



Radiological Protection Institute of Ireland

An Institiúid Éireannach um Chosaint Raideolaíoch

Current remediation methods, rates and costs in Ireland

National Radon Forum

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What am I going to talk about?

- **The RPII conducted two surveys to determine**
 - **Remediation methods and costs**
 - **Remediation rates**
- **Why did we do them and what we have found?**








Remediation Methods and Costs

Focus Group Study reported in 2010

People wanted more information on the whole process

Some comments included:

-  **Cost of testing is ~€50 plus unknown amount which could run into €000's**
-  **Currently unaware of what is involved in remediation process**
-  **How long will it last – is it a one off?**
-  **Assumption that it is a major disruption (rip up floorboards and have put in radon barrier)**
-  **Emotional impact on you and your family**



Remediation methods and costs

Methodology

- **Survey by questionnaire conducted in Jan/Feb of 2011.**
- **Questionnaire designed to be short (one page) and completed in a few minutes**
- **66 RPII customers completed Post Remediation Measurements in 2010.**



Remediation methods and costs Questionnaire

- 1. The year your house was built?**
- 2. What prompted you to carry out remediation?**
- 3. What remediation method did you chose?**
- 4. Who did the work?**
- 5. How long did the work take?**
- 6. What was the cost of the work?**
- 7. The electrical power, in watts of the fan installed**
- 8. Did the work cause major disruption to the house and were you happy with the service?**



Remediation methods and costs

Response rate

- **Completed questionnaires returned from 49 customers (74% response)**
- **However not all respondents answered all questions**



Remediation methods and costs

Results

1. The year your house was built?

Year of build	No of replies
Pre -1900	3 (6%)
1900 - 1939	3 (6%)
1940 - 1979	16 (32%)
1980 - 1990	16 (32%)
1991 - 1998	10 (20%)
Post 1998	1 (2%)
TOTAL	49



Remediation methods and costs - results

2. What prompted you to remediate?

Reason for remediating	No of replies
Presence of high radon levels*	25 (53%)
Media report or local publicity	13 (28%)
Death of someone I know from cancer	3 (6%)
Call from RPII*	1 (2%)
Local gossip	1 (2%)
Local deviner	1 (2%)
SEIA information	1 (2%)
House built pre 1998	1 (2%)
Renovating house	1 (2%)
TOTAL	47



Remediation methods and costs - results

3. How long did the work take?

- **47 replies (96%) to this question**
 - **40 (85%) said less than one day. Typically “a few hours”**
 - **6 (13%) 2 days**
 - **1 (2%) more than 2 days**



Remediation methods and costs - results

4. Were you happy with the service and was there much disruption?

- **44 replies (94%) to these questions**
 - **41 (93%) reported they were happy with the service**
- **Three were not happy**
 - **Radon levels were still high**
 - **The work caused disruption**



Remediation methods and costs - results

5. Remediation solution installed?

Type of system	No. of replies
Active sumps	42 (90%)
Passive sumps	3 (6%)
Underfloor ventilation	1 (2%)
Indoor ventilation	1 (2%)
TOTAL	47



Remediation methods and costs - results

5.1 Active sumps, who did the work and cost?

Who did the work?	No of replies	Cost €	Running cost 70W fan
Radon contractor	38 (82%)	1100 (800 – 2000)	~€90 per year
DIY	4 (8%)	383 (135 – 650)	



Remediation methods and costs - results

Other Observation – first time success?

Active sump systems – do they work first time?

Attempt	Number
First attempt	28 (70%)
Second attempt	9 (92%)
Third attempt	2 (98%)
Fourth attempt	1 (100%)
TOTAL	40



Remediation methods and costs - Summary

- **Active sump is most common remediation method. They typically cost €1100 to install and €90/year to run (70W fan)**
- **They can reduce radon by over 90%.**
- **The chances of successful remediation at the first attempt are high but it may not work first time around.**
- **Remediation work typically completed within 1 day with little disruption to the house.**
- **Most people (94%) were happy with the service.**



Remediation Rate Survey

- **The health gain in identifying high radon levels is realised when people remediate.**
- **It is important to find out how many remediate and the obstacles that deter people from remediating**



Remediation Rate Survey

Methodology

- **Survey by questionnaire was conducted in August 2011**
- **A sample were of 122 customers were selected**
 - **Were private householders**
 - **Had measured as high between August 2010 and May 2011**
 - **Distribution was representative of high results nationally. Approximately 11% > 800 Bq/m³**
 - **Had not requested a post remediation measurement**
 - **Who had given their consent to be contacted**



Remediation Rate Survey

Methodology

- **Questionnaire designed to be short (one page) and completed in a few minutes**
- **Three main questions**
 - **Have you remediated**
 - **If not why not**
 - **Do you smoke**



**Questionnaire
Radon Remediation in your Home.**

Ref No.

1. Have you undertaken work in your home to reduce the radon level?

Yes

No

If yes

Is the level of radon in your home now less than the National Reference Level of 200 becquerels per cubic metre (Bq/m³)?

Yes

No

If no,

2. Reasons why remediation work was not undertaken

Please tick the box beside your most relevant reason.

Not certain there is a serious risk

Difficult to find reliable contractor

Concern about the cost of work

Inconvenient and disruptive

Living in rented accommodation

Intend to undertake remediation

Other, please specify

.....
.....
.....
.....
.....

3 Are you a smoker? **ex- smoker?** **non-smoker?**

The risk from radon is 25 times greater for active smokers than for lifelong non-smokers exposed to the same concentrations of radon.

**PLEASE USE THE ENCLOSED PREPAID ENVELOPE TO RETURN THE COMPLETED
QUESTIONNAIRE BEFORE 05 SEPTEMBER 2011**

THANK YOU



Rate of Remediation survey

Response rate

- **Completed questionnaires returned from 63 customers (52% response)**



Rate of Remediation survey

Have you remediated?

- **YES - 16 (25%)**
- **NO - 47 (75%)**



Rate of Remediation survey

Why not remediate?

- 47 people had high radon levels and had not remediated**
- There were 6 choices several respondents gave multiple answers.**
- 67 choices in total were given by the 47 respondents**



Rate of Remediation survey

Why not remediate?

Reason	Number (%)
Concern about cost	24 (36%)
Not certain there is a risk	18 (27%)
Intended to do remediation	11 (16%)
Inconvenient and disruptive	6 (9%)
Difficult to find a reliable contractor	5 (7%)
Living in rented accommodation	3 (5%)
TOTAL	67 (100%)



Rate of Remediation survey Smokers?

Remediation	Smoking Status
	3 (6%) smokers
47 who didn't remediate	16 (34%) ex-smokers
	28 (60%) non smokers
	1 (6%) smoker
16 did remediate	2 (12%) ex smoker
	13 (81%) non smokers



Rate of Remediation survey Summary

- **People seem reluctant to remediate even when they know they have high levels**
- **Only 25% have remediated. Comparable to previous surveys and internationally where 20% to 30% is reported**
- **Non smokers are most concerned at radon, then ex smokers. Active smokers seem unconcerned. This is also seen internationally.**



What now?

- **The information can input directly to the strategy development**
- **It is recognised that the information will need to be updated with time**



Thank you for your attention



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