

PROCESSING GUIDE FOR EXTRUSION OF SEMI-RIGID PVC INSULATION COMPOUNDS

EQUIPMENT & CONDITIONS	SUGGESTIONS						
Compound Drying	Typically not required. 160°F for 4 hours if desired.						
Color Concentrate	PVC-based color concentrates.						
Machine Type	Typical PVC extrusion equipment. Chrome plated screw and bimetallic barrel.						
Screw Design	<p>A) General Purpose Metering Type.</p> <table> <tr> <td>Metering Section</td> <td>33%</td> </tr> <tr> <td>Transition Section</td> <td>33%</td> </tr> <tr> <td>Feed Section</td> <td>33%</td> </tr> </table> <p>(20:1 extruders or very high or low RPM may require a screw with more mixing.)</p> <p>B) Barrier Maddock screw designed for PVC.</p>	Metering Section	33%	Transition Section	33%	Feed Section	33%
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Transition Section	33%						
Feed Section	33%						
Compression Ratio	2.75:1 target (2.5:1 to 3.0:1 range)						
L/D Ratio	24:1 target						
Screen Packs	40/60/80/100 recommended for thin-wall extrusion.						
Screw RPM	Critical: 30 RPM minimum (choose extruder size to accommodate this)						
Screw Cooling	Not Recommended.						
Water Bath	Critical: 160°F minimum for the first 15 feet (180°F - 190°F preferred), following by air gap before second trough. Remainder of trough need to be cool (chilled if possible).						
Tooling	<p>Cross-head: Low inventory cross-heads.</p> <p>Die design: Pressure type with steep single angles (tip and die with same angle). Typical angle is 16 degrees.</p> <p>Pressure die: Size die 5% over final diameter for optimum speed and physicals.</p> <p>Pressure die: Die should have no land.</p>						
Copper Preheat	Critical: 225°F - 250°F actual copper temperature entering head for best results.						

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EQUIPMENT & CONDITIONS

SUGGESTIONS

Machine Temperatures

Typical Barrel Settings	Melt Temperature Range
345°F - 375°F	390°F - 400°F

**Melt temperature should be measured using a pyrometer on the material exiting the cross-head.

Purging

If necessary, use HD polyethylene.

Regrind

Recyclable; mix up to 20% regrind with virgin.

Additional Considerations

Care must be taken to avoid excessive temperatures or delays during extrusion; material should not sit for more than 15 minutes under any circumstances.

Never leave in extruder at elevated temperature without purging.

Never process with an actual melt temperature > 400°F.

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