

A NEMA Lighting Systems Division Document

**Compatibility of Add-on Tube Guards with T-8
Fluorescent Lamps
Operating on High Frequency Electronic Ballasts**

Prepared by

Lamp Section
National Electrical Manufacturers Association
1300 North 17th Street, Suite 1847
Rosslyn, VA 22209
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Compatibility of Add-on Tube Guards with T-8 Fluorescent Lamps Operating on High Frequency Electronic Ballasts

From time to time concerns arise in the field regarding the use of plastic tube guards on T-8 fluorescent lamps operated on high frequency electronic ballasts. Such guards are configured as “add-on” solid plastic sleeves that are held in place around the lamp via separable plastic end caps. These products maintain an air space between the outer lamp bulb wall and the inside of the sleeve when it is in place around the lamp. It is extremely important that the tube guards are properly installed utilizing these end caps. Improperly installed guards may come in direct contact with the bulb wall and problems may result. Installation instructions supplied by tube guard manufacturers must be followed.

If the lamp/ballast system is correctly wired,¹ the lamp/tube guard combination should function satisfactorily during normal lamp life. At the end of lamp life, the end of the lamp may significantly heat up causing some add-on tube guards to distort and discolor.

Add-on tube guards are typically made of UV-stabilized polycarbonate plastic. An average melting temperature for polycarbonate is 370° F. But, not all tube guards are alike. The wall thickness and the stability of polycarbonate material can vary from manufacturer to manufacturer. Some manufacturers use recycled polycarbonate material for their products, while others use virgin material for best stability. If the tube guard is virgin polycarbonate, the melting point is much higher, approximately 480° F. This greatly reduces the probability of the tube deforming at the end of lamp life.

¹ See “Application Note: Wiring Requirements for T-8 Fluorescent Lamps with Instant-start Ballasts,” NEMA Lamp, Ballast, and Luminaire Sections, last revised February 3, 1999.

The end user should ask his tube guard supplier to provide him with the melting temperatures of their sleeves. Use of tube guards with a melting temperature of 370° F, or greater, should minimize melting or deformation of the tube guard at end of lamp life.