



Town of Paris

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Radon Summary

This letter is designed to help with an understanding of the requirements for successful Radon abatement system installation. The guidelines set forth in this document are directly from "Standard Practices for Radon Control Options for the Design and Construction of New Low-Rise Residential Buildings", the guideline used by the State of Maine and set forth in ASTM E 1465-08 and reprinted as 402-K-08-004.

Maine has a high level of radioactive rock in the soil which is the cause of Radon. It is emitted from the ground and the purpose of these measures is to create a path for the gas to bypass the building and a vapor barrier to help ensure that it doesn't have access.

There are 5 prescribed designs to protect against Radon in the home. 3 of them will be described here. These 3 will be explained because they are the 3 most common and most effective.

- 1- Large Aggregate
- 2- Medium Aggregate
- 3- Large Aggregate in a Trench

Large Aggregate is defined as stone from 1 to 1-1/2" laid out in a 4" continuous layer in which 4" perforated flexible or Rigid PVC pipe is installed. By this method a minimum of 20' of pipe is necessary. This 20' is connected to an elbow or T which brings the pipe through the layer of poly and the concrete.

Medium Aggregate is stone measuring 1/2 to 3/4". As there is less room for gas to travel through this a loop of the perforated flexible or solid PVC pipe is required to be installed within 5' of the perimeter of the building. In this case a T would be necessary again to vent up through the poly and cement. This Medium Aggregate would also be in a continuous layer beneath the building.

Large Aggregate in a trench is considered to be less efficient as it does not provide a continuous layer of stone. Again, stone from 1 to 1-1/2" is used but since not a complete layer a loop again within 5' of the perimeter of the building is required. The trench requirements are that the stone layer in the trench be a minimum of 4" deep and 12" wide with the 4" perforated flexible or solid PVC in the layer. This would also require a T fitting to allow the gas to travel up through the poly and cement.

The prescribed layer of poly should be installed across the entire bed. Any seam in the layer should be overlapped by at least 1 foot. The heavier the thickness the better. Interestingly there is no standard for mil thickness though 3 mil is suggested.

From the point that the 4" rigid emerges from the slab it is necessary that it continues up through the building and out through the roof. In roughly 2/3rds of installations having the 4" Radon pipe through the roof is sufficient to allow what gasses are present to bypass the living space. The remaining third require the installation of a blower fan to help remove the gas more expediently from beneath the slab.

There is certainly much more detail available on this subject. For further understanding of installation standards a review of 402-K-08-004 is recommended. You can also inquire of the Paris CEO at 207-890-9590.