

B.C. ENERGY EFFICIENCY ACT STANDARDS: Electric Water Heaters

MEMPR INFORMATION BULLETIN 09-04



What products are you regulating? Electric storage-type water heaters with a rated storage capacity of 50 to 454 litres.

Are you forcing me to replace my water heater? No. The regulation applies to voluntary purchases of new or replacement water heaters. Individuals can keep their existing water heaters for as long as they wish.

What is the regulated energy efficiency standard for those products?

The standby loss (in watts)¹ must be equal to or less than:

$$25 + (0.20 \times V) \quad \text{for those having a top inlet and a rated volume}^2 \text{ of 50 to 270 litres or}$$
$$(0.472 \times V) - 48.5 \quad \text{for those having a top inlet and a rated volume of } >270 \text{ and } \leq 454 \text{ litres}$$

The maximum standby loss for water heaters with a bottom inlet³ is identical to existing federal standards set by Natural Resources Canada. The standby loss (in watts) must be equal to or less than:

$$40 + (0.20 \times V) \quad \text{for those having a bottom inlet and a rated volume of 50 to 270 litres or}$$
$$(0.472 \times V) - 33.5 \quad \text{for those having a bottom inlet and a rated volume of } >270 \text{ and } \leq 454 \text{ litres}$$

Here is the new maximum Standby Loss levels for several common sizes:

Rated Storage Capacity in litres (imperial gallons)	Maximum Standby Loss For Top Inlet	Maximum Standby Loss for Bottom Inlet
114 L (25 imp gal)	48	63
136 L (30 imp gal)	52	67
182 L (40 imp gal)	61	76
272 L (60 imp gal)	80	95
364 L (80 imp gal)	123	138

For a lookup table with all sizes, go to:

www.empr.gov.bc.ca/EEC/Strategy/EEA/Pages/default.aspx

What are the new installation requirements for electric water heaters?

Homeowners and installers should be aware that all electric storage-type water heaters must have a functioning heat trap⁴ installed at the inlet and outlet, or, in the case of bottom inlet water heaters, at the outlet.

In addition, all water heaters must be installed with R-4 (RSI 0.70) pipe insulation on the first 3.0 metres (9.8 ft) of exposed⁵ outlet piping down stream of the tank or heat trap and the first 3.0 m of exposed water inlet piping upstream of the tank or heat trap. If there is an

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¹ Standby loss must be determined using the test standard *CAN/CSA-C191-04: Performance of Electric Storage Tank Water Heaters for Domestic Hot Water Service*.

² In these equations, V is the water heater's rated storage capacity in litres.

³ "Bottom inlet" means a cold water inlet that enters near the bottom of the storage tank of a water heater, but does not include a cold water inlet that has a dip tube.

⁴ The heat trap may be a device or pipe configuration, either integrally connected or independently attached.

⁵ "Exposed piping" means pipes not concealed in a wall, ceiling, or floor.

⁶ The database can be found online at www.oee.nrcan.gc.ca/residential/business/manufacturers/search/electric-water-heaters-search.cfm?attr=4

independently attached heat trap, then the heat trap and the piping between the heat trap and tank must also be covered.

When will the regulation take effect? September 1, 2010

Can I sell my inventory of non-compliant products after the effective date? Any water heaters manufactured after September 1, 2010 must comply with the regulation. If you have unsold inventory of products manufactured before the effective date, they can still be sold legally in British Columbia after the effective date.

How can I tell if a product is compliant with efficiency regulations?

Suppliers can ensure compliance with the standard by stocking only products that meet the maximum standby loss outlined above. If the manufacturer's product literature is not clear on this point, Natural Resources Canada has an electric water heater database⁶ which lists standby loss by model number.

Who enforces this regulation?

The Ministry of Energy, Mines and Petroleum Resources is responsible for enforcing all regulated standards under the *EEA*.

What are the penalties for non-compliance?

Under the *EEA*, the Ministry can conduct inspections to verify compliance with the *Act* and regulations. *EEA* enforcement begins with education and voluntary compliance measures. Ministry staff follow up on all complaints and other information respecting non-compliance, and communicate directly with industry participants to develop a compliance plan.

The Ministry can also seek to have those who have contravened the legislation charged under the *Offence Act*. An offence can result in fines up to \$2,000.

What do I do if I see a non-compliant product for sale or distribution?

Please circulate this information bulletin to the retailer or distributor. You can also report infractions to Erik Kaye, Ministry of Energy, Mines and Petroleum Resources at 250-356-1507 or Erik.Kaye@gov.bc.ca.

For more information on B.C.'s Energy Efficiency Act:
www.empr.gov.bc.ca/EEC/Strategy/EEA/Pages/default.aspx

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