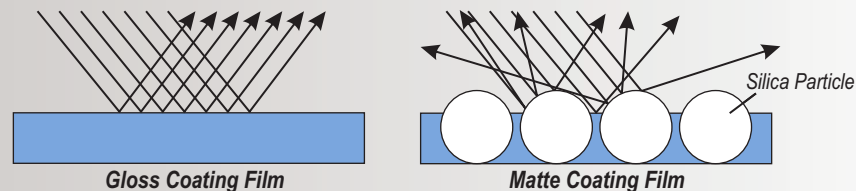


Waterbased Coating - Matte Burnishing v1.1

Matte Burnishing Overview

Product Comparison - Gloss v Matte

Unlike gloss/clear waterbased coatings, matte waterbased coating products contain silica flattening particles that are employed to create a very low visual/measurable gloss level to the dried coating film. While gloss coating products produce a very smooth and glass-like film surface with a high degree of clarity to optimize specular reflectance and achieve high results for visual/measurable gloss, the silica particles used in matte coating products produce a very irregular/rough film surface and light interference within the film which increases light refraction, lowers specular reflectance and ultimately lowers the resulting visual/measurable gloss level. The degree of 'matte' gloss level that a matte waterbased coating achieves is representative of the size/concentration of silica flattening particles that are contained in the coating film. The below image demonstrates the light reflective difference between a 'gloss' and 'matte' waterbased coating film:



Burnishing

Burnishing is a visual defect in which the matte waterbased coating film increases in gloss or 'sheen' due to applied friction/abrasion while the dried film remains intact. Due to the inherent irregular/rough surface that a matte coating film achieves, when abrasion/friction forces are applied to the film, the silica flattening particles on the film surface can become sheared resulting in a smoother coating film surface than was originally established. The change in the matte coating film surface can result in a much smoother or 'polished' film creating an increase in visual/measurable gloss compared to the surrounding coating areas; this area that now has an increase in gloss is defined as a 'burnish'.

Matte Coating Burnishing Considerations

Substrate

High hold-out stocks with a smooth surface can contribute to matte coating burnishing. Use of absorbent stocks with a rough/irregular surface with 'peaks and valleys' can reduce the visual burnish result.

Ink Coverage

Matte waterbased coating applied over dark ink colors can make the burnish result more visibly evident.

Rub Testing

When conducting rub testing on printed-pieces that use a matte waterbased coating, burnishing will be a consideration in the testing results. While the overall matte coating film may exhibit robust characteristics for rub-resistance, due to the burnish sensitivity of matte coatings, a visual burnish may be the result. Rub test parameters may require adjustment compared to other higher-gloss coating products if burnish-resistance is to be part of the overall performance evaluation/criteria.

Alternatives

Use of a less-matte coating product that produces a higher visual/measurable gloss film may be necessary as the reduced concentration of silica flattening particles contained in the dried film can reduce/eliminate the burnish result compared to a more-matte coating product. 'Burnish-resist' matte waterbased coating products are available, however, this may only improve the overall burnish result and not eliminate it.