

## Colorbond™ Heavy Mil Vinyl Bonded over Galvanized Steel Chain Link Fence Posts, Rails and Fence Fittings

### 1. PRODUCT NAME

Colorbond™ Heavy Mil Vinyl Bonded over Galvanized Steel Chain Link Fence Posts, Rails and Fence Fittings

### 2. MANUFACTURER

#### Merchants Metals:

##### Brighton, MI:

800 Whitney Avenue  
Phone: (800) 338-7684  
Fax: (810) 227-1969

##### Houston, TX

4901 Langley Road  
Phone: (800) 723-3623  
Fax: (713) 697-5806

##### Bladensburg, MD

4301 – 46<sup>th</sup> Street  
Phone: (301) 927-4080  
Fax: (301) 927-0368

Merchants Metals Service Centers are located throughout the United States.

### 3. PRODUCT DESCRIPTION

#### **Basic Use:**

Colorbond™ framework is bonded vinyl, high strength, galvanized steel, chain link fence posts and rails. It is approved by the U.S. Federal Government for road, airport, commercial, industrial and institutional applications.

#### **Composition and Materials:**

Colorbond™ framework is manufactured in a unique process which results in a heavy mil PVC coating, with armor-like bonding. Maintenance free, Colorbond™ never needs painting and won't chip, crack or peel. The vinyl bonding process features a four-stage washing/rinsing cycle, drying cycle, and curing/cooling cycle.

#### **Four-stage Washing/Rinsing:**

**First Stage:** Spray washing with a mild acid and ambient temperature water solution to assure a clean service.

**Second Stage:** Ambient temperature water spray rinse after acid wash.

**Third Stage:** Heated washing with a solution of iron phosphate and a proprietary cleaning formula which acts as an adhesion enhancer.

**Fourth Stage:** Final rinsing with water at ambient temperature.

**Drying Cycle:** The material is immersed in a special proprietary water based epoxy primer, then dried with forced air.

#### **PVC Coating Applications:**

The material is heated in a natural gas-fired oven to approximately 500°F (260

°C). The product temperature is adjusted primarily by line speed to ensure the smooth flow-out of the PVC coating and to maintain the primer coat integrity. The material is then dipped in a fluidized bed of PVC powder. The residence time in the fluidized bed is adjusted to the thickness of the material coated.

#### **Curing/Cooling:**

After PVC dipping, the material is hung a conveyor to allow proper curing (uniform melt). For final cooling, the material is immersed in cold water until fully cool. After final inspection, the Colorbond™ product is packaged and shipped.

#### **Standards:**

ASTM F1043 *Strength and Protective Coatings on Metal Industrial Chain Link Fence Framework*, Group I-A and Group I-C Heavy Industrial  
ASTM F567 *Installation of Chain Link Fence*

ASTM F934 *Standard Colors for Polymer-Coated Chain Link Fence Materials*

Federal specification RR-F-191K/3D *Fencing, Wire and Post Metal (Chain Link Fence Posts, Top Rails, and Braces)*, Class 1, Grade A or B  
AASHTO M-181 *Chain Link Fence*, Grade 2 (American Association of State Highway Transportation Officials), Grades 1 and 2.

### 4. TECHNICAL DATA

#### **General:**

If requested, prior to installation, the manufacturer will supply samples and certification that all materials furnished fully comply with the appropriate specifications.

#### **Chain Link Framework:**

The base metal of the posts and rail are commercial steel conforming to ASTM F1043 Group I-A and I-C, Heavy Industrial Fence and also conform to Federal specification RR-F-191, Class 1, Grades A and B and AASHTO M181 Grades 1 and 2. The thickness of the PVC coating is 0.010 - 0.015 in. (0.25 - 0.38 mm).

#### **Pipe Coating:**

Only Plasticized Polyvinyl Chloride (PVC) with low temperature (-20 °C; -4 °F) plasticizer and no extenders or other extraneous matter, other than the necessary stabilizers and pigments. The PVC coating resists attack from prolonged exposure to most common mineral acids, sea water, and dilute solutions of salts and alkali.

#### **Fittings**

Fittings and other accessories are zinc-

coated (galvanized) pressed steel, cast steel or malleable iron, as specified and are coated with matching PVC by the same process as post and rails. PVC coating thickness is 0.006 to 0.015 mils (0.15 to 0.38 mm). Painted fittings are not acceptable.

#### **ASTM Color System**

All components conform to the color requirements of ASTM F934. Other colors may be available by special order.

**Adhesion Test:** At three separate locations, a sharp knife if used to cut two parallel lines 1/8-in apart and 1-in long through the coating. At one end of the parallel cut, an attempt to pull away the PVC coating from the substrate shall result breakage of the PVC coating, rather than disbonding from the substrate, in no less than two of the three tests.

### 5. INSTALLATION

Install fence posts in accordance with ASTM Practice 567.

### 6. AVAILABILITY AND COST

**Availability:** Colorbond™ is available for shipment throughout the United States and worldwide.

**Cost:** Material costs may vary depending on specific requirements. Costs may be obtained through all Merchants Metals Service Centers.

### 7. WARRANTY

Colorbond™ framework carries a 15-year factory warranty against failure due to rust or corrosion.

### 8. MAINTENANCE

No routine maintenance is required. PVC coated products should be handled with care. If the finish is damaged, contractor must repair or replace at their own expense.

### 9. TECHNICAL SERVICES

Technical services are available through the Merchants Technical Sales Department:

Phone: (888) 260-1600 (toll free)

Facsimile: (888) 261-3600 (toll free)

or your local Merchants Metals Service Center.

Additional information is available on our website: [www.merchantsmetals.com](http://www.merchantsmetals.com)



# Merchants Metals Spec Tech

## Colorbond™ Industrial Weight Heavy Mil Vinyl Coated Framework

ASTM F1043 Group I-A and I-C, Federal specification RR-F-191 Type 1, Grades A and B, AASHTO M-181 Grades 1 and 2

Table 1 – Physical Characteristics

All dimensions and weights nominal

Fence Industry	Size Designator	Metric		O. D.		ASTM F1043 I-A, RR-F-191 Grade A, AASHTO Grade 1			ASTM F1043 I-C, RR-F-191 Grade A, AASHTO Grade 2			PVC Thickness inch (mm)	
		NPS	inch	mm	inch	mm	Yield Strength psi (MPa)	Wall Thickness		Weight			Yield Strength psi (MPa)
		1-1/4	1.660	42.2	0.140	3.56		inch	mm	lb/ft	kg/m		
2	1-1/2	40	1.900	48.3	0.145	3.68	30,000 (205)	0.120	3.05	2.28	3.4	50,000 (344)	0.010 to 0.015 (0.25 to 0.38)
2-1/2	2	50	2.375	60.3	0.154	3.91		0.130	3.30	3.12	4.6		
3	2-1/2	65	2.875	73.0	0.203	5.16		0.160	4.06	4.64	6.9		
4	3-1/2	90	4.000	101.6	0.226	5.74	9.11	0.160	4.06	6.56	9.8	NA	NA
6-5/8	6	150	6.625	168.3	0.280	7.11	18.97	28.3	NA	NA	NA	NA	NA

Table 2 – Strength Characteristics – inch/pound units (Based on minimum yield strengths above)

Fence Industry	Size Designator	ASTM F1043 I-A, RR-F-191 Type 1, Grade A, AASHTO M181 Grade 1		ASTM F1043 I-C, RR-F-191 Type 1 Grade B, AASHTO M181 Grade 2								
		O.D. Nom	Wall	I.D.	Wall	I.D.						
		inch	inch	inch	inch	inch						
1-5/8	1-1/4	1.660	0.140	1.380	0.140	1.380	0.111	1.438	0.196	327	204	136
2	1-1/2	1.900	0.145	1.610	0.145	1.610	0.120	1.660	0.281	Sizes above 1.660 in. are not normally used for top rail.	293	195
2-1/2	2	2.375	0.154	2.067	0.154	2.067	0.130	2.115	0.488		508	339
3	2-1/2	2.875	0.203	2.469	0.203	2.469	0.160	2.555	0.878		914	610
4	3-1/2	4.000	0.226	3.548	0.226	3.548	0.160	3.680	1.782	1,856	1,237	NA
6-5/8	6	6.625	0.280	6.065	0.280	6.065	NA	NA	NA	NA	NA	NA

\* 10 ft Calculated Load is representative of top rail for a typical chain link fence installation.

\*\* 4 ft and 6 ft Cantilever Loads calculated for loads applied at the top of the post with the bottom fixed.

Table 3: Performance Criteria

Test	Test Method	Results
WEATHER-OMETER	ASTM E42	4,000 hour exposure without cracking, blistering or loss of adhesion.
Salt Spray (Unscored samples)	ASTM B117	5,000 hours without deterioration of coating or metal condition.
Salt Spray (Scored samples)	ASTM B117	Maximum 1/8 inch undercut after 2,000 hours exposure.

Note: Weather-ometer testing is a recognized plastics industry method for evaluating long-term sunlight exposure.

Revised: May, 2002

Technical Sales Department:  
Telephone: (888) 260-1600  
Facsimile: (888) 261-3600



**MERCHANTS METALS**  
The First Name In Fence