PERMAFUSE POLYOLEFIN COATED STEEL CHAIN LINK FENCE FABRIC

Class 2b - Fused and Adhered
ASTM F668, Federal Specification RR-F-191/1E Type IV, AASHTO M-181 Type IV, Class A

Product Name: Fused and Adhered Polyolefin Coated Steel Chain Link Fence Fabric.

Basic Use: Fused and adhered Polyolefin coated fabric is a bonded vinyl, high strength galvanized steel chain link fence fabric for industrial, commercial and institutional applications. Fused and Adhered Fabric is contained in local, state and federal government specifications for use in prison, road, dock, airport, housing, forestry, and military use.

Composition and Material: The galvanized steel core wire for producing extruded and adhered Polyolefin coated steel chain link fence fabric is produced by cold-drawing good commercial grade steel rod into wire of the appropriate diameter. The steel rod from which the wire is drawn is produced by the open hearth, electric furnace or basic oxygen process. The galvanized coating is produced by passing the cleaned wire through a bath of molten zinc which conforms to ASTM B6. The fused and adhered Polyolefin coating is produced by first applying a thermoset bonding agent to the galvanized core wire to which the Polyolefin is bonded. A coating of Polyolefin 0.006" (.15mm) - .010" (.25mm) is then fusion bonded to the wire.

Standards:
ASTM B6 – Slab Zinc
ASTM F567 – Installation of Chain Link Fence
ASTM F668 – Poly(Vinyl Chloride) (Polyolefin) and Other Organic Polymer-Coated Steel Chain Link Fence Fabric, Class 2b
Federal Specification RR-F-191K/1E – Fencing, Wire, and Post Metal (Chain Link Fence Fabric), Type IV
AASHTO M-181 – Chain Link Fence, Type IV, Class B

Technical Data:

General: The manufacturer, if requested, will supply samples and certification that all materials furnished comply with the appropriate specifications.

Chain Link Fence Fabric: The vinyl coating is thermally bonded to a thermoset bonding layer over a galvanized steel wire. This process ensures a tightly adherent and impervious coating free of voids, as well as a smooth and lustrous surface appearance. Vinyl coating thickness, galvanized coating weight, and wire tensile strength conform to ASTM F668, Class 2b. Federal Specification RR-F-191/1E Type IV, and AASHTO M-181 Type IV, Class B, as shown in table 1. The wire is polyolefin coated before weaving and is free and flexible at all joints. Unless otherwise specified, fabric woven in 2" (50 mm) mesh, under 72" (1,830 mm) is knuckled at both selvages; fabric 72" (1,830 mm) high and over is knuckled at one selvage and twisted at the other. All fabrics woven into meshes under 2" (50 mm) have both selvages knuckled. Properties of polyolefin used for coating are in Table 3.

Wire Coating: Only plasticized polyolefin with a low temperature (-20 C ; -4 C) plasticizer and no extenders or extraneous matter other than the necessary stabilizers and pigments, is used. The Polyolefin coating resists attack from prolonged exposure to dilute solutions most common mineral acids, seawater, and dilute solutions of most salts and alkali. See Table II. The Polyolefin coated wire shall pass the test for adhesion contained in ASTM F668 for Class 2b chain link fabric.

Installation: Install fence in accordance with ASTM Practice 567. Handle all Polyolefin coated material with care. If Polyolefin coating is damaged during installation, contractor must replace or repair the material at own expense.

Maintenance: Periodic inspection is recommended but no routine maintenance is required.

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FUSED AND ADHERED

ASTM F668 Class 2b, Federal Specification RR-F-191/1E Type IV, AASHTO M-181 Type IV, Class A

Table 1 - Permafuse Polyolefin Coated Steel Wire Characteristics

Zinc Coated Core Wire Size			Permafuse Coated Finished Wire Size	Permafuse Coated Wire Allowable Variance		Core Wire Zinc Coating Weight, min.		Polyolefin Coating Thickness		Breaking Strength, minimum		Tensile Strength, min	
Gage	Inch	mm	Gage	Inch	mm	Oz/ft²	g/m²	Inch	mm	lbf	Newtons	ksi	MPa
6	0.192	4.88	5	±0.005	±0.13	0.40	122	0.006 to 0.010	0.15 to 0.25	2,170	9,650	75	515
9	0.148	3.76	8	±0.005	±0.13	0.30	92			1,290	5,740	75	515
10	0.135	3.43	9	±0.005	±0.13	0.30	92			1,290	5,740	90	620
11	0.120	3.05	10	±0.005	±0.13	0.30	92			850	3,780	75	515
12	0.105	2.67	11	±0.004	±0.10	0.30	76			650	2,890	75	515
14	0.080	2.03	13	±0.004	±0.10	0.25	76			380	1,690	75	515

Note: Core wire sizes less than 0.120" (3.05 mm) are not contained in Federal specification RR-F-191 or AASHTO M-181

Table 2 - Polyolefin Coated Chain Link Fabric Recommended Usage

Mesh Sizes Available	Nominal Core Wire Size	Nominal Finish Wire Size	Selvage**	Recommeded Use	Standard Heights of Fence Fabric
inch	gauge	gauge			inch
2"	11	10	KK	Residential	36" - 144"
2"	9	8	KK, KT	Residential, Light Commercial	36" - 144"
2"	6	5	KK, KT	Industrial	36" - 144"
1-3/4"	11	10	KK	Tennis Court	120" - 144"
1-3/4"	9	8	KK,KT	Heavy Commercial, Industrial	36" - 144"
1-3/4"	6	5	KK, KT	Industrial	120" - 144"
1-1/2"	9	8	KK, KT	Heavy Commercial, Industrial	36" - 144"
1-1/4"	9	8	KK	Residential, Swimming Pool	36" - 144"
1"	11	10	KK	Heavy Industrial, Security	36" - 144"
1"	10	9	KK	Heavy Industrial, Security	36" - 144"
1"	9	8	KK, KT, TT	Heavy Industrial, Security	36" - 144"
3/4"	10	9	KK	Security, Anti-Climb	36" - 144"
3/4"	9	8	KK	Heavy Security, Anti-Climb	36" - 144"
5/8"	10	9	KK	Security, Anti-Climb	36" - 144"
5/8"	9	8	KK	High Security, Anti-Climb	36" - 144"
1/2"	10	9	KK		36" - 144"
1/2"	9	8	KK	Max Security, Anti-Climb	36" - 144"
3/8"	10	9	KK	High Security, Anti-Climb	36" - 144"
3/8"	9	8	KK		36" - 144"

**Selvage KK - Knuckle top and bottom
TT - Twist top and bottom
KT - Twist top and Knuckle bottom

Table 3 - Typical Vinyl Properties

Test	Test Method	Value
Specific Gravity	ASTM D 792	1.30 ± 0.03
Hardness, Durometer	ASTM D 2240	A90 ± 5
Tensile Strength	ASTM D 412	2,600 ± 5%
Ultimate Elongation	ASTM D 412	275% ± 5%
Mandrel Bend Test, 10X mandrel	ASTM D 668	-20° F (-29° C)
Dielectric Strength, volt/mil	ASTM D 149	750
Compression cut-through, lbs	BELL LABS	1,500
Accelerated Aging Test	ASTM D 1499	1,500 hrs @ 145° F