Optic Clear Solutions	**Applications Guide Line**	Process Specification
Drawn by: Sam T.	**Revision:** B **Date:** 17 Sep 2026	**Scale:** None
Tolerances: NA	**Approval:**	
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Sprayer, Application

Sprayer Specifications & Recommendations

To achieve optimal atomization and a smooth, professional finish, follow these equipment guidelines:

1. **Airless Sprayer Requirements**

- Pressure Rating: Use an airless sprayer with a maximum operating pressure of 3,300 psi.
- Recommended Pumps:
  - Graco 390 – Preferred for consistent atomization and reliability.
  - Titan 440 Impact – An excellent alternative for comparable performance.

2. **Spray Tip Selection**

- Preferred Tip Type: Use FFLP (Fine Finish Low Pressure) spray tips for precise atomization.
- Manufacturer Options:
  - Graco FFLP tips provide superior atomization due to their double-orifice design.
  - Titan SC-6+ Fine Finish tips are recommended when using Titan equipment
  - Fan Pattern Options: Both Graco and Titan tips are available in 4", 6", 8", or 10" fan patterns.
  - Choose the fan width based on project size and surface area (e.g., 4–6" for narrow areas, 8–10" for broad coverage).

3. **Filter Recommendations**

- Use standard mesh filters supplied with either Graco or Titan units.
- No need to switch to a finer or coarser filter for manifold or gun assemblies.

4. **Curing Recommendations**

- Handling or 2nd Coat: Minimum 90 min. @ ambient temperature (70°F/ 21°C)
- Curing Time: 24 hours @ ambient temperature (70°F/ 21°C) – fully cured

Additional Method Considerations

- Always perform a test spray on a scrap surface to confirm proper atomization and fan pattern.
- Spraying in warm or dry conditions, consider a shorter hose (25–50 ft) to reduce material drying.

Application Specifications & Techniques

For a smooth, defect-free finish and strong adhesion:

1. **Tack Coat Application**

- Purpose: Reduces drips, sags, and potential delamination.
- Procedure:
  - Set the unit to half pressure.

- Apply a light mist coat evenly across the substrate.
- Allow a brief flash-off (quick dry) before proceeding to the final coat.

2. **Final Coat Application**

- After the tack coat has dried to touch, increase pressure to full operating range.
- Spray the final coat in an even, overlapping pattern for uniform coverage.
- Maintain a 12–16-inch spray distance from the surface for best atomization.

Additional Method Recommendations

- Work in crosshatch patterns (horizontal then vertical passes) for maximum uniformity.
- Avoid over-application on edges or corners to prevent pooling and sagging.
- Monitor ambient conditions—temperature and humidity can affect dry times.

Brush and Roller Recommendations

Brush Application

- For optimal results, use a Chinex bristle brush.
- Chip brushes may be used for convenience, but they will not produce as smooth a finish.

Roller Application

- Use a soft woven 3/8" or 3/16 roller with a solvent-resistant core for best performance.
- These rollers are typically shed-resistant, helping achieve a smoother finish.

Application Tips

- Apply an even, consistent coat—avoid overapplication.
- This is a self-leveling product, so excess material may result in visible brush or roller marks.

Curing Recommendation

- Handling or 2nd Coat: Minimum 4-6 hrs. @ ambient temperature (70°F/ 21°C).
- Curing Time: 24 hours @ ambient temperature (70°F/ 21°C) – fully cured.

Surface Prep and Cleanup

Recommended Solvent -

- Prep surface use Acetone
- Clean up: Spray equipment or paint brushes with Acetone

Flushing Procedure

- Flush the pump and spray gun with solvent (as recommended) until clear solvent flows from the spray tip.

Filter & Manifold Check

- After flushing, remove and inspect both manifold and gun filters.
- Ensure there is no residual coating before storage.

Additional Cleanup Tips

- Use a dedicated solvent container for final rinse to avoid contamination.
- Cycle clean solvent through the sprayer for at least 30 seconds after clear flow is observed.
- If the unit will be idle for an extended period, consider a pump protector solution to prevent corrosion.

Thinning Guidelines

The coat has been formulated for compatibility with acetone as the recommended thinning solvent. Acetone provides excellent solvency and rapid flash-off characteristics, allowing applicators to adjust viscosity for varying spray equipment and environmental conditions.

Safety Precautions

- Acetone is highly flammable and fast evaporating.
- Always work in a well-ventilated area.
- Eliminate ignition sources before mixing or spraying.
- Wear solvent-resistant gloves, safety glasses, and appropriate respiratory protection.

Pre-Mixing Preparation

- Assess Compatibility: Acetone is a "hot" solvent. Using it on alkyd enamels or water-based/latex paints can cause them to curdle, separate, or ruin underlying paint layers.

Standard Thinning Ratios

- **Start Small**: Add the acetone slowly. *Never exceed 5% to 15% of the paint's total volume*.
- **Starting point** is ~200-300 mPa; a 5% reduction equals approximately a 50 mPa drop. ~150-250 mPa. The coat is stable up to 15% thinning for finer tips and thinner coats. 15% should get you approximately a 50–150 mPa
- **Measure Accurately**: For 1 gallon (3.8L) of compatible paint, start by adding just 4 ounces (~118mL) of acetone.

  For one gallon (3.8 L) of paint:

Acetone %	Volume
5%	6.4 oz (190 mL)
10%	12.8 oz (380 mL)
15%	19.2 oz (570 mL)

  Note: Do not exceed 15% acetone without consulting Optic Clear Solutions.

  Typical viscosity reduction achieved with acetone:

Acetone Addition	Approximate Viscosity Reduction
5%	10–20%
10%	20–35%
15%	35–50%

- Mix Thoroughly: Stir the paint and acetone together completely to achieve a uniform consistency before testing.

Application Tips

- **Work Quickly:** Because acetone flashes (evaporates) extremely fast, thinned paint can dry out rapidly in the brush or sprayer.
- **Watch for Issues:** If the paint dries to a sandy/rough finish (orange peel) or looks stringy, you may have added too much acetone, causing it to dry before it can level out.

An HVLP (High Volume, Low Pressure) spraying procedure yields a flawless finish. The process requires prepping your material to the correct viscosity, setting the gun's air and fluid controls, spraying in straight, overlapping passes 6 to 12 inches away from the surface, and cleaning thoroughly after use.

Material Prep and Thinning

- **Strain the Paint**: Always use a paint strainer to remove clumps or particles that could clog the gun.
- **Viscosity Check**: Coat may require thinning for you application. Use a viscosity cup to verify your starting point. A good baseline is to start with 5% acetone by volume and work your way up to a maximum of 15% acetone. The fluid should run out of the cup in a steady, thin stream within 25–40 seconds for a 1.5mm tip.

- Here's how to measure viscosity cup:

  Step 1: Immerse the cup in the liquid. Stir it around for a few seconds to allow any air bubbles to dissipate.

  Step 2: With a finger in the ring, quickly lift the cup vertically out of the liquid.

  Step 3: Start the timer as soon as the top edge of the cup breaks the surface of the liquid.

  Step 4: Stop the timer when you see the first break in the liquid stream at the bottom of the cup.

  Step 5: Write down the number of seconds on the stopwatch.

  Step 6: Repeat steps 3 – 5 until you have obtained a consistent reading.

  Step 7: Thoroughly clean the cup with spray gun cleaner and dry it with a soft, lint-free cloth.

  Measurements are provided in centistokes, and are expressed in seconds.

  The thicker the coating, the longer it takes to flow through the hole, producing a higher reading.

Spray Gun Tip Size Chart

Needle & Nozzle Set	Application	Viscosity Zahn #2	Air Cap
.8mm (.031)	Inks, dyes, stains, extremely thin viscosity fluids, water-based finishes.	16 seconds	A
1.0mm (.039)	All purpose, thin lacquers, thin enamels, water-based finishes, automotive, marine, airplane finishes	16 – 18 seconds	B or B-HS
1.3mm (.051)	Same as 1.0mm above, except slightly higher viscosity	17 - 20 seconds	B or B-HS
1.5mm (.059)	Catalyzed lacquers, conversion varnish, primers, automotive, marine, airplane finishes, varnish, high-viscosity industrial coatings, urethanes, enamels	18 - 24 seconds	B or B-HS
1.8mm (.07)	Same as 1.5mm above, except slightly higher viscosity	20 – 22 seconds	C or C-HS
2.0mm	Thinned latex paint, multi-spec, heavy primers, butyrate, nitrate dope, high-viscosity industrial coatings	24 – 35 seconds	C or C-HS
2.5mm	Thinned latex paint, multi-spec, solvent adhesives, wax-based strippers	35+ seconds	D or D-HS

Gun Setup and Calibration

- **Set the Air Pressure:** Place the turbine away from the spraying area to prevent drawing airborne particles into the system. Adjust the air pressure (recomended is min of 30-32 psi) so it is as low as possible while still atomizing the paint. High pressure creates unnecessary overspray.
- **Adjust the Fan Pattern:** Test your pattern on a piece of cardboard. You can rotate the air cap to switch between a horizontal or vertical oval spray pattern.
- **Adjust the Fluid Volume:** Start with the material flow knob closed, then open it while spraying to find your preferred volume.

Spraying Technique

- **The "Goldilocks" Method:** Hold the gun at a consistent distance of 6 to 12 inches from your project, depending on the material (e.g., closer for polyurethane, slightly farther for paint).
- **Start Off the Piece:** Begin pulling the trigger *before* sweeping the gun across the surface, and release it *after* you clear the opposite edge.
- **Maintain Even Passes:** Move your entire arm, not your wrist, to keep the gun perfectly parallel to the surface. Do not arc the gun.
- **Overlap:** Overlap each previous pass by 50% for consistent coverage.
- **Apply Thin Coats:** It is always better to spray two or three thin, dry coats to avoid drips and runs.

Cleaning and Maintenance

- **Flush the Line:** Never leave paint in an HVLP gun. Empty the remaining paint into a can, then pour acetone into the cup. Spray the acetone through the gun until the fluid runs completely clear.
- **Deep Clean:** Disassemble the needle, nozzle, and air cap to soak them in acetone. Use a cleaning brush and needle to scrub the tiny fluid passages and tip to prevent the gun from clogging before its next use.