Exceed™ mPE blown film extrusion

processing guide

- Exceed mPE rich blends
- Exceed mPE pure systems

Exceed metallocene polyethylene (mPE) can be processed on extrusion lines designed for processing LLDPE film.

This processing guide for Exceed mPE provides a summary of basic extrusion information for Exceed mPE rich blends or pure films.

Line operators can combine these recommendations with their knowledge of specific equipment to optimize the extrusion parameters for processing.

MACHINE CONFIGURATION	
LLDPE Screw	• Screw designed for LLDPE (low shear, low compression) • L/D of approximately 24 - 30:1 • Mixing zones of low to medium shear
Filter pack	• 20 - 40 mesh screens
Die	• Spiral mandrel • Die gap: 60 -80 mils (1.5 - 2.0 mm) • Die lip temperatures at 420 °F (215 °C)
Cooling ring	• Dual lip air ring • IBC (internal bubble cooling) system • Chilled air at 60 °F (15 °C)
Tower	• Teflon coated collapsing frame recommended • Stabilization cage recommended
Cutting	• Ceramic blades recommended
PROCESSING CONDITIONS	
Temperature Setting	• Target melt temperature: 400-410 °F (205-210 °C) • Smooth bore: Hump profile - 325/400/380/365/365 °F (160/205/195/185/185 °C) Screen changer / adapter / die: 400 °F (205 °C) • Grooved feed: Cooling on feed section (target 85 °F (30 °C)) Flat profile at 360 °F (180 °C) Screen changer / adapter / die: 375-390 °F (190-200 °C)
Extruder line preconditioning	• Preheat extruder and die to minimum of 300 °F (150 °C) • Slowly start screw rotation, then bring up temperature • At 350+ °F (175+ °C) melt temperature, pre-coat die with concentrated addition of process aid • On a startup with a clean die, melt fracture may take 40-60 minutes to clear
Drawdown	• High drawdown - typically up to 100:1
PRODUCTS	
Exceed mPE blend partners	• Add 5-10% LDPE for bubble stabilization and improved optical properties. The melt index (MI) of the LDPE should be lower than the MI of the Exceed mPE if being done for bubble stabilization. • Alternatively, add 10-20% of Enable™ mPE for bubble stabilization with greater strength preservation, although not for optical improvement.