Applying ISO14040 Life -Cycle -Assessment Technology to Illumination Products

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Abstract

Most traditional methods of assessing the environmental impact load of various products focus on "command and control" and measure the degree of impact that products have on environment by the environmental burdens produced after use at disposal stage. However, they fail to consider waste handling, the pollution condition in the ultimate production process, and the pollution condition when acquiring raw materials and after use. This research attempts to study ISO 14040 life-cycle assessment technology in depth, and use fluorescent lamps, energy-saving lamps, and incandescent lamps of illumination industry in case study for empirical analysis, with the hope to provide illumination industry with valuable information for reference. All the life stages of fluorescent, energy-saving, and incandescent lamps are analyzed by the four dimensions of characterization, standardization, evaluation, and indictors of SimaPro, the life-cycle assessment and analysis software. The research results show that the electricity consumption of incandescent lamps at service stage imposes the most significant impact on environment, that is, is most unfriendly to environment, where, in particular, "heavy metal" dimension is most influential to human living environment.

Keyword：Keywords: Life-cycle-assessment, fluorescent lamp, energy-saving lamp, incandescent lamp