

Residential Solar Domestic Hot Water Systems

Building Permit Submission Requirements

Solar Neighbourhoods

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Introduction:

This is an overview of the fees, forms, and submission requirements for a Building Permit application for the installation of a residential Solar Domestic Hot Water (SDHW) System. By using the information provided in this guide you can ensure that your building permit application and submissions will be accepted, reviewed and issued in a timely fashion.

Building Permit Fees:

For applicable permit fees refer to the fees section of our website at www.toronto.ca/building, fee brochures, or feel free to ask one of our Customer Service Staff at our four District Offices (see map on the back of this page).

As of June 4, 2009 the building permit fee for residential SDHW system installations is the minimum building permit fee of \$96.38, inclusive of both the structural and mechanical permits.

The following methods of payment are accepted at Customer Service counters: Cash; Certified cheque; Personal cheques for fees over \$2000; Debit; MasterCard and Visa.

Residential FASTRACK

This project type may be eligible for Residential FASTRACT. The service is available in all our District Offices, 5 days a week, during regular business hours. The goal is to issue your permit while you wait, however, for more complex projects it may take up to 5 business days to complete the review.

Ontario Building Code Requirements

Sufficient information must be submitted to deem compliance with the Ontario Building Code and applicable laws. Toronto Building has the right to ask for additional information deemed necessary to determine compliance.

Specific CSA Standards that the SDHW system must conform to include:

F379: Packaged solar domestic hot water systems

F383: Installation code for solar domestic hot water systems

B64: Selection and installation of backflow preventors

Form Requirements

Application for a Permit to Construct or Demolish	■
Schedule1: Designer Information	■
Declaration of Time Frames	■
Tree Declaration Form	■
Solar Roof Structure Report	■

Other Submission Requirements

Site Plans	■
Proof of Conformance to CSA F379 (see below)	□
Mechanical Drawing of the SDHW system (see below)	□
Structural Drawings of SDHW system and its attachment to the structure (see below)	□
Proof of Conformance to CSA F383 (see below)	□

Building Permit Plan Requirements

MECHANICAL INFORMATION

Master thermostatic-mixing valve conforming to CSA B125: Plumbing Fittings must be provided on the hot water line downstream of the domestic hot water tank and prior to any take offs to plumbing fixtures.

Installation of a reduced pressure principle backflow preventor device (RP BFP) in accordance with the CSA B64 standard requirements for SDHW systems that do not heat potable water directly (i.e. where there is a separate heat transfer fluid used).

INSTALLATION REQUIREMENTS

SDHW System Commissioning and Inspection Report (Toronto Building Form): Upon completion of the installation of the SDHW System the installer must submit to the inspector the verification of installation of the system is in conformance with CSA F383 standard. This must be done by a CanSIA certified SDHW Installer or an Ontario licensed professional engineer.

Backflow Prevention Test Report (Toronto Building Form): Upon completion of the installation of the SDHW System the reduced pressure principle backflow preventor device (RP BFP) must be tested in accordance with the CSA B64 standard requirements by a certified backflow prevention tester. The test report must be submitted to the Toronto Building inspector.

■ = required □ = Required (more details provided below)
Additional information may be required on a case by case basis

Mechanical Compliance to the Ontario Building Code

Acceptable Solution under the OBC: System certified to CSA F379 (OBC 7.2.10.13.)

For products that are certified to CSA F379 standard you must submit the complete CSA Certificate of Compliance and mechanical drawings showing all components at time of building permit application.

Products that are certified to CSA F379 are still required to be reviewed for structural compliance to the Ontario Building Code and CSA F383.

Alternative Solution #1: Individual Project Review (OBC 7.2.10.13.)

SDHW systems that are not CSA certified must undergo an individual review to verify conformance with the CSA F379 standard. Submission requirements include an Ontario licensed professional engineer-stamped mechanical drawing and a letter of conformance to the Ontario Building Code and CSA F379 standard. Use the ***Application for SDHW Certified Plans Review*** as outlined below as a guide for the submission requirements.

Alternative Solution #2: Certified Plans

Toronto Building has established a process to review SDHW systems sold in Toronto to ensure that they conform to the Ontario Building Code and applicable CSA standards.

Once a product has been reviewed (for mechanical and structural compliance) a Certified Plan is issued. This is kept on file by Toronto Building and is to be referenced each time a building permit application is submitted for this product.

SDHW system suppliers are not obligated to go through the process of obtaining a certified plan, but the issuance of a Certified Plan eliminates the need to do a full review of the SDHW system each time a building permit is applied for.

If you are a supplier contact Toronto Building to obtain a copy of the ***Application for SDHW Certified Plan Review***.

Backflow Prevention

All SDHW systems in Toronto that do not heat the potable water supply directly (i.e. where a separate heat transfer fluid loop is used) are required to use a Reverse Pressure Principle Backflow Prevention Device (RP). The RP backflow preventor must be tested in accordance with the CSA B64 standard requirements by a certified backflow prevention tester and a test report completed and submitted to the Toronto Building inspector. There is no requirement for annual testing.

Structural Compliance to the Ontario Building Code

To ensure compliance to the Ontario Building Code it is required that the roof be inspected to identify its structural elements and that the roof be reviewed for its ability to adequately support the proposed solar collectors. This shall be accomplished by the following two steps:

1. A ***Solar Roof Structure Report*** shall be completed showing the location of the proposed solar collectors and the rafter size, spacing and span under the proposed solar collectors. This report shall be completed and signed by an individual who holds a BCIN # or is an Ontario licensed professional engineer or architect. The report is exempt from this requirement if the homeowner takes responsibility for the information contained in the report by signing the report (this is similar to the homeowner sign off of *Schedule 1: Designer Information*).

Use the Toronto Building document, ***Solar Roof Structure Report***.

2. A review of the roof's ability to adequately support the proposed solar collectors shall be undertaken. This shall be either in the form of detailed calculations and report done for the specific proposed location done by an Ontario licensed professional engineer, or the development of a Certified Plan (see above) which includes an Ontario licensed professional engineer stamped structural drawing that contains a span table for the solar collectors showing the allowable roof structures (rafter size, spacing, and span) that the solar system may be installed on.

Please see the Toronto Solar Neighbourhoods document, ***A Guide to Roof Assessment for SDHW Systems*** for details on roof assessment.

Installation Requirements– Conformance to CSA F383 Standard

The Ontario Building Code requires that a SDHW system shall be installed in accordance with good engineering practices or installed in conformance with CSA-F383, "Installation Code for Solar Domestic Hot Water Systems" (OBC 7.6.1.13). Completion of the "System Commissioning & Inspection report" form will be required. There are two methods of conformance:

Certified Installer

The SDHW System shall be installed by an installer who is certified as a Canadian Solar Hot Water System Installer (level 1) by the Canadian Solar Industries Association (CanSIA).

A listing of certified installers can be found at the CanSIA website at www.cansia.ca/Default.aspx?pageId=143754.

Inspection Report on the Installation by a Professional Engineer

Those installations not completed by a certified installer shall require an Ontario licensed professional engineer's report stating that the installation is in conformance to the CSA F383 requirements.