

# ASTM A234 WP9 Elbow Tee, Reducer, Caps Pipe Fittings

## ASME B16.9 Specification

We are a leading **manufacturer and supplier of ASTM A234 WP9 Elbows** for high-temperature and high-pressure piping systems. Our WP9 alloy steel elbows are produced according to **ASME B16.9, MSS-SP-75, and ASTM A234** requirements, ensuring excellent creep strength, oxidation resistance, and long service life in boiler, refinery, and petrochemical applications.

What is ASTM A234 WP9?

ASTM A234 WP9 is a **Cr-Mo alloy steel (9% Cr, 1% Mo)** used for elevated-temperature service. It offers:

- Superior **creep resistance**
- Excellent **high-temperature strength**
- Good **oxidation and corrosion resistance**
- Reliable weldability and stability after heat treatment

It is commonly used in **power plants, refinery heater lines, steam lines, and superheater piping systems.**

Chemical Composition of A234 WP9

Grade	C	Mn	Si	S	P	Cr	Mo
A234 WP9	≤0.15	≤0.6	1.00	≤0.03	≤0.03	8-10	0.90-1.10

Mechanical Property of WP9

Grade	Tensile Strength (Mpa)	Yield Strength (Mpa)	Elongation %
A234 WP9	380 min	585 min	≥30

Types of A234 WP9 Fittings

We supply all sizes and schedules of WP9 elbows, including:

- A234 **WP9 45° Elbow** (Short & Long Radius)
- A234 **WP9 90° Elbow** (LR & SR)
- A234 **WP9 180° Return Bend**
- A234 WP9 Tee
- A234 WP9 Reducer

Available wall thickness: **SCH 40, SCH 80, SCH 160, XXS**  
Dimensions: **DN15–DN1200 / ½” to 48”**

### Manufacturing Standards

Our ASTM A234 WP9 elbows comply with:

- **ASTM A234 / ASME SA234**
- **ASME B16.9**
- **MSS-SP-75**
- **EN 10253-2 (optional)**
- **NACE MR0103 / MR0175 (on request)**

### Heat Treatment for ASTM A234 WP9

Heat treatment is a mandatory and critical process for WP9 fittings to develop the required mechanical properties (strength, ductility, toughness) and to ensure microstructural stability at high service temperatures.

The standard heat treatment for WP9 is **Full Annealing** or **Normalizing and Tempering**.

#### 1. Normalizing

- **Process:** The fitting is heated to a temperature above its upper critical transformation temperature ( $A_{c3}$ ), typically in the range of **1650°F - 1750°F (900°C - 955°C)**.

#### 2. Tempering (or Stress Relieving)

- **Process:** Immediately after normalizing, the fitting is reheated to a sub-critical temperature. The standard tempering range for WP9 is **1250°F - 1400°F (675°C - 760°C)**.

Heat treatment records are provided with **EN 10204 3.1 MTC**.

### Why Choose our WP9 Elbow?

- In-house forging & heat-treatment facility
- 100% dimensional and visual inspection
- PMI testing for Cr-Mo material verification
- Ultrasonic testing (UT) & radiography on request
- Global export experience (Asia, Middle East, Europe)
- Fast delivery for standard sizes

## Available Related Products

- **ASTM A234 WP5 Elbows**
- **ASTM A234 WP11 Elbows**
- **ASTM A234 WP22 Pipe Fittings**
- **ASTM A335 P9 Alloy Steel Pipes**
- **ASTM A182 F9 Flanges**

Download ASTM A234 WP9 Pipe fittings specification

