

SPILLS: Inspect 10 Areas to Prevent Spills from Heating Oil Tanks



Spills of hazardous substances can come from not only industrial equipment but also equipment found in homes, office buildings and non-industrial workplaces, such as heating oil tanks. And heating oil spills can be just as harmful to the environment as other kinds for spills—and just as costly to remediate. For example, several hundred litres of furnace oil spilled from the basement of a privately owned building and onto property owned by a city. The private property owners started remediation but ran out of money. So the city was forced to clean up the contamination [*Kawartha Lakes (City) v. Ontario (Environment)*, [2013] ONCA 310 (CanLII), May 10, 2013]. And because the warm weather seems to result in an increase in the number of spills from heating oil tanks, it's a good time for all property managers and companies to conduct inspections of such tanks.

Consequences of Heating Oil Spill Can Be Serious

If you think spills from a heating oil tank aren't something you should spend a lot of time worrying about, think again. Look what happened to the owner of a commercial office building because of a such a spill.

A heating oil tank attached to the building sprang a leak, releasing its entire contents onto the ground and underneath the building. Heating oil fumes permeated the building, ruining furniture, carpets, books, etc. Workers complained of headaches and their clothes and hair smelled of heating oil even after they left the building for the day. And because the building was only one foot above ground level, it wasn't possible to get at the spilled material under the building by the usual means. As a result, the company renting the building cancelled its lease and moved out of the building, citing unsafe working conditions for its employees. So the building owner not only faced huge cleanup costs but also lost his rental revenue.

10 Areas to Inspect

The Nunavut Department of Environment's *Illustrated Homeowner's Guide to Heating Oil Tanks* provides information on how to properly conduct inspections of heating oil tanks and recognize potential spill risks. And here's a heating oil tank system inspection checklist based on one in a homeowner's guide from Nova Scotia. When conducting this inspection, focus on the following 10 key areas:

Physical damage. Check for excessive denting and any other signs of physical

impacts or damage that may have weakened the tank, making it more subject to leakage and rupture.

Rusting/corrosion. Check for surface rusting. Some surface rusting is normal. But excessive rusting may be an indication that your tank is approaching the end of its useful life and in need of replacement.

In addition, serious and unseen rusting can happen inside of the tank because of a buildup of condensation water that collects on the bottom of the tank or bad fuel. If you see a dark line along the bottom of your tank—as if someone has drawn a line along the bottom of the tank with a marker—it's likely on the verge of rupturing and so should be replaced immediately.

Tank stand. Some outside oil tanks are mounted on elevated platforms or stands to keep them off of the ground, particularly in the northern territories. But a full tank is very heavy and can weigh as much as a tonne. So tank stands are inherently unstable because they're top-heavy and so are subject to tipping over unless properly anchored.

Make sure your tank stand is bolted to a solid footing and/or fitted with a very broad base. An ideal foundation consists of a large concrete pad onto which the metal tank stand is firmly bolted. Don't anchor the heating oil tank and stand to the building's siding, which provides virtually no holding strength and certainly not enough to hold one tonne of dead weight. And note that wooden tank stands are barred by the *National Fire Code of Canada*.

Flex hoses. Flex hoses shouldn't be compressed. So inspect the steel weaving of the hose by grasping it with your hand. If the weave is loose and you're able to compress it by hand, the flex hose needs to be replaced. In addition, don't install flex hose through a building wall.

Fittings and valves. Examine all fittings and valves. Look for signs of rust, corrosion and any other mechanical distress. Check for leakage and "weeping"—that is, a thin film of oil coating the area around the joints. If you find or suspect any such defects, contact your oil burner or boiler mechanic and have him repair the defect as soon as possible.

Fuel lines. Avoid excessively long fuel lines, which are more vulnerable to breakage due to ground shifting, vandalism and accidents. If a lengthy fuel line is unavoidable, the line should be firmly supported along its entire length. In addition, fuel lines should be easy to access for regular inspections. So buried fuel lines should be avoided. And if your fuel line is subject to burial by drifting snow, install structural support along the affected section of the fuel line and make sure to regularly clear the drifted snow from around it.

Vents and filler caps. Ensure that the vent pipe is clear and free of obstructions. Vent and filler pipes should be fitted with rain caps to prevent water from entering the tank. Filler pipe caps should be affixed to the pipe with a hinged arrangement to prevent accidental loss of the cap. Most filler pipe caps can be locked to prevent tampering and/or theft of heating oil.

Drips and ground staining. Check for excessive ground staining, which could be a sign of chronic spillage from overfills or leakage from the tank. Also check for drips. Repair or replace leaking/dripping tanks and fittings immediately.

Oil level gauge. Your heating oil tank should be fitted with an oil level gauge that's functional. Look at the gauge over a period of weeks during the winter to see if the level indicator changes position. If it doesn't, then there may be a problem with the gauge. Repair or replace broken and/or malfunctioning gauges without delay. Gauges should also be equipped with a gauge protector to prevent accidental damage from falling ice, vandalism and other accidents.

Secondary containment. The general purpose of a secondary containment structure, also called a "containment berm," is to prevent heating oil from escaping into the environment in the event of a minor or major failure of the enclosed heating oil tank. It also serves to contain nuisance leaks and minor spills. Secondary containment structures are usually associated with large commercial buildings.

Keep containment berms clear of water, garbage and other debris. Most berms are fitted with a drain valve to release accumulated water. This valve should be fitted with a lock or the spout should be fitted with a pipe plug or pipe cap to prevent tampering by vandals and children. Before draining accumulated water, make sure that it doesn't also contain heating oil.

Tank location. Your heating oil tank should be located as close as possible to the heating appliance, such as the furnace. It should also be located where it won't be subject to vehicular impact or any other physical hazards. Heating oil tanks are particularly vulnerable to toppling over during the spring runoff, when flowing meltwater tends to undermine the ground on which the oil tank and stand rest. So locate your heating oil tank on a dry, well-drained location and clear of any pathways of flowing water.