

ClearShield® is your first choice for all non-water-sensitive applications. We created **ClearShield®** using state-of-the-art resins and ultraviolet inhibitors that protect the substrate, ink, and the clear coating itself. These non-yellowing clear coatings have excellent exterior durability and are highly flexible.

Use **ClearShield®** on most substrates, including waterproof canvas, vinyl, banners, fiberglass, wood, metal, plastic, and paper. You can apply it over solvent-based inks and most water-based paint systems. **ClearShield®** is available in several versions. **ClearShield VG Gloss** is highly flexible and has excellent chemical resistance. **ClearShield VG Gloss is not recommended for use with eco-solvent and UV inks.**

ClearShield® Application Techniques

ClearShield Original Formula (no version noted)

With **ClearShield®**, we do not recommend bristle brushes. Use conventional or foam rollers and foam applicators. Applying clears is an acquired skill. Here are our recommendations:

1. Load the roller by rolling it in the clear coating until it is saturated.
2. Then fully submerge the roller in the coating.
3. Using a back and forth motion, start in one corner of the print and roll to opposite corner, drawing from the puddle you created when first placing the roller on the print. The roller should push out excess coating in the direction of the uncoated substrate.
4. Continue until you have completely covered the print or run out of liquid laminate. If you run out, load and submerge the roller again and begin in the last wet area to be coated. Do not start in an uncoated area and roll back. This technique mimics the wet edge associated with spray application.

To allow the material to flow out, try to work wet (thicker, full coats). If the finish does not appear smooth enough while still wet, you can re-roll the print with the same roller you used. Do not saturate the roller again.

If you want a second coat, wait for the first coat to fully dry (usually about 1 hour) and then apply the second coat at a 90-degree angle to the first.

Important note: With water-based products it is very important to always work with full, wet coats. Water-based products dry very quickly and will not level well if applied dry.

- Work wet with a well-saturated 3/16" to 1/4" roller.
- Do not overwork the clear with your roller or foam applicator.
- Resist going back and forth many times over the same area, particularly with a dry applicator. (A dry applicator either is not sufficiently loaded with coating or the bulk of the clear coating has already been transferred from the applicator to the surface).

Sometimes, the finish does not seem to be fully even during application. If you have worked wet enough, the clear will flow out very smoothly and appear glass-like.

If this doesn't happen, you may be able to rework the **ClearShield®** while the material is still wet. If it is wet enough, re-roll with a moderately loaded applicator. You need to do this very quickly after the initial application.

ClearShield Type LL and Type VG

Our previously described brush and roll recommendations for **ClearShield®** apply to these versions, too. You can achieve excellent results with a mop applicator - a common window-washing mop head made of material like lamb's wool fastened to a dowel rod. Typically, you want the applicator to be fully saturated. Most people simply pour the coating in puddles or lines on the material to be coated. They then use the applicator to spread the coating. Try to apply the coating evenly and consistently.

ClearShield® Technical Information

We generally recommend the following dry film thickness:

- **ClearShield Water-based Clears** - .7 to 1 mil dry film
- **ClearJet Solvent-based Clears** - .5 to 1 mil dry film

This chart shows you the theoretical coverage at 100% transfer efficiency. Fine Art versions tend to penetrate much more than standard versions so the surface film build will be lower, yet the protection will be excellent.

	1 mil dry	.5 mils dry
ClearShield (all products)	480 sq. feet	960 sq. feet
ClearJet Type S (FA & Original)	370 sq. feet	740 sq. feet
ClearJet Type BR (FA & Original)	485 sq. feet	970 sq. feet

- Roll and mop applications transfer at 100% efficiency.
- Conventional spray applications transfer at 35% efficiency.
- HVLP spray applications transfer at 65% efficiency.

We believe in testing.

As the digital industry grows and more inks and media types are introduced, it is now impossible to predict the compatibility of every combination of media, ink, and clear coat. We strongly recommend that you test before use. A test will immediately show you incompatibilities, including water sensitivity, ink jet receptive layer mud cracks, and ink bleeds.

Generally, let the tested material dry for at least 24 hours. Evaluate the adhesion, flexibility, and visual appearance. Be realistic in your expectations and simulate the conditions the material will be exposed to. Clearstar maintains working relationships with media manufacturers, our distributors, and our customers. We are happy to provide testing for our industry friends and customers.