European Radon Solutions Database

Prepared by

: ERRICCA 2 *European Radon Research and Industry Collaboration Concerted Action*

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Existing Buildings

Case Study

Sheet N°

Type	Radon sump system
Country	Sweden

Illustration

Description

The house was built in 1936, two floors with cellar. Slab on ground construction with brick walls. Natural draught ventilation with a kitchen fan. The house is located on a normal-risk soil, with high-risk areas close by.

This house is a demonstration house on the SSI training course about remedial measures. The house was also part of a project carried out in Sweden during 15 years about long-term performance of different radon remedial methods. Therefore measurements have been made every third year.

Selection

The selected mitigation method in this case is a sub-slab suction system. This system is homemade, with one suction point located in the middle of the slab. A 75 W electric fan draws air from the soil beneath the slab. The fan can be regulated. The air is exhausted outside the house. The fan is insulated not to make noise.

Pre-installation Diagnosis

Radon measurement indoor.

Radon reduction achieved

The original level of radon was 1440 Bq/m^3. After the sub-slab suction system was installed the levels have varied between 70 and 110 Bq/m^3 depending on the adjusted effect of the fan. Usually the effect has been set on one fourth of its maximum.

Problems

There have been some problems maintaining a low radon level due to the fan that has broken down at a few occasions. The air exhaust in this case is about 0,5 meters above ground at the same vertical level as the house wall. This construction could in worst case lead the radon containing air into the house again, but fortunately there is no window or air intake close to the exhaust pipe.

System enhancements

The fan can be accelerated to receive a bigger reduction in radon level.

Further Information

Further information can be found at SSI.

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