



HI-Y 50 STRUCTURAL PIPE THE OUT-PERFORMER



H I - Y 50 Structural Pipe We make it...it takes it

for structural applications that demand greater strength, closer tolerances, and a superior surface finish. HI-Y 50 is produced using high frequency electric resistance welding which insures homogenous weld integrity. Bend it - Punch it - Flatten it - Flare it - Flange it - Bolt it - Rivet it and HI-Y 50 takes it!

Leavitt Tube Company manufactures HI-Y 50 Structural Pipe in sizes from NPS 1/2 to NPS 9 in schedules 5 to 80. We can also custom produce HI-Y 50 to meet your specific needs in outside diameters from .406 to 9.625 with wall thicknesses from .035 to .500 .

HI-Y 50 can be manufactured from High-Strength Low-Alloy Steel Grades. Flash Controlling is also available on selected sizes.

HI-Y 50 is manufactured from hot rolled steel coil which provides a Superior Surface Finish compared to that of standard butt welded pipe. This product is an excellent choice for Painted Applications such as handrails, scaffolding, and communication towers. HI-Y 50 is readily available to satisfy your delivery requirements.



HI-Y 50 Structural Pipe

Leavitt Tube Company HI-Y 50 Structural Pipe, we make it...it takes it.

As shown on Chart A: Pipe Properties Comparison Table, Leavitt Tube Company HI-Y 50 has a unique combination of properties that can provide the structural pipe user with additional benefits not available from any other single type of pipe.

Specifically, HI-Y 50 will provide you with:

• WEIGHT REDUCTION OF FINISHED PRODUCT

Because HI-Y 50 has extra strength to weight ratio, you can specify and use lighter gauge HI-Y 50 to replace heavier gauge pipe with no loss in load capacity. The net result is lower raw material and transportation costs . . . a real savings to you.

• PRODUCT IMPROVEMENT

A direct substitution of your current pipe product with HI-Y 50 can provide a finished product with superior strength and greater aesthetics . . . at no extra cost to you.

• EASE OF FABRICATION

With HI-Y 50's tighter O.D. tolerance, closer wall thickness tolerance and truer straightness, it can be fabricated more efficiently and with fewer equipment adjustments. This translates into faster production and less scrap . . . another definite cost savings.

Chart B: Engineering Data Comparisons, should prove helpful in designing structures or products utilizing Leavitt Tube Company's HI-Y 50 high-strength pipe.

For beam applications, one can readily see that for any specified pipe size and beam length, HI-Y 50 can support a greater allowable uniform load than other pipe product. HI-Y 50 with a lighter wall can replace a heavier pipe product without loss of load capacity.

EXAMPLE: You are currently using 3" Schedule 80, A 501 for a 10' beam with a load capacity of 3,453 pounds or 3.45 KIPS. The weight per foot of 3" Schedule 80 is 10.25 lbs./ft. Moving horizontally along the 10' row, you will see that 3" Schedule 40, HI-Y 50 has an allowable uniform load capacity of 3.78 KIPS. Its weight per foot is 7.57 lbs./ft. Thus, by substituting 3" Schedule 40 HI-Y 50 for 3" Schedule 80, A501, the load capacity is increased 7.1% while the pipe weight will decrease by 26.2%.

Where torsional strength is important, using the above sizes as an example, you can achieve a comparable increase in strength when substituting 3" Schedule 40 HI-Y 50 for 3" Schedule 80 A501 — again at a reduction in the weight per foot.

For columnar applications, any Schedule 80 A501 pipe can be successfully replaced by Schedule 40 HI-Y 50 of the same diameter. The reduction in weight per foot can be even more dramatic if you are using A120 pipe. For instance, for a 3" column, 2" Schedule 80 A120 can be replaced by 1-1/2" Schedule 40 HI-Y 50 with a weight per foot reduction of 45.9%, i.e. 5.022 lbs./ft. to 2.717 lbs./ft.

In all cases, the net result will be a substantial savings in material usage—which means a lower cost—without sacrificing quality.

HI-Y 50's greater strength to weight ratio makes it an excellent choice for all structural applications. Also, it's made to more exacting specifications when compared to pipe: tighter O.D. and straightness tolerances, typically closer wall tolerances and greater concentricity.

We'll deliver it ready to fabricate in either 21' or 42' lengths from our inventory or cut to any length up to 80' (depending on O.D. and wall) with square ends — punch-cut, punch-cut and dedimped or saw-cut.

Our HI-Y 50 pipe can be combined to ship with other Leavitt Tube Company tubing products.

HI-Y 50 typically meets or exceeds the tensile requirements of these ASTM specifications:

A53	Type E	Grade B (untested)
A53		Type F (untested)
A500		Grade B
A501		
A252		Grade 2

. . . and these additional specifications upon request:

A618	Grade 1 (yield strength)
A500	Grade C
A252	Grade 3

TOLERANCES

Straightness:

1/8" times the number of feet of total length divided by 5

Length Tolerances Mill Cut:

22 ft. and under — + 1/2" ; - 1/4"

Over 22 ft. to 44 ft. — + 3/4" ; - 1/4"

OUTSIDE DIAMETER

0.840 to 1.900 incl.— ±0.5%

2.000 and larger— ±0.75%

The outside diameter measurements shall be made at positions at least 2" from either end of the pipe.

PHYSICAL REQUIREMENTS

	HI-Y 50 Structural Pipe	ASTM A53 Grade B
Tensile Strength Minimum PSI	58,000	60,000
Yield Point Minimum PSI	42,000 ^①	35,000
Elongation in 2 in. Minimum Percent	23% ^②	23.6% ^③
① HI-Y 50 pipe minimum yield typically exceeds 50,000 PSI		
② Applies to .180 wall thickness & over.		
③ Applies to .180 wall thickness. For wall thickness under .180 use formula: Formula 48t + 15 = E		
t = specific thickness E = % elongation		



Dimensions and Weights of Leavitt Tube Company's HI-Y 50 - Structural Pipe												
Nominal Pipe Size (NPS)	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	6	8
Outside Diameter (In.)	0.840	1.050	1.315	1.660	1.900	2.375	2.875	3.500	4.000	4.500	6.625	8.625
Nominal Thickness (In.)												
0.083	SCH10 0.67	SCH10 0.86										
0.109	SCH40 0.85		SCH10 1.41	SCH10 1.81	SCH10 2.09	SCH10 2.64						
0.113		SCH40 1.13										
0.120							SCH10 3.53	SCH10 4.34	SCH10 4.98	SCH10 5.62		
0.133			SCH40 1.68									
0.140				SCH40 2.27								
0.145					SCH40 2.72							
0.154						SCH40 3.66						
0.203							SCH40 5.80					
0.216								SCH40 7.58				
0.226									SCH40 9.12			
0.237										SCH40 10.80		
0.280											SCH40 18.99	
0.300								SCH80 10.26				
0.322												SCH40 28.58
0.432											SCH80 28.60	
0.500												SCH80 43.43

Note: Weight Per Foot = 10.69 t (D - t) "SCH" indicates the NPS pipe.

This table is based on commonly used sizes. Other sizes are within Leavitt Tube Company's production capabilities. We invite your inquiry.

HI-Y 50 STRUCTURAL PIPE TABLES							
CHART A PIPE PROPERTIES COMPARISON TABLE							
Properties	ASTM A-500 Leavitt Tube HI-Y 50	ASTM A-120 *	ASTM A-53 Type E Grade B	ASTM A-53 Type F Grade A	ASTM A-501	ASTM A-618 Grade 1	ASTM A-252 Grade 2
Yield min. ksi	Typically exceeds 50	None	35	30	36	50	35
Tensile min. ksi	Typically exceeds 62	None	60	48	58	70	60
Hydrostatically Tested	Optional	Yes	Yes	Yes	No	No	No
Dimensional Tolerances							
Outside Diameter	NPS 2 and Over ± .75%	NPS 2 and Over ± 1%	NPS 2 and Over ± 1%	NPS 2 and Over ± 1%	NPS 2 and Over ± 1%	NPS 2 and Over ± 1%	All Sizes ± 1%
Wall Thickness	± 10% of Nominal Wall	+ All -12.5%	+ All -12.5%	+ All -12.5%	Specified by Weight Not Wall	Specified by Weight not Wall	+ All -12.5%
Straightness	1/2" Max. bow in 20'	Not Specified	Not Specified	Not Specified	1/2" Max. bow in 20'	1/2" Max. bow in 20'	Not Specified

*This standard has been withdrawn. Use as reference only.



Material Prime hot rolled steel coils, purchased directly from mill sources are used by Leavitt Tube Company to manufacture HI-Y 50 Structural Pipe. Limits on residual as well as primary elements are specified to our steel suppliers. This makes the steel that we purchase superior for HI-Y 50 Structural Pipe production.

Slitting Slitting of our mill coils is achieved using our precision in-house slitting equipment. Coils are selected from our on-hand hot rolled steel inventory.

Forming and Welding The flat, slit coil is gradually and progressively formed into a round shape as it enters the welder. The steel edges are then joined by our electric resistance high frequency induction welding process to produce the highest quality weld.

Sizing and Shaping With our in-line continuous system, the welded pipe then moves through a cooling section and a set of sizing rolls which cold work it to the ordered diameter.

End Finishing and Cutting Pipe is cut to any practical length up to a plant maximum of 80' by either flying saw-cut or punch cutting. Ends can be finished by dedimpling and/or deburring depending on size, gauge, and customer requirements.

Quality Assurance In addition to routine on-the-mill-inspection, our finished pipe is examined and tested in one of our three Quality Assurance Labs. A sample of each lot of pipe (pipes of the same size and thickness made from the same heat) is tested in-house for tensile requirements. These test results are the basis of our mill test reports supplied to our customers.



The Tube People

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