

Energy-Cured Coatings – Gloss Level Definitions

Scope

- Energy-cured coating products can be supplied in a variety of gloss-levels, ranging in visual appearance from a brilliantly reflective shine to a muted flat-opaque tone.
- While visual interpretation of the gloss-level can provide a general description of a specific coating product gloss type, the subjectivity of the interpretation can cause confusion in communication as everyone's ideas and relative nomenclature can differ as to what constitutes a particular gloss-level of an applied coating film.
- The broad range of achievable gloss-levels and variety of energy-cured coating products that are available in the graphic arts industry necessitates that the entire gloss range is broken down into several gloss-level categories/definitions based on the desired **measurable** gloss-level.
- Using industry-standard gloss measurement equipment and procedures allows for the clear and objective interpretation and communication of a desired visual appearance of printed products and ensures that repeatability and predicably exists in the printing process.
- This document outlines the measurable gloss-level definitions and ranges for use with INXCAC energy-cured coating products.

Gloss Measurement

- Gloss measurement for energy-cured coating products supplied to the graphic arts industry is conducted using a gloss meter that measures the specular reflectance of the coating film at a 60° reference angle – the meter must be calibrated to the supplied calibration standard prior to use.
- The measurement results are expressed in 'gloss-units' ranging from '0 - 100' – '0' represents the lowest possible measurable gloss and '100' represents the highest possible measurable gloss.

Gloss Variables

- Each coating product is formulated/manufactured with a gloss-level target/range potential.
- The following variables will directly impact the visual/measurable gloss results of the applied coating film and can cause the final measured gloss result to not reach the potential of the formulated/manufactured target/range:
 - Film thickness/ coat-weight (dry lb 3000 ft²)
 - Film quality – lay/smoothness/defects
 - Film consistency/homogeneity
 - Degree of film-cure – cross-link density
 - Substrate type – surface smoothness, consistency, hold-out/absorbency
 - Ink type – cure/dry condition, smoothness, density/saturation
 - Gloss measurement direction – parallel vs perpendicular to grain-direction of substrate
- If a specific gloss target/range is required, prior testing of the recommended coating product should be conducted using all conditions of the job inclusive of coat-weight (anilox engraving), coating blanket/plate, inks and substrate.

Gloss Definitions

- Below table lists gloss-level definitions and gloss-unit ranges for use with energy-cured coating products:

	Gloss Range
Ultra Matte	<10
Dull-Matte	10 - 20
Satin-Matte	20 - 35
Satin	35 - 50
AQ Gloss Mimic	50 - 60
Semi-Gloss	60 - 70
Gloss	70 - 90
Ultra Gloss	>90