Northwest Indiana

Fully Integrated

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Data Sources and Definitions

Sources

Data	Source
Current events in the industry	! Indiana Business Magazine: Northwest Indiana Update, www.indianabusiness.com, 12/16/02 ! Steel: Its Impact on Our Local Economy; the Midwest Steel-Framing Alliance, www.mwsteelframingalliance.org, 12/16/02 ! Angles: News, Data, and Analysis about the Steel Industry, World Steel Dynamics, www.worldsteeldynamics.com, 12/16/02
Industry Employment trends, projections, earnings, and hours worked	Indiana Department of Workforce Development
Unionization percentages across industries	U.S. Bureau of Labor Statistics
Occupations in the Steel Industry	! Interviews with United Steel Workers of America (USWA), Midwest Steel, United States Steel (USS), Bethlehem Steel, and Ispat Inland, Inc. ! Job Descrip

Definitions

includes all types of manufacturing, such as food products, textiles, garments, logging, beverages production, books, asphalt, plastics, tires, concrete, electronic equipment, computer equipment, furniture, surgical supplies, jewelry, transportation equipment, etc. It is essentially any establishment engaged in the mechanical or chemical transformation of materials and substances into new products.

includes motor vehicles, furniture, construction materials, metals, and other items that have a normal life expectancy exceeding three years.

are items with a normal life expectancy of less than three years, such as drugs, chemicals, textile products, groceries, beverages, books, tobacco products etc.

North American Industry Classification System (NAICS) 331 includes Steel Works, Blast Furnaces, and Rolling and Finishing Mills, Iron and Steel Foundries, Primary Smelting and Refining of Nonferrous Metals, Secondary Smelting and Refining of Nonferrous Metals, Rolling, Drawing, and Extruding of Nonferrous Metals, Nonferrous Foundries and Miscellaneous Primary Metal Products.

NAICS 333 includes establishments engaged in manufacturing industrial and commercial machinery and equipment such as engines, cranes, monorails, farm machinery, etc.

NAICS 325 includes drugs, soaps, paints, agricultural chemicals, and so forth.

for technical definitions of how these data elements are developed, contact the Indiana Department of Workforce Development. It should be kept in mind when viewing averages that, for example, an "average" annual income of $55,000 per year does not mean each individual in the industry earns that much. It could mean that half the individuals earn $25,000 per year, and the other half earn $85,000 per year, while no one makes exactly $55,000. Total hours during the pay period include all hours worked (including overtime hours) and hours paid for holidays, vacations, and sick leave. Total hours differ from the concept of scheduled hours worked. The average weekly hours reflects effects of numerous factors such as unpaid absenteeism, labor turnover, part-time work, strikes, and fluctuations in work schedules for economic reasons. Overtime hours in manufacturing are collected where overtime premiums were paid if hours were in excess of the number of straight time hours in a workday or workweek.

These positions require expert knowledge and skills in electronics and industrial electricity. Some of the necessary skills are AC/DC and industrial electricity and electronic blueprint reading, analysis, troubleshooting, maintaining, and repairing electrical/electronic control and power circuit components; and using various instruments such as, but not limited to: volt-ohm meters, oscilloscopes, and amp probes.

These positions require expertise in instrumentation process analysis, logic control, computer control devices, process control, measuring, and calibrating while troubleshooting, maintaining, and repairing instruments and communication devices and related equipment.

These positions require expertise and skills in mechanical knowledge,

The Wirer works from electrical diagrams and other related blueprints, installs conduit and fittings for all types of electrical equipment, new, replacement, or up-grade. Workers in these positions troubleshoot equipment for proper operations and work with hand and power tools.

Workers in these positions troubleshoot, maintain, repair, and install all mechanical and electrical components and equipment relating to heating, refrigeration, ventilation, and air conditioning units and their applications. Universal Type Licensing is required. Expertise is required in, but not limited to: compressors, condensers, evaporators and metering devices, gas combustion, venting, control and power circuit problems, pressure systems, and temperature control.

The pipefitter troubleshoots, maintains, lays out, installs, and repairs low-pressure and high-pressure pipelines, tubing, fittings, values, drainage flow and systems, vent, traps and waste pipes, steam systems and other related components. He/she sets up and operates various power tools for cut-offs, bending, and threading. The use of hand tools, testing equipment, burning and welding equipment are necessary. Knowledge and skills in pipe layout, calculations, and blueprint reading are critical.

Welders perform, at a minimum, metal-inert-gas (MIG) welding, tungsten-inert-gas (TIG) welding, oxy-acetylene welding, automatic welding, brazing, soldering, and cutting although most fusing of metal occurs in the form of electric-arc welding, and cutting by means of oxy-acetylene burning. Many positions and welds such as flat, horizontal, vertical, overhead, structural and pressure vessel are common processes.

The machinist sets up and operates machine tools and equipment, interprets drawings; plans and determines layout and work procedures from complex blueprints; lays out and sets up work to drill, face, cut, turn, bore, shape, and mill parts to precision tolerances; and specific finishes. He/she checks and measures work with micrometers, calipers, and other precision tools and operates drill presses, lathes, mills, saws, and grinders. Some operations may include computerized computing processes such as computer numerical control (CNC) machines and programming and computer aided design (CAD).

These

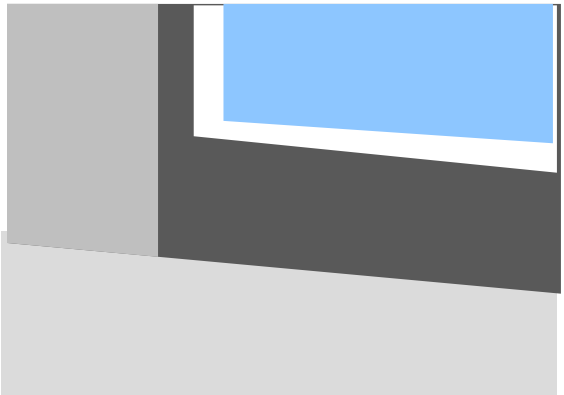
Sheet metal workers fabricate, install, and repair sheet metal items such as air and heat ducts, ventilators, siding, and roofing. They use blueprints, patterns, and templates to lay out work. The position requires analyzing and planning complex layout, development, and fabrication involved in performing a variety of sheet metal fabrication and installation work. Workers use traditional and precision tools and equipment.

Boilermakers lay out, fabricate, assemble, erect, and make repairs for all types of structural and plate work. They operate equipment for bending, shearing, pressing, grinding, riveting, fitting, burning and welding and perform hydrostatic or pneumatic tests for structural and pressure compliances. They use tools of the trade, blueprints, shop formulas, and geometry to locate lines, centers, angles, and bends.

corrosion mechanisms within industrial metals and alloys and their electrochemical, physical and mechanical properties. The ability to select appropriate metals, alloys, nonmetallic materials, linings and coatings for specific applications is integral to solving many corrosion-related problems and failures. Such material selection for chemical processes and new design applications has long-term ramifications in both the industry's economic longevity and safety considerations.

The technical engineer has the ability to communicate directly and indirectly and in written, oral, and visual formats at all levels of the organization. He or she must have the

typing forms, correspondence, and



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- ! Setting goals for oneself.
- ! Strives for above average performance.
- ! Showing concern for oneself and the organization in quality, details, accuracy, and performance.
- ! Exhibiting good attendance, punctuality, and work attitudes.
- ! Accepts responsibility.
- ! Applies employee rules, regulations, and policies in the workplace.
- ! Accepts an

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  - ! Aware of the conditions and environment that affect employee safety.

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- : Point of reference and direction of choice and outcome based on decisions and conclusions to meet the bottom line and return on investments in the future.
- Expressing ideas effectively in individual or group settings. Reads well and uses writing, grammar, and vocabulary correctly in both written and oral communication.
- Selects tasks and goals, ranks their importance, allocates time to and across tasks, prepares and follows schedules.
- Identifies problems, listens effectively, considers decisions of others, develops solutions with action steps, reviews the return on investment, tests the solutions, makes recommendations, implements the solution, solicits feedback on results.
- Attitude and determination to continue in the face of obstacles on the job.
- Problem identification, drawing conclusions from data collected, problem solutions, recommendations, actions taken, and understanding impact of actions and outcomes.
- Defines responsibilities and decision points prior to running the job, during the time the job is being run, and after the job is completed.
- : Complying with the organization ethical and conduct policies.
- Can be trusted, beliefs and behavior are within the ethical codes of the organization.
- Understanding differences in culture, opinion, skills, and work groups.
- Setting standards of performance for self, others, and the organization.

Certifications and Assessments

Despite the fact that employers have found skill deficits in the majority of applicants, entry-level positions require no skill certification of any kind. A high schoon91.18high

Reading and Math tests for all entry-level positions	Assess for 12

Clerical Tests for clerical positions	Basic typing and keyboard accuracy and speed and basic computer skills such as Word and Excel.
Targeted Selection Interview	Behavioral dimensions and motivations associated with success or failure in a job: ! Work standards and quality orientation ! Communication ! Initiative ! Teamwork and Collaboration ! Decision-making and Safety awareness ! Ability to learn, leadership skills, and work ethics

Company-Provided Training

Most training is provided in-house, but firms also use local schools such as Ivy Tech and private training vendors. The firms provide:

- Safety
- Environment
- ISO
- ISM
- Apprentice training
- First aid and CPR
- Hiring orientation
- Supervisory / management training
- PC training
- Statistical process control
- Craft and craft skill refresher
- On-the-job training

Future Workforce Preparation

- Most local secondary and postsecondary schools do not adequately prepare students for steel jobs because of the uncertainty in steel. The firms perceive that area high schools promote students to attend the standard four-year college institutions. Students are scheduled to meet certain mandatory classes to graduate and

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Kankakee Valley Workforce Development Council, collaborated in a project titled "Millwright Partnership = Skilled Workforce." The objective of this project is to develop a continuing and sustaining partnership between local industry and area schools. The schools teach workplace competencies identified by regional employers in order to enhance the employability of participating students. Their program could also be explored as a model for other mills.

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Industry Data

Northwest Indiana is a top producer of steel in the United States, which has always been the largest steel producer in the world. In 1996, however, Ohio was ranked the number one steel state in the nation for the first time. Ohio produced and processed $5.3 billion in steel that year, while Indiana trailed at $4.9 billion. Pennsylvania employed the most workers (36,300 compared to 35,400 in Ohio and 33,300 in Indiana), but only ranked 3rd in production at $3.6 billion.

Critical factors impacting the region's industry include:

- 8000 jobs will be vacated over the next 5 years due to retirements;
- The average age of steel workers is 53;

Annual, 1997

Industry	Number Employed in thousands	A

The downturn that the country is experiencing is due to increased imports resulting from a world steel surplus capacity attributed to economic downturns in Asia and the CIS (Commonwealth of Independent States). However, a global steel shortage was predicted for the first half of 2003. In October, World Steel Dynamics noted a tight supply of steel sheet in China, rising prices in Russia an

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