

GALVANIZED FRAMEWORK – LusterGuard™ LG-20 ASTM F1043 Group I-C Light Industrial

1. PRODUCT NAME

Galvanized Framework,
LusterGuard™, LG-20

2. DISTRIBUTOR

Merchants Metals

Corporate Headquarters:
Houston, TX 77067
515 West Greens Road
Phone: (800) 254-0080
Fax: (281) 876-0465

Merchants Metals Service Centers are located throughout the United States.

3. PRODUCT DESCRIPTION

Basic Use:

LusterGuard™ pipe is used as end, corner or line posts, and rails, for commercial, industrial and institutional installations of chain link fencing. The requirements for this material are contained in various government specifications for use in prison, road, dock, airport, housing, forestry, and military installations.

LusterGuard™ pipe is typically used in installations which incorporate zinc-coated or aluminum-coated steel chain link fence fabric, although it may be specified for use with other types of fabric, i.e. PVC coated.

Composition and Materials:

LusterGuard™ pipe is manufactured using cold formed steel with a higher yield strength and tensile strength than schedule 40 pipe. The pipe is triple coated to provide and maintain a lustrous appearance in all climates and under the most severe atmospheric conditions.

Standards:

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

4. TECHNICAL DATA

General:

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

Galvanized Steel Framework:

The information contained herein for high yield strength/high tensile strength pipe covers the requirements for pipe sizes NPS 1 to NPS 3-1/2 which correspond to Fence Industry sizes 1-3/8 to 4. (Note: The dimensionless designator NPS is used instead of traditional terms such as nominal diameter, size, and nominal size.)

Yield Strength Requirement:

The yield strength of LusterGuard™ pipe is 50,000 psi (344 MPa), min.

Coating Requirements:

The exterior of LusterGuard™ pipe is triple coated, ensuring to pipe will maintain its appearance. The triple coating consists of a metallic coating of zinc, plus a conversion coating and a clear organic film, conforming to ASTM F1043 Type B coating requirements.

The interior of the pipe is coated with a zinc rich paint conforming to the requirements of ASTM F1043 Type D coating requirements. This coating provides a high level of corrosion resistance to the interior of the pipe.

Size and Tolerances:

Sizes and other critical physical characteristics of LusterGuard™ LG-20 pipe typically used for fence installations are listed in **Table 1**.

The weight tolerance of the pipe is $\pm 5\%$ of the nominal weights listed in **Table 1**.

Mill lengths may range from 18 ft to

24 ft, or posts are available cut-to-length. Post lengths must be noted on purchase orders, plans or specifications.

LG-20 Strength Characteristics

Strength calculations are provided in **Table 2**. The calculations are based on the specified diameters, wall thicknesses, and minimum specified yield strength.

Additional information regarding size of pipe typically used for various heights of fence fabric is found in **Table 3**.

5. INSTALLATION

Install fence posts in accordance with ASTM Practice 567.

6. AVAILABILITY AND COST

Availability: LusterGuard™ pipe 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. MAINTENANCE

Periodic inspection is recommended but no routine maintenance is required.

8. 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



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Table 1 – LG 20 Pipe – Nominal Dimensions and Weights

Designator			Outside Diameter		Wall Thickness		Weight	
Fence Industry	NPS	Metric	inch	mm	Inch	mm	lb/ft	kg/m
1-3/8	1	25	1.315	33.4	0.080	2.03	1.06	1.6
1-5/8	1-1/4	32	1.660	42.2	0.085	2.16	1.43	2.1
2	1-1/2	40	1.900	48.3	0.090	2.29	1.74	2.6
2-1/2	2	50	2.375	60.3	0.095	2.41	2.31	3.4
3	2-1/2	65	2.875	73.0	0.110	2.79	3.25	4.8

Table 2 – LG 20 Pipe – Strength Characteristics – inch/pound units
Based on minimum yield strength of 50,000 psi

NPS	Outside Diameter o.d. inches	Wall Thickness inch	Inside Diameter i.d. inches	Section Modulus inch ²	Maximum Bending Moment lb-inch	Calculated Load (lbs)		
						10 ft * Free Supported	Cantilever Load **	
							4 ft	6 ft
1	1.315	0.080	1.155	0.090	4,520	151	94	63
1¼	1.660	0.085	1.438	0.158	7,880	263	164	109
1½	1.900	0.090	1.660	0.221	11,060	Sizes above 1.660" o.d. are not normally used for top rail	230	154
2	2.375	0.095	2.115	0.373	18,650		389	259
2½	2.875	0.110	2.555	0.636	31,810		663	442

* 10 ft Free Supported Calculated Load is representative of top rail for a typical chain link fence installation.
** 4 ft and 6 ft Cantilever Loads represent maximum calculated load applied at the top of the post with the bottom fixed.

Table 3 Post Selection Guide – based on fabric height

Fabric Height	O. D.		Wall Thickness		Weight	
	in.	mm	in.	mm	lb/ft	kg/m
Terminal Posts: End, Corner and Pull						
Fabric 6 ft (1,830 mm) and under	2.375	60.3	0.095	3.30	3.12	4.6
Fabric over 6 ft (1,830 mm) to 12 ft (3,660 mm)	2.875	73.0	0.110	4.06	4.64	6.9
Line Posts						
Fabric 6 ft (1,830 mm) and under	1.900	48.3	0.090	3.05	2.28	3.4
Fabric over 6 ft (1,830 mm) to 8 ft (2,440 mm)	2.375	60.3	0.095	3.30	3.12	4.6
Fabric over 8 ft (2,440 mm) to 12 ft (3,660 mm)	2.875	73.0	0.110	4.06	4.64	6.9
Rails (Top, bottom, intermediate and brace)						
All Heights (select one)	1.315	33.4	0.080	2.03	1.09	1.5
	1.660	42.2	0.085	2.82	1.84	2.7

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