

# PIPE



## 1. Unifit Metalloys Inc.: Premier Steel Pipe Manufacturer

Unifit Metalloys Inc. is an established [ISO 9001:2015 certified](#) manufacturer, supplier, and exporter based in Mumbai, India. They are recognized for producing high-quality industrial piping solutions tailored for critical global industries.

- **Manufacturing Capabilities:** The company manufactures both [seamless and welded pipes](#) in a wide range of standards, including ASTM, ASME, and DIN.
- **Material Expertise:** They specialize in a diverse spectrum of metals:
  - **Stainless Steel:** Including grades like [304, 316L, and 904L](#).
  - **Carbon Steel:** Such as [ASTM A106 Gr. B and API 5L](#) seamless pipes.
  - **Alloy Steel:** High-performance grades like [ASTM A335 P11, P22, and P91](#).
  - **Exotic Alloys:** Manufacturers of [Nickel, Monel, Inconel, and Titanium](#) products.
- **Industry Reach:** Their manufactured pipes are vital for [petrochemicals, oil and gas, fertilizers, and power generation](#).
- **Global Footprint:** With over [22 years of experience](#), they have exported to more than [21 countries](#), maintaining a reputation for precision and reliability

## 2. General Information: Steel Pipe Basics

Steel pipes are hollow cylinders used primarily for conveyance or structural purposes.

### Key Manufacturing Methods

- **Seamless (SMLS):** Produced by heating a solid billet and piercing it to form a tube. These pipes have no weld joints, making them ideal for [high-pressure environments](#) where structural integrity is paramount.

- **Welded (ERW/EFW):** Created by rolling steel plates or coils and welding the longitudinal seam. These are typically [more cost-effective](#) and available in larger diameters.

### 3. Standards and Dimensions

Industrial steel pipes are standardized to ensure compatibility across global systems:

- **Schedules:** Refers to the [wall thickness](#) (e.g., Sch 40, Sch 80). Higher numbers indicate thicker walls for higher pressure.
- **Nominal Pipe Size (NPS):** A set of standard sizes used for North American piping. Unifit Metalloys, for instance, stocks standard pipes from [1/2" to 24"](#).
- For a comprehensive view of piping specifications, grades are typically organized by the material's chemical properties and the international standards they meet. [Unifit Metalloys Inc.](#) manufactures and supplies these across all major industrial categories.
- Here is a breakdown of the standard grades for all primary pipe types:
- [Industrial Pipe Grade Matrix](#)

| Pipe Category              | Common Material Grades                                                                                              | Primary Standard (ASTM/API) |
|----------------------------|---------------------------------------------------------------------------------------------------------------------|-----------------------------|
| <b>Stainless Steel</b>     | <a href="#">304</a> , <a href="#">304L</a> , <a href="#">316</a> , <a href="#">316L</a> , 310, 317L, 321, 347, 904L | ASTM A312, A358             |
| <b>Carbon Steel</b>        | <a href="#">Grade A</a> , <a href="#">Grade B</a> , Grade C                                                         | ASTM A106, A53              |
| <b>Alloy Steel</b>         | <a href="#">P5</a> , <a href="#">P9</a> , <a href="#">P11</a> , <a href="#">P22</a> , <a href="#">P91</a>           | ASTM A335 (Seamless)        |
| <b>Line Pipe (O&amp;G)</b> | Grade B, X42, X46, X52, X56, X60, X65, X70, X80                                                                     | API 5L                      |
| <b>Low Temp Steel</b>      | Grade 1, <a href="#">Grade 3</a> , <a href="#">Grade 6</a>                                                          | ASTM A333                   |
| <b>Duplex Steel</b>        | S31803 (2205), S32750 (2507), S32760                                                                                | ASTM A790                   |
| <b>Nickel Alloys</b>       | <a href="#">Monel 400</a> , <a href="#">Inconel 600/625</a> , Hastelloy C276                                        | ASTM B161, B165, B167       |
| <b>Titanium</b>            | Grade 1, Grade 2, Grade 5, Grade 7                                                                                  | ASTM B861, B862             |

- ❑ **Corrosive Environments:** Use **Stainless Steel** (316L is preferred for marine or chemical exposure).
- ❑ **High-Pressure Steam:** Use **Alloy Steel** (P11 or P22 are the industry standards for power plants).
- ❑ **Oil & Gas Pipelines:** Use **API 5L** grades; the "X" number indicates the minimum yield strength in kilopsi (\$ksi\$).
- ❑ **Extreme Cold:** Use **ASTM A333 Grade 6**, which is specifically tested for impact resistance at sub-zero temperatures.
- ❑ **Acidic Processing:** Use **Nickel Alloys** or **Duplex Steel** provided by specialist manufacturers like [Unifit Metalloys Inc.](#) to prevent pitting and stress corrosion cracking.