Welcome to the Faircrest Steel Plant

At the Faircrest Steel Plant, TimkenSteel develops some of the cleanest and strongest alloy steels in the world.

The plant features more than 20 acres under its roof on a 450-acre site near Canton, Ohio, and houses individual steelmaking, ingot and continuous casting and piercing facilities. Customers across the globe rely on this steel to strengthen their energy-drilling equipment, industrial machinery, rail axles, mining equipment, automotive drivelines and transmissions, agriculture machinery and more.

Since the plant’s first 175-ton electric arc furnace poured its initial heat of steel on Aug. 5, 1985, the Faircrest Steel Plant became one of the industry’s most advanced alloy steel manufacturing facilities in the world. We’re proud to welcome you!

Making Your Visit Safe And Enjoyable

For the personal safety of our visitors, we insist that you stay within the approved tour route and away from operating equipment. We don’t permit any food, drinks or smoking on the plant tour. A TimkenSteel team member will serve as your tour guide. Please stay with him/her at all times. Inform your tour guide if you have a pacemaker. For your protection, you must wear safety glasses and hard hats at all times. No photography and video taping is permitted.

High-Performance Steel: Pushing the Bounds of What’s Possible

TimkenSteel customizes every product and service we deliver to meet customers’ specific needs. Our focus is on improving performance by addressing the toughest challenges, whether that requires a special bar quality (SBQ) steel bar or seamless mechanical tube, a precision steel component, honing, drilling or thermal-treatment services or a supply chain solution.

Our engineers are experts in both materials and applications, so we can work closely with each customer to deliver flexible solutions related to our products as well as their applications and supply chains. We believe few others in our industry can consistently deliver that kind of customization and responsiveness.

We manufacture alloy steel, as well as carbon and microalloy steel, with an annual melt capacity of approximately two million tons.

For more information on TimkenSteel and other value-added services and products, call 866.284.6536 (USA) or +44 1455 826320 (international). Also, please visit our website at www.timkensteel.com.
Making Our Special Bar Quality Alloy Steel

1. Scrap Loading
The entire steelmaking process can be seen as a vast recycling enterprise since virtually all input to the furnace is from discarded materials such as old cars, appliances and scrap metal. A computer assists the scrap operator in selecting the optimum scrap mix, ensuring the proper chemistry and minimizing energy consumption. Dump trucks bring scrap into the plant. The scrap mix is then loaded into buckets and transferred to the furnace area.

2. Melting
In less than 60 minutes, scrap melts in the electric arc-furnace to produce 155 tons of steel. When the molten steel reaches 3000°F, it is tapped (poured) into a refractory-lined ladle and transferred to the ladle refining station.

3. Refining
The ladle of molten steel then moves into a ladle refining station, where final alloys are added, unwanted gases removed and the steel bath heated to a proper pouring temperature. The ladle refining performed at Faircrest provides effective control of steel chemistry and results in a product tailored to meet exact requirements. The steel is now ready to be poured into ingot molds in the ingot-making facility or sent to the continuous caster.

4. Teeming
Here, liquid steel is tapped (poured) into ingot molds six at a time in a circular cluster. The molds connect at their bottoms by refractory tubes to a central trumpet. After being poured, ingots are transferred to the castle to be billet cut.

5. Billet Cut
Billet cutters blend the ends of the ingots to 10-foot (3.0 meters) to 35-foot (10.6 meters) lengths, depending upon customer requirements. Below the saw, large buckets catch the cut ends for recycling and return to the melting operation.

6. Mold Make-Up
Most molds are 28 inches (711.2 mm) square and approximately 7 feet (2.1 meters) tall. Three other sizes are also available, with the largest size being 32 inches (812.8 mm). The molds are prepared in this area with groupings of six placed on a 13.5-foot (4.1 meter) round steel plate with refractory tubes connecting the bottoms of each mold to a central trumpet.

7. Soaking Pits
Ingotos or continuous cast blooms are placed into soaking pits. Computer-controlled, gas-fired soaking pits uniformly heat the ingots or blooms to a 2200°F rolling temperature. Heated ingots are removed by crane and placed on the forge press tables.

8. Forge Press
Ingotos or blooms are forged in-line to prescribed cross section and transferred to the 46-inch (1168.4 mm) mill.

9. 46-inch Blooming Mill
Here, the forging mill is passed back and forth through the mill until it is reduced – actually squeezed – to a bar of steel known as a “bloom.” Each bloom ranges from 8 inches (203.2 mm) to 16 inches (406.4 mm) square.

10. Scarfer
As the bloom passes, gas torches remove a thin layer of surface scale on all four sides of the product. Called scarfing, this process provides a clean surface for further processing. We do not scarf all ingots or blooms.

11. Bloom Shear
The bloom shear cuts unwanted material from both ends of the product and cuts each piece in preparation for final sizing. The bloom mill is passed back and forth between the grooved rolls, its entire crystalline structure is improved as it becomes longer and narrower on its way to its final dimension.

12. 36-inch Billet Mill
The Faircrest mill is a 36-inch (914.4 mm), two-high reversing mill that converts blooms to billets and bars ranging from 5.5-inch (139.7 mm) to 16-inch rounds or 5-inch (127 mm) to 12-inch (304.8 mm) squares. As the bloom passes back and forth between the grooved rolls, its entire crystalline structure is improved as it becomes longer and narrower on the way to its final dimension.

13. Billet Saws
Product is saw cut to 10-foot (3.0 meter) to 35-foot (10.6 meters) lengths, depending upon customer requirements. Below the saw, large buckets catch the cut ends for recycling and return to the melting operation.

14. Billet Identification and Cooling
To ensure center soundness, the end of each billet is automatically stamped with an identification number. Once cooled, the billets are ready for further processing at other facilities.

15. Roll Shop
This facility machines and assembles the rolls used throughout the TimkenSteel business. Three CNC lathes turn rolls from 12 inches (304.8 mm) through 50 inches (1270 mm) in diameter. Finished rolls are assembled into sets that are installed at various rolling and piercing mills.

16. Billet Conditioning
Here, bars and billets are conditioned, a process designed to clean, inspect and remove surface defects for each piece. Conditioning includes an in-line shotblaster, an Elkem nondestructive test inspection system, an Olympus ultrasonic test inspection system, a large bar peeling machine, two automated grinding systems and finishing saws. Individual pieces are inspected and matched to customer requirements throughout all operations. Bar orders are inspected to ensure that they meet all customer requirements and are prepared for shipment.

An electronic shipping system assigns a unique dispatch number to each shipment. Billet conditioning associates load customer material onto commercial trucks or railcars for transport to final destination.
• Faircrest has more than 350 operational associates, producing more than one million melt tons of steel per year.
• The soaking pits use as much natural gas as the annual consumption of 8,500 homes.
• In a year, Faircrest melts the equivalent of 1.2 million scrap cars.
• About 20 football fields could fit under the roof of the Faircrest Steel Plant.
• The concrete used in the construction of Faircrest could build a 3½-foot-wide (1.1 meters) sidewalk from Canton to the White House.

*Data from 2011.