

**INSTALLATION GUIDE
FOR
REPLACEMENT WINDOWS**

PREPARED FOR:

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The CANMET Energy Technology Centre (CETC)
Energy Technology Branch, Energy Sector
Department of Natural Resources Canada
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IMPORTANT NOTICE

The intent of this technical guide on windows installation is to help assure integrity and durability of replacement windows in building envelopes. The technical requirements put forward in this manual should be considered as complementary to window manufacturer's instructions. In case of contradiction, comply with the manufacturers' instructions and local building codes.

FOREWORD

Once the decision is made to replace existing windows, many possibilities exist, regarding namely:

- Frame material (frame and sashes);
 - Wood
 - PVC
 - Aluminum
 - Other

- Glazing type;
 - Double glazing
 - Factory sealed unit
 - With or without low emissivity coatings
 - Air or inert gas filled space

- Window type;
 - Horizontal sliding
 - Vertical sliding
 - Casement
 - Awning
 - Tilt-and-turn
 - Fixed
 - Composite
 - Combination

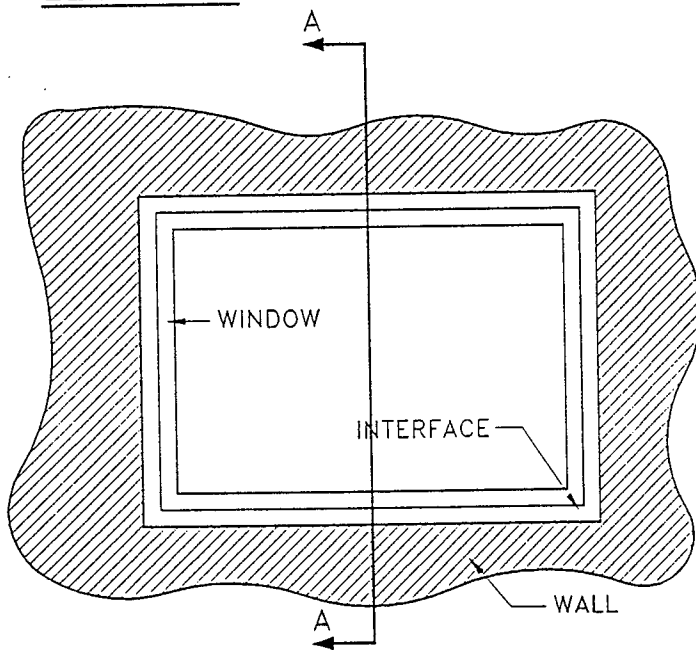
- Installation method;

This document will deal specifically with installation method, considering frame materials and type of replacement window. The type of glazing will not affect the method of installation in any way.

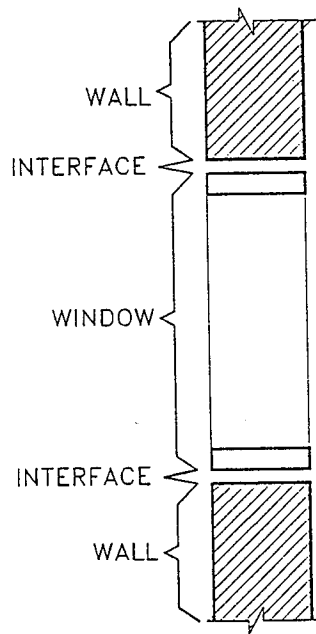
The windows covered in this manual must conform with the prescriptive and performance requirements of the National Canadian Window Std. (CAN/CSA-A440-M90) for shop assembled windows.

All of the operations involved in window replacement must result in the proper integration of the new window into the existing wall, while complying with building science requirements. Therefore, the "window system" must be integrated in the "wall system" in such a way that both system maintains their respective qualities.

ELEVATION



SECTION A-A



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The integration of the window into the wall requires consideration for the "interface system", with the following basic function:

- Ensure a structural tie between the "window system" and the "wall system", while following these principles:
 - Reduce or eliminate any downward load transfer to the top cross member (frame head).
 - Permit differential movement between both systems, in the same plane as the window.
 - Maintain forced entry (burglary) resistance of the "window system"
- Ensure continuity of air-barrier
- Shelter the window from weather conditions (rain and snow)
- Restrict vapour diffusion
- Reduce the risk of condensation and thermal heat loss
- Maintain satisfactory performance throughout service life (durability)
- Maintain ease of operation
- Prevent insect entry
- Limit sound transmission
- Be aesthetically acceptable and blend in with surroundings
- Be cost effective

In order to facilitate comprehension, this manual is sub-divided into several chapters, which follow the sequence of the various steps involved in window replacement. Each chapter takes into consideration the functions or requirements mentioned above to ensure the integration of the window to the wall. The flow chart illustrated on the following page illustrates the decision making process involved in window replacement.

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WINDOW REPLACEMENT

WHAT IS THE FRAME MATERIAL?

WOOD

ALUM., P.V.C., ETC.

IS EXISTING FRAMEWORK SOUND?

YES

NO

KEEP EXISTING FRAME

REMOVE EXISTING FRAME

REMOVE EXISTING FRAME

OPENING PREPARATION

IS A SUBFRAME REQUIRED?

WILL THE SURROUNDING BE CLAD?

CHOICES
EXTERIOR CLADDING
INTERIOR CLADDING

WINDOW INSTALLATION

WINDOW POSITIONING

PERIPHERAL ALLOWANCE

SETTING BLOCKS POSITIONING

LATERAL SHIMS POSITIONING

FASTENING/ANCHORAGE

PERIMETER CAULKING

FINISHING WORK