RESEARCH HIGHLIGHT

Technical Series 01-106

Thermostat Settings in Houses with In-Floor Heating

INTRODUCTION

Radiant in-floor heating is now a popular heating alternative in many parts of Canada. Homeowners often relish the feeling of warm floors when the weather is cold outside, or wish to avoid the air movement related to forced air systems. A common claim by those selling in-floor heating systems is that, with warm floors, people often set their thermostats lower, and that this will lead to energy savings. CMHC undertook a short research project to see whether the thermostats in houses with in-floor heating were set lower than in comparable houses.

RESEARCH PROGRAM

CMHC hired a contractor to visit a sample of new houses with in-floor heating and with other heating systems. The contractor simply noted the types of heating systems in place and recorded the main floor thermostat setting. The research took place in Nova Scotia and was conducted during daylight hours on the weekend. Fifty houses with radiant in-floor heating and 25 houses with other heating systems (forced air, hot water baseboard, etc.) were compared.

RESULTS

Main floor thermostat settings for the 50 houses with radiant in-floor heating systems averaged 20.4°C. Main floor thermostat settings for the 25 control houses with other heating systems averaged 19.8°C. For comparison, the measured temperatures in 11 Nova Scotia houses with forced air systems in a 1993 CMHC survey[1] averaged 20.2°C. In the National Energy Use Database report, "Survey of Houses Built in Canada in 1994"[2], the average reported daytime setting in all Atlantic houses surveyed was 19.9°C, with an evening setting of 20.6°C. Weekend daytime settings would probably fall within that range.

IMPLICATIONS FOR THE HOUSING INDUSTRY

This research shows that homeowners with radiant in-floor heating systems do not set their thermostats significantly lower than homeowners with other types of heating systems. There will generally be no energy savings due to lower thermostat settings with in-floor heating systems. Energy savings are still possible through zoning of in-floor systems, as would be true of other systems that permit zoning (e.g. baseboards, radiators, etc.).

1. "Field Testing of House Characteristics", Scanada Consultants Limited for CMHC, Ottawa, 1993.
2. "Survey of Houses Built in Canada in 1994", National Energy Use Database, Natural Resources Canada, Ottawa, 1997.

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CMHC Project Manager: Jennifer Foote, Halifax, Nova Scotia

Housing Research at CMHC

Under Part IX of the ***National Housing Act***, the Government of Canada provides funds to CMHC to conduct research into the social, economic and technical aspects of housing and related fields, and to undertake the publishing and distribution of the results of this research.

This fact sheet is one of a series intended to inform you of the nature and scope of CMHC's research.

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or contact:

Canada Mortgage and Housing Corporation
700 Montreal Road
Ottawa, Ontario
K1A 0P7

Phone: 1-800-668-2642
Fax: 1-800-245-9274

Printed in Canada
Produced by CMHC 30-07-2007
Revised: 2005, 2007

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