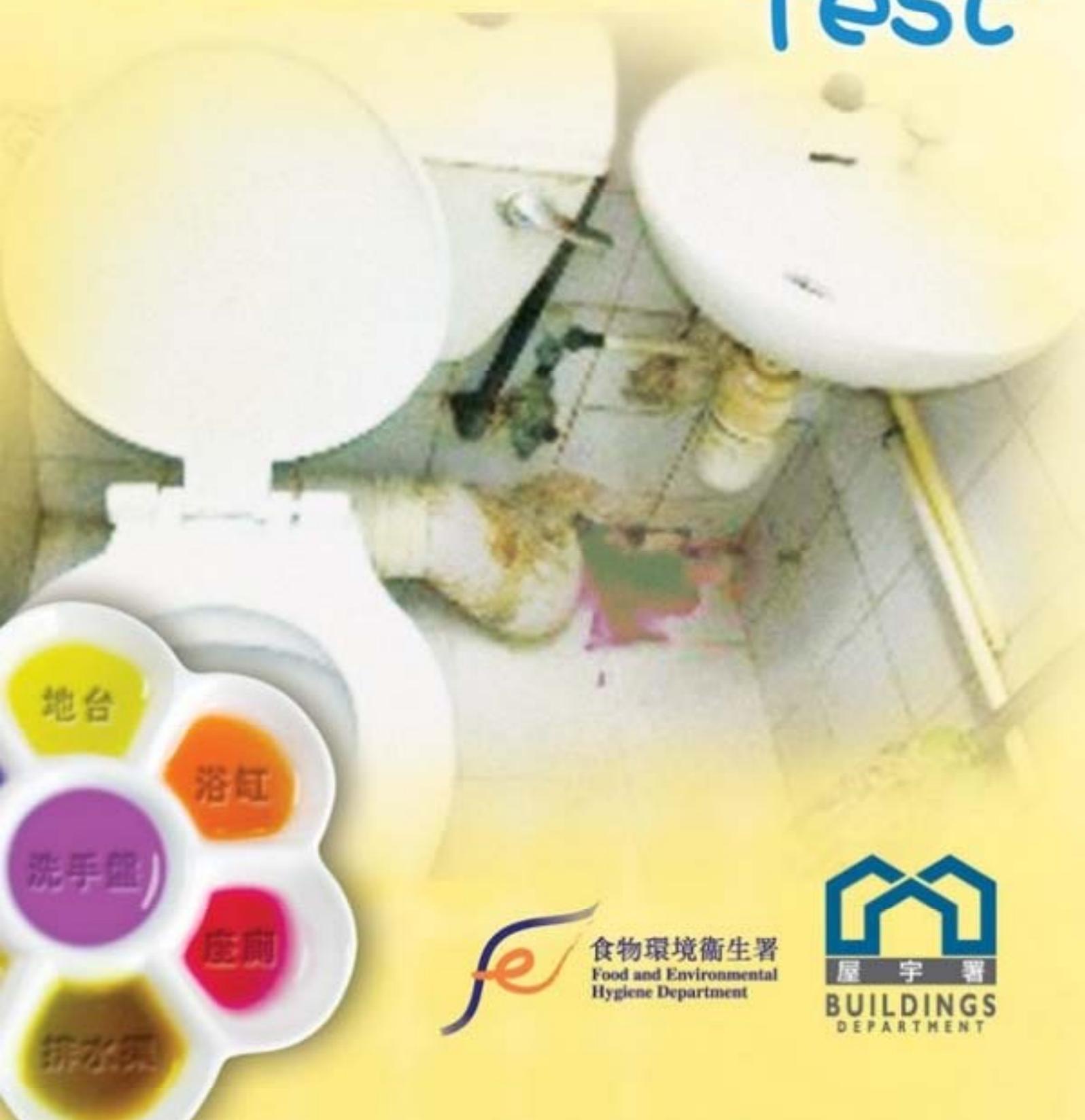


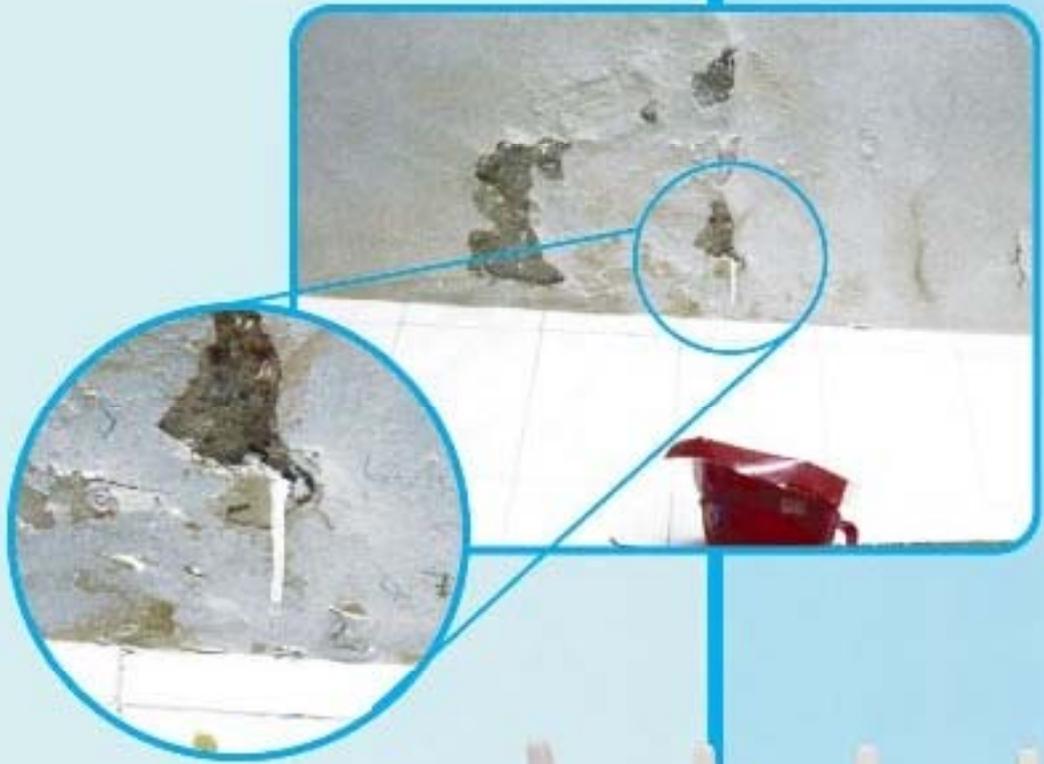
"Do-it-yourself" Water Seepage Test



食物環境衛生署
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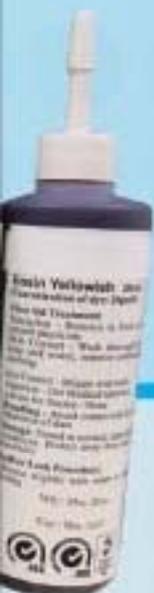
Do It Yourself to investigate Water Seepage



This Do It Yourself (DIY) pamphlet gives guidance on simple methods to detect the source of water seepage found on the ceiling. The suggested non-destructive tests may be used separately or in combination, and do not damage the building fabric and sanitary fitments. To get good results, you should observe and record any changes in the seepage during the whole test.

When water seepage occurs in residential flats, it may pose a nuisance to occupiers. Flat owners are responsible for maintaining their properties including investigating the water seepage problem. Where water seepage is seen on the ceiling of a lower flat, owner/occupier on the upper flat should cooperate to resolve the problem.

If the seepage is very mild, intermittent or ceases to occur, it would be difficult to detect the source. Before the lower flat occupier approach the upper flat neighbour, please make sure that the seepage does not come from outside of the lower flat due to rain penetration or defective drainage works, i.e. seepage on the external wall.



Appearance of Water Seepage on the Ceiling

Water flows downwards or along the shortest possible path. Hence ceiling seepage is normally observed below its source, e.g. a defective sanitary fitment or a drainage pipe. Please see Diagram.



◀ Possible source of water seepage in upper flat

Ceiling seepage ▶
in lower flat





The appearance of seepage or dampness, i.e. its position, intensity, odour and colour, also gives tell-tale signs about its source. The following checklist will suggest a probable cause or source of seepage:-

a. Defective drainage piping within floor slab of upper flat

- seepage is below a sanitary fitment in the kitchen or bath room; Yes/ No
- seepage is intermittent and circular in shape; Yes/ No
- seepage is below washing machine discharge pipe; Yes/ No
- seepage is mouldy and smelly to indicate foul water. Yes/ No

b. Damaged water proofing in floor slab of upper flat

- seepage is below bathroom; Yes/ No
- seepage is below surface channel or wet floor slab (shower room); Yes/ No
- seepage area is relatively large and even, or near the wall. Yes/ No

c. Leaking water supply piping in floor slab of upper flat

- seepage forms dripping; Yes/ No
- seepage contains greyish crystalline deposits to indicate salt water. Yes/ No

Testing of Drainage and Plumbing Works

The colour water test is an inexpensive and effective method for detecting any defect in sanitary fitments and drainage works. For the sake of health and safety, you may consider using food dye. Colour dye in powder or liquid form should be dissolved or diluted in water for tracing the source of seepage. It should be noted that colour dye seepage will discolour and stain the ceiling. About 10 litres of colour water is needed for each test.

Pour colour water into the outlet of the sanitary fitment to resemble actual use of the fitment. You may prepare the colour water in the receptacle as shown. Afterwards observe whether colour seepage will appear on the ceiling of the lower flat. Colour water seeping through the concrete floor slab will take about an hour or sometimes two weeks to finally appear on the ceiling.



You may apply colour water to detect any leakage in the components of a floor drain, a bath tub or a shower tray step by step (changing the colour to distinguish one test from another) as shown: -

a. Floor Drain

- wet the junction between floor drain and concrete slab with colour water;
- then pour colour water into the inlet.



b. Bath Tub

- splash the wall sealant with colour water;
- then drain colour water into the outlet;
- retain one bottle of colour water and drain into the overflow inlet to check the connexion.



c. Shower Tray

- wet the whole shower tray including all junctions with the walls or curbs;
- then drain colour water into the outlet.



Testing of concealed water supply pipes

To overhaul the water supply system, it is advisable to employ a licensed plumber who may choose to carry out a suitable test including the use of a pressure machine. The following two simple methods may be used to detect any leakage in the water supply pipes in normal situations:-

a. Flow meter test

turn off all water taps;

record the reading on the water meter first and again after 30 minutes; and

check any change in the second reading to indicate leakage.

Reversible pressure test

record the rate of water dripping at a prominent spot on the ceiling for about 30 minutes;

turn off the mains water supply to the flat under investigation;

turn on all taps (including washing machines) to drain off water and release pressure within the water pipes;

record the rate of water dripping at the selected spot again for 30 minutes;

record the rate of water dripping at the same selected spot again for 30 minutes to re-confirm the leaking water supply pipes.

turn on the mains water supply to the flat under investigation and turn off all taps to resume the pressure within the water pipes for 1 hour; and

observe a reduced rate of water dripping to indicate leakage;

continue to record the rate of water dripping till it ceases;

If the source of seepage cannot be identified, you may consult a building professional.

Joint Office of Buildings Department and
Food and Environmental Hygiene Department

www.bd.gov.hk / www.fehd.gov.hk

For enquiries, please call "1823 Citizen's Easy Link"