ESM

ELGILOY SPECIALTY METALS
Hampshire Mill Products

STAINLESS STEEL
and HIGH PERFORMANCE
ALLOYS

COMBINEDMETALS OF CHICAGO, LLC
Stainless Companies

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Our state-of-the-art conversion mill is built on a 25 acre site in Hampshire, Illinois. Our customers are the main focus of our continued long-term success. ESM is the leading manufacturer of light gauge stainless steel strip which is produced to precision thickness and widths based upon our customers specifications.

WHY ESM?

ESM offers short lead times and smaller minimum quantities than our competitors which allow customers the ability to receive material in the same month an order is taken. We value our customers, therefore we have and always will be a customer driven company. Our state-of-the-art facility and "can-do" service center philosophy set new industry standards.

ESM Capabilites

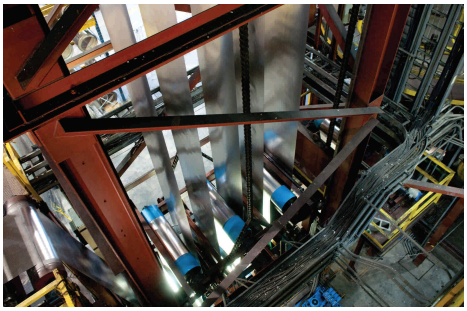
Sundwig 40" Reversing Mill

This versatile 20 High Mill is capable of rolling all types of stainless steel alloys from .100" in thickness to as thin as .004".

The mill is equipped with Automatic Gauge Control and Automatic Shape Control systems. Thickness can be controlled to within +/- 1% of the target thickness longitudinally. Strip shape measurements and automated control of the actuators provides uniform flatness across the strips profile. For cost control and efficiency the rolling mill operates at speeds near 2000 FPM.

40" Ebner and 52" Drever Bright Anneal Furnaces

Stainless and Specialty alloys are annealed on one of Hampshire's two bright annealing lines. The automation and temperature control of these units allows ESM to offer very specific mechanical property requirements. These lines can also be used exclusively for cleaning of temper rolled material.



ESM IS THE CHOICE FOR LIGHT GUAGE STAINLESS STEEL PRECISION STRIP AND HIGH PERFORMANCE ALLOYS

52" Herr-Voss Tension Leveler

Coils are leveled on this unique machine through a combination of tension and roller leveling. The automated drive system controls strip elongation to within +/- .02%. One of the 2 flattener designs engages the metal as it is pulled though the leveling device providing strip flatness for the most critical applications. Strip steepness ratings of less than 2% are routinely achieved and certified.

40" and 52" Precision Strip Slitting

Hampshire is capable of slitting material as thin as .0015" as well as widths from 52" to cuts as narrow as .185".

ESM Hampshire Mill manufacturers all 200, 300, and 400 series stainless steel alloys in both the annealed and tempered condition. We also have the capability of producing nickel and titanium alloys upon request.

All material is certified to customer and industry specifications.

With our own metallurgists and our affiliate laboratory's, metallographic and chemical analysis is performed routinely.

To complement its automation Hampshire has a highly skilled and motivated workforce. ESM's experienced operating and quality staff can be consulted and provide feedback on many different issues. Our direct contact with the customer insures problems will be understood, communicated and corrected.

STAINLESS STEEL REFERENCE GUIDE

Grade	Annealed			1/4 Hard	1/2Hard	3/4Hard	Full Hard
201	ASTM-A-240	ASTM-A-666					
301	ASTM-A-240	ASTM-A-666		AMS-5517 ASTM-A-666	AMS-5518 ASTM-A-666	AMS-5902 ASTM-A-666	AMS-5519 ASTM-A-666
302	ASTM-A-240	ASTM-A-666		AMS-5903 ASTM-A-666	AMS-5904 ASTM-A-666	AMS-5905 ASTM-A-666	AMS-5906 ASTM-A-666
304	ASTM-A-240	ASTM-A-666	ASME-SA-240	ASTM-A-5910 ASTM-A-666	ASTM-A-5911 ASTM-A-666	AMS-5912	AMS-5513
304L	ASTM-A-240	ASTM-A-666	ASME-SA-240	ASTM-A-666	ASTM-A-666		
305	ASTM-A-240		ASME-SA-240				
316L	ASTM-A-240	ASTM-A-666	ASME-SA-240	AMS-5907 ASTM-A-666	ASTM-A-666		
321	ASTM-A-240		ASME-SA-240				
430	ASTM-A-240						

Other alloys available upon request.

SURFACE FINISHES OFFERED

Finish Description	Process	Designation
Commercial 1BA	Ground Rolls	BA1
Smooth/Brite 2BA	Ground & Polished	BA2
1BA Polish Quality	Ground & Controlled	BA3
Ultra Smooth 2BA	Ground & Polished	BA4
2B Alternative	Proprietary	CA1
2D Dull Surface	Proprietary	CA2
Dull High Friction	Proprietary	CA3
Lite Matte	Proprietary	CA4

Other finishes available upon request.

STAINLESS STEEL STRIP

Thickness Tolerances (inches)

In Inches	Width in inches 1/8" to 6" incl. +/-	6" to 12" incl. +/-	12" to 24" incl. +/-
.040 - .0499	.002	.003	.003
.035 - .0399	.002	.002	.002
.029 - .0349	.0015	.002	.002
.020 - .0289	.0015	.0015	.0015
.017 - .0199	.001	.0015	.0015
.013 - .0169	.001	.0015	.0015
.011 - .0129	.001	.001	.0015
.010 - .0109	.001	.001	.0015
.005 - .0009	10%	10%	10%
.004 - .0049	10%	10%	10%

Automatic gauge control allows tighter tolerances than those shown above.

Width Tolerance (inches)

No. 3 Slit Edge

Width (inches)	Thickness (inches) under .069
.187 to .500	(+ / -.005)
.500 to 6	(+ / -.005)
Over 6 to 9	(+ / -.005)
Over 9 to 12	(+ / -.001)
Over 12 to 20	(+ / -.0016)
Over 20 to 23.99	(+ / -.002)

Camber Tolerances

Up to and including 1 1/2" wide	1/2" in an 8' length
Over 1 1/2" to 24" exclusive	1/4" in an 8' length

Camber is the greatest deviation of a side edge from a straight line, the measurement being taken on the concave side with a straight edge.

STAINLESS STEEL SHEET

Thickness Tolerances (inches)

Gauge	Normal Decimal Range	Normal Decimal	Plus /Minus
19	.040 - .0459	.040	.003
20	.035 - .0399	.036	.002
21	.032 - .0349	.032	.002
22	.029 - .0319	.030	.002
23	.026 - .0289	.028	.002
24	.023 - .0259	.024	.0015
25	.020 - .0229	.020	.0015
26	.018 - .0199	.018	.0015
27	.016 - .0179	.016	.0015
28	.015 - .0159	.015	.0015
29	.013 - .0149	.013	.0015
30	.011 - .0129 .004 - .0109	.012	.0015 10%

Width Tolerance (inches)

Thickness / Width / Length	Width	Length
Under .1874 / to 48" / to 120"	(+ 1/16 - 0)	(+1/4 - 0)
Under .1874 / to 48" / over 120"	(+ 1/16 - 0)	(+1/2 - 0)

Camber Tolerances

Specified in inches	Variation in inches per unit length of 8 feet
24 -36 inches (includes 36)	0.1250
Over 36 inches	0.0938

Camber is the greatest deviation of a side edge from a straight line, the measurement being taken on the concave side with a straight edge.

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