

# Perdüre U90

## Mixing & Installation Instructions



### Perdure U90 Aliphatic Polypolyurethane Sealer/Coating (Clear/Pigmented, Gloss/Satin, ESD)

**Important Note:** Perdure U90 Gloss and Satin are **different** formulations, which require different Part B Hardeners; do NOT interchange part B's or cure problems will occur! Perdure U90-ESD is available in clear gloss formulation only.

**Important Note:** This is a unique hard wearing and low odor polyurethane with excellent abrasion and stain resistance. The Clear/Gloss formulation as a result of these features has a tendency to cause small "fish eyes" when applied over a smooth epoxy basecoat. It is advised to use some quantity of Perdure Non-Skid Additive (NSA, 80-100 fine mesh) or WFA-240 mesh aluminum oxide (AL/OX) which helps to reduce this tendency. A suggested recommendation is 2-8 ounces by volume of Perdure NSA (fine mesh) or 8-64 ounces by volume WFA-240 mesh AL/OX.

**Important Note (Surface Preparation):** When Perdure U90 is to be applied over a smooth epoxy basecoat, the epoxy should be **thoroughly** sanded/screened (complete removal of gloss). This should be done even when the epoxy has been applied the previous day and is within the standard recoat window. Sanding is also recommended when applying over Perdure P98 Polyaspartic topcoat. Application over a prior coat of Perdure U90 **absolutely** requires thorough sanding, refer to section B.iii. for additional details.

#### A. Mixing

- i. Thoroughly mix each component prior to combining.
- ii. Mix four (4) parts by volume of Part A with one (1) part by volume of Part B for three minutes with a low speed electric drill and mixing paddle (Jiffy mixer). Do not thin material. If adding Polyurethane Pigment Pack (UPP) or Satin Additive (SA), mix Part A and Part B for a minimum of 2 minutes before adding UPP or SA and continue mixing for 1-2 additional minutes. **Important: DO NOT add pigment pack before first thoroughly mixing Part A and Part B, otherwise color will be altered.**
  - ii-a. Polyurethane Pigment Pack Mix Ratio: 1 pint UPP per 1 gallon part A Perdure U90. White requires 2 pints UPP per 1 gallon part A, applied over white epoxy basecoat. Add UPP after first mixing part A and part B thoroughly.
  - ii-b. Satin Finish: After mixing Part A and Part B as outlined above, add 1.0-1.5 gallons Satin Additive (SA) to 1.25 gallons mixed resin and continue mixing for 1-2 minutes. **Important:** If adding Polyurethane Pigment Pack (UPP), mix UPP with mixed resin BEFORE adding SA. **Important:** Be sure to maintain consistent mix ratio of SA to mixed resin from batch to batch to ensure consistent satin finish. Using 1.5 gallons SA will yield a more prominent satin appearance and more prominent orange peel finish. Using 1.0 gallons SA will yield a semi-gloss appearance and less prominent orange peel finish.
  - ii-c. HTS Finish (WFA-240 mesh AL/OX): After mixing Part A and Part B as outlined above, for maximum wear resistance with Gloss Finish only add ½ gallon of Perdure WFA-240 mesh aluminum oxide (AL/OX) powder to 1.25 gallons mixed resin and continue mixing for 1-2 minutes. If using UPP or SA, mix those components prior to adding HTS additive. **Important:** Adding 8 ounces (by volume) up to ½ gallon of WFA-240 mesh AL/OX to Gloss Finish will reduce gloss to some degree, and very significantly with the ½ gallon loading. If using Satin formulation, it is advised to use no more than ¼ gallon of WFA-240 mesh AL/OX due to higher viscosity of Satin formulation. When using WFA-240 mesh AL/OX or NSA, mix small batches (1.25 gallons) and remix periodically as needed to keep grit suspended, particularly just prior to pouring into a paint

pan when using “dip and roll” procedure. Keep grit suspended in the paint pan using the roller immediately before each application.

- ii-d. ESD Finish: After mixing Part A and Part B as outlined above, continue mixing while adding ESD Additive and continue mixing for 1-2 minutes.
- iii. **Do not mix more material than can be used in 1 (one) hour.**

## B. Application

- i-a. To ensure proper application thickness and consistency, it is best to use a “dip and roll” procedure and apply at 450-500 ft<sup>2</sup>/gallon. This will yield 3 mils dry film thickness. Apply in a “V” shape procedure, using aggressive pressure on the roller handle. Initially an “orange peel” texture will be evident if applying at correct thickness, which will slowly level out (Gloss only—Satin will remain orange peel). DO NOT apply thicker than 3.5-4 mils DFT (350-400 ft<sup>2</sup>/gallon) or puddle resin, particularly when applied over broadcasted or troweled mortar systems with low spots, as this may cause microbubbles and a resulting white haze.
- i-b. Perdure U90-ESD Coverage Rate: Apply at 350-400 ft<sup>2</sup>/gallon.
- ii. Immediately and slowly cross roll with a lint-free short nap 3/8” mohair roller to even the surface texture of the coating, again using aggressive pressure on the roller handle. All cross rolling steps must be done immediately in sequence after initial application of resin. Particularly with pigmented Perdure U90, DO NOT re-roll isolated areas more than 10 minutes after completing final cross roll procedure, as roller marks or pigment color alteration may occur! Material must be **very thoroughly** rolled, particularly the Clear/Gloss formulation, or tiny “fish eyes” (i.e., material separation) may occur. Also, “aggressive” pressure does not mean rapid rolling, but rather to bear down on the roller handle with enough force that the handle bends slightly, to insure enough pressure is used, to help reduce material separation. Crossrolling is always recommended, do this immediately. If resin begins to “fish eye” or pull apart, immediately re-roll. With Clear/Gloss formulation, isolated areas can be re-rolled somewhat later than 10 minutes. Be sure to check areas already finished to confirm that fish eyes did not form. DO NOT rapidly roll the Perdure U90 Polyurethane or microbubbles may form from air entrainment. **Important:** Change roller cover every 45-60 minutes if a residue begins to build up on the ends of the roller or roller frame, as accumulated older resin may cause reaction with fresh material, resulting in shortened working time and/or microbubbles. Apply material within the recommended thickness range and allow to cure tack free if topcoating.
- iii. Allow material to cure completely hard (8 to 10+ hours at 75°F, 50% RH) before applying a second coat. DO NOT apply a second coat of Perdure U90-ESD unless approved by Duraamen Technical Service. Perdure U90 must be hard enough to aggressively sand (completely de-glossed) prior to application of a second topcoat or “fish eyes/crawling” may occur. Use diamond-impregnated buffer pad (100-150 grit is recommended), or resin-bond diamond plugs (100-150 grit), or 80-100 grit carborundum sand paper, or ‘Diama-Brush’ buffer pad. It is recommended that the installer test which method will work best for any particular project. If individual scratch marks are apparent, the surface has NOT been sanded thoroughly. Be sure to completely remove all residual dust with vacuum and damp mopping before coating. **Important:** Perdure U90 is a moisture cure polyurethane, relative humidity will significantly affect cure speed. Relative humidity range must be 30%-80% RH, low RH will slow the cure rate. Note that very high humidity (80%+) may result in moisture condensation on the substrate, which can cause numerous small bubbles to form in the polyurethane.
- iv. Do not open to light foot traffic for 24 hours at 75°F, 50% RH. Do not open to vehicle traffic for 72+ hours at 75°F, 50% RH. Full chemical cure and maximum resistance are achieved in five to seven (5-7) days at 75°F, 50% RH.
- v. Perdure U90-ESD conductivity testing: Allow to cure minimum 24-48 hours at 75°F, 50% RH before testing with floor surface ohm meter.