

**Rising damp** in concrete footings is the wicking of ground moisture into the footing and wall, and subsequent diffusion into the building leading to excess humidity, chronic damp and mold. Rising damp does not produce pools of water, (as can be the case with waterproof failure of a concrete wall) but a musty smell, growing insidiously stronger when the concrete is exposed to more water.

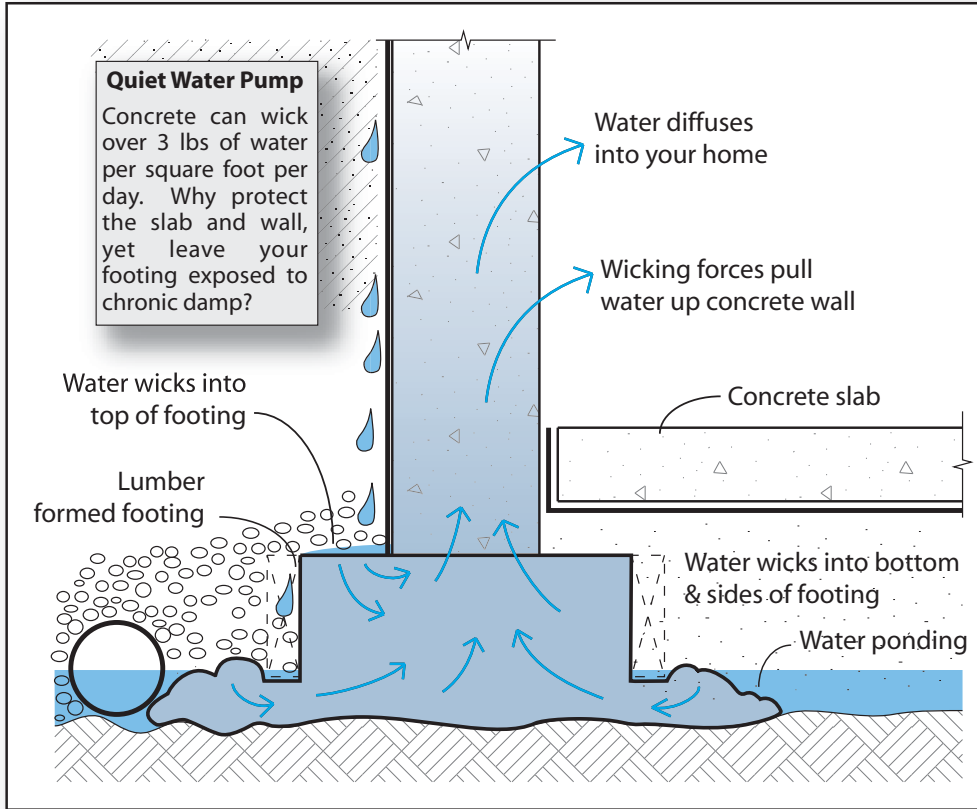
### Harmful Molds in Finished Basements

CMHC conducted a survey of 405 houses in Ottawa, Canada, "to determine whether typical 'finished' basements are contributing to poor indoor air quality as a result of mold growth in the finishing materials".

**About half of the 405 houses "had signs of moisture in the basement"**. The study selected 22 for investigation. Molds were found in 18 of the 22 houses, or 82%. Samples were taken from 16 of the 18 houses. **In 100% of those houses, "molds with properties that are harmful to humans were found."**

### The study concluded:

1. Some finished basements do present health hazards to the occupants due to the presence of toxigenic and dangerous molds in the wall cavities;
2. The causes of mold growth in finished basements are directly related to **chronic wetting incidents** rather than the wall finishing and insulating techniques;
3. The main chronic moisture sources associated with mold growth in finished basements are **exterior moisture sources and wetting mechanisms;**"



**Wicking action** is the movement of water by forces of attraction (both capillary and chemical) between water and the adsorbing material. Capillary forces are seen in a glass where the water edge rises above the surface. If the diameter of the glass is reduced to the size of a small tube, the force of attraction will become stronger than the gravitational force, causing the water to move up the tube.

### An excellent example of wicking and rising damp is the Redwood tree:

- The roots absorb water from the ground, similar to the concrete footing;
- The trunk transfers water vertically, similar to the concrete wall;
- The leaves evaporate water into the air, similar to the interior surface of the concrete wall.



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### Materials Show Different Wicking Effects

Material	Description	Height of Action
Gravel	Large spaces between rocks and pebbles prevent wicking forces from acting on the water.	Zero
River Sand	Small, compacted sand particles will induce small wicking forces on the water.	From 1/2' to 2' as per compaction
Clay	Small particle size creates strong wicking forces.	Tens of feet
Concrete	Small particles create strong wicking forces.	Tens of feet

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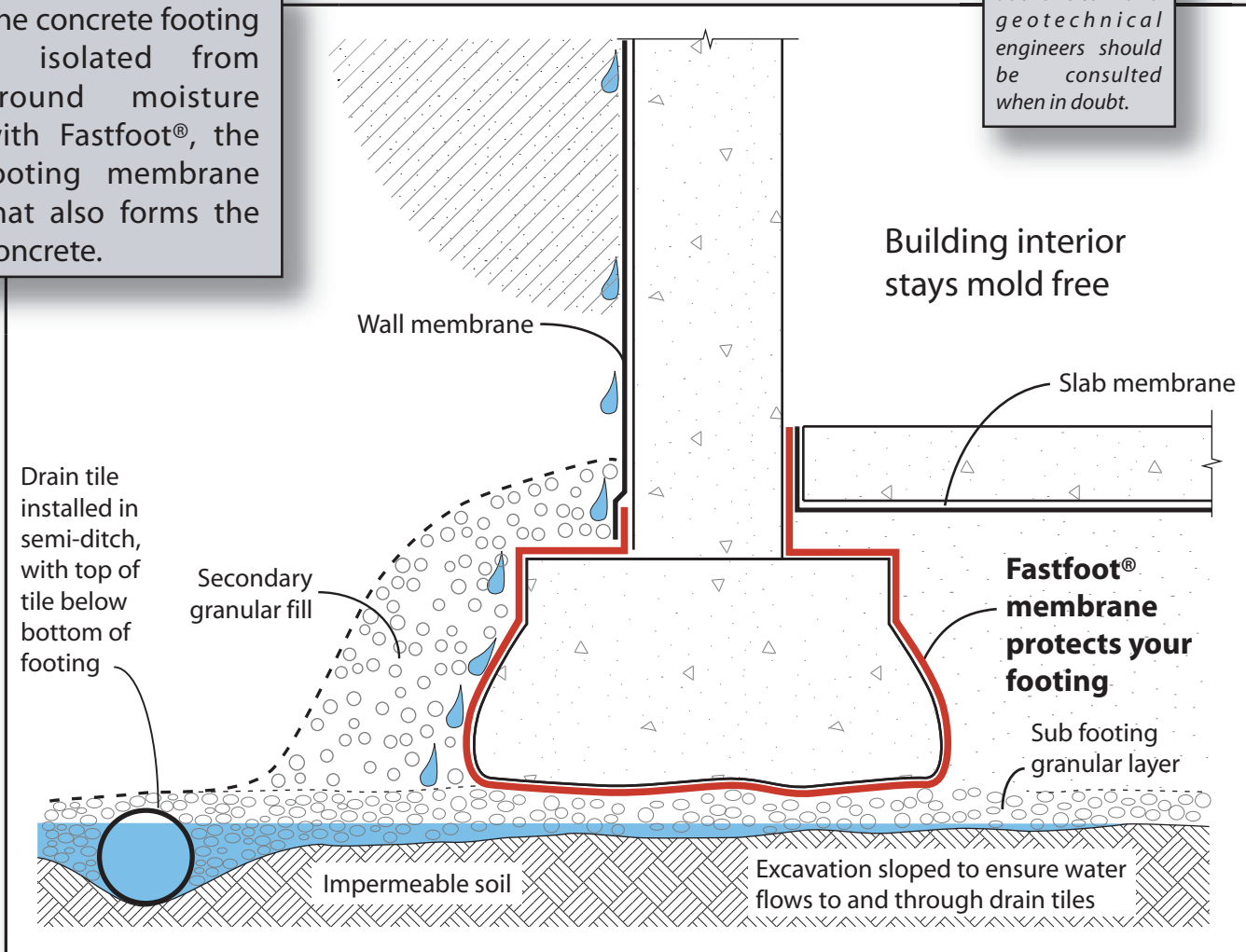
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## PREVENTION OF RISING DAMP

The concrete footing must be protected from all external water sources.

*Rising damp is a complex issue and local inspection authorities and geotechnical engineers should be consulted when in doubt.*

The concrete footing is isolated from ground moisture with Fastfoot®, the footing membrane that also forms the concrete.



Building interior stays mold free

**Fastfoot® membrane protects your footing**

**Impermeable sub soils** (such as clay or rock), require the placement of 3" to 4" granular drainage layer under the footing, and the careful location of the drain tile (see report "Drainage & Rising Damp" located at [www.fab-form.com](http://www.fab-form.com)).

**Permeable sub soils** (such as sand and gravel) do not require a drainage layer under the footing.

### Fastfoot® Membrane Installation

Install Fastfoot® as per instructions included with the fabric. All joints should be lapped a minimum of 8".

The bottom edge of the wall membrane must lap over the footing membrane to ensure water is directed away from the footing and into the drainage layer below. The inside footing membrane is taped to the underslab membrane.

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