

## IRON AND STEEL<sup>1</sup>

(Data in million metric tons, metal, unless otherwise specified)

**Domestic Production and Use:** The U.S. iron and steel industry produced raw steel in 2023 with an estimated value of about \$110 billion, a 15% decrease from \$128 billion in 2022. Pig iron and raw steel were produced by two companies operating integrated steel mills in 12 locations. Raw steel alone was produced by 49 companies at 105 minimills. Combined raw steel production capacity was about 104 million tons per year. Indiana accounted for an estimated 24% of total raw steel production, followed by Ohio, 12%, and Pennsylvania and Texas, 5% each; no other State accounted for more than 4% of total domestic raw steel production. Construction accounted for an estimated 30% of net shipments by market classification, followed by service centers, 24%; automotive, 14%; converting end uses, 8%; non-classified shipments, 4%; machinery and equipment, 3%; appliances, 3%; and other applications, 12%.

<b>Salient Statistics—United States:</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023<sup>e</sup></b>
Pig iron production <sup>2</sup>	22.3	18.2	22.2	19.8	21
Raw steel production	87.8	72.7	85.8	80.5	80
Distribution of raw steel production, percent:					
Basic oxygen furnaces	30	29	29	28	29
Electric arc furnaces	70	71	71	72	71
Continuously cast steel, percent	99.8	99.8	99.8	99.7	99.7
Shipments, steel mill products	87.3	73.5	85.9	76.9	77
Imports, steel mill products:					
Finished	19.1	14.6	20.6	22.9	21
Semifinished	<u>6.2</u>	<u>5.3</u>	<u>7.9</u>	<u>5.1</u>	<u>5</u>
Total	25.3	20.0	28.5	28.0	25
Exports, steel mill products:					
Finished	6.6	6.1	7.4	7.5	8
Semifinished	<u>0.1</u>	<u>0.1</u>	<u>0.1</u>	<u>0.1</u>	<u>0.1</u>
Total	6.7	6.2	7.5	7.6	8
Stocks, service centers, yearend <sup>3</sup>	7.4	5.8	5.8	6.8	7
Consumption, apparent (steel mill products) <sup>4</sup>	100	82.9	98.9	96.9	93
Producer price index for steel mill products (1982=100) <sup>5</sup>	204	184	351	382	325
Employment, average, number:					
Iron and steel mills <sup>5</sup>	85,700	83,200	78,300	80,800	80,600
Steel product manufacturing <sup>6</sup>	57,800	54,900	52,700	55,400	54,900
Net import reliance <sup>7</sup> as a percentage of apparent consumption	12	12	13	17	13

**Recycling:** See the Iron and Steel Scrap and the Iron and Steel Slag chapters.

**Import Sources (2019–22):** Canada, 21%; Mexico, 15%; Brazil, 13%; Republic of Korea, 9%; and other, 42%.

<b>Tariff:</b>	<b>Item</b>	<b>Number</b>	<b>Normal Trade Relations 12–31–23</b>
Carbon steel:			
Semifinished		7207.00.0000	Free.
Flat, hot-rolled		7208.00.0000	Free.
Flat, cold-rolled		7209.00.0000	Free.
Galvanized		7210.00.0000	Free.
Bars and rods, hot-rolled		7213.00.0000	Free.
Structural shapes		7216.00.0000	Free.
Stainless steel:			
Semifinished		7218.00.0000	Free.
Flat-rolled sheets		7219.00.0000	Free.
Bars and rods		7222.00.0000	Free.

**Depletion Allowance:** Not applicable.

**Government Stockpile:<sup>8</sup>**

<b>Material</b>	<b>FY 2023</b>		<b>FY 2024</b>	
	<b>Potential acquisitions</b>	<b>Potential disposals</b>	<b>Potential acquisitions</b>	<b>Potential disposals</b>
Grain-oriented electrical steel	—	—	3,200	—

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**Events, Trends, and Issues:** In September, one company announced that it had launched a pilot program in coordination with the National Energy Technology Laboratory to use advanced membrane technology as a carbon capture and storage system at a steel mill in Pennsylvania. The same company also launched its new electrical steel line at a steel mill in Arkansas. Electrical steel has been in high demand and is a key component in certain green technologies. In October, the company also announced that it had indefinitely idled a steel mill in Illinois, with a steelmaking capacity of 2.5 million tons per year, laying off over 1,000 employees.

The World Steel Association<sup>9</sup> forecast global finished steel consumption to increase by 1.8% in 2023 and increase by 1.9% in 2024. End-use consumption of steel products was expected to only increase slightly in 2023 following concurrent events affecting consumer demand, including the conflict in Ukraine, monetary tightening, and rising interest rates, though inflation began to moderate owing to slowing economic conditions. In the United States, the apparent consumption of finished steel products was estimated to have decreased slightly in 2023 owing to interest rate increases that negatively affected manufacturing and residential construction; however, consumption was expected to increase by 1.6% in 2024. Increases in the commercial building and automotive sectors were attributed to the 2022 Inflation Reduction Act and the 2021 Bipartisan Infrastructure Law.

The economic conditions in China significantly affected steel production; Chinese finished steel production increased by 2% in 2023 and was expected to remain unchanged in 2024, owing to unexpected economic slowing related to real estate and property markets. The European Union's steel consumption was estimated to decrease by 5.1% in 2023 owing to the conflict in Ukraine and decreases in energy and manufacturing activities. In the Republic of Korea, an increase in steel demand from the construction sector was moderated by a decrease in nonautomotive manufacturing.

### World Production:

	Pig iron		Raw steel	
	<u>2022</u>	<u>2023<sup>e</sup></u>	<u>2022</u>	<u>2023<sup>e</sup></u>
United States	19.8	21	80.5	80
Brazil	27	26	34	34
Canada	6	6	12	12
China	866	890	1,020	1,000
Germany	24	22	37	33
India	80	87	125	140
Iran	3	2	30	30
Italy	3	3	22	20
Japan	64	63	89	87
Korea, Republic of	42	44	66	68
Mexico	2	2	18	20
Russia	52	54	72	75
Taiwan	13	14	21	21
Turkey	9	11	35	42
Ukraine	6	7	6	7
Vietnam	12	13	20	21
Other countries	<u>67</u>	<u>63</u>	<u>195</u>	<u>180</u>
World total (rounded)	1,300	1,300	1,880	1,900

**World Resources:** Not applicable. See the Iron Ore chapter for steelmaking raw-material resources.

**Substitutes:** Iron is the least expensive and most widely used metal. In most applications, iron and steel compete either with less expensive nonmetallic materials or with more expensive materials that have a performance advantage. Iron and steel compete with lighter materials, such as aluminum and plastics in the automotive industry; aluminum, concrete, and wood in construction; and aluminum, glass, paper, and plastics in containers.

<sup>e</sup>Estimated. — Zero.

<sup>1</sup>U.S. production and shipments data source is the American Iron and Steel Institute; see also the Iron and Steel Scrap and the Iron Ore chapters.

<sup>2</sup>More than 95% of pig iron production is transported in molten form to steelmaking furnaces at the same site.

<sup>3</sup>Steel mill products. Source: Metals Service Center Institute, May 2023.

<sup>4</sup>Defined as steel mill product shipments + imports of finished steel mill products – exports of steel mill products ± adjustments for stock changes.

<sup>5</sup>Source: U.S. Department of Labor, Bureau of Labor Statistics, North American Industry Classification System Code 331100.

<sup>6</sup>Source: U.S. Department of Labor, Bureau of Labor Statistics, North American Industry Classification System Code 332100.

<sup>7</sup>Defined as imports of finished steel mill products – total exports ± adjustments for industry stock changes.

<sup>8</sup>See Appendix B for definitions.

<sup>9</sup>Source: World Steel Association, 2023, Short range outlook October 2023: Brussels, Belgium, World Steel Association press release, October 7, 7 p.