



## PolyTough1 bimodal MDPE – answers to FAQs

### Introduction

Dura-Line 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, Material Cell Classification PE234373E		
	ASTM D3350 (Table 1) base resin requirement	PE2708 bimodal	PE2708 unimodal
Density (g/cc)	>0.925 – 0.940	0.940	0.939
Melt Index (g/10min @ 2.16kg)	<0.40 – 0.15	0.16	0.20
Melt Index (g/10min @ 21.6kg)		9.5	20.0

The technical data sheet for PolyTough1 is available at:

[https://www.duraline.com/sites/default/files/downloads/dl\\_pp\\_polytough1\\_12.18.pdf](https://www.duraline.com/sites/default/files/downloads/dl_pp_polytough1_12.18.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 DuraLine 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. These procedures and the joining of PolyTough1 bimodal PE2708 to unimodal PE2708 are also addressed in the DuraLine heat fusion joining procedures [https://www.duraline.com/sites/default/files/downloads/dl\\_pp\\_heatfusionjoining\\_8.2018.pdf](https://www.duraline.com/sites/default/files/downloads/dl_pp_heatfusionjoining_8.2018.pdf), (notes 2 & 3, page 9).

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 DuraLine Technical Services at 940-727-3278.

