HOT WATER PIPE INSULATION

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This handout is intended only as a guide and is based in part on the 2015 Minnesota Residential Code, Big Lake City ordinances, and good building practice. While every attempt has been made to insure the correctness of this handout, no guarantees are made to its accuracy or completeness. Responsibility for compliance with applicable codes and ordinances falls on the owner or contractor. For specific questions regarding code requirements, refer to the applicable codes or contact your local Building Department.

R403.4 Service hot water system. Energy conservation measures for service hot water systems shall be in accordance with Sections R403.4.1 and R403.4.2.

R403.4.1 Circulating hot water systems (Mandatory). Circulating hot water systems shall be provided with an automatic or readily accessible manual switch that can turn off the hot-water circulating pump when the system is not in use.

R403.4.2 Hot water pipe insulation (Prescriptive). Insulation for hot water pipe with a minimum thermal resistance (R-value) of R-3 shall be applied to the following:

1. Piping larger than ¾" nominal diameter.
2. Piping serving more than one dwelling unit.
3. Piping from the water heater to kitchen outlets.
4. Piping located outside the conditioned space.
5. Piping from the water heater to a distribution manifold.
6. Piping located under a floor slab.
7. Buried piping.
8. Supply and return piping in recirculation systems other than demand recirculation systems.
9. Piping run lengths greater than the maximum run lengths for the nominal pipe diameter given in Table R403.4.2.

All remaining piping shall be insulated to at least R-3 or meet the run length requirements of Table R403.4.2.

TABLE R403.4.2
MAXIMUM RUN LENGTH (feet)[a]

Nominal Pipe Diameter of Largest Diameter Pipe in the Run (inch)	⅜	½	¾	>¾
Maximum Run Length	30	20	10	5

a. Total length of all piping from the distribution manifold or the recirculation loop to a point of use.

rev. 02-25-16

INSULATION OF HOT WATER PIPING FOR COMPLIANCE WITH THE MINNESOTA RESIDENTIAL ENERGY CODE