AirBorn, Inc.
Product Technical Bulletin

FORTRON DISCOLORATION

A common occurrence with many engineering plastics is surface discoloration following prolonged exposure to fluorescent lighting. Although common with most colors, it is more evident in the lighter pigmented materials. Desktop pc's, telephone housings, and other common office equipment are all routinely subjected to indoor fluorescent lighting.

The light spectrum is composed of ultraviolet (UV), visible and infrared (IR) wavelengths. Fluorescent lighting contains light from the visible spectrum as well as the ultraviolet, however, so little heat (IR) it is of no consequence. Fluorescent wavelengths lie between 354 and 700 nm. Below 400 nm, the light energy is higher and thus more potentially damaging to polymers. After prolonged exposure to the UV wavelengths that are transmitted from fluorescent lights, grey polyphenylene sulfide will begin to turn from a light grey color to a greyish brown color. In order to retard this phenomenon, many manufacturers utilize UV inhibitors in their formulations. As of yet, no military approved UV inhibitor has been developed.

AirBorn has conducted extensive testing to evaluate the effect of the discoloration of grey PPS. Connectors have been subjected to accelerated testing simulating prolonged exposure to fluorescent lighting by an independent lab.

The outcome of this showed a surface discoloration that penetrated an average of 0.0025 inch. This can be compared with routine laser marking of connectors which etches the part .003 to .005 inch. Follow–up testing subjected the parts to Dielectric Withstanding Voltage, Insulation Resistance and Humidity tests of MIL–C–55302; all showed results in excess of those required by the spec. Specific test results are available from AirBorn upon request. AirBorn is confident that any surface discoloration is purely cosmetic and will not affect the performance of the connector.

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