

PAINT, POWDER & COATING SPECIFICATIONS

Gleco Paint & Powder Coating | ISO 9001:2015 | AS9100D | ITAR Registered | Rowlett, Texas

FINISH WELL

POWDER COATING

MIL-PRF-24712B | MIL-PRF-32348

Electrostatically applied thermoset powder, oven cured to a hard, uniform film. No solvents, so film builds are heavy without runs or sags, and edge coverage is far better than wet paint. The workhorse finish for enclosures, frames, weldments and support equipment.

MIL-PRF-24712B	Types I, II and IV
MIL-PRF-32348	Types I, II, III and IV
Typical build	2.0 - 4.0 mils
Cure	Batch oven, schedule per powder
Colors	Any custom color; gloss, satin, matte, textured
Note	Masking must survive full cure temperature

EPOXY PRIMERS - GROUND

MIL-DTL-53022 | MIL-DTL-53030

Corrosion-inhibiting primers that carry the adhesion and most of the corrosion life of a ground-vehicle paint system. The topcoat handles chemistry and signature; the primer handles the steel.

MIL-DTL-53022	Epoxy primer, VOC compliant
MIL-DTL-53030	Water-reducible epoxy primer
Under	CARC per MIL-DTL-53039 / 64159
Typical build	1.0 - 1.5 mils
Prep	Blast or phosphate per substrate
Note	Primer and topcoat are quoted as a system

PRETREATMENT - ALUMINUM

MIL-DTL-5541 | MIL-A-8625

Aluminum will not hold paint reliably without a conversion coating first. Chem film and anodize both give the film something to key into and add corrosion protection beneath it.

MIL-DTL-5541	Type II, Class 1A chemical conversion
MIL-A-8625	Anodic coatings, Types I / II / III
DOD-P-15328	Wash primer pretreatment
MIL-C-8514	Wash primer pretreatment
Runs at	Gleco Plating, same company
Note	Class 1A for maximum corrosion protection

DRY FILM LUBRICANT

MIL-PRF-46010

Resin-bonded solid film lubricant based on molybdenum disulfide. Cures to a dry, low-friction film that lubricates where oil or grease cannot be used, and adds galling and fretting resistance.

MIL-PRF-46010	Resin-bonded solid film lubricant
Lubricant	Molybdenum disulfide (MoS2)
Typical build	0.3 - 0.5 mils
Use case	Fasteners, slides, bearing surfaces
Benefit	Anti-galling, anti-fretting, dry
Note	Substrate usually phosphated first

HOW TO USE THIS CHART

Call out the system, not just the topcoat

A CARC or MIL-spec finish is a stack: pretreatment, primer, topcoat. Naming only the topcoat leaves the two layers that carry adhesion and corrosion life undefined. Give us the full callout, or send the print and we will tell you what the system should be.

Plating and coating in one company

Chem film under primer, anodize with a masked painted face, cadmium plate with a topcoat. Gleco Plating runs the plating and anodizing lines in the same company, so multi-process parts ship on one purchase order.

CARC TOPCOATS

MIL-DTL-53039 | MIL-DTL-64159

Chemical Agent Resistant Coating. Specified for decontaminability and infrared signature, not appearance. CARC is a system - pretreatment, epoxy primer and CARC topcoat. A CARC topcoat over an unspecified primer is not a compliant system.

MIL-DTL-53039	Single-component CARC topcoat
MIL-DTL-64159	Water-dispersible CARC topcoat
Over primer	MIL-DTL-53022 or MIL-DTL-53030
Colors	383 Green, Tan 686A, Sand, Black and others
Gloss	Controlled - low gloss is part of the spec
Note	No color or material substitution permitted

PRIMERS - AEROSPACE

MIL-PRF-23377 | MIL-PRF-85582

Chromated and non-chromated epoxy primers for aerospace structure and components. Applied over a conversion coating on aluminum, and specified by type and class on the drawing.

MIL-PRF-23377	Epoxy primer, solvent-borne
MIL-PRF-85582	Epoxy primer, water-borne
Over	MIL-DTL-5541 chem film or anodize
Typical build	0.6 - 0.9 mils
Under	MIL-PRF-85285 polyurethane topcoat
Note	Type and Class must be called out

PRETREATMENT - STEEL

Iron phosphate | TT-C-490E

A crystalline conversion coating on carbon steel that gives powder and paint a chemically bonded surface and adds corrosion life under the film. Standard on steel where salt spray hours matter.

Iron phosphate	Conversion coating before coat
TT-C-490E	Cleaning and pretreatment methods
Method	Mechanical, solvent or alkaline clean
Gate	Water break-free surface before coating
Improves	Adhesion and salt spray performance
Note	Blast-to-coat time is controlled

CERAKOTE

Ceramic-based thin-film coating

A thin ceramic-polymer film that adds wear, heat and corrosion resistance without meaningful dimensional change. Useful where a conventional coating would be too thick to hold tolerance.

Film	Very thin - typically under 1 mil
Substrates	Aluminum, steel, stainless, copper, brass
Resistance	Wear, heat, chemical and corrosion
Finish	Wide color range, matte to satin
Use case	Tight-tolerance and moving parts
Note	Not a substitute for a MIL-spec system

MIL-SPEC TOPCOATS

MIL-PRF-22750 | MIL-PRF-85285

Epoxy and polyurethane topcoat systems for aerospace and defense hardware where chemical resistance, color retention and adhesion over a qualified primer are what the drawing is buying.

MIL-PRF-22750	Epoxy topcoat
MIL-PRF-85285	Polyurethane topcoat
Substrates	Steel and aluminum alloys
Typical build	1.8 - 2.5 mils over primer
Color	FED-STD-595 numbers matched and held
Records	Film thickness measured and recorded

ZINC-RICH PRIMER

Sacrificial corrosion protection

A primer loaded with metallic zinc that protects steel galvanically rather than only as a barrier. Where a scratch through an ordinary primer starts rust, a zinc-rich film keeps corroding sacrificially instead of the substrate.

Mechanism	Galvanic - zinc corrodes preferentially
Substrate	Carbon steel and weldments
Prep	Abrasive blast, profile controlled
Topcoat	Compatible epoxy or urethane
Use case	Long outdoor and marine exposure
Note	Weld-through grades available on request

ABRASIVE BLASTING

Glass bead | Aluminum oxide | Sand

Cleaning, profiling and stress improvement. Aluminum oxide cuts and profiles for mechanical adhesion; glass bead cleans and leaves a softer, more uniform surface. Media is matched to substrate and finish.

Media	Glass bead, aluminum oxide, sand
Purpose	Clean, profile, shot peen
Removes	Scale, oxide, old coatings, weld discolor
Capacity	Unlimited-size parts
Control	Profile matched to coating system
Note	Call out any required profile range

SILK SCREENING & MARKING

Panel legends | Nomenclature | ID

Legends, control markings, nomenclature and part identification screened directly onto the finished surface, then protected. Applied in the same building as the coating, so artwork registration and color match are controlled.

Applied to	Metal, plastic and painted surfaces
Typical	Panel legends, placards, part numbers
Artwork	Matched to drawing or supplied file
Durability	Coated over where the spec requires
Colors	Custom matched
Note	Send artwork as vector where possible

Types and classes change the part

MIL-DTL-5541 Class 1A is not Class 3. MIL-PRF-24712B Type I is not Type IV. Where a specification has types, classes or grades, the drawing has to pick one - the spec number alone is not an instruction.

Ask before the order, not after

Send the print and the quantity. We will confirm the finish, flag anything the drawing has not defined and give you a date - usually within one business day.