Polytrope® STR Enhanced Polyolefins

Sheet Extrusion Guide

Polytrope® STR resins are based on enhanced polyolefin compositions that have been specifically designed to provide high melt strength for sheet and profile extrusion, and thermoforming applications. Sheet products produced with *Polytrope® STR* resins may consist of smooth or textured surfaces, in low or high gloss, and in mono and multilayer sheet structures. Although many of the practices and equipment used in extruding sheet produced with other resins apply to extruding sheet produced with *Polytrope® STR* resins, provided are general start-up conditions and points of consideration more specific to *Polytrope® STR* resins. Consult with your representative for further detailed information regarding equipment design, regrind usage, and potential sheet structures which can be extruded using *Polytrope® STR* enhanced polyolefin resin technology.

PARAMETER	VALUE		
	TPO Resins	Color and Capstock Resins	Color Concentrates
Drying			
Time (hours)	4 - 8	4 - 8	4 - 8
Temperature, °F (°C)	160 -180 (70 - 80)	160 -180 (70 - 80)	120 - 160 (50 - 70)
Dew Point, Maximum, °F (°C)	-40 (-40)	-40 (-40)	-40 (-40)
Maximum Moisture %, (ppm)	0.02 (200)	0.02 (200)	0.05 (500)
Screen Pack			
Mesh	As needed	As needed	
Temperatures			
Melt Temperature, °F (°C)	390-450 (200-230)	390-450 (200-233)	
Typical Barrel Temperatures			
Feed Throat, °F (°C)	70-100 (20-40)	70-100 (20-40)	
Rear Zone (Hopper), °F (°C)	345-410 (175-210)	345-410 (175-210)	
Intermediate Zones, °F (°C)	360-430 (180-220)	360-430 (180-220)	
Front Zone, °F (°C)	390-450 (200-230)	390-450 (200-230)	
Screen Changer/Adaptor	390-450 (200-230)	390-450 (200-230)	
Feed tubes	390-450 (200-230)	390-450 (200-230)	
Feed block	390-450 (200-230)	390-450 (200-230)	
Die Temperature, °F (°C)	390-450 (200-230)	390-450 (200-230)	
Chill Roll Temperature, °F (°C)	140-200 (60-95)	140-200 (60-95)	
Pressure			
Head Pressure psi (bar)	1,500-3,500 (100-240)	1,500-3,500 (100-240)	
Roll stack, pli (KN/m)	800 pli minimum (140)	800 pli minimum (140)	
Die and Roll Stack Settings			
Die Gap	0 - 20% Greater than targeted sheet thickness		
Die Lip to First Nip	Minimize Distance		
Haul Off Settings			
Trim speed ratio, %	-1.5 to -2.0		
Edge Trimming and Cutting			
Suggested Edge Trim Method	Razor Knives		
Suggested Cut off Method	Traveling Shear		

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