

HOW TO CALCULATE HEATING NEEDS

Total Heating

- Make a heat loss calculation for each room. See Heat Loss by infiltration and transmission in section Radiant Heat in STEP Handbook.
- When calculating, remember to use the STEP Element efficiency factors and multiply by 0.5 for floor exposure, by 0.7 for heat distribution and by 0.75 for self-regulating / energy savings.
- Compensation for heat gain from lights, boilers, house appliances, etc. needs to be added to the calculation.
- Conventional heat loss methodology does not compensate for heat loss or gain from radiant heating.
- For further general design refer to STANDARD GUIDELINES by Radiant Panel Association and National Standard ANSI-UL 1693.

Floor Warming

- Systems that are not used for primary heating do not require a heat loss calculation.
- Evaluate the needs for each room: area heated, available floor space, type of floor covering, etc. Example:
 - a) Bathrooms and living rooms require more heat than bedrooms.
 - b) Additions and sunrooms may need calculations depending on construction.
 - c) Maximum floor temperature may vary according to floor covering installed.
- For guidance on material required, refer to Estimate Programs in section Technical Tables in Handbook.

Operating Cost Per Year

- For guidelines, refer to Heating Needs in section Technical Tables in Handbook. Look up your region and choose type of house, then multiply the kWh/sqft (kWh/m) per year by the price/kWh for your area.

MAX. ELEMENT LENGTH PER TRANSFORMER

Transformer Size VA	Current			Terminal Board Minimum	Element Length	
	Primary 240V	120V	Secondary 24V		Feet	Meters
150	0.6 A	1.2 A	6 A	1	17 ft	5.2 m
300	1.2 A	2.4 A	12 A	1	34 ft	10.4 m
500	2 A	4 A	20 A	1	58 ft	17.7 m
1000	4 A	8 A	40 A	2	116 ft	35.4 m
1500	6 A	12 A	60 A	3	174 ft	53.0 m