Application Guide

# PARTALL® Film #10

PARTALL® Film #10 is a water and alcohol based polyvinyl alcohol (PVA) coating comprised of solvent-resistant, film-forming materials. Once dry, the PVA film is resistant to solvents in the resin system used to make composites parts but is soluble in water. It is particularly recommended as a parting agent for separation between polyester, vinylester, or epoxy resins and various mold surfaces but may be used with most thermoset resins. PARTALL® Film #10 is not recommended for use with mold substrates or resins (e.g., phenolics) containing water or giving off water during cure or with automotive finishes.

PARTALL® Film #10 parts easily from mold surface and is readily dissolved from molded parts and spray equipment with water. For most composite casting processes PARTALL® Film #10 is used over wax such as PARTALL® Paste #2 or other mold release agents and renewed for each part casting.

## PREPARING THE MOLD SURFACE

Molding surface must be thoroughly dry and free of other parting agents and contaminants such as silicone, dust, and compressor oil prior to application of PARTALL® Film #10. Porous molds (i.e., plaster or wood) must be sealed; composites grade sealers such as FORMULA FIVE® Mold Sealer are recommended but fairing compounds, automobile type primer-sealers, and lacquers may be sufficient. Rough wood molds or plugs may be adequately sealed with a number of coats of PARTALL® Paste #2. Waxes or sealers containing high levels of silicone should be avoided as they can create separation or pin holes in the PVA film. Best practice is to allow residual solvents to out-gas from sealers and waxes for at least one hour prior to application of PARTALL® Film #10.

## DIRECTIONS FOR USE

Use in a well-ventilated area with appropriate personal protection. PARTALL® Film #10 is ready to use as received and should not be diluted. Preferred application is with a spray gun. Recommended air pressure with HVLP spray gun is 22-24 psi (1.5-1.7 bar) at the gun. When using a traditional spray gun adjust air pressure to 60-90 psi (4-6 bar). Normal gun to substrate spraying distance is 12–18 inches (30-45 cm). Good results may also be obtained with a sponge applicator or paint brush, or by dipping substrate and draining excess PVA. Clean application equipment thoroughly with water after use to avoid damage to metal parts.

On new or reconditioned polyester or vinylester molds, apply a mist coat of PARTALL® Film #10 followed by multiple flow coats, allowing each coat to dry completely before proceeding. Drying time is approximately 15-45 minutes per coat depending on ambient temperature, humidity, and wet PVA coat thickness. On seasoned molds, apply a mist coat followed by at least 1-2 flow coats. A spray density that just allows the liquid to flow together and form a continuous film without creating drips or runs on vertical surfaces or pooling on horizontal surfaces is ideal. Dry film thickness should be at least 2-4 mils (50-100 µm) on new or reconditioned molds and 1-2 mils (25-50 µm) on seasoned molds. A 10 mil (250 µm) wet film will result in about a 1 mil (25 µm) dry film once water and alcohol have evaporated. One gallon (3.79 liters) will cover about 400 $ft^2$ (40 $m^2$).

PARTALL® Film #10 will exhibit a white foamy appearance when sprayed but will dry to a clear coat. Film should not sag or contain runs when applied. If application flaws appear in PVA film wash off with water and begin again. Factors such as humidity and proximity to direct sunlight may cause drying time to vary. Do not begin casting or molding parts until surface is completely dry. Film should be very smooth and glossy when dry. A dull, hazy, or grainy film may result from insufficient spray (PVA coat is too thin) and may indicate an inadequate protective coating, porosity, or pinholes.; spray PVA to look wet. If spray bubbles are trapped in PVA film try higher air pressure. In hot and dry climates the alcohol in PARTALL® Film #10 may cause the atomized stream to dry prior to arrival at substrate, creating a cobwebbing effect. This may be overcome by diluting PARTALL® Film #10 with up to 10% distilled water.

The best procedure for separating a part from a mold depends on the size and shape of the part. In most cases a part can be lifted from the mold after loosening around the edges. Injecting compressed air between the part and mold at the edge is sometimes useful. On large or difficult parts it may be helpful to introduce water between the mold and part in order to dissolve the PVA film and float the part free. PARTALL® Film #10 generally comes off with the finished part and will need to be renewed on the mold for each molding cycle.

*PARTALL® Film #10 is packaged in 55 gallon (208.2 liter) drums, 5 gallon (18.9 liter) pails, and 1 gallon (3.79 liter) bottles.*
*Available colors are Green and Clear (untinted).*

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