INFO BRIEF 19-8.0 (1/12/21)

PolyTough1 bimodal MDPE – answers to FAQs

Introduction

PolyPipe is one of the largest manufacturers of medium and high density polyethylene pipe and the only nation-wide manufacturer of the high performance **PolyTough1** (PE2708) medium density gas distribution pipe manufactured from Dow® Continuum™ DGDA 2420 bimodal resin.

PolyTough1 provides outstanding resistance to slow crack growth (SCG) and rapid crack propagation (RCP) which provides for a safer gas distribution system. In many cases, the utility can eliminate costly construction practices such as sand backfill required with conventional polyethylene pipe products and significantly reduce overall life-cycle cost.

Physical Property Comparison

PolyTough1 bimodal MDPE is material grade PE2708. The term "bimodal" simply is a reference to the molecular weight distribution of the base resin. You will see from the table below that the bimodal MDPE pipe has a slightly higher base resin density and lower melt index.

PE2708		
	BIMODAL PIPE	UNIMODAL PIPE
Density (g/cc)	0.941	0.940
Melt Index (g/10min @ 2.16kg)	< 0.25	0.20
Melt Index (g/10min @ 21.6kg)	9.5	20.0

The technical data sheet for PolyTough1 is available at:
https://www.polypipeusa.com/hubfs/Polypipe_TDS%20Sheets/PP_PolyTough1_2.22.pdf

Heat Fusion Joining

PolyTough1 was introduced to the gas industry in November 2008. The product has been fully vetted with regard to heat fusion joining. This work has been done by PolyPipe in conjunction with industry partners including but not limited to: Dow Chemical, Gas Technology Institute, Jana Labs, Central Plastics, and McElroy Manufacturing.

PolyTough1 can be fused to itself, to all unimodal PE2708 pipes and to PE4710 pipes using the heat fusion joining procedures outlined in the Plastics Pipe Institute (PPI) Technical Report TR-33 and the ASTM F2620 Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings.

If you have additional questions regarding this product or would like to receive a technical presentation on the features and benefits of bimodal PE2708, please contact PolyPipe Technical Services at questions@polypipeusa.com.