



# SECURITY CONTRACTOR SERVICES

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*Large Enough To Serve  
Small Enough To Care*

## **Heavy Mill Vinyl Bonded over Galvanized Steel Chain Link Fence Posts, Rails and Fence Fittings**

### **1. PRODUCT NAME**

Heavy Mill Vinyl Bonded over Galvanized Steel Chain Link Fence Posts, Rails and Fence Fittings.

### **2. DISTRIBUTOR**

Corporate Headquarters: **5339 Jackson St, North Highlands, CA 95660**

Phone: (916) 338-4800

SCS centers are located throughout the West Coast of the United States

### **3. PRODUCT DESCRIPTION**

**Basic Use:** Heavy Mill 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 Material:** Heavy Mill framework is manufactured in a unique process which results in 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 and 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.

**PVC Coating Applications:** The material is heated in a natural gas fired oven to approximately 500 degrees Fahrenheit. The product temperature is adjusted primarily by the 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 coating, the material is hung on a cart to allow proper curing (uniform melt). For final cooling, the material is immersed in cold water until fully cool. After final inspection, the Heavy Mil 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 rails 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 Celsius; -4 Fahrenheit) plasticizer and no extenders or other extraneous matter, other than 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 is 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 in 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:** Heavy Mill is available for shipment throughout the United States.

**Cost:** Materials costs may vary depending on specific requirements. Costs may be obtained through all SCS service Centers.

**7. WARRANTY**

Heavy Mill framework carries a 20 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, the contractor must repair or replace at their own expense.

**9. TECHNICAL SERVICE**

Technical services are available through the SCS Corporate Office:

Phone: (916)338-4200

Fax: (916)338- 1140

Quote: (800)843-7893

## Heavy Mill Vinyl Coated Framework

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

Table 1 - Physical Characteristics

Size Designator			O.D.		All Dimensions and Weights Nominal									PVC Thickness Inch (mm)	
					ASTM 1043, I-A, RR-F-191 Grade A, AASHTO Grade 1				ASTM 1043, I-A, RR-F-191 Grade A, AASHTO Grade 2				Yield Strength psi (Mpa)		
Fence Industry	NPS	Metric	Inch	mm	Inch	mm	lb/ft	kg/m	Inch	mm	lb/ft	kg/m		Yield Strength psi (Mpa)	Inch (mm)
1-5/8	1-1/4	32	1.66	42.2	0.14	3.56	2.27	3.4	30,000 (205)	0.111	2.82	1.84	2.7	50,000 (344)	0.010 to 0.015 or (0.25 to 0.38)
2	1-1/2	40	1.9	48.3	0.145	3.68	2.72	4		0.12	3.05	2.28	3.4		
2-1/2	2	50	2.375	60.3	0.154	3.91	3.65	5.4		0.13	3.3	3.12	4.6		
3	2-1/2	65	2.875	73	0.203	5.16	5.79	8.6		0.16	4.06	4.64	6.9		
4	3-1/2	90	4	101.6	0.226	5.74	9.11	13.6		0.16	4.06	6.56	9.8		
6-5/8	6	150	6.625	168.3	0.28	7.11	18.97	28.3		N/A	N/A	N/A	N/A		

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

Size Designator			O.D. Nom		ASTM 1043, I-A, RR-F-191 Grade A, AASHTO Grade 1						ASTM 1043, I-A, RR-F-191 Grade A, AASHTO Grade 2					
					Wall	I.D.	Section Modules	Calculated Lodas, lbf			Wall	I.D.	Section Modules	Calculated Lodas, lbf		
Fence Industry	NPS	Inch	inch	inch	Section Modules	10 ft Mid-point	4 ft ** Cantilever	6 ft ** Cantilever	inch	inch	Section Modules	10 ft Mid-point	4 ft ** Cantilever	6 ft ** Cantilever		
1-5/8	1-1/4	1.66	0.14	1.38	0.235	235	147	98	0.111	1.438	0.196	327	204	136		
2	1-1/2	1.9	0.145	1.61	0.326	Sizes above 1.660 in. are not normally used for rail	204	135	0.12	1.66	0.281	Sizes above 1.660 in. are not normally used for rail	293	195		
2-1/2	2	2.375	0.154	2.067	0.561		350	234	0.13	2.115	0.488		508	339		
3	2-1/2	2.875	0.203	2.469	1.064		665	443	0.16	2.555	0.878		914	610		
4	3-1/2	4	0.226	3.548	2.394		1,496	997	0.16	3.68	1.762		1,856	1,237		
6-5/8	6	6.625	0.28	6.065	8.496		5,310	3,540	N/A	N/A	N/A		N/A	N/A		

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.

