

# PROCESSING GUIDE FOR EXTRUSION OF APEX™ PVC INSULATION COMPOUNDS

EQUIPMENT & CONDITIONS	SUGGESTIONS						
<b>Compound Drying</b>	Typically not required. 160°F for 4 hours if desired.						
<b>Color Concentrate</b>	PVC-based color concentrates.						
<b>Machine Type</b>	Typical PVC extrusion equipment. Chrome plated screw and bimetallic barrel.						
<b>Screw Design</b>	<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%						
<b>Compression Ratio</b>	3:1 target (2.5:1 to 3.5:1 range)						
<b>L/D Ratio</b>	24:1 target (20:1 to 30:1 range)						
<b>Screen Packs</b>	Varies according to filler/flame retardant loading and particle size. Typical combination 20/60/80.						
<b>Screw RPM</b>	As required for proper mixing (Suggested: 30 RPM or greater)						
<b>Screw Cooling</b>	Not Recommended.						
<b>Water Bath</b>	Elevate temperature if required to improve physical properties. 160°F for insulation is suggested.						
<b>Tooling</b>	<p><b>Cross-head:</b> Low inventory cross-heads.</p> <p><b>Die Design:</b> Tube (Sleeving) or Pressure Type. Matched tip and die angles, fairly tight together for optimum die pressure.</p> <p><b>Pressure Die:</b> Size die 5% over final diameter for optimum speed and physicals with pressure set-up.</p> <p><b>Tubing Die:</b> 2.0 - 5.0:1 DDR target for tubing set-up.</p>						
<b>Copper Preheat</b>	225°F - 250°F actual copper temperature entering the head for best results.						

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## EQUIPMENT & CONDITIONS

## SUGGESTIONS

### Machine Temperatures

Hardness Range	Typical Barrel Settings	Melt Temperature Range
Below Shore A70	255°F - 310°F	330°F - 340°F
Shore A70 - 65C	270°F - 350°F	345°F - 360°F
Shore C65 - 70	320°F - 365°F	365°F - 375°F
Shore C71 - 80	330°F - 375°F	375°F - 380°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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