



# Cortec's Coatings Guide for Construction Applications

Cortec's coatings have a broad scope of use for a variety of metal substrates in construction and facility maintenance applications: structural steel, steel plates, metallic platforms, architectural metallic elements, stairs and banisters, metallic components of HVAC and mechanical systems, and much more!

## Traditional Coatings vs. Cortec® Micro-Corrosion Inhibiting Coatings™ Technology

Whereas traditional coatings rely on sacrificial metals (zinc, chromates, aluminum) with large particle sizes for inhibition (allowing gaps for corrosion and coatings failure to start), coatings containing VpCI® inhibitors protect the metal substrate with a tight bonding molecular structure to inhibit micro-corrosion and deter corrosion creep at the micro-cavity level.

### Metal Coatings Application Steps

#### Step 1: Surface Preparation

Surface preparation is the key to good, long-lasting system perfor-

mance. Refer to each product data sheet before for instructions. Surface cleaning products such as VpCI®-423 Gel can help remove existing rust.

#### Step 2 (Optional): Rinsing

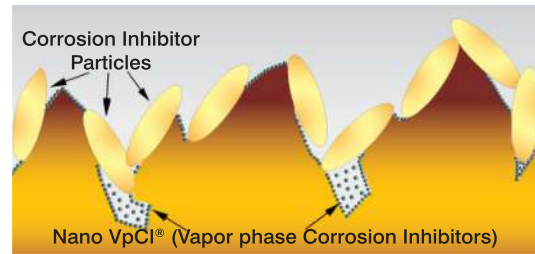
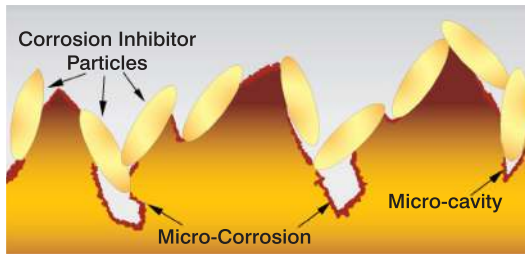
Once the surface has been cleaned, rinsing with VpCI®-440 is recommended to prevent short-term rust and promote adhesion.

#### Step 3: Coating System Application

A coating system may consist of one or more products, depending on substrate condition, exposure, and the required protection.

**Prime Coat:** For partially rusted surfaces, CorrVerter® can be used as a primer. If there is no surface rust, other primers in the full list below can be used.

**Topcoat:** Choose one or more depending on exposure, durability, and aesthetics requirements. Some topcoats can be used as an intermediate coat and/or topcoat. A full list of topcoats is below.



### Full System Application Example

Step 1: Surface Prep	Step 2 (opt): Rinsing	Step 3: Coating System Application		
VpCI®-423 Gel or Sandblasting	Use VpCI®-440	Prime Coat	Topcoat 1	Topcoat 2
		CorrVerter® MCI® DFT = 3 mils (75 µm)	VpCI®-395 epoxy DFT = 1.5-3 mils (37.5-75 µm)	VpCI®-384 or VpCI®-386 DFT = 1.5-3 mils (37.5-75 µm)

### Primers

	VpCI®-375	VpCI®-396	CorrVerter® MCI® Rust Primer	EcoShield® VpCI® 386	MCI® EcoRainbow® Architectural Coating	VpCI®-395
System Type	Water	Solvent	Water	Water	Water	Water
Parts	1K	1K	1K	1K	1K	2K
Resin	Acrylic	Urethane	PVC	Acrylic	Acrylic	Epoxy
Exterior Durability	Very Good	Very Good	Poor	Very Good	Very Good	Poor
Chemical Resistance	Fair	Good	Very Good	Fair	Fair	Excellent
Salt Spray (hrs)	750+	750+	500	1000	168	1000+
Gloss	30-50	30-50	15-25	80+	80+	15-25
VOC	0.7 lbs/gal (84 g/L)	3.1 lbs/gal (371 g/L)	0.1 lbs/gal (12 g/L)	0.06-0.07 lbs/gal (7.5-8.4 g/L)	0.01-0.02 lbs/gal (1.6-2.0 g/L)	0.2 lbs/gal (24 g/L)
Solids	40-52%	56.20%	34.50%	31%	31%	48.60%
Recommended DFT	1.5-3.0 mils (37.5-75 µm)	2.0-3.0 mils (50-75 µm)	3.0-5.0 mils (75-125 µm)	1.5-3.0 mils (37.5-75 µm)	1.5-3.0 mils (37.5-75 µm)	1.5-3.0 mils (37.5-75 µm)
Dry to Touch	20 min	2-3 hrs	2-3 hrs	30 min	30 min	20-30 min

Topcoats					
	EcoShield® VpCI®-386	MCI® EcoRainbow® Architectural Coating	VpCI®-375	VpCI®-384	VpCI®-395
System Type	Water	Water	Water	Solvent	Water
Parts	1K	1K	1K	2K	2K
Resin	Acrylic	Acrylic	Acrylic	Urethane	Epoxy
Exterior Durability	Very Good	Very Good	Very Good	Excellent	Poor
Chemical Resistance	Fair	Fair	Fair	Very Good	Excellent
Direct to Metal (DTM)	Yes	Yes	Yes	No	Yes
Salt Spray (hrs)	1000	168	2500+	500+	1000+
Gloss	80+	80+	30-50	80+	15-25
VOC	0.06-0.07 lbs/gal (7.5-8.4 g/L)	0.01-0.02 lbs/gal (1.6-2.0 g/L)	0.7 lbs/gal (84 g/L)	3.5 lbs/gal (419 g/L)	0.2 lbs/gal (24 g/L)
Solids	31%	31%	40-52%	50-55%	48.60%
Recommended DFT	1.5-3.0 mils (37.5-75 µm)	1.5-3.0 mils (37.5-75 µm)	4-5 mils (100-125 µm)	1.5-3.0 mils (37.5-75 µm)	1.5-3.0 mils (37.5-75 µm)
Dry to Touch	30 min	30 min	20 min	30 min	20-30 min

Selection Guide								
ID	Primer	Low VOC	Components	UV Stable (Exterior Application)	Color Matching	Chemical Resistance	Salt Spray Resistance	Recommended Topcoats
P1	VpCI®-375* (DFT: 1.5-3 mils/ 37.5-75 µm)	Yes	1	Yes	Yes	Fair	750 hrs+	T1, T3, T5
P2	EcoShield® VpCI® 386*	Yes	1	Yes	Yes	Fair	1000 hrs	T3, T5
P3	VpCI®-395*	Yes	2	No	Limited	Excellent	1000 hrs+	T1, T2, T3, T4, T5
P4	VpCI®-396*	No	1	Yes	2 Colors Available	Good	750 hrs+	T1, T2, T3, T4, T5
P5	CorrVerter® MCI® Rust Primer	Yes	1	Yes	No	Very Good	500 hrs	T1, T2, T3, T4, T5
P6	MCI® EcoRainbow® Architectural Coating*	Yes	1	Yes	Yes	Fair	168 hrs	T3, T5
ID	Topcoat**	Low VOC	Components	UV Stable (Exterior Application)	Color Matching	Chemical Resistance	Salt Spray Resistance	Recommended Topcoats
T1	VpCI®-375* (DFT: 4-5 mils/ 100-125 µm)	Yes	1	Yes	Yes	Fair	2500 hrs+	T3
T2	VpCI®-384	No	2	Yes	Yes	Very Good	500+	
T3	EcoShield® VpCI® 386*	Yes	1	Yes	Yes	Fair	1000 hrs	
T4	VpCI®-395*	Yes	2	No	Limited	Excellent	1000 hr+	T2, T3
T5	MCI® EcoRainbow® Architectural Coating*	Yes	1	Yes	Yes	Very Good	168 hrs	

\* These products can be used as primers or topcoats depending on application

\*\* Some topcoats can be used as topcoats and/or intermediate coats

Recommended System Combinations	
P3 + T3	Recommended for clean structural steel
P1 + T1	
P2 + T4 + T5	
P5 + T4 + T1	Recommended for rusted structural steel
P5 + T4 (Interior)	
P3 + T2	Recommended for metals exposed to chemicals
P3 + T4 (Interior)	
Clean Substrate: P3 or P4 + T1, T2, T3	Recommended for handrails, banisters, steel plates, and mechanical equipment
Rusted Substrate: P5 + (P3 or P4) + (T1, T3)	
P5 + T4 (Interior)	
Clean Substrate: (P1 or P4) + (T1 or T3)	Recommended for pipes (below 194 °F [90 °C])
Rusted Substrate: P5 + (T1 or T3)	