

**STATEMENT U**  
**PPI POSITION STATEMENT ON THE USE**  
**OF PCR MATERIALS IN NON-PRESSURE POLYETHYLENE PIPE**

(March 2009)



**PLASTICS · PIPE · INSTITUTE™**

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Polyethylene piping is extensively used for a wide variety of pressure and non-pressure applications from gas distribution through drainage. Equally diverse are the performance requirements for these varied applications. PE materials for all applications are required to meet recognized industry standards (i.e. ASTM, CSA, BNQ, ISO).

Building standards and design procedures are evolving to incorporate sustainable design elements. This is a direct result of the current social and governmental atmosphere that demands responsibility with the use of our limited non-renewable resources. The U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program is leading the way, and recognizes the use of recycled materials in building products.

Several years ago, attention was focused on incorporating post consumer recycled (PCR) polyethylene materials in polyethylene piping as a means to further plastics recycling efforts. PPI (Plastics Pipe Institute) supported that initiative through an American Plastics Council ad-hoc committee of polyethylene pipe manufacturers, resin suppliers, researchers, and trade association representatives to develop means for the responsible use of post-consumer recycled polyethylene materials in polyethylene pipe.

The PCR Ad-Hoc Committee chose as its mission and objective to consider the responsible use of PCR in PE piping through consensus standards writing bodies that would define the performance requirements, material properties, proper applications and test criteria for the proper use of PCR PE materials for piping applications. PCR materials may be used in polyethylene non-pressure pipe when standards bodies for the particular piping application have established these requirements and criteria.

ASTM D 3350 allows for the use of reprocessible and recyclable PE materials, as defined in ASTM D 7209, provided that all specific requirements of D 3350 are met. Some ASTM and Canadian product standards allow the use of recycled materials in non-pressure PE pipe applications.

As a trade association, PPI's position is that PCR materials may be used in certain non-pressure piping applications as long as they are used with the buyer's knowledge and as long as the governing standard has established performance criteria to assure satisfactory long-term performance for the intended application. Thus the use of PCR PE materials in PE piping must be carefully evaluated so that long-term durability of polyethylene piping is assured.

PPI supports continued work toward defining performance requirements, material properties, and test criteria that will result in the proper use of PCR materials in polyethylene pipe used for non-pressure applications. Additional standards that permit the use of recycled materials in non-pressure applications are being developed by standards organizations. Also, NCHRP (National Cooperative Highway Research Program) is sponsoring a research program (04-32) to investigate the use of PCR PE

materials in corrugated HDPE pipe, and PPI supports this effort. Programs such as these may soon demonstrate that non-pressure corrugated HDPE piping that uses PCR PE materials may be equivalent to non-pressure corrugated HDPE pipe made from virgin HDPE compound when PCR materials are used properly.

Because pressure piping requires pressure rated materials, PCR materials cannot be used for pressure piping. Pressure rated materials are listed in PPI TR-4.

The Plastics Pipe Institute, its member companies, and the PCR Ad-Hoc Committee support this ongoing work in development of PCR standards.

Abbreviations:

ASTM – ASTM International

BNQ – Bureau de Normalisation de Quebec

CSA – Canadian Standards Association

HDPE – high density polyethylene

ISO – International Standards Organization

PCR – post consumer recycled

PE - polyethylene

PPI – Plastics Pipe Institute

TR – Technical Report