

Building code alternatives to emergency lighting: It's no longer "glow in the dark".....

We have all been fascinated by the greenish glow emanating from any number of toys, key chains and novelty products, lasting only for a few minutes, but resulting in that lighting occurrence called luminescence.

Today, HPPL or high performance photoluminescence, has rapidly been accepted as a new technology producing 100% reliable emergency lighting. New products are 20 times brighter and remain visible for many hours, often times' days, when directly compared to the "glowing" zinc sulfide based products that we have either seen or used in the past.

Not requiring any electricity, HPPL acts as if it is a sponge by absorbing ambient lighting. When thrust into darkness or upon any form of power loss, the HPPL material returns highly visible lighting back again with no human or mechanical involvement. It is activated immediately and works all of the time. The HPPL material emits a bright greenish attention getting light. Dangerous areas can be avoided and people proceed quickly and safely toward exits. Stairways are clearly defined, as are locations for fire fighting equipment and other building operating devices. The HPPL system eliminates confusion and minimizes panic when evacuation time is vital to ensure safety.

The basis for these strange phenomena is a proprietary formula of rare earth compounds, metal oxides, totally safe, composed of non-radioactive inorganic minerals and formulated into pigments for further use. Plastics, ceramics porcelain enamels, paints, rigid and soft vinyls, sheet metals and rubber compounds are often used. Life safety products are developed using any printed emergency evacuation visual communicator packages that do function 24 hours per day.

Commercially, HPPL is accepted as a replacement for battery or generator set emergency lighting systems...Including EXIT signs and other forms of visual communications. Rapidly becoming the dominant source of safety signage and emergency egress lighting, HPPL seems to be the next lighting source. It is replacing the high operating and maintenance cost programs inherent and associated with the often un-reliable battery and hard wired electrical safety egress and signage plans found in commercial facilities today. Electrical systems require regular and expensive maintenance programs....they are not fail safe. Even if fully functional, these systems provide little, if any, guidance in the event of smoke. With heat and water being enemies of electrical installations, it is not unusual from a partial or complete system failure to develop in an emergency condition.

As people protectors, you assume the responsibility for the safety of occupants by providing mechanical means of protection in the event of a disaster. In most locations, fire codes are written as minimum requirements only. For a relatively small investment, an installation of HPPL individual products or a complete life safety evacuation system would provide that extra level of both people and property protection. Consider that the fire brigade or rescue teams must make split second life safety decisions in a smoke filled locations. In the case of disabled, elderly or infants, the room occupant's identification status is critical to the rescue effort. A "beyond the code" example would be an HPPL, door mounted monitor. This sign is simple and reliable. Located on the middle upper third portion of a door, the sign rapidly shows the rescue team the condition of the occupant, confirmation that the room was inspected and a safe evacuation was concluded. In long corridors, rescue teams can visually locate these monitors instantly.

Typically, building evacuation during daylight hours would rarely present a problem. Performing the same function, in total darkness or in a smoke filled stairwell, is another matter. Many tests have proven that the time factor alone would be increased by 10 to perform a similar routine. Familiar surroundings and objects become extremely hostile obstacles when one is thrust into sudden darkness. Jury decisions and out of court settlements tend to provide potential corporation legal responsibilities to building owners in the event a building could not be safely evacuated in total darkness.

Since 1941, National model codes have been prepared and maintained by Commissions on Buildings and Fire Codes, with excellent input coming from a responsible cross section of all industry sectors.

The ICBO (Int'l Council Building Org) NRC, National Research Council, and supplies the technical support for any related or developing technology that could influence building codes. After exhaustive tests to evaluate photoluminescent materials as a safety wayguidance system, the NRC published a recent study entitled, "Assessment of Photoluminescent Material During Office Occupant Evacuation", Report # 774 in April 1999. Quoting from the Executive Summary, This study's findings show the interesting potential of PLM signage to assist occupant evacuation. Such signage, properly installed can address certain deficiencies in the traditional approach of emergency lighting associated with power failure or smoke logging of high mounted luminaries. In order to obtain the expected outcome though, it is essential to properly install the signs, material and way guidance components. Setting up a PLM wayfinding system appears as a cost effective addition to, or even a potential replacement for, traditional electrical emergency lighting, since it does not consume energy, requires no wiring, minimum maintenance, and is completely reliable provided it is installed in locations where sufficient activation is ensured from normal illumination maintained on the evacuation route. The occupant's behavior, their speed of movement and their subjective appraisal of the materials are all in concordance to indicate that PLM signs and safety wayguidance systems could be worthwhile addition improving occupant fire safety in office buildings.

In other parts of the world, most European countries mandated the use of photoluminescent materials through their building and fire safety codes. The standard, DIN 67 510 covers the products as well as their applications. Mexico has had requirements since the Mexico City earthquake. In the USA, the California Building code accepts HPPL lighting for evacuation route systems. More states with photoluminescent use already, in their building codes include, Washington, Michigan, Illinois, Florida, New York, Oregon, Ohio and Wisconsin. Other states are rapidly following since the NFPA, National Fire Protection Association, Life Safety Code 2000, recently approved the use of Photoluminescent materials as an internally lighted sign or system, UL (Underwriters Laboratories) re-wrote and established performance standards for the inclusion of HPPL EXIT signs for both level and above door locations as one standard.

Other very significant and mandated approvals for HPPL materials come from the Marine Industry as SOLAS (Safety of Life at Sea), IMO (International Organization for Standardization), ABS (American Bureau of Shipping). The FAA, in an advisory circular for airplanes, indicates that the use of high performance photoluminescent materials will demonstrate compliance with their mandate for floor proximity emergency escape path marking systems (FPEEPMS). APTA (American Public Transit Association) authorized the requirements for an emergency low location exit path marking system. Mandated since March of 1999, either electrically powered or an HPPL system must be used in new, remanufactured and existing rail passenger cars as the means to mark the exit paths to safety.

Today, with HPPL installations multiplying worldwide, the old “glow in the dark” technology is history. Producing glow with zinc sulfide crystals may remain only as a memory. The new High Performance Photo Luminescent material is a new indoor light source. Products take many forms. Mandatory, emergency, hazardous, warning and fire equipment locator signs are easily provided by any reliable printing process on HPPL pigmented plastics, paints, rigid boards, injection molded or custom formed photoluminescent parts, extruded shapes, vinyl or rubber floor tiles, porcelain, powder coated sheet metal, stair nosings, corner guards, and ceramic tiles further fill the many needs for unique safety lighting applications. Typical uses would include stairwells, walls, floors and doors. Used in conjunction with an existing electrical/battery system, a synergistic life safety system would result.

Legislative action committees, worldwide, are learning and accepting the full benefits, thus life saving potential for their constituents. Slowly and steadily local building codes are being amended and re-written to mandate, accept and encourage the use of this high performance photoluminescent technology.

HPPL products are fail proof, completely reliable, work every time, require little, if any, maintenance, easy to install, and have an indefinitely long life span. They are also non-radioactive; perfectly safe and non-toxic, use no electricity or batteries, not affected by water or heat, and are very cost effective. **The question then becomes, “what is wrong with this nearly perfect product? There are relatively small trade off concessions that should not dissuade any responsible elected or appointed professional from exploring options to integrate his building code with HPPL; no longer “glow in the dark” but THE real alternative to emergency lighting.**

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