

K38-20-160 Polyethylene Copolymer

K38-20-160 is a yellow medium density polyethylene resin designed specifically for natural gas pipe extrusion. It exhibits excellent long term stress life and environmental stress crack resistance. This material is certified to CSA Standard B137.4-05 and is recognized by the Plastics Pipe Institute as having a PE 2708 (formerly PE 2406) and PE 80 rating. The natural version of this resin is available as K38-20-188.

Typical Properties¹

	Values		ASTM Method
	English Units	SI Units	
Density (Natural)	—	0.940 g/cc	D 4883
Density (Yellow)	—	0.943 g/cc	
Melt Index ²	—	0.20 g/10 min	D 1238
Tensile Strength			
@ Yield (2 in/min)	2800 psi	19.3 MPa	D 638
@ Break (2 in/min)	4500 psi	31.0 MPa	D 638
Elongation @ Break (2 in/min)	>800%	>800%	D 638
Flexural Modulus ³	100,000 psi	690 MPa	D 790
Notched Izod Impact Strength	10 ft-lbf/in	0.53 kJ/m	D 256
Hardness (Shore D)	64	64	D 2240
Vicat Softening Point	248 °F	120 °C	D 1525
Brittleness Temperature	<-180 °F	<-118 °C	D 746
Thermal Stability	428 °F minimum	220 °C minimum	D 2513/D 3350
Environmental Stress Crack Resistance ⁴	>5000 hrs.	>5000 hrs.	D 1693
Environmental Stress Crack Resistance ⁵	>5000 hrs.	>5000 hrs.	D 1693
Pipe Ring ESCR ⁶	>5000 hrs.	>5000 hrs.	F 1248
Notch Tensile (PENT)	>500 hrs.	>500 hrs.	F 1473
Hydrostatic Design Basis			
@ 23 °C	1250 psi	8.6 MPa	D 2837
@ 60 °C	1000 psi	6.9 MPa	D 2837
Cell Classification	234373E	234373E	D 3350

¹ Typical properties will vary within specification limits.

² 190° C/2160 g

³ 2% Secant-Method 1

⁴ Condition B, 10%

⁵ Condition C

⁶ One inch, SIDR 7

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Regulatory Information

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