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Raising the Threshold for Pipe Performance and Sustainability

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The Uni-Bell PVC Pipe Association (PVCPA) is proud to achieve the first industry-wide, peer reviewed environmental product declaration (EPD) for water and sewer piping, and it has been verified by NSF Sustainability, a division of global public health organization NSF International. This internationally recognized certification helps municipalities meet their green building and infrastructure goals and should open the door to wider consideration of PVC piping in the US municipal market. The EPD can be useful to municipal pipe procurement officials as it sets performance benchmarks and allows for life cycle comparisons between multiple pipe materials.

The EPD was developed in compliance with international management guidelines (ISO 14025) Environmental management guidelines (ISO 14025) and benchmarks the impacts of seven PVC pipe products across their life cycles. This includes PVC pressure pipe for potable water, reclaimed water and sewer force main systems as well as PVC non-pressure pipe for storm sewer and sanitary sewer systems. NSF Sustainability reviewed and verified the life cycle assessment (on which the EPD is based) and EPD documents to ensure that no unsubstantiated claims were made and that the EPD followed all applicable rules.

NSF International also maintains certification programs which provide independent confirmation that products meet the requirements of American National Standards designed to assure products are appropriate for these end uses. PVCPA members are certified to NSF/ANSI 14 for physical performance, health effects and quality requirements of pipe products and NSF/ANSI 61 for potable water contact products. Both standards establish strict criteria for products to be considered safe for use. This third-party verified, ISO 14025 compliant EPD was the next step in validating the safety and sustainability of PVC piping products. With the completion of this EPD, PVCPA members have demonstrated their continued commitment to product safety and transparency.

EPDs are increasingly used across many industries by product manufacturers to provide transparent environmental data to customers. This EPD is based on an industry-wide life cycle assessment (LCA) prepared by Sustainable Solutions Corporation that identifies the full life cycle environmental impacts of PVC pipe. PVCPA members can use the LCA and EPD report as a baseline for continuous improvement, identifying opportunities throughout the product life cycle for further environmental impact reductions. This positions PVC pipe manufacturers as leaders in their industry, and provides transparent environmental impact data to builders and municipalities for building and construction standards.

The EPD pinpoints areas of greatest environmental impact as well as the environmental benefits of utilizing PVC piping. For example, the use phase of pressurized potable water pipe, during which pumps overcome friction to move water through pipe, was found to contribute the greatest

environmental impacts throughout the product's entire life cycle. The EPD also identified advantages in this stage such as the smooth interior surface of PVC pipe that minimizes friction and therefore energy consumption. PVC pipe is also corrosion resistant and has a proven durability in excess of 100 years, requiring less frequent replacement.

Environmental impact categories analyzed include global warming potential, ozone depletion, acidification, eutrophication, smog formation and cumulative energy demand. PVC pipe is designed to minimize environmental impacts due to its corrosion resistance, enabling long-term durability.

"The PVCPA environmental product declaration provides transparent environmental impact data that is essential for builders and municipalities sourcing products in accordance with their green building goals," said Amber Dzikowicz, Business Unit Manager, Sustainability, NSF International. "Having their EPD verified by an independent third-party organization like NSF International lends credibility and trust to their report and is an industry best practice."

It was an extensive process to develop the life cycle assessment and the resulting EPD documents, but well worth the effort. Buyers of PVC piping want to see this data to help meet their sustainability goals and our members were dedicated to making this possible. This industry-wide EPD reflects their resolve to use science to drive manufacturing and product improvements and to be leaders in transparency reporting. For more information see www.uni-bell.org