

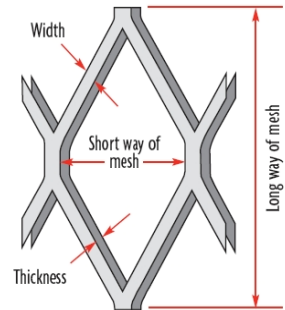


Explaining Expanded Metal Mesh

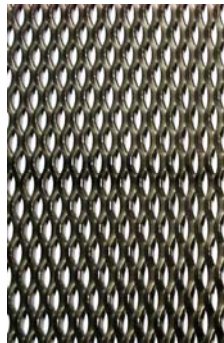
Expanded Metal is produced from solid sheets or plates of carbon, galvanized and stainless steel, as well as aluminum and a variety of alloys of copper, nickel, silver, titanium and other metals. Because expanded metal is made from a solid sheet of metal, and it is not woven or welded - it can never unravel.

To produce expanded metal, a sheet or plate is simultaneously slit and stretched. This process expands the cuts into diamond shaped holes of uniform size and shape. Because no metal is lost in the expanding process, expanded metal is cost effective and saves energy by conserving material and allowing the fabrication to go further and do more.

When choosing expanded metal for your fence application, you will need to determine which style or diamond size is best for your application. Expanded metal designations are indicated by SWD (the measurement on the short way of diamond), while the second number may specify the gauge of metal, the weight per hundred sq. foot, or have some other significance.



1/2" – 13 R



1/2"- 13 (.188)



3/4" – 9 R



3/4" – 9 F



1" – 7 R



1-1/2" – 6 R



1-1/2" – 9 R



2" – 9 R



**NILES FENCE & SECURITY
PRODUCTS, LLC.**

P.O. Box 191 • Niles, Ohio 44446-0191 • **Phone:** 800.321.2727 • **Fax:** 330.652.6497 • **E-mail:** info@nilesfence.com
www.nilesfence.com

Another consideration when ordering expanded metal mesh panels is the actual metal strand width and metal strand thickness. These are important because they contribute the actual opening size of the diamond and the % open area or visibility through the fence.

Niles Fence has standardized this for fencing applications and below is a comprehensive table of nominal weights and dimensions.

STYLE	GALVANIZED	DIAMOND SIZE		DIAMOND OPENING SIZE		STRAND SIZE		%
	WEIGHT PER	(INCHES)		(INCHES)		(INCHES)		OPEN
	SQ. FOOT	SWD	LWD	SWO	LWO	WIDTH	THICKNESS	AREA
Standard - Carbon Steel								
1/2" -13R	1.74	0.500	1.20	0.312	0.938	0.096	0.090	57
1/2"-13R (.188)	3.1	0.500	1.20	0.220	0.630	0.188	0.090	25
3/4"-9R	1.98	0.923	2.00	0.688	1.562	0.150	0.134	68
1"-7R (.240)	3.7	1.000	2.40	0.650	1.600	0.240	0.170	52
1"-7R (.300)	4.79	0.875	2.20	0.450	1.550	0.275	0.183	39-41
1-1/2" -6R	2.75	1.330	3.00	1.110	2.313	0.203	0.194	69
1-1/2" -9R	1.31	1.330	3.00	1.125	2.375	0.144	0.134	76
2"-9R	0.99	1.850	4.00	1.563	3.375	0.149	0.134	84
Flattened - Carbon Steel								
1/2" - 13F	1.61	0.500	1.25	0.265	1.000	0.107	0.078	52
3/4"- 9F	1.88	0.923	2.10	0.563	1.688	0.165	0.120	63
1-1/2"- 9F	1.25	1.330	3.20	1.000	2.563	0.158	0.110	75
Stainless Steel - (nominal weight only, no galvanize) #304								
1/2" -13R	1.87	0.480	1.20	0.270	0.830	0.113	0.093	52
3/4"-9R	2.05	0.923	2.00	0.687	1.562	0.160	0.140	67
1-1/2" -9R	1.37	1.330	3.00	1.125	2.500	0.155	0.140	77
Flattened Stainless Steel - (nominal weight only, no galvanize) #304								
1/2" -13R	1.78	0.48	1.26	0.220	0.970	0.128	0.080	47
3/4"-9R	1.95	0.923	2.10	0.562	1.697	0.165	0.119	61
1-1/2" -9R	1.31	1.330	3.15	0.937	2.625	0.165	0.119	75
Aluminum - (nominal weight only, no galvanize)								
1/2" - .081	0.44	0.500	1.20	0.375	0.937	0.096	0.081	60
3/4" - .125	0.65	0.923	2.00	0.687	1.680	0.169	0.125	68
1-1/2"- .125	0.43	1.330	3.00	1.187	2.500	0.162	0.125	79
Flattened Aluminum - (nominal weight only, no galvanize)								
1/2" - .081	0.42	0.500	1.27	0.312	1.000	0.105	0.060	58
3/4" - .125	0.62	0.923	2.13	0.625	1.750	0.187	0.095	62
1-1/2"- .125	0.41	1.330	3.15	1.000	2.750	0.181	0.095	70

* Expanded metal mesh shall be subject to standard manufacturing tolerances. Standard Mesh: +/- 3/16" per foot of width on the SWD, +/- 1/2"-0" on LWD. Flattened Mesh +/- 3/16" per foot of width on the SWD, +/- 3/4" on LWD.



NILES FENCE & SECURITY PRODUCTS, LLC.

P.O. Box 191 • Niles, Ohio 44446-0191 • **Phone:** 800.321.2727 • **Fax:** 330.652.6497 • **E-mail:** info@nilesfence.com
www.nilesfence.com

In addition to the SWD or short way diamond, there is also a measurement known as the LWD (long way of diamond).

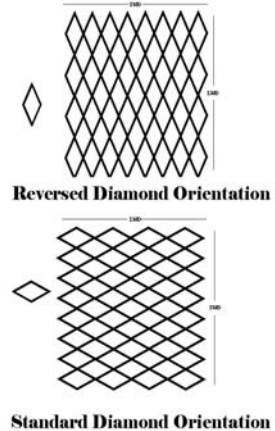
In fencing applications, the orientation of the diamonds creates a different look to the final fence.

Expanded metal mesh panels can be hung in one of two ways - standard or reversed diamond orientation.

SECUREX recommends a reversed diamond orientation:

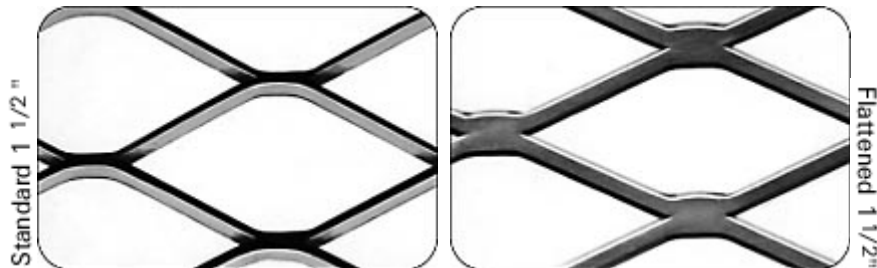
For fencing purposes, expanded metal is ordered SWD x LWD.

Ordered correctly, a 4' x 8' piece of mesh would look like the reversed diamond orientation piece you see to the right. |



Finally, a note about flattened expanded metal.

Standard expanded metal mesh is expanded metal as it comes off the press. Standard expanded metal (usually abbreviated S, STD or R) gives the metal additional strength and rigidity and is recommended for fence applications.



Flattened expanded metal (abbreviated F) is manufactured by passing the metal through a cold roll reducing mill parallel to the LWD. By flattening the sheet, the bonds and strands are turned down to produce a smooth and flat surface – essentially elongating the LWD of the diamond