

# ASTM A234 WP11 Butt Weld Pipe Fittings Specification Elbow · Tee · Reducer · Cap

This specification covers ASTM A234 WP11 wrought alloy steel butt weld pipe fittings, including elbows, tees, reducers, and caps, supplied in Class 1, Class 2, and Class 3 conditions according to ASTM A234.

## 1. ASTM A234 WP11 Overview

ASTM A234 WP11 is a 1.25Cr-0.5Mo alloy steel grade intended for moderate and high-temperature pressure piping systems. WP11 fittings are classified into three classes based on heat treatment condition and mechanical strength.

## 2. Products Covered

WP11 Elbow (45°, 90°, LR & SR)

WP11 Tee (Equal & Reducing)

WP11 Reducer (Concentric & Eccentric)

WP11 Cap

## 3. Chemical Composition – WP11 (All Classes)

Element	WP11 CL1	WP11 CL2	WP11 CL3
C	≤ 0.15	≤ 0.15	≤ 0.15
Mn	0.30 – 0.60	0.30 – 0.60	0.30 – 0.60
P	≤ 0.030	≤ 0.030	≤ 0.030
S	≤ 0.030	≤ 0.030	≤ 0.030
Si	≤ 0.50	≤ 0.50	≤ 0.50
Cr	1.00 – 1.50	1.00 – 1.50	1.00 – 1.50
Mo	0.44 – 0.65	0.44 – 0.65	0.44 – 0.65

## 4. Heat Treatment by Class

Class	Heat Treatment Condition
WP11 Class 1	Normalized
WP11 Class 2	Normalized
WP11 Class 3	Normalized and Tempered

## 5. Mechanical Properties by Class

Property	WP11 CL1	WP11 CL2	WP11 CL3
Tensile Strength (MPa)	≥ 415	≥ 485	≥ 515
Yield Strength (MPa)	≥ 205	≥ 275	≥ 310
Elongation (%)	≥ 20	≥ 20	≥ 20
Hardness (Max)	235 HB	235 HB	235 HB

## 6. Testing & Certification

All ASTM A234 WP11 fittings shall be supplied with chemical analysis, mechanical testing, heat treatment verification, dimensional inspection, and EN 10204 3.1 Mill Test Certificates.

## 7. Dimensions & Standards

Nominal Pipe Size: ½" – 48" Wall Thickness:  
SCH 10 – SCH XXS Dimensional  
Standards: ASME B16.9 /

