

# ESTANE® TPU FOR MINING CABLES



## OVERVIEW

A mining cable jacket serves as the first set of protection from environmental damage, chemical materials and biological attacks. Lubrizol's Estane® TPU (thermoplastic polyurethane) offers the superior properties and benefits needed for mining cables to withstand the most extreme temperatures and meet everyday demands.

## BENEFITS OF ESTANE® TPU

Estane TPU is the preferred choice for jacketing materials and cables due to its key benefits. These include, but are not limited to:

- Excellent Abrasion and Cut-Through Resistance
- High Flex-Life
- Flame Retardancy
- Excellent Chemical Resistance
- Weathering Resistance to UV and Harsh Environment

## PORTABLE CONDUCTORS FOR SINGLE & MULTIPLE POWER CABLES:

Minimum tensile strength and tear resistance for TPU are 50 to 100% higher than alternative materials (chloro-sulfonated polyethylene, neoprene, chlorinated polyethylene, etc.).

## MINING POWER CABLE FEEDERS:

Minimum tensile strength and elongation expectations from TPU are significantly higher than alternative products like PVC and chlorinated polyethylene.

# CABLE JACKETING GRADES OF ESTANE® TPU VS ICEA REQUIREMENTS

NEMA Standard Publication No. WC 58-2008, ICEA Standard Publication No. 2-75-381-2008					
	Table 3-3 Portable Power Cable Jacket	Table 4-9 Mine Power Feeder Cable Jacket			
Products	Required Minimum	Required Minimum	Estane® 58300	Estane® 58863	Estane® 58887
Shore Hardness			82A	85A	87A
Tensile Strength	3,700 psi	3,700 psi	5,200	6,300	6,800
Ultimate Elongation	400%	400%	600	540	540
Stress at 200% Elongation	800 psi	800 psi	1,000	1,300	1,400
Trouser Tear	80 ppi	80 ppi	130	150	160
<b>100°C 168 HR Heat Aging</b>					
Tensile Retention	50%	50%	61%	89%	84%
Elongation Retention	75%	75%	115%	100%	107%
<b>121°C 18 HR ASTM Oil #2</b>					
Tensile Retention	60%	60%	75%	102%	77%
Elongation Retention			125%	130%	119%
LOI					
Comment			Non-FR	Non-FR	Non-FR

## TABER ABRASION RESISTANCE

Estane® TPU Products	Weight Loss, mg
Estane® 58300	20
Estane® 58887	21
Estane® 58863	25
<b>Reference Materials</b>	
Chlorosulfonated Polyethylene	222
Flexible PVC	631
Polychloroprene	939

**Test Method:** ASTM D3389  
**Wheel Type:** H-18  
**Load:** 1,000 grams  
**Cycles:** 1,000



Engineered Polymers



For more  
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