

ZINC COATED FRAMEWORK – LusterGuard™ LG-40 ASTM F1043 Group I-C, Federal specification RR-F-191 Class 1 Grade B, AASHTO M-181 Grade 2

1. PRODUCT NAME

Galvanized Framework,
LusterGuard™, LG-40

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 insti-
tutional 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 also be specified for use with
other types of fabric, i.e. PVC
coated.

Composition and Materials:

LusterGuard™ pipe is manufac-
tured 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*
Federal specification RR-F-191K/3D
*Fencing, Wire and Post Metal
(Chain Link Fence Posts, Top Rails,*

and Braces), Class 1, Grade B
AASHTO M-181 *Chain Link Fence*,
Grade 2 (American Association
of State Highway Transportation
Officials), Grade 2
Federal Aviation Administration AC
150/5370 *Item F162*

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.

Zinc Coated Steel Framework:

The information contained herein for
high yield strength/high tensile
strength pipe covers the require-
ments for pipe sizes NPS 1 to NPS
3½, corresponding 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 the 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
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-
40 pipe typically used for fence
installations are listed in **Table 1**.

The weight tolerance of the pipe is
± 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-40 Strength Characteristics

Strength calculations are provided in
Table 2. The calculations are based
on the specified diameters, wall
thicknesses, and minimum specified
yield strength. Strength calculations
are in inch-pound units only.

Additional information regarding the
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-40 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	0.104	2.64	1.35	2.0
1-5/8	1-1/4	32	1.660	42.2	0.111	2.82	1.84	2.7
2	1-1/2	40	1.900	48.3	0.120	3.05	2.28	3.4
2-1/2	2	50	2.375	60.3	0.130	3.30	3.12	4.6
3	2-1/2	65	2.875	73.0	0.160	4.06	4.64	6.9
3-1/2	3	80	3.500	88.9	0.160	4.06	5.71	8.5
4	3-1/2	90	4.000	101.6	0.160	4.06	6.56	9.8

**Table 2 – LG-40 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	0.104	1.107	0.111	5,555	185	116	77
1¼	1.660	0.111	1.438	0.196	9,810	327	204	136
1½	1.900	0.120	1.660	0.281	14,050	Sizes above 1.660" o.d. are not normally used for top rail	293	195
2	2.375	0.130	2.115	0.488	24,405		508	339
2½	2.875	0.160	2.555	0.878	43,890		914	610
3	3.500	0.160	3.180	1.341	67,040		1,397	931
3½	4.000	0.160	3.680	1.782	89,100		1,856	1,237

- * 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	0.130	3.30	3.12	4.6
Fabric over 6 ft (1,830 mm) to 12 ft (3,660 mm)	2.875	73.0	0.160	4.06	4.64	6.9
Line Posts						
Fabric 6 ft (1,830 mm) and under	1.900	48.3	0.120	3.05	2.28	3.4
Fabric over 6 ft (1,830 mm) to 8 ft (2,440 mm)	2.375	60.3	0.130	3.30	3.12	4.6
Fabric over 8 ft (2,440 mm) to 12 ft (3,660 mm)	2.875	73.0	0.160	4.06	4.64	6.9
Rails (Top, bottom, intermediate and brace)						
All Heights	1.660	42.2	0.111	2.82	1.84	2.7

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