume of Piping Systems

Internal Volume of Various Water Distribution Tubing⁷

Ounces of Water Per Foot Length of Hot Water Tubing								
Nominal Size (Inches)	Copper M	Copper L	Copper K	CPVC CTS SDR 11	CPVC SCH 40	PEX-AI-PEX ASTM F 1281	PE-AL-PE	PEX CTS SDR 9
	1.06	0.97	0.84	N/A	1.17	0.63	0.63	0.64
½	1.69	1.55	1.45	1.25	1.89	1.31	1.31	1.18
¾	3.43	3.22	2.90	2.67	3.38	3.39	3.39	2.35
1	5.81	5.49	5.17	4.43	5.53	5.56	5.56	3.91
1¼	8.70	8.36	8.09	6.61	9.66	8.49	8.49	5.81
1½	12.18	11.83	11.45	9.22	13.20	13.88	13.88	8.09
2	21.08	20.58	20.04	15.79	21.88	21.48	21.48	13.86

Conversions: 1.0 gallon (3.8 liters) = 128.0 ounces
 1.0 ounce = 0.00781 gallons (0.0296 liters)
 0.5 gallons (1.9 liters) = 64.0 ounces
 0.6 gallons (2.3 liters) = 76.8 ounces

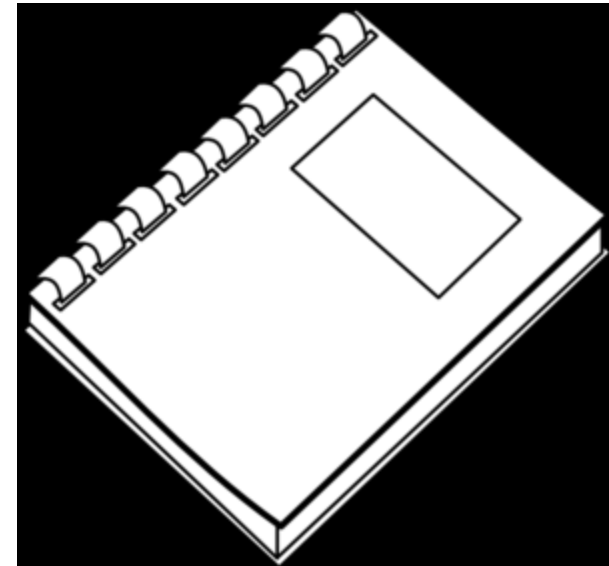
WaterSense: Other Specifics

- No leaks
- Service pressure: max 60 psi
- Clothes washer and dishwasher must be ENERGY STAR labeled
- Multifamily: units individually metered
- Optional: drinking water treatment systems and water softeners with specs



WaterSense: Homeowner Manual

- Operation and maintenance information for:
 - PRVs
 - Hot water delivery system
 - Toilets, faucets, showerheads
 - Dishwasher, clothes washer, water softener, drinking water treatment system



WaterSense Help

- Website:
http://www.epa.gov/watersense/new_homes/homes_final.html
- E-mail: watersense@epa.gov
- Helpline: (866) WTR-SENS (987-7367)
- Alicia or Jonah



LEED for Homes v2008

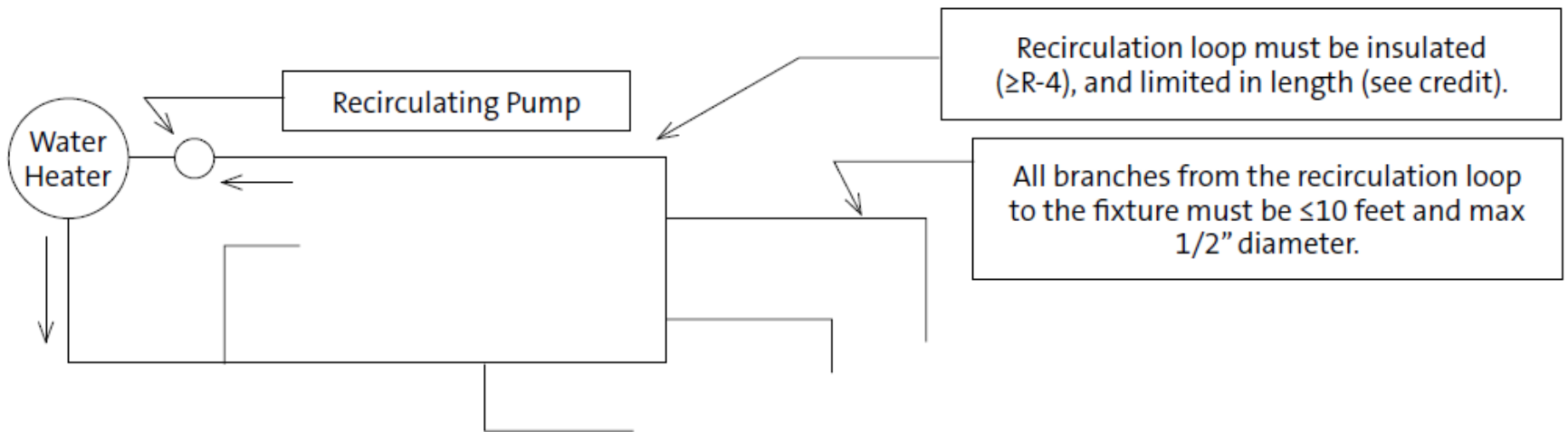
- Durability
 - Drain and drain pan for
 - tank water heaters
 - clothes washers
 - condensing dryers
- Water Efficiency
 - Lavatory faucets, showerheads, toilets
 - Spec sheets



LEED for Homes v2008

- Hot Water Distribution
 - Pipe insulation, R-4 on all domestic hot water lines, including elbows

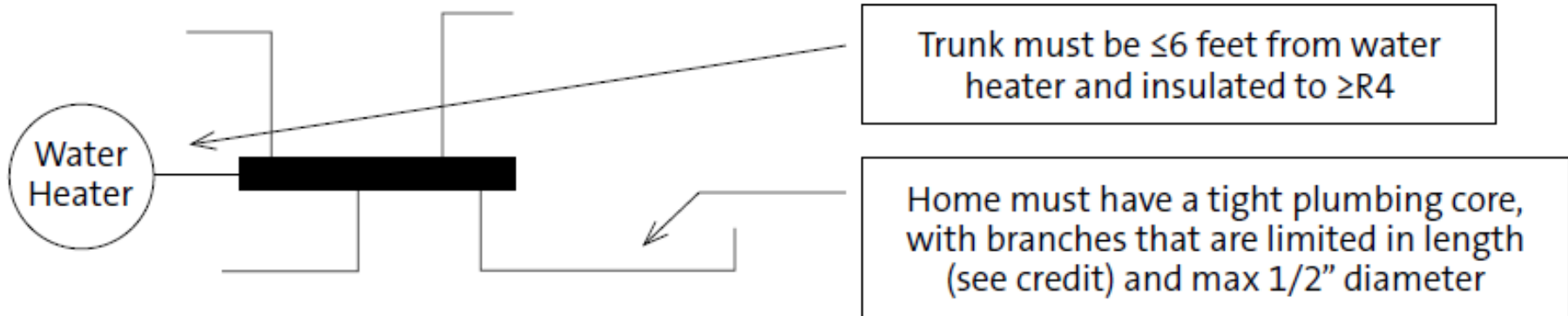
Figure 5(a): Sample Schematic of a Structured Plumbing System



LEED for Homes v2008

- Hot Water Distribution (cont.)

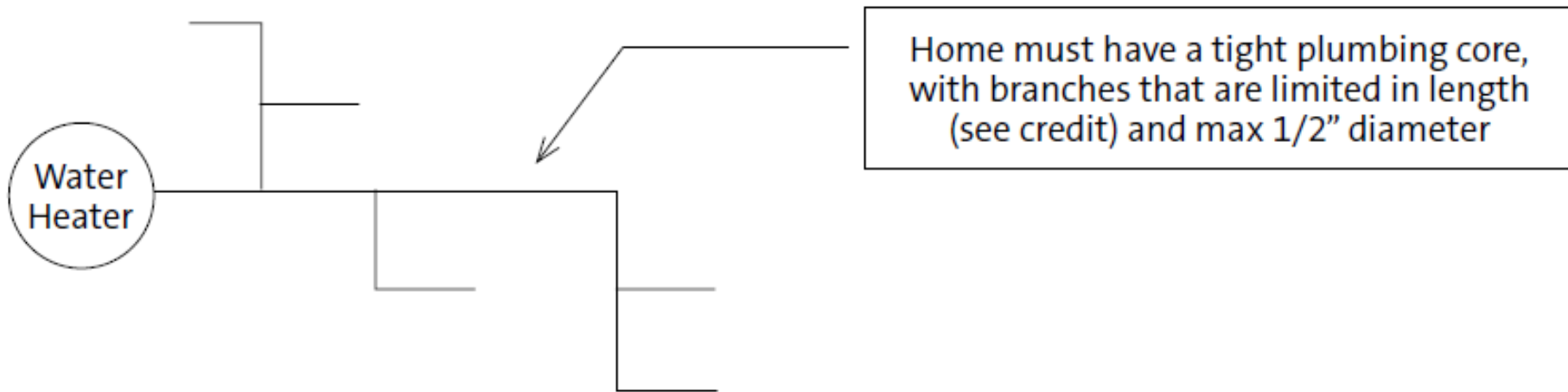
Figure 5(b): Sample Schematic of a Central Manifold Distribution System



LEED for Homes v2008

- Hot Water Distribution (cont.)

Figure 5(c): Sample Schematic of a Compact Design



LEED for Homes v2008

- Efficient hot water heater
- High efficiency appliances
- Materials
 - PEX water piping
- Homeowner manual
 - Operations manual for all installed water equipment



LEED for Homes v4

- Same as WaterSense plus (from v2008):
 - Pipe insulation
 - Efficient hot water heater
 - Durability

LEED v4



LEED for Homes Help

- Website: www.usgbc.org
- Email: homes@usgbc.org



ENERGY STAR v3

- Efficient hot water heater

Gas:	30 Gal = 0.63 EF	40 Gal = 0.61 EF	50 Gal = 0.59 EF
Electric:	30 Gal = 0.94 EF	40 Gal = 0.93 EF	50 Gal = 0.92 EF
Oil:	30 Gal = 0.55 EF	40 Gal = 0.53 EF	50 Gal = 0.51 EF
	60 Gal = 0.57 EF	70 Gal = 0.55 EF	80 Gal = 0.53 EF
	60 Gal = 0.91 EF	70 Gal = 0.90 EF	80 Gal = 0.89 EF
	60 Gal = 0.49 EF	70 Gal = 0.47 EF	80 Gal = 0.45 EF

- Help:

- Hotline: 1-888-STAR-YES (1-888-782-7937)



Question and Answer





energyLogic

analysis. insight. answers.

Thank you!

Contact Information

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