



# Protect Your Property

## High Intensity Discharge (HID) Lighting

### Loss Scenarios

Paper products were stored in a warehouse with Metal Halide lighting present. The stock was either too close to the lights when one failed, or a light was struck by a forklift load. The ensuing fire resulted in total product loss throughout an entire bay.

Metal Halide lighting was installed in a lumber storage warehouse. It is believed to have catastrophically failed, with the entire building and contents destroyed.

An elementary school gymnasium had this type of lighting installed. During a PE class, a light failed, sending glass and hot filaments to the ground.

Luckily, the children were lining up on the other side of the room and no one was hurt.



*Building products storage fire*

### History

High Intensity Discharge lighting is a category which encompasses Metal Halide, Sodium Vapor, Mercury Vapor, and others. Essentially, these are bulbs within bulbs, with the innermost area a pressurized environment containing an element which enhances lighting characteristics.

This style of lighting has been around since the 1960's, and is an economic and valued light source seen most often in outdoor areas requiring significant light, such as a sports arena, or indoors in areas such as warehouses and gymnasiums.

In general, these lights are considered safe and efficient. However, there is the potential for catastrophic failure. Most failure will merely be the inability to illuminate. The bulb would be replaced, and there will have been no incident. However, catastrophic failure can happen if the failure occurs during its "on" phase, rather than at the time it is turned on. The pressurized inner bulb can burst as the filament breaks. This can shatter the inner bulb with enough force to break the outer bulb. These lights burn at 1500-2000 degrees, which would mean anything combustible in its path would be subject to ignition.

These lights can be installed with covers. However, these glass or plastic covers can be a false sense of security as the covers themselves can burn.



*HID Lighting with cover beginning to burn. Photo compliments of ISO.*

There is also an OSHA directive regarding these, as the glass and hot embers can endanger people.

HID lighting is generally safe, and the National Electric Code (NEC) has tried to make it safer after the 2005 edition. There was a time that different types of bulbs (O, E, and S) could be interchanged. However, the threading of bulbs and fixtures are differentiated so that the proper bulb is used. Incompatibilities between bulbs and ballasts are a potential source of failure.

Of the types of bulbs, Sodium Vapor and Mercury have more fail safe mechanisms. The Metal Halide is considered the one to take the most caution with.

### **Positive Action Steps**

In general, this type of lighting is valued and is here to stay. However, you can do the following:

- Identify HID lighting fixtures on your property so you know where they are located.
- It is preferable to have these lights over open space, rather than a combustible commodity.
- Relamp according to the manufacturer's suggestion.
- Cycle the lights weekly, particularly if lamps are in an area which is lit 24 hours per day. Cycling means the lights are turned off for 15 minutes. When they are turned back on, a representative must watch the lights, looking for any that flicker or take longer to come on. Those are most at risk of creating a catastrophic failure and should be changed immediately.
- Use the proper type of bulb for the fixture.
- Store stock at least 3 feet (sideways) away from these fixtures (as stock should not be directly underneath them)
- Forklift operators should be well trained and aware of the risks of striking lamps with loads.
- Arrange warehouses to minimize the risk of a load striking a fixture.

For additional information about Acadia Insurance and its loss control programs, contact your local Acadia insurance agent.

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