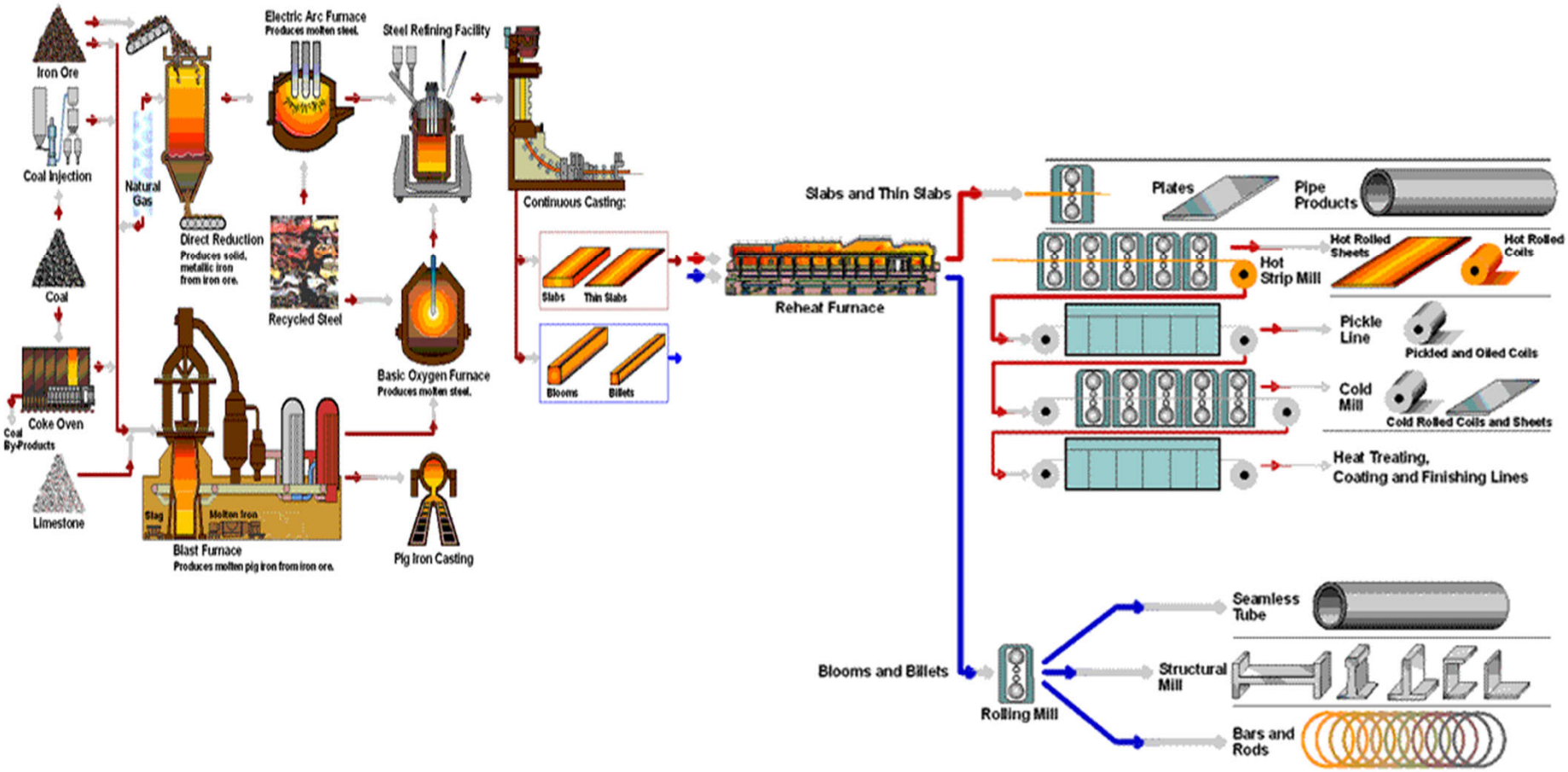
Fort Pierre, SD

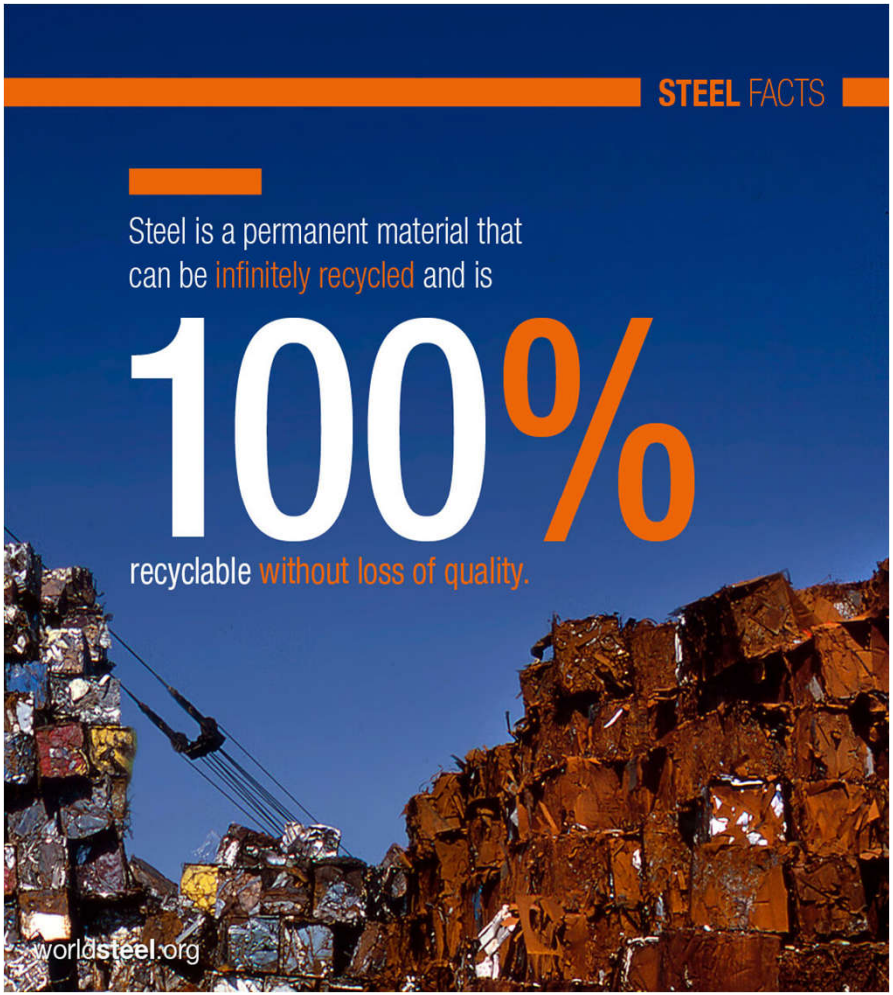
Sep 26th 2019

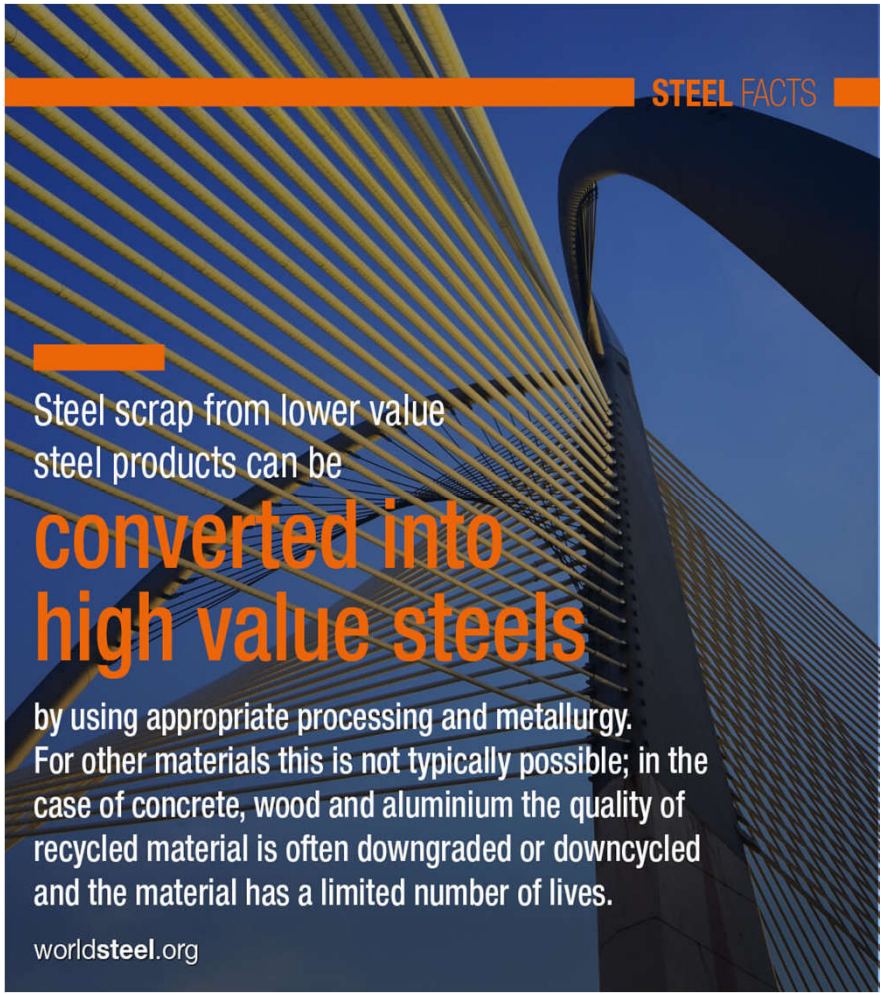
How Steel Is Made



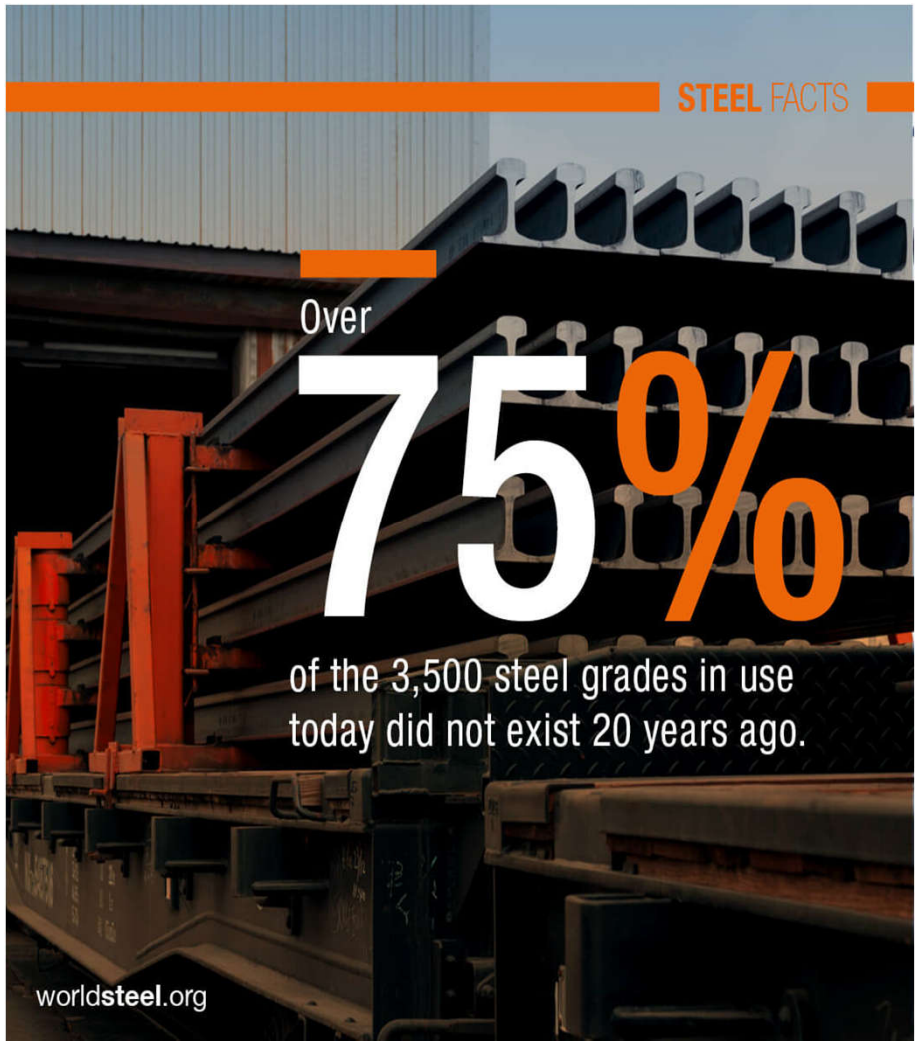
Blast Furnace and Electric Arc Furnace Production Route

Steel is infinitely recycled





Steel is available in various grades



Continuous Improvement…

How Much Steel is Consumed in the US?

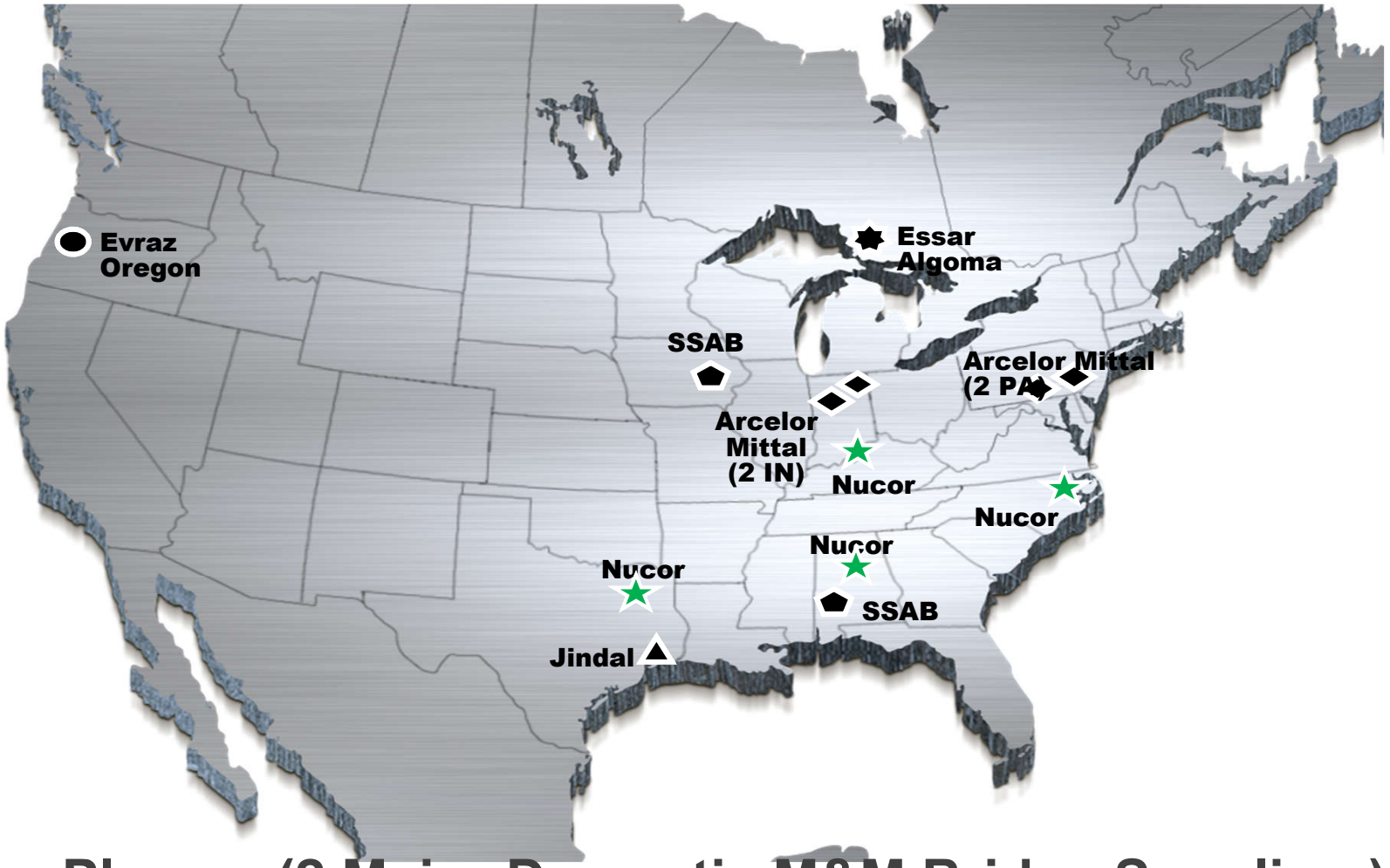
2018 U.S. Steel Industry STATISTICAL HIGHLIGHTS	
Steel shipments	95.3 million tons
Imports (finished)	25.7 million tons
Exports	8.8 million tons
Apparent steel demand	112.2 million tons
Steel mill employment	141,700*

U.S. Cut Plate Market

6 Million Tons
(~5% to 6% of Total Steel Consumption in the U.S)

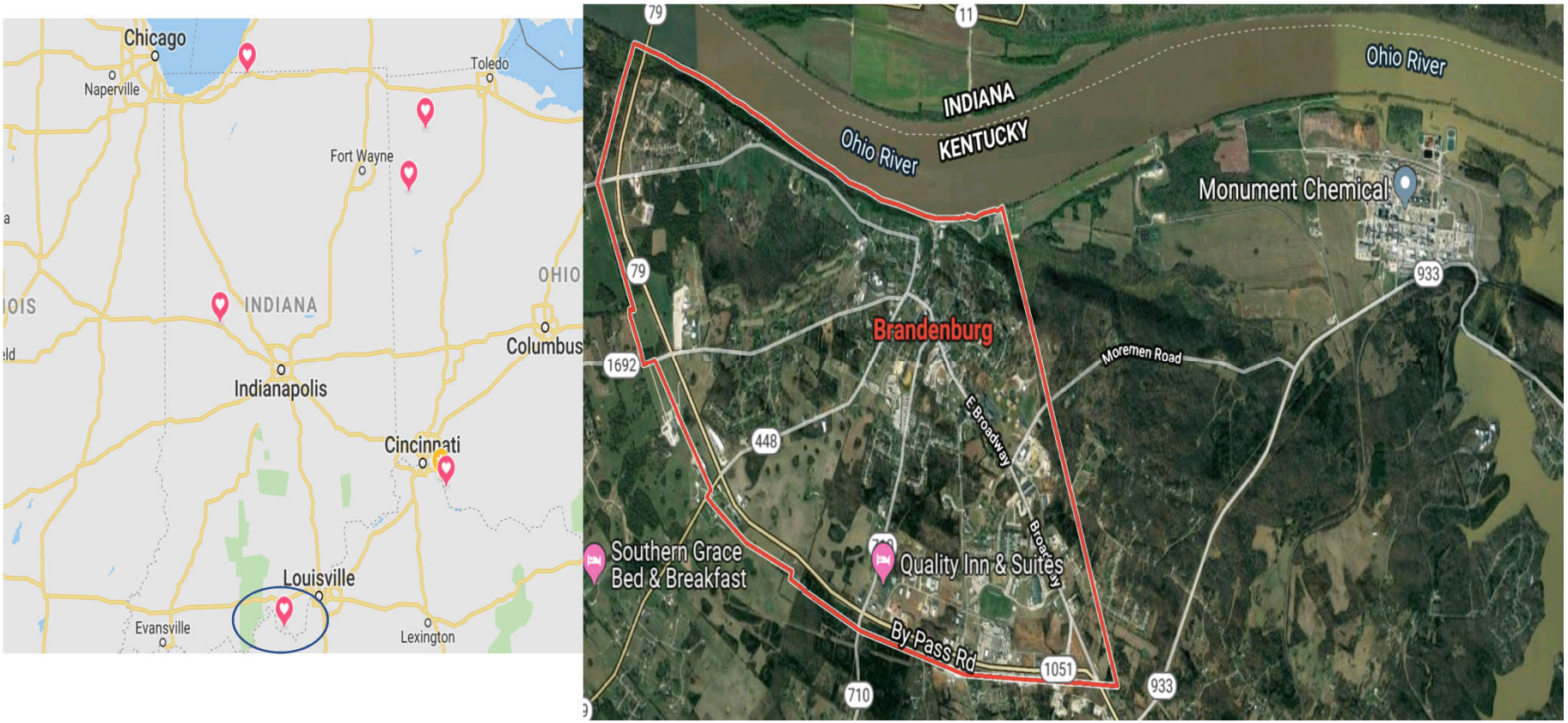
Construction Industry is the largest consumer of Plate at about **2 Million Tons** Annually

Where is Plate Produced in U.S. and Canada?



6 Major Players (2 Major Domestic M&M Bridge Suppliers)

Nucor - Brandenburg : Town and Site



New Plate Mill Capabilities

- **1.2M tons per year Capacity**
- **Product Mix**
  - 0.1875”- 14” thick
  - 60” - 160” width
  - Plates up to 1500” long for bridge construction
  - Thermal Mechanically Controlled Rolled Plate (TMCP)
  - Online Accelerated Cooling (OLAC) for high strength grades for API, bridges, transportation, line pipe, construction equipment, mining and energy
  - Roller and Batch full thickness Q&T and Normalized out to 120” wide

Plate Market Size Range:

Thickness

	ArcelorMittal	Nucor	SSAB
3/16	X		X
1/4	X		X
5/16	X	X	X
3/8	X	X	X
7/16	X	X	X
1/2	X	X	X
9/16	X	X	X
5/8	X	X	X
11/16	X	X	X
3/4	X	X	X
13/16	X	X	X
7/8	X	X	X
1	X	X	X
1 1/8	X	X	X
1 1/4	X	X	X
1 1/2	X	X	X
1 3/4	X	X	X
2	X	X	X
2 1/4	X	X	X
2 1/2	X	X	X
2 3/4	X	X	X
3	X	X	X
3 1/4	X		
3 1/2	X		
3 3/4	X		
4	X		

Width

	ArcelorMittal	Nucor	SSAB
48	X		
54	X		
60	X		
66	X		
72	X	X	X
75	X	X	X
78	X	X	X
81	X	X	X
84	X	X	X
87	X		X
90	X	X	X
93	X	X	X
94	X	X	X
95	X	X	X
96	X	X	X
99	X	X	X
102	X	X	X
108	X	X	X
111	X	X	X
114	X	X	X
117	X	X	X
120	X	X	X
123	X	X	
126	X		
132	X		
138	X		

Length

	Plate Width								
	72	78	84	90	96	102	108	114	120
3/8	972	972	972	972	972	972	972	972	750
1/2	972	972	972	972	972	972	972	972	750
9/16	972	972	972	972	972	972	972	972	972
5/8	972	972	972	972	972	972	972	972	972
3/4	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030
7/8	1,030	1,030	1,030	1,030	1,030	1,030	1,007	954	907
1	1,030	1,030	1,030	1,030	992	933	882	835	793
1 1/4	1,030	1,030	907	846	793	747	705	668	635
1 1/2	1,030	1,030	756	705	661	622	588	557	529
1 3/4	1,030	1,030	648	604	567	533	504	477	453
2	937	937	567	529	496	467	441	418	397
2 1/4	833	833	504	470	441	415	392	371	353
2 1/2	749	749	453	423	397	373	353	334	317
2 3/4	681	681	412	385	361	339	321	304	288
3	624	624	378	353	331	311	294	278	264

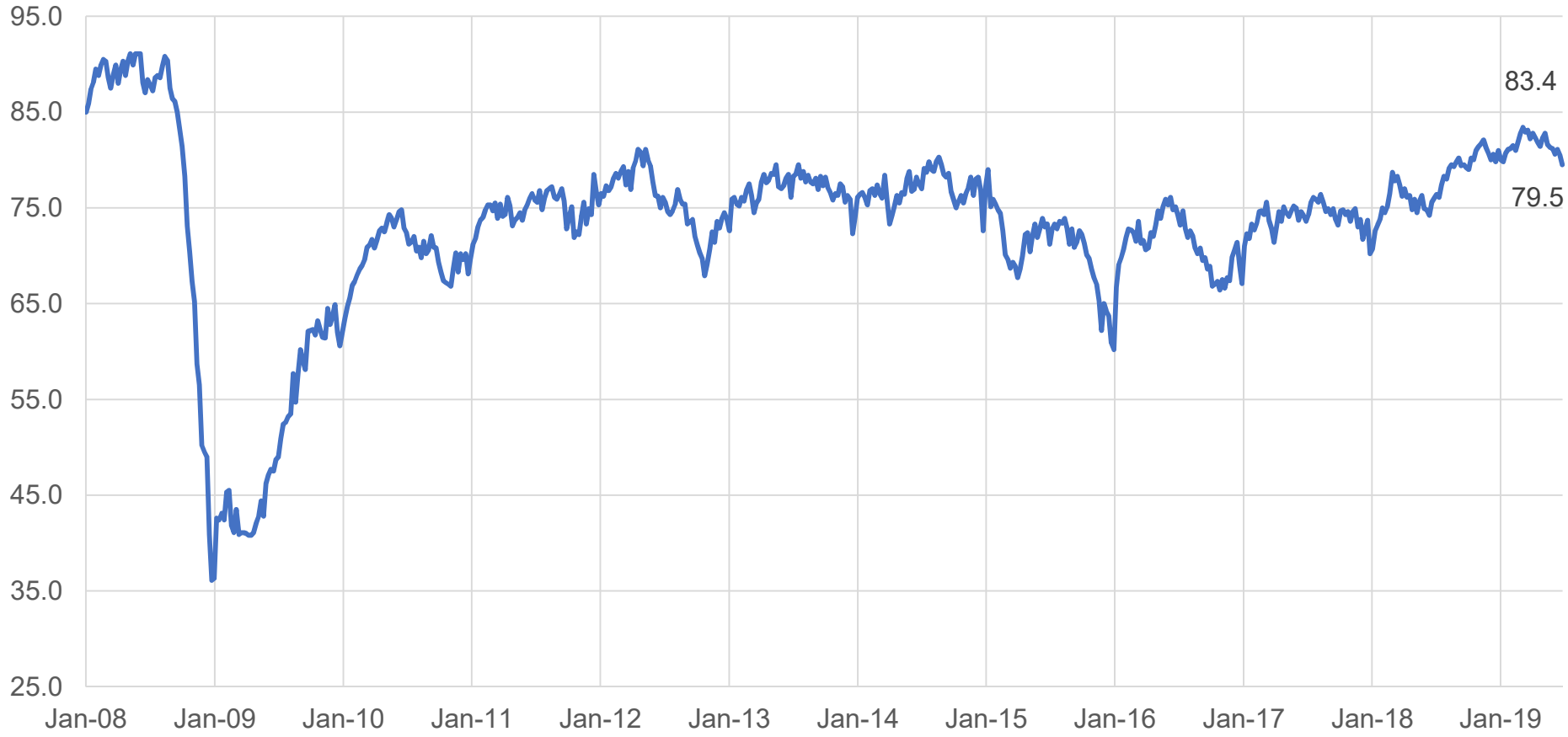
Nucor Longview :
Max Thickness 12”; Max Width 136”

Nucor Brandenburg (New Mill) :
Max Thickness 14”; Max Width 160”

 Source: NSBA

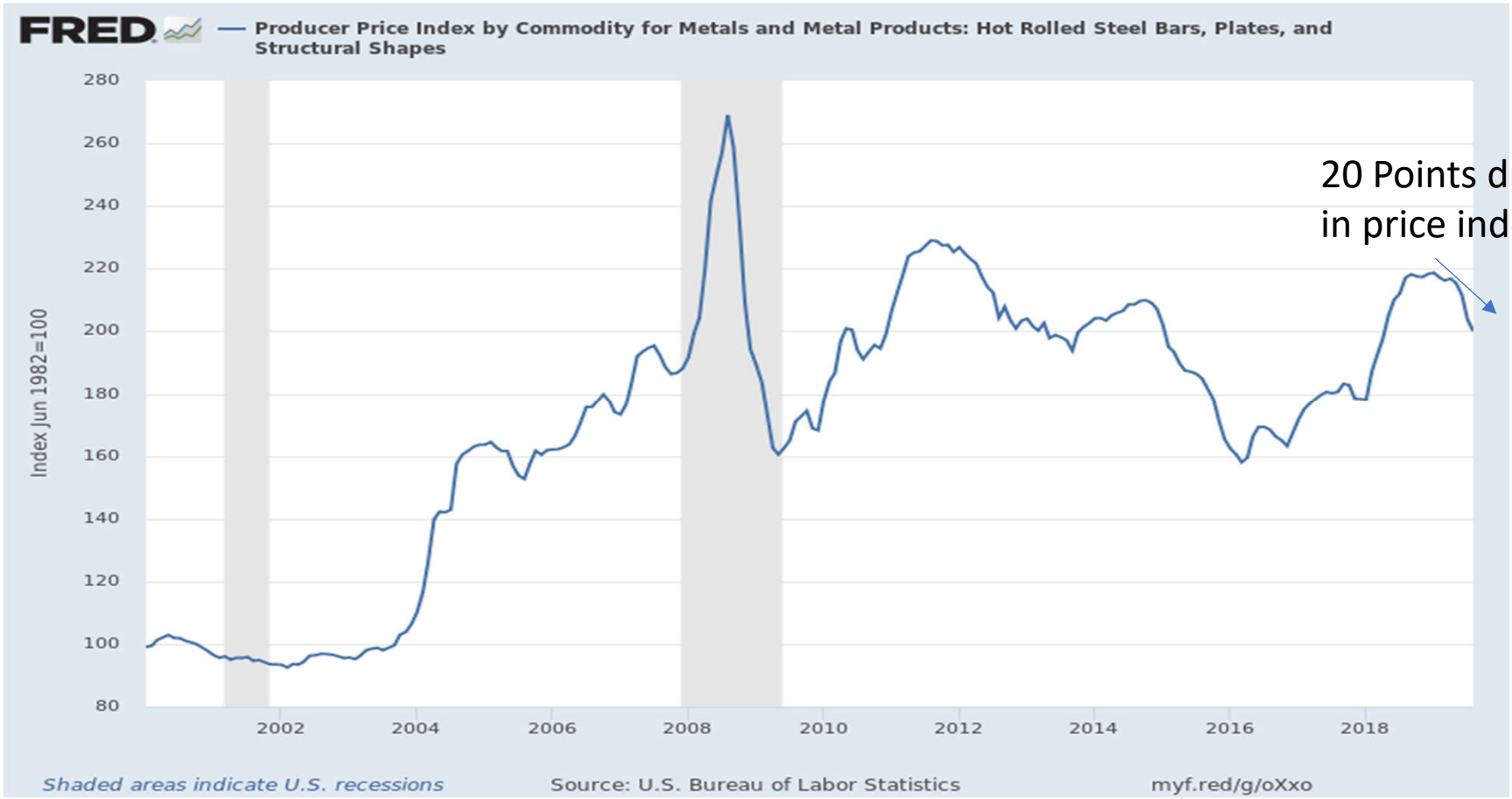
Availability : AISI – Steel Mill Utilization

Year-to-date (Sep 14th'2019) raw steel production was 68.96 Million NT at a capability utilization rate of 80.7%. Historic average utilization rate is 77%



Producer Price Index

Produce Price Index on Plates, Structural Shapes and Bars are declining since Jan 2019



Typical Nucor Plate Mill Lead Times

- Plate Mill Lead Times – HPS 50W (<2 ¾" Gauge) ~ 4 Weeks
- Typical Delivery Lead Time to North and South Dakota

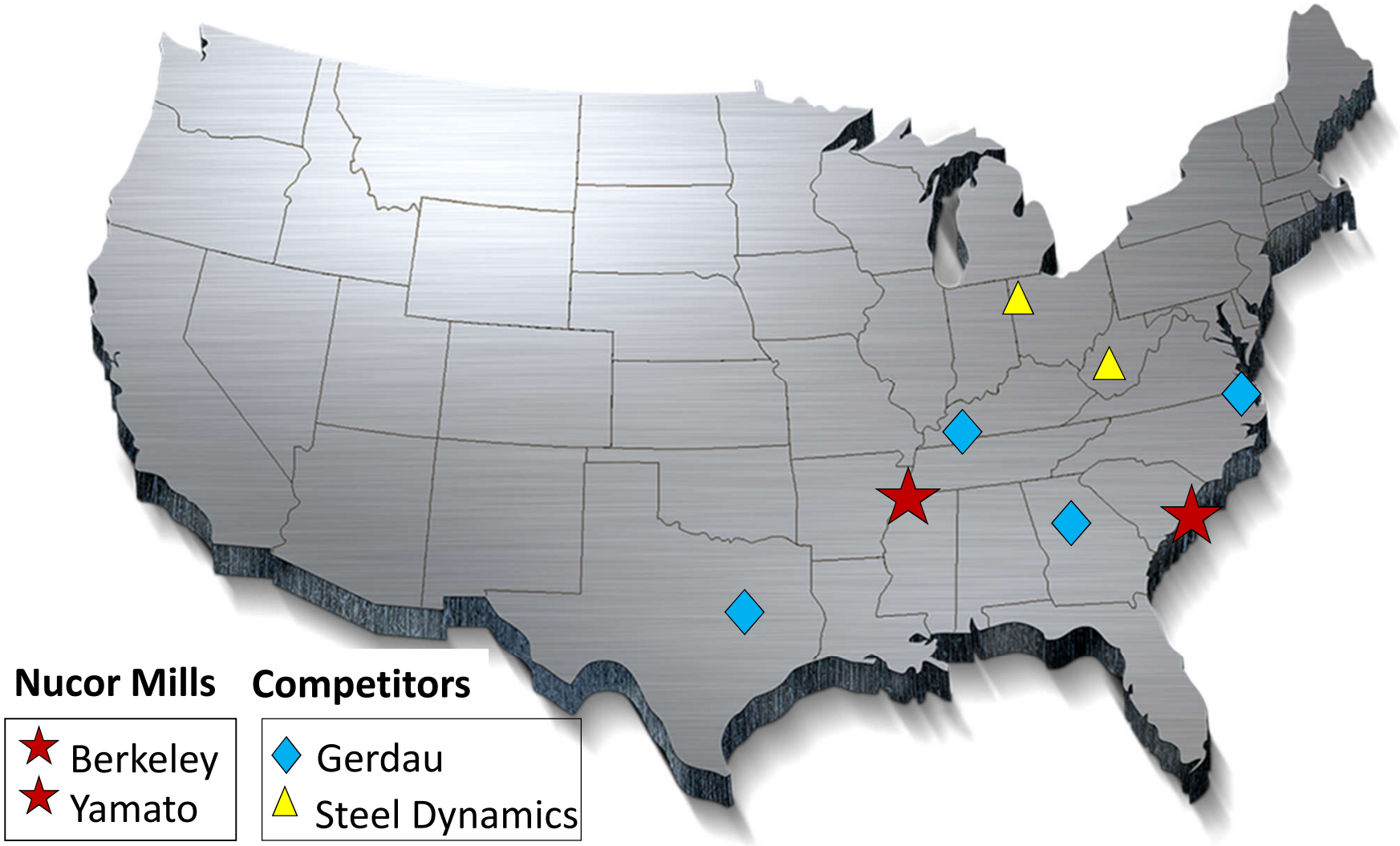
  Rail ~ 2 – 3 Weeks

From Order to Delivery **6 – 7 Weeks**

- HPS 70 or Heavier Gauges goes through Quench and Temper Line and adds additional 3 – 4 weeks to the lead time

U.S. Beam Market

Beam Mill Producers



Nucor Yamato Steel & Nucor Berkeley Beam & Structural Shapes Mill (Arkansas & South Carolina)

Capabilities

- Product List
  - Wide Flange Shapes : W6 (x6) to W44 (x16)
  - Standard Shapes
  - H-Piling
  - Sheet Piling
  - CZ Shapes

- Various length and weight combination

- Grades
  - ASTM A36, A529, A572, A588, A709, A913, A992

- Markets served (including but not limited to)
  - Fabricators, Distribution, **bridge & highway**, Piling, Metal Buildings, Manufactured housing, truck trailer, energy, general construction etc.

W44 Beams for Bridge Applications

Quenching and Self-Tempering: A913 Steel – Grade 65

- Benefits:
  - High yield strength
  - Welding without preheat

Requirement	A709-50	A709-50W	A709-50S	A913-G65
Yield	50 ksi min.	50 ksi min.	50 - 65 ksi	65 ksi min.
Tensile	65 ksi min.	70 ksi min.	65 ksi min.	80 ksi min.
Yield to tensile ratio	-	-	0.85 max.	-
Elongation (8-in. sample)	18% min.	18% min.	18% min.	15% min.
Standard Flange Location CVN	Zone Dependent	Zone Dependent	Zone Dependent	40 ft-lbf at +70°F
AWS D1.1 Table 3.3	Category B	Category B	Category B	Category B & D

Steel Resources - Beams

WWW.NUCORYAMATO.COM Ph : 870–762-5500

NUCOR-YAMATO STEEL

- HOME
- CUSTOMER LOGIN
- PRICE LIST
- ROLLING/CASTING SCHED
- ORDER BUDDY
- PRODUCT LIST
- RMS/FUEL SURCHARGE
- RELATED LINKS
- NEWS ARCHIVE
- FREIGHT RATES
- SALES INFO
- GENERAL INFO
- COMMON LETTERS
- CONTACTS

:NYS NUTRUCK CARRIERS

:SIGN UP FOR EMAIL NOTIFICATIONS

:VENDOR LOGIN

It's Our Nature.

Our Goal is to Take Care Of Our Customers.
We will accomplish this by being the safest, highest quality, lowest cost, most productive and most profitable steel making facility in the world. We will accomplish this while being cultural and environmental stewards in our communities and by working together.

Nucor-Yamato Steel Company was formed in 1987 as a joint venture between Nucor and Yamato Kogyo with the goal of operating a steel mini-mill to manufacture wide-flange beams in Blytheville, Arkansas. Today, Nucor-Yamato Steel Company has the capacity to produce over 2.5 million tons per year of not only wide-flange beams, but also H-piling, sheet piling, standard I-beams, channels and various other structural shapes.

The company has gone from a Northeast Arkansas cotton field, to the largest structural steel mill in the Western Hemisphere, with employment of over 800 men and women. As with all Nucor operations, Nucor-Yamato's success is tied to the employees' success. The production bonus system creates an environment where the employees are some of the most talented, creative and well compensated in the industry. Their ability and commitment to continually improve makes Nucor-Yamato Steel Company a world class company and the leader in the structural steel business.

NEWS

CONTACT US | WEBSITE HELP | LEGAL TERMS | PRIVACY STATEMENT | ABOUT NYS

Nucor Beam Mill Lead Times – Currently in Oct 13th – 20th

I = Inquire O = Open PS = Planned Stock SA = Subject to Accumulation E = Controlled C = Closed

Nucor-Yamato Proposed Roll/Close Schedule * ISO 9001:2015 Registered * September 25, 2019

American Made / ASTM Compliant

Close Dates for all items, if available, are shown immediately behind the status of the book week

Highlighted items will close in the next week - All sections close at 4 PM Central on the date indicated

Week Beginning		22-Sep	29-Sep	6-Oct	13-Oct	20-Oct	27-Oct	3-Nov	10-Nov	
NYS Fiscal Week		39	40	41	42	43	44	45	46	
Wide Flange Sections	Mill #									Projected next roll week
W44x16x230-335	2		Shutdown		42 C					12/8-12/15 Wks
W40x16x199-593	2		Shutdown		42 C					12/8-12/15 Wks
W40x12x149-327	2		Shutdown		42 I 10/7	42 I 10/7			46 O	12/8-12/15 Wks
W36x17x487-652	2		Shutdown	42 C	42 C					12/8-12/15 Wks
W36x16.5x231-441	2		Shutdown	42 C	42 C					12/8-12/15 Wks
W36x12x135-256	2		Shutdown		42 I 10/7				46 O	12/8-12/15 Wks
W33x15.75x201-387	2		Shutdown			42 I 10/3				12/15-12/22 Wks
W33x11.5x118-169	2		Shutdown			42 I 10/7			46 O	12/15-12/22 Wks
W30x15x173-391	2		Shutdown			42 I 10/3				12/15-12/22 Wks
W30x10.5x90-148	2		Shutdown			43 I 10/9			46 O	12/15-12/22 Wks
W27x14x146-368	2		Shutdown			43 I 10/9	<<<<			11/17-11/24 Wks
W27x10x84-129	2		Shutdown			43 I 10/14	43 I 10/14			11/17-11/24 Wks
W24x12.75x104-370	2		Shutdown				43 I 10/14			11/17-11/24 Wks
W24x9x56-103	2		Shutdown				43 I 10/14			11/17-11/24 Wks
W24x7x55-62	1	38 C	Shutdown			43 I 10/7				11/24-12/1 Wks
W21x12.25x101-275	2		Shutdown				44 I 10/15			12/15-12/22 Wks
W21x8.25x48-93	1	38 C	Shutdown			43 I 10/8	43 I 10/8			11/24-12/1 Wks
W21x6.5x44-57	1	38 C	Shutdown				44 I 10/8			11/24-12/1 Wks
W18x11x76-311	2	38 C	Shutdown				44 O			11/24-12/1 Wks
W18x7.5x41-71	1	39 C	Shutdown				44 O			11/24-12/1 Wks
W18x6x35-46	1	39 C	Shutdown				44 O			11/24-12/1 Wks
W16x10.25x67-100	1		Shutdown	41 C			44 O			11/24-12/1 Wks
W16x7x36-57	1		Shutdown	41 C			44 O			12/1-12/8 Wks
W16x5.5x26-31	1		Shutdown		42 I 9/26					11/10-11/17 Wks
W14x16x455-730	2		Shutdown	42 C						12/1-12/8 Wks
W14x16x145-426	2	41 C	Shutdown	<<<<				45 O		12/1-12/8 Wks
W14x14.5x90-132	2	41 C	Shutdown	41 C				45 O		12/1-12/8 Wks
W14x10x61-82	1	39 C	Shutdown				44 I 10/8			11/24-12/1 Wks
W14x8x43-53	1	39 C	Shutdown				44 O			11/24-12/1 Wks
W14x6.75x30-38	1		Shutdown	41 C			44 O			12/1-12/8 Wks
W14x5x22-26	1		Shutdown		42 I 9/26					11/17-11/24 Wks
W12x12x65-336	2	39 C	Shutdown					45 O		11/24-12/1 Wks

Steel School

Nucor-Yamato Steel School

Schedule of Events

8:00 a.m.- Arrival at Nucor-Yamato Steel
8:15 a.m. - Welcome & Safety Orientation
8:30 a.m. - Metallurgy for the Non-Metallurgist
9:45 a.m.- Melting Process
11:00 a.m.- Rolling Process
11:45 a.m. - Mill Tour
12:00 p.m.– Lunch (provided)
1:00 p.m.– 4:00 p.m. - Mill Tour
4:00 p.m.– Wrap-up and Closing Comments

Upcoming Events

Tuesday, Sept 10, 2019
Tuesday, Oct 15, 2019
Tuesday, Nov 12, 2019
Tuesday, Dec 3, 2019

NUCOR®
NUCOR-YAMATO

Nucor-Yamato Steel
5929 East State Hwy 18
Armorel, AR 72310
Telephone: (800) 289-6977

When you arrive at the mill you will need to stop at the guard house to check in and the guards will direct you to the main conference room.

**Breakfast will be provided.*

Mill Tour:
To participate in the mill tour all visitors must wear long pants and closed toe, hard sole shoes (no high heels). No jewelry.

If you are interested in attending please contact your District Sales Manager or the mill direct at:

800-289-6977

NUCOR®

Questions?