



State of New Jersey
DEPARTMENT OF COMMUNITY AFFAIRS
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GOVERNOR

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ACTING COMMISSIONER

SUBJECT: High-Intensity Discharge Luminaires

Dear Electrical Subcode Official:

The Department of Community Affairs is working in conjunction with the Department of Environmental Protection (DEP) to publicize requirements for the protection of HID lamps for the safety of occupants in all buildings.

There are regulations contained in the Uniform Construction Code (UCC) that address the use of high-intensity discharge (HID) lamps, which are also called electric discharge lighting, when used in public schools. This includes mercury vapor, high pressure sodium and metal halide lamps. The requirements of N.J.A.C. 5:23-3.11A(c)3. state that all HID lamps are to be of the fail-safe type which will permanently extinguish within 15 minutes after the outer glass of the bulb is broken and that all lamps are to be provided with a glass or plastic lens to protect the bulb.

The 2005 National Electrical Code (NEC) only addresses metal halide lamp containment. Section 410.73(F)(5) of the 2005 NEC states that luminaires that use a metal halide lamp other than a thick glass parabolic reflector lamp (PAR) are to be provided with a containment barrier that encloses the lamp, or are to be provided with a physical means that only allows the use of a lamp that is Type O. For other types of HID lamps, the NEC relies on the manufacturer's installation instructions for the type, use and protection of the lamps.

In addition to the rules described above that are part of the UCC, the DEP has rules which establish safety requirements for the indoor or outdoor use of mercury vapor or metal halide lamps (N.J.A.C. 7:28-41.) The DEP rules address the use of mercury vapor or metal halide lamps and protection from those lamps breaking and from the harmful UV radiation that could be emitted.

There are two types of mercury vapor lamps which exist: the T-rated, self-extinguishing variety and the R-rated, non-extinguishing variety. T-rated bulbs self-extinguish within 15 minutes following breakage of the outer envelope of the bulb, thus limiting exposure to UV radiation. R-rated bulbs, on the other hand, do not self-extinguish upon fracture of the outer envelope. In fact, so long as the discharge tube remains intact, the lamp may continue to burn. R-rated bulbs can still be used if encased in a totally enclosed lighting fixture that absorbs UV radiation if the

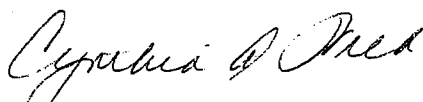


outer bulb is broken. However, a simple wire cage, as commonly seen around job sites, will not provide adequate shielding.

N.J.A.C. 7:28-41 permits only self-extinguishing lamps to be used in open high intensity or electric discharge lighting fixtures. The lamps as well as the fixtures are required by the National Electrical Code (NEC) to be listed or labeled for the use. This means that the lamps for the fixture are required to be marked with the appropriate letter corresponding to the listed use. Self-extinguishing type lamps are marked with a "T." Lamps marked with an "O" must still be enclosed if they are not self-extinguishing. Likewise, lamps marked with "MP", "S" or "E" must be totally enclosed if they are not self-extinguishing. In summary, all types of lamps that are non self-extinguishing present a potential hazard and must be completely enclosed.

Please be sure to check the manufacturer's installation instructions and make building owners and contractors aware of the DEP requirements. Should you need further assistance on this matter, please contact the Code Assistance Unit at (609) 984-7609.

Sincerely,



Cynthia A. Wilk
Director
Division of Codes and Standards