

# LEGISLATIVE INTERPRETATIONS

Topic: Fire Suppression Systems	Issued by: Director, Compliance and Regulatory Review
Statute: 96-105 <i>Underground Mines</i>	Date Issued: March 3, 2014
Section or subsection: 93, 94(1) and (2)	Date Revised:

## Fire suppression

**93** An employer shall ensure that a fire suppression system consisting of sprinklers, foam or other adequate means of suppressing fire is provided

- (a) in each area where more than five hundred litres in total of flammable or volatile materials are stored, and
- (b) in each surface building or surface structure, other than a fan house, located above or adjoining a mine entrance.

**94(1)** An employer shall ensure that each mining machine, stationary engine and piece of mobile equipment using hydraulic fluid with tank capacity greater than fifty litres

- (a) is equipped and maintained with an adequate fire suppression system, or
- (b) uses a fire resistant hydraulic fluid that meets the requirements of CSA standard CAN/CSA-M423-M87, “Fire Resistant Hydraulic Fluids”.

**94(2)** An employer shall ensure that each engine using hydraulic fluid with a tank capacity of less than fifty litres and each piece of mobile equipment containing diesel fuel is equipped and maintained with an adequate fire suppression system.

## Question

Section 93 of *Regulation 96-105* refers to a fire suppression system as “*consisting of sprinklers, foam or other adequate means of suppressing fire*”. Our underground mine uses both mining machines and other equipment that contains more than 50 litres of non-fire resistant hydraulic fluids and some with less than 50 litres. Subsections 94(1) and 94(2) address both types of equipment and references the need for “an adequate fire suppression system.” What is the expectation for a fire suppression system to meet the requirements of 94(1) and 94(2)? Can a simple fire extinguisher be used in some circumstances?

## Answer

To comply with section 93, the chosen systems must be able to control a fire situation once activated.

The appropriate system depends primarily on the volume of flammable or combustible fuel that could be released in an emergency and the potential for the fuel to ignite.

Mining machines and other equipment with large volumes of flammable or combustible hydraulic fluids (greater than 50 litres, for example) are at a high risk of releasing large volumes of hydraulic fluids due to mechanical failure during operations and for the fluid to come in contact with an ignition source such as the heat generated by operating such equipment. As a result, a more robust fire suppression system consisting of sprinklers or foam would likely be necessary to extinguish such a fire.

On the other hand, fires occurring from the operation or maintenance of equipment with low volumes of hydraulic fluids, or powered mobile equipment containing diesel fuel could be adequately suppressed using a fire extinguisher.

The most effective way to determine a fire suppression system's adequacy would be to conduct a hazard assessment to determine the risk of release of the flammable or combustible fluid, the volume of the release and the potential for the introduction of an ignition source.