Light bulbs and pipe

by David A. Chasis

In today's exploding market of green and sustainable choices, two products in particular qualify as star performers. They save energy, last much longer than the products they replace and are cost effective. Let's take a closer look at compact fluorescent lamps (CFLs) and polyvinyl chloride (PVC) pipe.

One piece of green advice we hear repeatedly is to replace our incandescent bulbs (IL) with CFLs. This recommendation makes bottom line sense when you consider the savings CFLs deliver. Over the lifespan of a CFL, there is an average savings of more than $30 (USD) in electric costs, compared to the equivalent use of an IL. The use of CFLs also results in reduction of greenhouse gases by over 2,000 times the CFL's own weight. Also, the lifespan of CFLs are 12 to 15 times longer than that of ILs. While it is true that the purchase price of CFLs are 3 to 10 times that of ILs, the benefits of extended lifetime and low energy use make the return on investment reasonable.

PVC piping offers similar benefits, and sometimes even better than CFLs. For example, PVC in certain applications doesn't have any apparent end-life. This piping product could last for centuries without needing to be replaced.

There is a growing body of scientifically confirmed information supporting the preference for PVC piping. The piping industry in North America is presently involved with Life Cycle Assessment (LCA) studies, investigations conducted by a third party to determine the economic, energy and environmental impact and feasibility of various piping materials. Preliminary LCA findings of the first two phases put PVC among the top tier of piping materials, those with comparatively the lightest footprint on Mother Earth.

Prolonged product life is a benefit of both PVC piping and CFLs, yet in several areas there are important differences between them. A comparative cost ranking within their respective categories shows PVC piping as one of the lowest priced piping products when you figure initial and installed costs, but shows CFLs as one of the highest cost lamp bulbs. The most significant difference between PVC piping and CFLs is how they are disposed of after use. Unlike CFLs, PVC pipe is entirely recyclable both in the processing (post-industrial) and after-life (post-consumer) stages. Because CFL contains mercury (a toxic metal), it should be disposed of as a hazardous waste.

What the consumer needs to do when CFLs break:

1. Open a window and vacate the area for 15 minutes.
2. Wear gloves to carefully clean up the glass and any loose white powder, and put all waste in double **plastic** bags.
3. When vacuuming over the spillage for the first time, remove the vacuum bag when finished and empty and wipe the canister, putting the bag and vacuum debris, as well as the cleaning materials, in two sealed **plastic** bags.

No hazardous warnings apply when disposing of PVC pipe. As mentioned above, it is completely recyclable. Regrind is used in the manufacture of drainage pipe, decks, fencing and other lightweight, corrosion resistant products. There is minimal harm to the environment if the pipe isn't recycled, is incinerated or added to landfills. This is not the case with CFL disposal.

When we examine and consider the latest information available on these two products, it is puzzling that some environmentalist groups vigorously promote the replacement of incandescent lamps with compact fluorescent lamps, but fail to note the proven environmental benefits of using PVC to replace failing non-plastic piping systems.

PVC fabricated gasketed fittings

PVC potable water distribution line

PVC pipe and valves in a car wash application.

Yes, CFLs have the environmental advantage of reducing greenhouse gases while illuminating our homes, buildings and factories, but PVC piping offers significant advantages of its own. PVC is one of the most durable, easy and safe to install, environmentally sound and cost effective piping systems available. Now is the time for us all, from consumer to environmentalist, to be informed of and knowledgeable about the full range of positive features and benefits of PVC piping. ■

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Compact fluorescent lamp (CFL)