

EPOMATT® G-151 TECHNICAL BRIEF #2

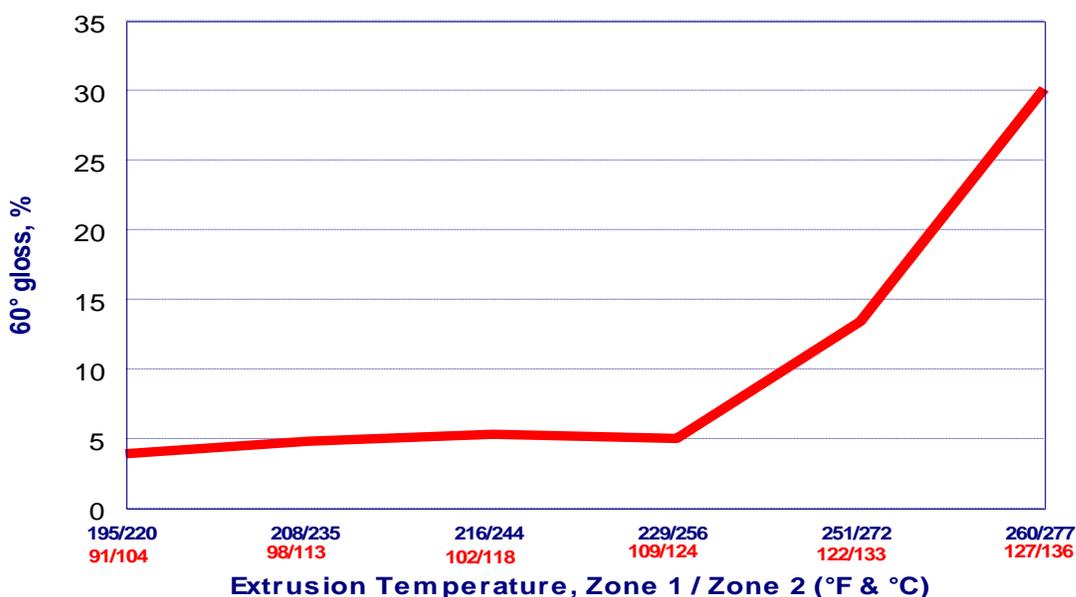
The Relationship between Extrusion Temperatures and Gloss

DISCUSSION

The matting properties of *Epomatt® G-151* (when used in conjunction with a co-curing agent such as Estron's *Epoxy Hardener G-91* or OTB) are brought about through a dual, differential curing mechanism. This system is generally fairly robust in terms of gloss reproducibility. It has now been determined, however, that certain processing conditions can sometimes have an adverse effect on the matting properties. This is particularly true of extrusion temperatures, and it was the purpose of this study to quantify this phenomenon as illustrated in the following graph:

Extrusion Temperature vs. Gloss

Matte System with Epomatt G-151 & Resiflow P-65F



As the above graph demonstrates, there is a threshold temperature above which the gloss of the powder coating can increase very sharply with a small change in the temperature of the extruded coating. If a formulation yields a higher-than-expected gloss (either in the laboratory or production), a reduction in the temperature of the extruded coating may provide a solution.

Widely varying gloss results from a specific formulation might also be due to extrusion temperature--if the extrusion conditions are in the zone where a small change in extrusion temperature causes a large change in gloss, gloss control will then be very difficult. It is therefore again recommended that extrusion temperatures be reduced.

The formulation and processing conditions used in this evaluation are:

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Epomatt® G-151
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<u>Component</u>	<u>Weight %</u>
Ciba 7013	67.4
<i>Epomatt® G-151</i> (Estron)	6.8
<i>Epoxy Hardener G-91</i> (Estron)	3.2
<i>Resiflow® P-65F</i> (Estron)	0.9
TiO ₂	8.5
Black	0.4
Barium Sulfate	12.8
<i>Premix</i>	20 seconds in Food Processor
<i>Extruder</i>	26 mm Single screw
<i>Screw Speed</i>	150 rpm
<i>Zone Temperatures</i>	See Graph
<i>Mill</i>	Bantam Mill
<i>Sieve</i>	200 mesh
<i>Cure</i>	10 min @ 200 ⁰ C

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