Energy Efficiency Design Summary:
Performance & Other Acceptable Compliance Methods

(Building Code Part 9, Residential)

This form is used by a designer to demonstrate that the energy efficiency design of a house complies with the Building Code using the Performance or Other Acceptable Compliance Methods described in Subsections 3.1.2. and 3.1.3. of SB-12.

This form must accurately reflect the information contained on the drawings and specifications being submitted. Refer to Supplementary Standard SB-12 for details about building code compliance requirements. Further information about energy efficiency requirements for new buildings is available from the Provincial Building Code website or the Municipal Building Department.

For use by Principal Authority	
Application No:	Model/Certification Number

A. Project Information

Building number, street name		Unit number	Lot/Con
Municipality	Postal code	Reg. Plan number / other description	

B. Compliance Option

☐ I* [SB-12 – 3.1.2.] [SB-12 - 2.1.1.]	* Attach energy performance results using an approved software (see guide)
☐ *ENERGY STAR*®* [SB-12 - 2.1.3.]	* Attach Builder Option Package [BOP] form
☐ R-2000®* [SB-12 – 3.1.3.]	* Attach R-2000 HOT2000 Report

C. Building Project Design Conditions

Climactic Zone (SB=1_	**Heating Equipment Efficiency**	**Space Heating Fuel Source**		
☐ Zone 1 (< 5000 degree days)	☐ ≥ 92% AFUE	☐ Gas	☐ Propane	☐ Solid Fuel
☐ Zone 2 (≥ 5000 degree days)	☐ ≥ 84% < 92% AFUE	☐ Oil	☐ Electric	☐ Earth Energy

Ratio of Windows, Skylights & Glass (W, S & G) to Wall Area		**Other Building Characteristics**		
Area of walls = _____ m^2 or _____ ft^2	W, S & G% =_____	☐ Log/Post & Beam	☐ ICF Above Grade	☐ ICF Basement
		☐ Slab-on-ground	☐ Walkout Basement	
		☐ Air Conditioning	☐ Combo Unit	
Area of W S&G = ____ m^2 or ____ ft^2		☐ Air Source Heat Pump (ASHP)		
		☐ Ground Source Heat Pump (GSHP)		

SB12 Performance Reference Building Design Package indicating the prescriptive package to be compared for compliance

SB-12 Referenced Building Package (input design package): Package: _____ Table: _____

D. Building Specifications [provide values and ratings of the energy efficiency components proposed] or attach Energy Star BOP form

Building Component	**Minimum RSI / R values Or Maximum U-Value(1)**		**Building Component**	**Efficiency Ratings**	
Thermal Insulation	**Nominal**	**Effective**	**Windows & Doors** Provide u-Value(1) or ER rating		
Ceiling with Attic Space			Windows/Sliding Glass Doors		
Ceiling without Attic Space			Skylights/Glazed Roofs		
Exposed Floor			**Mechanicals**		
Walls Above Grade			Heating Equip. (AFUE)		
Basement Walls			HRV Efficiency (SRE% at 0°C)		
Slab (all > 600mm below grade)			DHW Heater (EF)		
Slab (edge only ≤ 600mm below grade)			DWHR (CSA B55.1(min.42% efficiency))		# Showers ____
Slab (all ≤ 600mm below grade, or heated)			Combined Heating System		

(1) U Value to be provided in either W(m^2.K) or Btu/(h.ft^2.F) but not both.

E. Performance Design Verification [Subsection 3.1.2.Performance Compliance]

The annual energy consumption using Subsection 3.1.1. SB-12 Reference Building Package is _____ GJ (1 GJ=1000MJ)

The annual energy consumption of this house as designed is _____ GJ

The software used to simulate the annual energy use of the building is: _____

The building is being designed using an airtightness baseline of:

- ☐ OBC reference ACH, NLA or NLR default values (no depressurization test required)
- ☐ Targeted ACH, NLA or NLR. Depressurization test to meet _____ ACH50 or NLR or NLA
- ☐ Reduction of overall thermal performance of the proposed building envelope is not more than 25% of the envelope of the compliance package it is compared against (3.1.2.1.(6)).
- ☐ Standard Operating Conditions Applied (A-3.1.2.1. – 4.6.2.)
- ☐ Reduced Operating Conditions for Zero-rated homes applied (A-3.1.2.1. – 4.6.2.5.)
- ☐ On Renewable(s): Solar _____
  Other Types: _____

F. *ENERGY STAR* or *R-2000* Performance Design Verification

- ☐ The NRCAN "ENERGY STAR for New Homes Standard Version 12.6" technical requirements, applied to this building design result in the building performance meeting or exceeding the prescriptive performance requirements of the Supplementary Standard SB 12 (A-3.1.3.1.).
- ☐ The NRCan, "2012 R-2000 Standard" technical requirements, applied to this building design result in the building performance meeting or exceeding the prescriptive performance requirements of the Supplementary Standard SB12 (A-3.1.3.1.).

Performance Energy Modelling Professional

Energy Evaluator/Advisor/Rater/CEM Name and Company:	Accreditation or Evaluator/Advisor/Rater License #:
ENERGY STAR OR R-2000 Energy Evaluator/Advisory/Rater/ Name and Company:	Evaluator/Advisor/Rater License#:

G. Designer(s) [name(s) & BCIN(s), if applicable, of person(s) providing information herein to substantiate that design meets the Building Code]

Qualified Designer: Declaration of designer to have reviewed and taken responsibility for the design work.

Name	BCIN	Signature

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COMPLETING THE FORM

Section B. Compliance Options

Indicate the compliance option being used.

- SB-12 Performance refers to the method of compliance in Subsection 3.1.2. of SB-12. Using this approach the designer must use recognized energy simulation software (such as HOT2000 V10.51 or newer), and submit documents which show that the annual energy use of the proposed building is equal to or less than a prescriptive (referenced) building package.
- *ENERGY STAR* houses must be designed to *ENERGY STAR* requirements and verified on completion by a licensed energy evaluator and/or service organization. The *ENERGY STAR* BOP form must be submitted with the permit documents.
- *R-2000* houses must be designed to the *R-2000* Standard and verified on completion by a licensed energy evaluator and/or service organization. The HOT2000 report must be submitted with the permit documents.

Section C. Project Design Conditions

- *Climatic Zone*: The number of degree days for Ontario cities is contained in Supplementary Standard SB-1.
- *Windows, Skylights and Glass Doors*: If the ratio of the total gross area of windows, sidelights, skylights, glazing in doors and sliding glass doors to the total gross area of walls is more than 17%, higher efficiency glazing is required. The total area is the sum of all the structural rough openings. Some exceptions apply. Refer to 3.1.1. of SB-12 for further details.
- *Fuel Source and Heating Equipment Efficiency*: The fuel source and efficiency of the proposed heating equipment must be specified in order to determine which SB-12 Prescriptive compliance package table applies.
- *Other Building Conditions*: These construction conditions affect SB-12 Prescriptive compliance requirements.

Section D. Building Specifications

Thermal Insulation: Indicate the RSI or R-value being proposed where they apply to the house design. Refer to SB-12 for further details.

Section E. Performance Design Summary

A summary of the performance design applicable only to the SB-12 Performance option.

Section F. Energy Star or R-2000 Performance Method

Design to *ENERGY STAR* or *R-2000* standards

Section G. House Designer

The building code requires designers providing information about whether a building complies with the Building Code to have a BCIN. Exemptions apply to architects, engineers and owners designing their own house.

BUILDING CODE REQUIREMENTS FOR AIRTIGHTNESS IN NEW HOMES

All houses must comply with increased air barrier requirements in the building code. Notice of air barrier completion must be provided and an inspection conducted prior to it being covered.

The air leakage rates in Table 3.1.2.1 are not requirements. The Table is not intended to require or suggest that the building meet those airtightness targets. They are provided only as default or reference values for the purpose of annual energy simulations, should the builder/owner decide to perform such simulations. They are given in three different metrics; ACH, NLA, NLR. Any one of them can be used. They can be used as a default value for both a reference and proposed building or, where an air leakage test is conducted and credit for airtightness is claimed, the airtightness values in Table 3.1.2.1. can be used for the reference building and the actual leakage rates obtained from the air leakage test can be used as inputs for the proposed building.

OBC Reference Default Air Leakage Rates (Table 3.1.2.1.)

Detached dwelling	3.0 ACH 50	NLA 2.12 cm^2/m^2	NLR 1.32 $L/s/m^2$
Attached dwelling	3.5 ACH 50	NLA 2.12 cm^2/m^2	NLR 1.44 $L/s/m^2$

The building code requires that a blower door test be conducted to verify the airtightness of the house during construction if the SB-12 Performance option is used and an airtightness of less than 3.0 ACH @ 50 Pa (or NLA or NLR equivalent) in the case of detached houses, or 3.5 ACH @ 50 Pa (or NLA or NLR equivalent) in the case of attached houses is necessary to meet the required energy efficiency standard.

ENERGY EFFICIENCY LABELLING FOR NEW HOUSES

ENERGY STAR and *R-2000* may issue labels for new homes constructed under their energy efficiency programs. The Building Code does not currently regulate or require new home labelling.