



## RADON AND YOU ...

### WHAT IS RADON AND WHY IS IT DANGEROUS?

Radon is a radioactive but chemically inert gas. It has no taste, smell nor colour. It is formed when radium found in most soil and rock, particularly granite, radioactively disintegrates.

As radon gas further decays, a series of tiny radioactive particles are formed. When either the gas or these particles are breathed into the lung, some is deposited and continues to emit radiation. People so affected will have a higher risk of lung cancer.

Smoking and exposure to high radon level combined pose a serious health risk. A cigarette smoker runs three times more risk of getting lung cancer than non-smokers on exposure to high radon levels.

### HOW DOES RADON GET INDOOR?

Natural radon from the soil, rock or building materials such as granite used in concrete may enter the basement, ground or upper floors of buildings from the walls and floors, or through any crack or opening in the ground. If the building is not well ventilated, radon gas will get trapped inside and its concentration will build up. About one third of Hong Kong is comprised of granite bed-rock which emits a higher amount of radon.

### HOW HIGH ARE INDOOR RADON LEVELS IN HONG KONG?

A survey conducted in 1993 has shown that the average radon concentration in residential premises was 86 Becquerels per cubic metre ( $\text{Bq}/\text{m}^3$ ) and that for all premises surveyed was  $98 \text{ Bq}/\text{m}^3$ .

Compared with other countries, the highest Hong Kong radon levels are not as high, such as the UK, Sweden and the USA. However, some measured levels do exceed  $200 \text{ Bq}/\text{m}^3$ , the guideline level recommended by World Health Organisation and the International Commission on Radiological Protection above which improvement action is expected to be taken.

### IS $200 \text{ Bq}/\text{m}^3$ A SAFE LEVEL FOR RADON EXPOSURE?

We recommend that you take action to reduce radon level if it exceeds  $200 \text{ Bq}/\text{m}^3$ . Please note, however, that radon exposure carries risks even at very low level. Therefore you should desirably aim to reduce radon level whenever it is simple and practicable to do so.

### HOW DO I FIND OUT IF I HAVE A POTENTIAL RADON PROBLEM?

Granite is very widely used in concrete for building construction in Hong Kong. We may find high radon concentrations on all floors of a building. You should check on the following to see if you have a potential radon problem:-

1. whether you keep the windows of your accommodation shut most of the time, or if you close the fresh air intake of the air conditioning or mechanical ventilation systems;
2. whether your accommodation is at the basement or on ground floor; or
3. whether the building is extensively constructed with granite, for example a stone house.

## TIPS FOR REDUCING RADON RISK

Here are a few simple and easy ways to reduce the radon risk associated with your accommodation:-

1. Open your windows more often if your accommodation is naturally ventilated.
2. Set the fresh air intake correctly if you have air conditioners or ventilation systems.
3. Seal any crack on the ground or walls if your accommodation is in a basement or on the ground floor.
4. Apply less permeable wall covering such as wall paper.
5. Spend more of your leisure time outdoors in areas with good air quality, such as country parks.
6. Quit smoking immediately if you are a smoker.

## MEASURING INDOOR RADON LEVEL

It is advisable to measure the level of radon in your accommodation, particularly if you have checked that you have a potential radon problem. Before you make any measurement, you should have explored all the tips for reducing radon risk.

If the measured level is higher than 200 Bq/m<sup>3</sup>, you should consult an indoor air quality

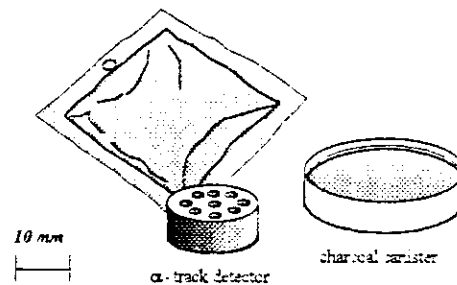
professional for advice on improvement measures.

Measuring radon normally takes from 90 days to one year. Since radon levels vary considerably during the day, from day to day and from season to season, a longer measurement period will provide more representative results. For long exposures, a testing device called an "Alpha track detector" is commonly used. To obtain results typical of people exposure, the device is left exposed at places in the building where the occupants frequently stay.

Some people use a "charcoal canister" device to carry out a short term measurement lasting less than 90 days. This device will give a quick assessment of the radon level.

You may buy these testing devices from either local or overseas suppliers.

Common Radon Testing Devices



**FOR MORE INFORMATION OR ADVICE,  
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