Step 2: Determine the Maintain Temperature and Make Cable Selection

The desired maintenance temperatures for most applications are listed in Table 2.1. Based on the maintain temperature desired, choose the appropriate HSX self-regulating cable. For temperatures other than those shown below, contact Thermon.

Table 2.1 Nominal Maintain Temperature

	45°C	50°C	60°C
	As Consistent with AS/NZ Std. 3500.4.2:1997[1]	As Consistent with AS/NZ Std. 3500.4.2:1997[2]	Kitchens, Laundries
Ambient Range[3]	22°C-27°C	22°C-27°C	22°C-27°C
Cable Jacket Color	Blue	Green	Red
240 Vac Power Supply	HSX 45-2	HSX 50-2	HSX 60-2

Notes . . .

1. Includes hospitals, nursing homes, early childhood centres, primary and secondary schools and similar facilities for young, aged and disabled persons.
2. Includes all other buildings.
3. Ambient temperature ranges below 22°C and above 27°C are possible; contact Thermon.

Step 3: Specify Circuit Breaker Requirements Based on Heat Tracing Circuit Lengths

After determining the extent of the hot water supply piping to be heat traced, determine the quantities to be maintained at 45°C, 50°C and/or 60°C. At this point, the total meterage of each type of HSX self-regulating cable can be determined.

Because HSX is designed specifically for hot water temperature maintenance and is manufactured with 2.3 mm^2 nickel-plated copper bus wires, the maximum circuit length possible is far greater than any other product approved for hot water temperature maintenance. These maximum circuit lengths must be observed to prevent excessive electrical currents in the bus wires of the heating cable. The maximum circuit length is defined as total length of cable that can be fed from a single power connection point, inclusive of all splices and tees. Note that longer circuit lengths may require larger circuit breakers. Be sure to verify the available amperages of the branch circuit breakers supplying power to the heat tracing.

Table 3.1 outlines the maximum lengths possible with each type of HSX self-regulating cable.

Table 3.1 Maximum Circuit Length vs. Circuit Breaker Size

Catalog Number	Service Voltage (Vac)	Steady-State Current Draw[1] amps/m	Breaker Size 15 Amp	20 Amp
HSX 45-2 (Blue)	240	0.016	395 m	525 m
HSX 50-2 (Green)	240	0.023	210 m	280 m
HSX 60-2 (Red)	240	0.0327	110 m	150 m

Note . . .

1. Steady-state current draw is defined as the theoretical current draw of the heating cable at the desired maintain temperature. Because temperature fluctuations will exist, this current should be used for reference purposes only. Current during start-up when the water in the piping is at ambient temperature will be greater and should be accounted for when sizing circuit breakers.
2. Longer circuit lengths may be possible, please consult Thermon for design assistance.
3. Maximum published circuit lengths are based on the use of “C” Type circuit breakers.