



Canadian Radon Experience with Collaboration

9th ERA Workshop - International Collaborations on
Radon – **Fribourg (Switzerland)**



12 October 2021



- **Large Land Mass**

Canada is 240 times the size of Switzerland

- **Sparsely populated areas with large remote areas**

Canada vs Switzerland
37.7 million vs 8.4 million



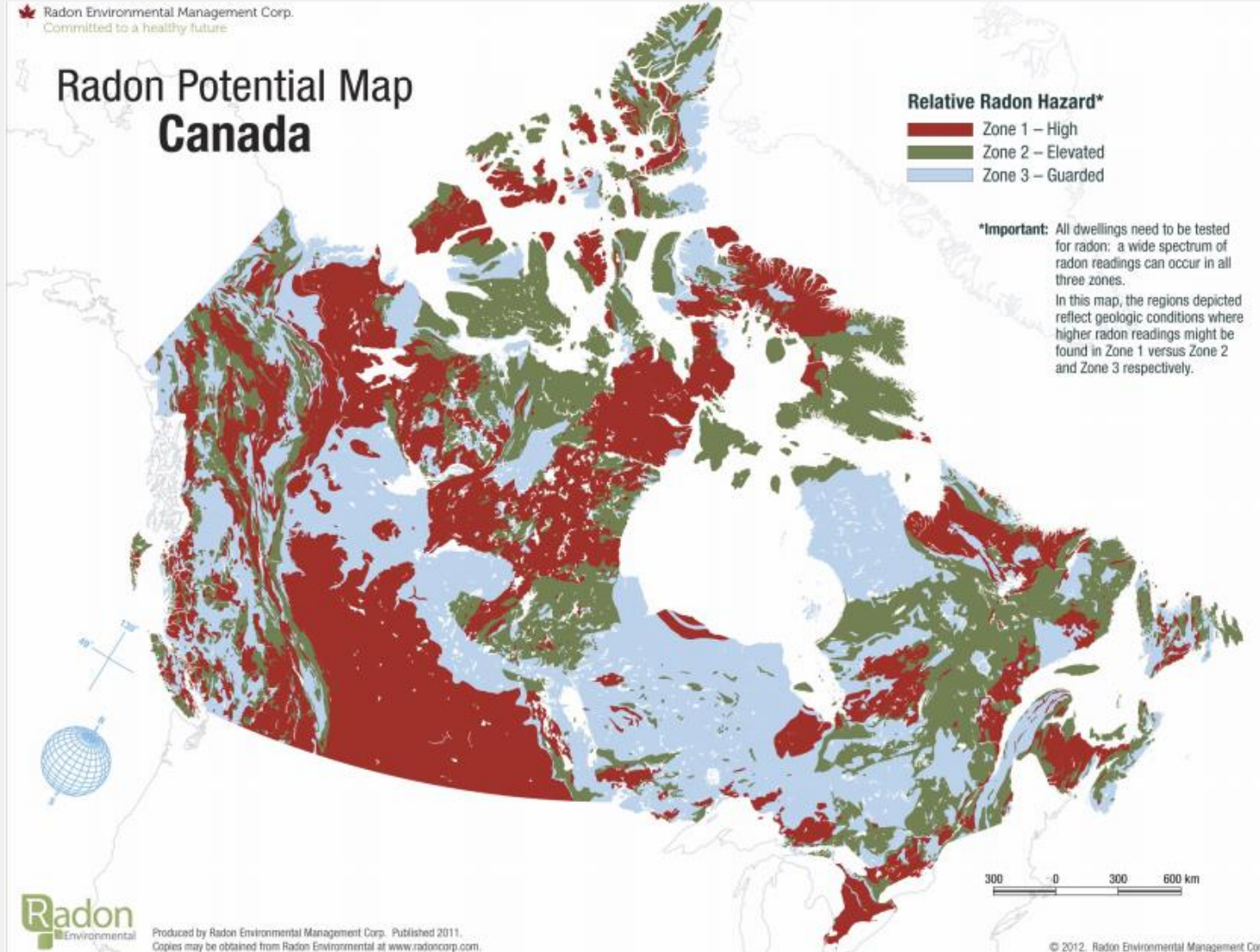
- Broad range of geographical and Physical conditions

Radon Potential Map Canada

Relative Radon Hazard*

- Zone 1 – High
- Zone 2 – Elevated
- Zone 3 – Guarded

***Important:** All dwellings need to be tested for radon; a wide spectrum of radon readings can occur in all three zones.
In this map, the regions depicted reflect geologic conditions where higher radon readings might be found in Zone 1 versus Zone 2 and Zone 3 respectively.



Radon from our
perspective

Geological
Radon
Potential

Temperatures range from 40C to -40C



We heat our homes in winter.



We cool our homes in summer.



Canada 101:

We have an
EXTREME CLIMATE



Our thoughts for looking for collaborators:

- Who is a trusted voice
- Who is a factual voice
- Where is an opportunity

Collaboration – A Canadian Success Story



Health
Canada

Santé
Canada

- Represents, supports and assists radon professionals
- Provides outreach and awareness to all Canadians

- A certification program that establishes guidelines, standards of excellence and best practices

- Created National Radon Program and Survey
- Developed guidance on measurement and mitigation
- Established the C-NRPP
- Provides funding to C-NRPP
- Maintains communication and provides input on direction



Building a strong
Foundation

Collaboration

REPORT OF THE RADON WORKING GROUP
ON A NEW RADON GUIDELINE FOR CANADA

REV. 03-10-2006

Submitted to the
FEDERAL PROVINCIAL TERRITORIAL
RADIATION PROTECTION COMMITTEE

2006 Report on Radon

- Developed recommendations for reducing radon levels in Canadians homes
- Recognized the importance of building codes to reduce or control radon within new construction
- Recommended a National Radon Action program prioritizing testing in homes, schools and hospitals, and also recommended testing in workplaces



Radon from our perspective

Recent History with Radon



Building a strong
Foundation

Collaboration

TAKE ACTION ON RADON



National Stakeholder Program
funded by Health Canada

Recruit, motivate, engage and bring together stakeholders
to increase radon awareness

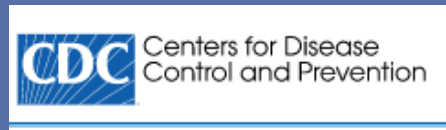
Motivate Canadians to take action to reduce radon and to
promote radon action month.

Collaboration – A Canadian Success Story

Government Organizations (Federal, Provincial/Territorial and Municipal)



Health-based Organizations



Other Industry Associations



Not-for-Profit Organizations



Private Sector Companies

Radon Guidelines and Standards



Reducing Radon Levels in Existing Homes: A Canadian Guide for Professional Contractors



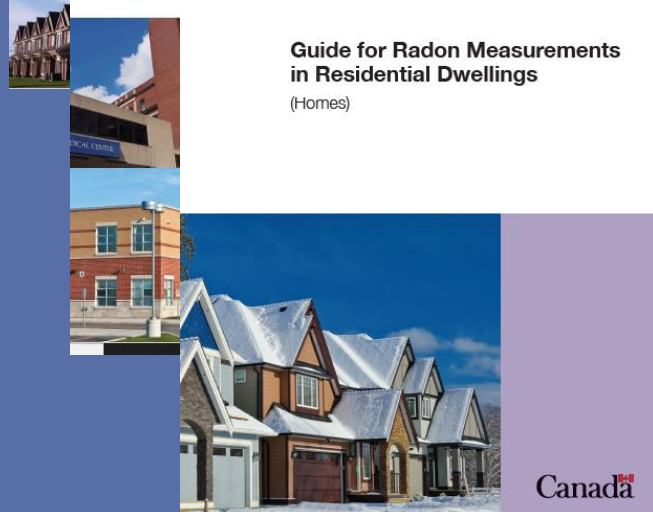
Guide for Radon Measurements in Public Buildings

(Workplaces, Schools, Day Cares, ...)



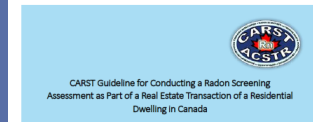
Guide for Radon Measurements in Residential Dwellings

(Homes)



C-NRPP Protocol for Conducting Short-Term Radon Measurements in Air

October 2018



CARST Guideline for Conducting a Radon Screening Assessment as Part of a Real Estate Transaction of a Residential Dwelling in Canada

October 2018



CAN/CSB-149.12-2017

National Standard of Canada

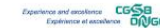
Radon mitigation options for existing low-rise residential buildings

Canadian General Standards Board / CGSB



CAN/CSB-149.11-2015 CD-01

Iss: 2015-07-10
149-149.11-2015
Comité des 149-CP-9



Radon control options for new construction in low rise residential dwellings

ICS 91.040.30

Document type: National Standard of Canada

Document stage: 40 - Approval

Warning

This document is not a National Standard of Canada. It is a draft distributed to CGSB committee members and other interested persons for review and comment. This draft is subject to change without notice and must not be referred to as a National Standard of Canada.

Recipients of this document are invited to submit their comments, to advise the CGSB committee of any relevant patent rights that they are aware of, and to provide supporting documentation. This information should be provided on or before 2015-09-12, to:

Cosmina Panu-anghel
Canadian General Standards Board
Ottawa, ON
K1A 1G6
Fax: 613-995-5740
Cosmina.panu-anghel@nrc.gc.ca



Guidance Documents



Best Practices

Standards





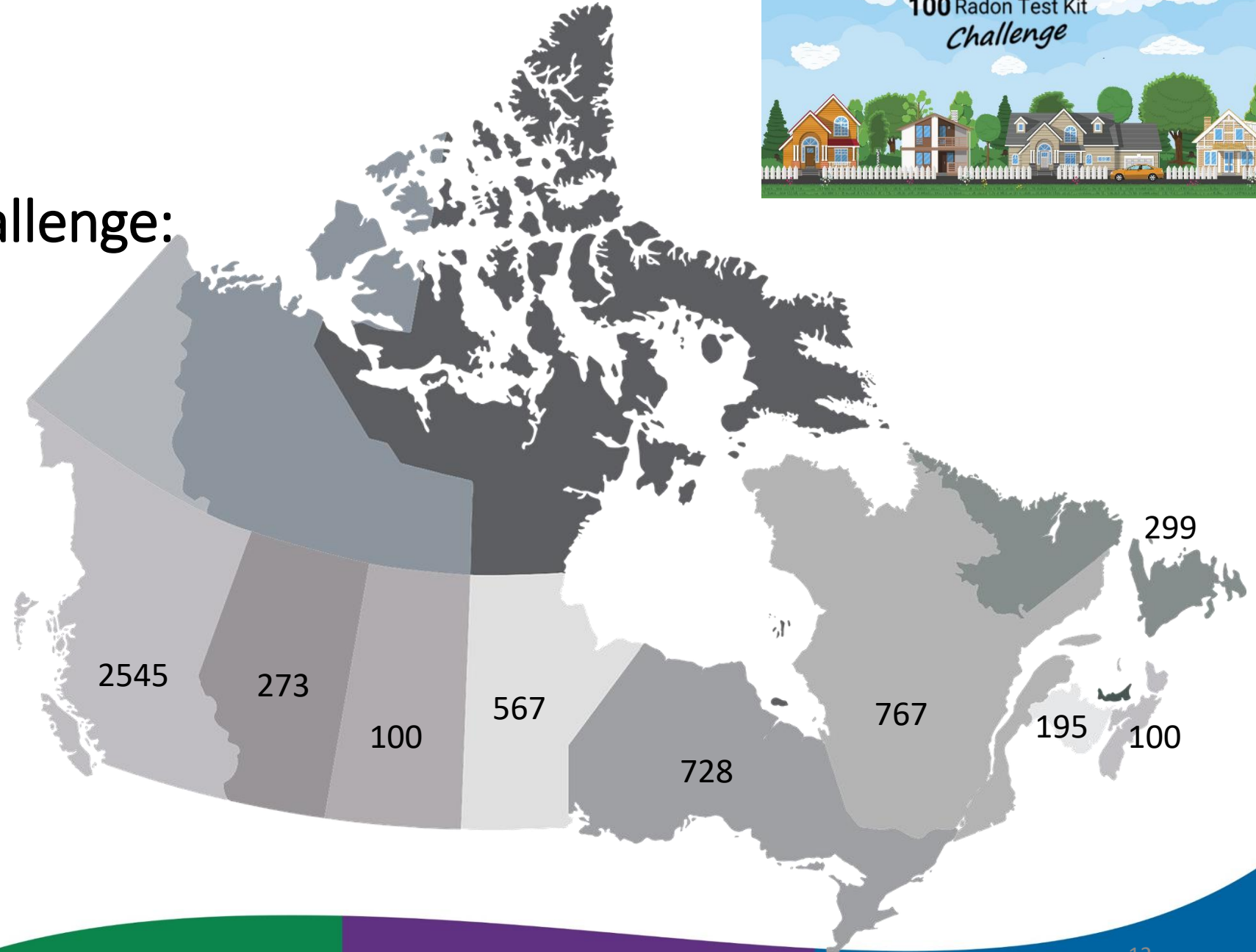
100 Radon Test Kit Challenge: Impact to date

3 years

40 communities

*Over 5 500 kits
distributed*

30 communities for fall of 2021.



TACKLE RADON TEAM ROSTER



**CALVIN
MCCARTY**

Calgary Football Team
& Grey Cup Champion

ORDER A TEST KIT



**TREVOR
HARRIS**

Quarterback for the Edmonton
Elks
& Grey Cup Champion

ORDER A TEST KIT



**ANDREW
GREENE**

Saskatchewan Roughriders
Alumnus,
4 year CFL All-Star

ORDER A TEST KIT



**ADAM
BIGHILL**

Winnipeg Blue Bomber
& Grey Cup Champion

ORDER A TEST KIT



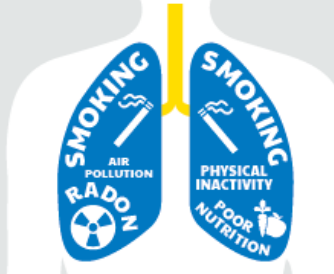
Take Action on Radon has:

- Presented a webinar to CCS's SHL and CIL on the risks of radon exposure, specifically when coupled with smoking.
- Developed resources for both team to use with clients and partners in order to answer questions on radon and provided the necessary information about testing for radon, reducing exposure, and spreading awareness.

REDUCE YOUR CHANCES OF A LUNG CANCER DIAGNOSIS

Lung cancer is the most commonly diagnosed cancer in Canada. It is the leading cause of death from cancer for both men and women in Canada.¹

Smokers have the highest risk of getting lung cancer and radon increases that risk. There are other factors that also increase lung cancer risk such as outdoor air pollution, physical inactivity and poor nutrition, specifically with a lack of fruit and vegetable consumption. While you should consider improving all these risk factors, the combination of radon and smoking is particularly dangerous.



RADON + SMOKING = DANGEROUS COMBINATION

QUIT OR REDUCE TOBACCO
Tobacco use is the #1 preventable risk factor in getting lung cancer

WHAT CAN YOU DO?

TEST AND REDUCE RADON
After tobacco, radon is the leading cause of lung cancer.

STEPS TO QUIT SMOKING

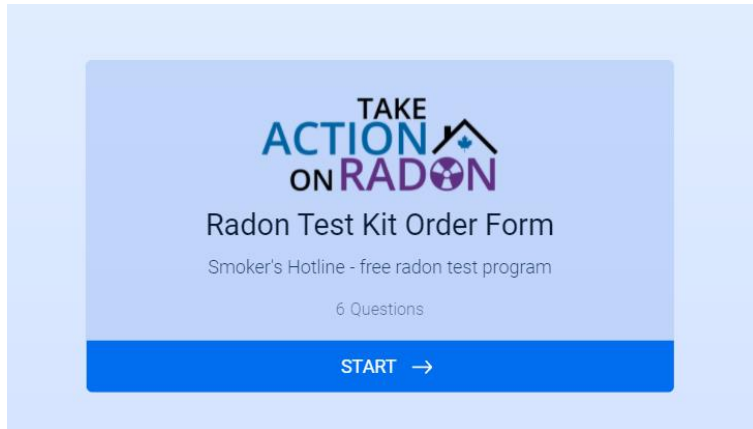
- 1 Make a quit plan.
- 2 Get guidance from a Quit Coach:
Call 1-866-366-3667
Text 'iQuit' to 123456
Chat go to smokershelpline.ca
- 3 Investigate Quit aids with a health professional
- 4 Select a quit date
- 5 Inform family and friends
- 6 Think about situations that you connect with smoking such as drinking coffee, driving, or having alcohol and come up with temporary alternatives such as replacing coffee with juice, foregoing alcohol for a little while, etc.

STEPS TO TAKE ACTION ON RADON:

- 1 TEST for Radon
- 2 EVALUATE Radon levels (Guideline is 200 Bq/m³)
- 3 DETERMINE necessary actions and timeline
- 4 REDUCE - find a mitigation professional
- 5 SPREAD RADON AWARENESS - Tell Others
To learn more go to takeactiononradon.ca



Canadian Cancer Society: Smoker's Helpline and Cancer Information Line



Take Action on Radon is offering FREE radon tests for any client who calls the Smoker's Helpline or Cancer Information Line.



Canadian Cancer Society / Société canadienne du cancer





White Ribbon Campaign



Free tests for Lung Cancer Patients and Families

- Piloted project with BC Cancer Agency
- Also working with Canadian Cancer Society's Cancer Information and Prevention Specialists
- Includes a CARE PACKAGE





- When pitching to work with a collaborator:
- What motivates them
 - What are their strengths
 - What supports/tools are needed to work together

RESOURCES:

TAKE ACTION ON RADON

Radon is an invisible, radioactive gas that comes from the ground

Radon is the **2ND LEADING CAUSE** of LUNG CANCER

3000+ PEOPLE/YEAR die from radon-induced LUNG CANCER

Radon is in ALL buildings

The only way to know how much radon is in your home is to TEST

Radon is easy to TEST and easy to REDUCE

HOW TO REDUCE RADON IN YOUR HOME

- HIRING** a certified professional LOWERS RADON BY UP TO **90%**
- INCREASING** home ventilation LOWERS RADON BY **25-50%**
- SEALING** cracks LOWERS RADON BY **13%**

Recent research found that **ONLY 29% OF CANADIANS** with high RADON in their home took action to REDUCE it!

TEST and REDUCE RADON to protect against lung cancer

www.takeactiononradon.ca

RADON IS THE LEADING CAUSE OF LUNG CANCER IN NON-SMOKERS

Test your home for radon and reduce your risk.

Testing is easy. Purchase a test at: takeactiononradon.ca/test/radon-test-kits/

Place a test in your house for 91 days.

After 91 days, return the test to the lab and get your results.

TAKE ACTION ON RADON

www.takeactiononradon.ca

#TAKEACTIONONRADON @ACTIONONRADON #RADONACTIONMONTH

Window Clings available



Pins



RADON IS THE LEADING CAUSE OF LUNG CANCER IN NON-SMOKERS

PROTECTING YOUR HEALTH IS AS EASY AS...

1. Test
2. Assess
3. Take Action

TAKE ACTION ON RADON

TO FIND OUT WHERE YOU CAN BUY RADON TEST KITS OR TO FIND A C-NRPP-CERTIFIED RADON PROFESSIONAL IN YOUR REGION, GO TO: www.takeactiononradon.ca

#TAKEACTIONONRADON @ACTIONONRADON #RADONACTIONMONTH

Postcard (French on reverse)



We also have playing cards available for purchase.

Order online:

<https://form.jotform.com/91975565858277>



Multiple Languages

Bookmarks and postcards in Tagalog, Punjabi, Italian and Chinese!

We are also working with some communities to translate into some First Nation Languages.

ਸ਼ਿਗਰਤ ਨਾ ਪੀਣ ਵਾਲਿਆਂ ਵੱਲੋਂ ਫੋਫੜਿਆਂ ਦੇ ਕੈਂਸਰ ਦਾ ਪ੍ਰਮੁੱਖ ਕਾਰਨ ਰੋਡਨ ਹੁੰਦਾ ਹੈ।
ਆਪਣੀ ਸ਼ਿਗਰਤ ਦੀ ਰੱਖਿਆ ਕਰਨਾ ਇੰਨਾ ਸੌਖਾ ਹੈ...

1. ਟੈਸਟ ਕਰੋ
2. ਨਤੀਜਾ ਵੇਖੋ
3. ਕਾਰਵਾਈ ਕਰੋ

ਇਹ ਪਤਾ ਲਗਾਉਣ ਲਈ ਕੀ ਰੋਡਨ ਟੈਸਟ ਕੌਂਟਾਂ ਕੌਥਿ ਖਰੀਦੀਆਂ ਜਾ ਸਕਦੀਆਂ ਹਨ ਜਾਂ ਆਪਣੇ ਇਲਾਕੇ ਵੱਲੋਂ ਇਕ C-NRPP ਪ੍ਰਮਾਣਿਤ ਰੋਡਨ ਪੇਸ਼ੇਵਰ ਲੱਭਣ ਲਈ, ਇਥੇ ਜਾਓ।
www.TakeActionOnRadon.ca

RADON ANG NANGUNGUNANG DAMLAN NO CANCER SA BAGA PARA SA MGA TAGONG HINDI NANGHISARILYO.

Sudin kung may radon ang inyong tahanan at bawasan ang panganib sa masamang epekto nito.

Madalì lang ang pagsusuri. Bumili sa: takeactionradon.ca/test/radon-test-kits/

Maglagay ng pansuri sa inyong tahanan sa loob ng 91 araw.

Paglitan ng 91 araw, ibalik ang pansuri sa lab at kunin ang inyong mga resulta.

Umaksyon sa Radon
www.TakeActionOnRadon.ca

ਸ਼ਿਗਰਤ ਨਾ ਪੀਣ ਵਾਲਿਆਂ ਵੱਲੋਂ ਫੋਫੜਿਆਂ ਦੇ ਕੈਂਸਰ ਦਾ ਪ੍ਰਮੁੱਖ ਕਾਰਨ ਰੋਡਨ ਹੁੰਦਾ ਹੈ।
ਆਪਣੇ ਘਰ ਦੇ ਵੱਲੋਂ ਰੋਡਨ ਹੋਣ ਦੀ ਜਾਂਚ ਕਰੋ ਅਤੇ ਆਪਣੇ ਜੋਖਮ ਨੂੰ ਘਟਾਓ।

ਟੈਸਟ ਕਰਨਾ ਸੌਖਾ ਹੈ। ਇਕ ਟੈਸਟ ਕਿੱਟ ਖਰੀਦੋ: takeactionradon.ca/test/radon-test-kits/

ਟੈਸਟ ਕਿੱਟ ਨੂੰ ਆਪਣੇ ਘਰ ਵਿੱਚ 91 ਦਿਨਾਂ ਲਈ ਰੱਖੋ।

91 ਦਿਨਾਂ ਤੋਂ ਬਾਅਦ, ਟੈਸਟ ਕਿੱਟ ਟੈਸਟ ਕਰੋ ਤੁਹਾਨੂੰ ਆਪਣੇ ਜੋਖਮ ਅਤੇ ਆਪਣੇ ਨਤੀਜੇ ਪ੍ਰਦਾਨ ਕਰੇ।

ਰੋਡਨ ਦਾ ਖਾਤਮਾ ਕਰਨਾ
www.TakeActionOnRadon.ca

氡是导致非吸烟者患上肺癌的主要原因
在家中检测氡含量，降低您的风险。

检测很容易 检测盒购买链接：
takeactionradon.ca/test/radon-test-kits/

将检测盒置于家中91天

91天后，将检测盒送回实验室并获取检测结果。

对氡采取行动
www.TakeActionOnRadon.ca





Free Downloadable Resources:
Radon photos now available on
pixabay.com



POPULAR LATEST ABOUT ME





Radon Reduction Sweepstakes – 2021/2022

2 prizes of \$500 per region (8 regions across Canada)

Anyone who has reduced their radon using a C-NPRP professional can apply.

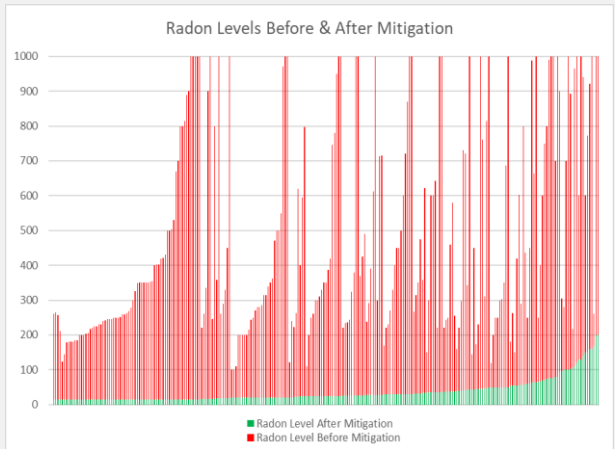
Winners from the 2020/2021 will be announced in October.

<https://takeactiononradon.ca/radon-reduction-sweepstakes/>



TAKE
ACTION 
ON **RADON** 

Region	# of Entries	Highest Radon Level	Average Post Mitigation Radon Level	Average % of Reduction
<i>BC and Yukon</i>	26	1800	49	92.0
<i>Alberta and NWT</i>	165	2281	26	91.0
<i>MB/SK</i>	94	3700	42	91.3
<i>ON</i>	24	1500	57	90.4
<i>QC</i>	25	1200	29	91.9
<i>Atlantic & Nunavut</i>	23	1765	39	91.5
	357	3700	35	91.2

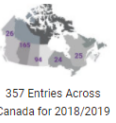


Data from CARST Radon Sweepstakes mitigation program




Take Action on Radon – October 2019
Radon Reduction Sweepstakes

The Radon Reduction Sweepstakes is a Canada-wide contest run by Take Action on Radon (TAOR) in conjunction with the Canadian Association of Radon Scientists and Technologists (CARST). The contest provides 10 prizes of up to \$1,000 each to homeowners who have tested their home for radon and used a C-NRPP professional to reduce levels to below Canada's recommended guideline of 200 Bq/m³. A key part of TAOR's mandate is to encourage Canadians to *take action* on radon, and the Sweepstakes does just that with the possibility of a cash reward.



The Sweepstakes is an excellent source of actual mitigation effectiveness and cost data and compelling testimonials from participants. Being able to reference actual numbers when estimating the cost of a radon mitigation system is very helpful, both to homeowners and to policy-makers. The data comparing the pre- and post-mitigation radon levels in homes mitigated by certified

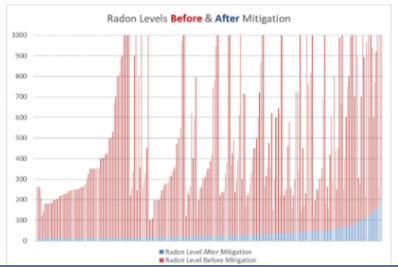


Table 2: Average Costs 2018-2019

Region	# of Entries	Average Cost	Highest Cost	Lowest Cost	# of Different Mitigation Professionals
<i>BC and Yukon</i>	26	\$ 2,663.93	\$ 4,128.98	\$ 1,381.80	4
<i>Alberta and NWT</i>	165	\$ 2,574.55	\$ 6,720.00	\$ 630.00	8
<i>Manitoba/Saskatchewan</i>	94	\$ 3,072.10	\$ 4,107.00	\$ 1,400.07	9
<i>ON</i>	24	\$ 3,166.19	\$ 9,098.76	\$ 1,412.50	3
<i>QC</i>	25	\$ 2,579.68	\$ 3,766.07	\$ 1,695.88	4
<i>Atlantic and Nunavut</i>	23	\$ 2,988.12	\$ 5,175.00	\$ 1,495.00	4
	357	\$ 2,794.64	\$ 9,098.76	\$ 630.00	

Data from CARST Radon Sweepstakes mitigation program



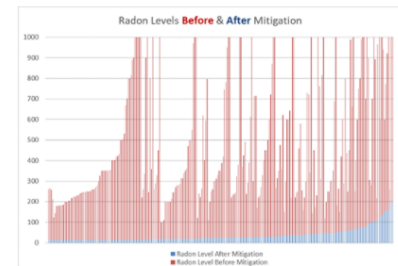
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357 Entries Across Canada for 2018/2019

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Thank you....Questions?

Pam Warkentin,
CARST/C-NRPP
p_warkentin@carst.ca



Driving forces...

How do we protect Canadians? - **Workplaces**

Method:

- Legislation (limited)... Canadian Labour Code
- Reduce liability/Risk averse companies
- Strong health and safety policy/culture
- Strong union presence
- BOMA Best and LEEDS certification points



Building a strong
Foundation –
Measurement in
Workplaces



Driving forces...

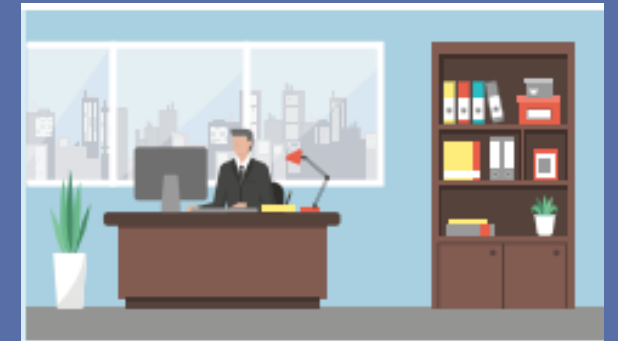
How do we protect Canadians? - **Workplaces**

Challenges:

- Lack of awareness
- Cost
- Deciding how to prioritize a large number of buildings
- Cooperation with employees, access to spaces or disappearing detectors



Building a strong
Foundation –
Measurement in
Workplaces





Building a strong
Foundation –
Measurement in
Homes



Driving forces...Why do Canadians care about radon? - **HOMES**

Motivations:

- Personal health
- Protect ones they love (Grandkids, children, pets)



Building a strong
Foundation –
Measurement in
Homes



Driving forces...Why do Canadians care about radon? - **HOMES**

Challenges:

- Lack of awareness
- Indifference
- Cost
- “If I have a high level then I’ll have to fix it”

The National Building Code addresses radon

- Gravel under the slab
- Sealed sump pit
- Well-sealed liner
- Radon rough-in for future installation



New
Construction