



PENN IRON WORKS, INC.

READING, PENNSYLVANIA

QUALIFICATIONS AND EXPERIENCE

Penn Iron Works (PIW) is a custom plate fabricator, machining facility, assembly shop and testing site operating within highly structured and documented Quality Assurance and Quality Control programs. PIW is a small, privately owned business.

PIW supplies the commercial nuclear markets, the defense industry (primarily the naval part of the military), a cross section of pressure vessels from specific industries and structural items from a variety of industries.

PIW has six decades of experience in forming, fitting and welding high integrity, complicated projects across a broad range of ferrous and non-ferrous materials. Fabricated and finished complete products and components, manufactured by PIW on behalf of our customers and their clients, can be found in many different operating applications around the globe.

Our diverse plant, equipment and assets include:

Mailing Address

P.O. Box 6858

Wyomissing, PA 19610-6858

Shipping Address

700 Old Fritztown Road

Sinking Spring, PA 19608

TEL 610.777.7656

FAX 610.777-2327

WEB <http://www.penniron.com>

- A modern 55,000 square foot facility – 50 Ton overhead crane lift/calibrated heat treat furnace/sand and shot blasting/hydrotest/paint booth
- Versatile forming capabilities – CNC burning up to 6 inch in stainless, 21 inch carbon steel/450 Ton & 1250 Ton press braking/1-1/4 inch thick bending rolls/Special straightening press designed to keep tubes over 10 feet long straight within 1/16 of an inch over the entire length.
- Multiple capacity welding – 15 different positioners to 20 Ton capacity/welding manipulator for overlay and sub-arc welding 14 feet high
- Turn, face, bore, drill machine tools – 2 CNC Horizontals (117 inch high and travel up to 30 feet)/2 Verticals (129 inch swing, 110 inches under rail), 2 Lathes (50 inch swing with 27 foot bed)/Drill Presses

Penn Iron Works is a certified ASME Code shop as follows:

- NPT – Nuclear parts fabrications - Certificate Number N-2927, Authorized 11/18/05-6/28/08 for nuclear parts manufacturing controlled by PIW Nuclear Quality Assurance Manual (ASME Section III, NPT Stamped Items and Supports and 10CFR50, Appendix B Activities), Revision 8, dated 09/02/05

- NS – Nuclear Supports - Certificate Number N-3175, Authorized 11/18/05-6/28/08 for nuclear supports – controlled by PIW Nuclear Quality Assurance Manual, Revision 8, dated 09/02/05
 - U – Unfired Pressure Vessels – Certificate Number 18,105, Authorized 9/03/03 – 11/15/06 for fabrication of vessels controlled by PIW ASME Section VIII Quality Assurance Manual (For “U” stamped vessels), Revision 12, dated 08/19/03
 - R certification is in the application process to the National Board for repair and alteration of boiler, pressure vessels and other pressure retaining items.
 - S certification is in the application process to ASME for construction of power boilers
-
- ASME Section IX & S9074-AQ-GIB-010/248 qualified weld procedures (150 in number to each or both) and corresponding welders and fitters.
 - (1) Qualified for the full family of carbon steels and stainless steels; duplex and super duplex stainless steels (including AL6XN, 254 SMO and Ferralium 255); Aluminum Bronze and Nickel Aluminum Bronze; and Nickel, Monels, Inconel, Hastelloys and Nitronics 50.
 - (2) Qualified for welding processes including, SMAW, GTAW, GMAW, FCAW and SAW

Penn Iron Works is a certified military standards shop as follows:

- Complies with Technical Publications S9074-AQ-GIB-010/248, S9074-AR-GIB-010/278 and T9074-AS-GIB-010/271
- Manufactured components include turbine, pump and gear baseplates; oil sump tanks; jet propulsion stators, ballast cans (NUWC PO N666-4-4321-676H for ballast cans). PIW has shipped 64 ballast cans, have a current order for 20 and this order has a live option for an additional 20.
- Applications are used in landing craft, fast attack submarines, Trident class submarines, Seawolf class submarines, frigates and aircraft carriers. Additional materials welded include A710, HY80, HY100, dissimilar metals and Inconel 625.
- Ballast can capabilities include up to 48 inch diameter, 320 inches long, 2.0 inch thick and straightening capabilities within 1/16 of an inch over 20 feet in length. PIW has current contracts delivering ballast cans that are 24 inches in diameter, 252 inches long, 1.25 inches thick and straight within 1/16 of an inch over the entire length. This is achieved by the Special Straightening Press, designed and built by PIW for its needs in the Ballast Can business

Penn Iron Works is a qualified NDE (Non-Destructive Examination) shop as follows:

- Inspectors are qualified in accordance with both ASME Section V and T9074-AS-61B-010/271
- PIW inspectors perform visual, liquid penetrant and magnetic particle inspections utilizing the following procedures and acceptance standards:
 - NDE Procedure 213-92 - Procedure for Magnetic Particle Examination Conforming to NAVSEA T9074-AS-GIB-010/271
 - NDE Procedure 212-03 – Procedure for Liquid Penetrant Examination Conforming to NAVSEA T9074-AS-GIB-010/271

- Visual Inspection is performed in accordance with NAVSEA 0900-LP-003-8000
- The acceptance criteria for all methods are defined in NAVSEA 0900-LP-003-8000, Surface Inspection Acceptance Standards for Metals.
- NDE Procedure PIW-LPT-1, Procedure for Liquid Penetrant Inspection Conforming to ASME Section V, Article 6 and ASTM E165/1417-95a
- NDE Procedure PIW-MT-1, Procedure for Magnetic Particle Inspection Conforming to ASME Section V, Article 7 and ASTM E709/E1444-94
- NDE Procedure PIW-VT-1, Procedure for Visual Inspection Conforming to ASME Section V, Article 9
- PIW audited suppliers perform radiographic and ultrasonic inspections utilizing:
 - Prime NDT Services, Inc. procedure SP-RT-271, Radiographic Examination and Acceptance Standards
 - Prime NDT Services, Inc. procedure SP-UT-1, General Requirements Ultrasonic Examination and Acceptance Standards