



ESM

Hampshire Mill
A Division of Combined Metals of Chicago LLC

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ESM IS YOUR CHOICE FOR LIGHT GAUGE STAINLESS STEEL PRECISION STRIP AND HIGH PERFORMANCE ALLOYS

ESM



Hampshire Mill

WHAT IS ESM?

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 strip which is produced to precision thickness and widths based upon customer 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 facility and “can-do” service center philosophy set new industry standards.

ESM CAPABILITIES

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 2,000 FPM.

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

40” Ebner and 52” Drever Bright Anneal Furnaces



52" Herr-Voss Tension Leveler



Coils are leveled on this unique machine through a combination of tension and roller leveling. The automatic drive system controls strip elongation to within $\pm .02\%$. One of the two flattener designs engage the metal as it is pulled through 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



ESM is capable of slitting material as thin as .002" as well as widths from 52" to cuts as narrow as .188".

ESM manufactures all 200, 300, and 400 series stainless steel alloys in both the annealed and tempered condition. We also have the capability of producing nickel, titanium, and 17-7PH alloys upon request.

All material is certified to customer and industry specifications. With our own metallurgists and our onsite laboratory, metallographic and analysis is performed routinely. To complement its automation, ESM has a highly-skilled and motivated workforce. ESM's experienced operating and quality staff can be consulted and are able to provide feedback on many different issues. Our direct contact with the customer ensures problems will be understood, communicated, and corrected.

Coil Degreasing / Clean Line

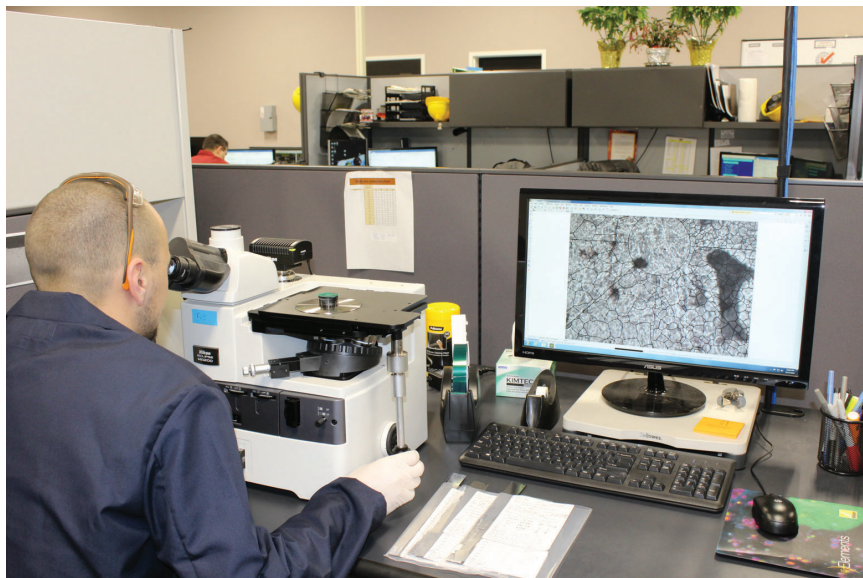


Stainless and other specialty alloy coils up to 56" wide and up to 0.060" thick are fed via driven rolls through a heated fluid wash zone. Within this zone, high pressure sprays utilizing more than 120 gal/min of fluid are used to degrease the strip. The strip is then run through a heated drying section at speeds up to 200ft/min to produce a clean, dry, high-quality steel product for our customers.



ESM LAB

ESM's 4,200 square foot R&D and laboratory located at our ISO 9001:2015 / AS9100 D accredited Hampshire facility is accredited to both ISO 17025 (through A2LA) and Nadcap Materials Test Lab (through PRI). With our four tensile testing frames, we can pull material with a yield strength of 1/4 pound all the way up to 120,000 pounds of force. Other common tests performed include: bend, wrap testing, hardness/microaggression, corrosion, and many microscopy tests including grain size, IGA/IGO, alloy depletion, alpha case, inclusion rating, etc. Our laboratory is open seven days a week to ensure fast and accurate testing!



Certifications:

AS9100:2016 & ISO9001:2015

ISO/IEC 17025:2017

PED Certificate of Conformance

Minority Business Enterprise Certificate

RoHS Directive

Reach Certification

Conflict Minerals



Approvals:

Pratt & Whitney

STAINLESS
STEEL
REFERENCE
GUIDE

	Grade	Annealed			1/4 Hard	1/2 Hard	3/4 Hard	Full Hard
	201	ASTM-A-240	ASTM-A-666					
	301	ASTM-A-240	ASTM-A-666		AMS-5517	AMS-5518	AMS-5902	AMS-5519
					ASTM-A-666	ASTM-A-666	ASTM-A-666	ASTM-A-666
	302	ASTM-A-240	ASTM-A-666		AMS-5903	AMS-5904	AMS-5905	AMS-5906
					ASTM-A-666	ASTM-A-666	ASTM-A-666	ASTM-A-666
	304	ASTM-A-240	ASTM-A-666	ASME-SA-240	ASTM-A-5910	ASTM-A-5911	AMS-5912	AMS-5513
					ASTM-A-666	ASTM-A-666		
	304L	ASTM-A-240	ASTM-A-666	ASME-SA-240	ASTM-A-666	ASTM-A-666		
	305	ASTM-A-240		ASME-SA-240				
	306L	ASTM-A-240	ASTM-A-666	ASME-SA-240	ASM-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 & Polish	BA2
1BA Polish Quality	Ground & Controlled	BA3
Ultra Smooth 2BA	Ground & Polish	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)				Width Tolerances (inches)	
Width in Inches				No. 3 Slit Edges	
In Inches	1/8" to 6" incl. +/-	6" to 12" incl. +/-	12" to 24" incl. +/-	Width (Inches)	Thickness (inches) under .069
.040 - .0499	.002	.003	.003	.187 to .500	(+ / - .005)
.035 - .0399	.002	.002	.002	.500 to 6	(+ / - .005)
.029 - .0349	.0015	.002	.002	Over 6 to 9	(+ / - .005)
.020 - .0289	.0015	.0015	.0015	Over 9 to 12	(+ / - .001)
.017 - .0199	.001	.0015	.0015	Over 12 to 20	(+ / - .0016)
.013 - .0169	.001	.0015	.0015	Over 20 to 23.99	(+ / - .002)
.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.

STAINLESS
STEEL SHEET

Thickness Tolerances (inches)				Width Tolerances (inches)		
Gauge	Normal Decimal	Normal Decimal	Plue /Minus	Thickness / Width / Length	Width	Length
19	.040 - .0459	.040	.003	Under .1874 / to 48" / to 120"	(+ 1/16 - 0)	(+1/4 - 0)
20	.035 - .0399	.036	.002	Under .1874 / to 48" / over 120"	(+ 1/16 - 0)	(+1/2 - 0)
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	.012	.0015			
	.004 - .0109		10%			

Chamber Tolerances

Specified in inches	Variation in inches per unit length of 8 feet	
24 - 36 inches (includes 36)	.1250	
Over 36	.0938	
Chamber is the greatest deviation of a side edge from a straight line, the measurement being taken on the concave side with a straight line.		



OUR COMMITMENT

We value our customers and always will be a customer-driven company.

ESM strives to stay competitive by understanding our customers' needs, constantly innovating our process, and continually improving our ability to deliver the quality products our customers demand which allows us to continue to be the best-in-class.

OUR STATE-OF-THE-ART CONVERSION MILL



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Certifications



ESM Hampshire Mill
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