

## PART 1 - GENERAL

### 1.1 REFERENCES

- .1 American National Standards  
Institute/Canadian Standards Association  
(ANSI/CSA).
- .2 Canada Green Building Council (CaGBC)
  - .1 LEED Canada-NC-2009, LEED (Leadership in  
Energy and Environmental Design): Green  
Building Rating System Reference Package For  
New Construction and Major Renovations.
- .3 Canadian Standards Association (CSA  
International)
  - .1 CSA B51-03(R2007), Boiler, Pressure  
Vessel, and Pressure Piping Code.
  - .2 CAN/CSA C22.2 No.110-94(R2004),  
Construction and Test of Electric Storage Tank  
Water Heaters.

### 1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section  
01 33 00 - Submittal Procedures.
  - .2 Product Data:
    - .1 Provide manufacturer's printed product  
literature and datasheets for domestic water  
heater, and include product characteristics,  
performance criteria, physical size, finish  
and limitations.
  - .3 Shop Drawings:
    - .1 Provide drawings stamped and signed by  
professional engineer registered or licensed  
in the Province of Newfoundland and Labrador,  
Canada.
    - .2 Indicate:
      - .1 Equipment, including connections,  
fittings, control assemblies and  
ancillaries, identifying factory and  
field assembled.
  - .4 Sustainable Design Submittals:
    - .1 LEED Submittals: in accordance with  
Section 01 35 21 - LEED Requirements.
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<u>1.3 CLOSEOUT SUBMITTALS</u>	.1	Provide maintenance and engineering data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
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<u>1.4 DELIVERY, STORAGE AND HANDLING</u>	.1	Deliver, store and handle in accordance with Section 01 61 00 - Common Product Requirements.
	.2	Deliver materials to site in original factory packaging, labelled with manufacturer's name, address.
	.3	Packaging Waste Management: remove for reuse or return of pallets, crates, padding and packaging materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

<u>1.5 WARRANTY</u>	.1	For the Work of this Section 22 30 05 - Domestic Water Heaters, 12 months warranty period is to be extended to number of years specified for each product.
	.2	Contractor hereby warrants domestic water heaters for number of years specified for each product.

## PART 2 - PRODUCTS

<u>2.1 COMPONENTS</u>	.1	Sustainable Requirements: .1 Materials and products in accordance with Section 01 35 21 - LEED Requirements.
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<u>2.2 HYBRID ELECTRIC WATER HEATER</u>	.1	CSA,ULC and Energy Star Certified.
	.2	Tank: .1 See schedule on drawings for model capacities and size. .2 63 mm non-cfc foam insulation, enamelled steel jacket, 10 year warranty.

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2.2 HYBRID  
ELECTRIC WATER  
HEATER  
(Cont'd)

- .3 Self contained heat pump unit integrated unto top of tank. Operating modes include efficiency, hybrid or electric. Vacation setting can be selected to reduce operating costs during extended absence.

2.3 TRIM AND  
INSTRUMENTATION

- .1 Drain valve: NPS 1 with hose end.
- .2 Electronic user interface allows for control of temperature setting, operating mode and communicates diagnostics.
- .3 Thermometer: 100 mm dial type with red pointer and thermowell filled with conductive paste.
- .4 Pressure gauge: 75 mm dial type with red pointer, syphon, and shut-off cock.
- .5 Thermowell filled with conductive paste for control valve temperature sensor.
- .6 ASME rated temperature and pressure relief valve sized for full capacity of heater control valve, having discharge terminating over floor drain and visible to operators.
- .7 Anode rods with stainless steel cable. Adequate for 20 years of operation and located for easy replacement.
- .8 Acceptable Product: A.O. SMith - Residential hybrid electric heat pump water heater, or approved equal.

2.4 ANCHOR BOLTS  
AND TEMPLATES

- .1 Supply anchor bolts and templates for installation in concrete support pad in accordance with Section 03 30 00 - Cast-in-Place Concrete.

PART 3 - EXECUTION

- 3.1 APPLICATION .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.
- 3.2 INSTALLATION .1 Install in accordance with manufacturer's recommendations and authority having jurisdiction.
- 3.3 FIELD QUALITY CONTROL .1 Manufacturer's factory trained, certified Engineer to start up and commission DHW heaters.
- 3.4 CLEANING .1 Clean in accordance with Section 01 74 11 - Cleaning.  
.1 Remove surplus materials, excess materials, rubbish, tools and equipment.
- .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and Section 01 35 21 - LEED Requirements.