

Basement Floor Heat Loss

The heat loss of any component of a structure is a factor of the differential between the indoor design and the outdoor design temperatures (ΔT) as well as the type of material and its resistance to heat flow (R-value).

Outdoor design temperatures as well as ground temperatures can be found in the national and provincial building codes and the HRAI design handbooks for all locations or near locations. It is these temperatures that must be used when performing heat loss calculations for a house. The ground temperature of 47°F (8.5°C) is the average for Nova Scotia.

The drawing on the next page shows two examples of floor slab construction. With conventional heating the temperature differential between the inside floor surface and the design ground temperature is 19°F (10.5°C). With an in-floor radiant slab the temperature differential is 44°F (24.5°C). This represents a heat loss of more than twice as much as conventional heating.



