

# ASTM SPECIFICATIONS FOR WELD FITTINGS AND FLANGES. GRADE & COMPOSITION SYMBOLS FOR CARBON WELD FITTINGS.

## MATERIAL SPECIFICATIONS FOR CARBON STEEL BUTT WELDING FITTINGS

	ASTM SPECIFICATION A234	
	WPA (Grade A)	WPB (Grade B)
GRADE SYMBOL	WPA (Grade A)	WPB (Grade B)
TYPE OF STEEL	Carbon	Carbon
CHEMICAL COMPOSITION	C-0.25 max.	C-0.30 max.
MINIMUM PHYSICAL REQUIREMENTS	TS-48,000 YP-30,000	TS-60,000 YP-35,000
HEAT TREATMENT	Cooled in Still Air	Cooled in Still Air

## MATERIAL SPECIFICATIONS FOR CARBON STEEL FLANGES

	ASTM SPECIFICATION*			
	A181		A105	
GRADE SYMBOL	I	II	I	II
TYPE OF STEEL	Carbon		Carbon	
CHEMICAL COMPOSITION	C-0.35 max.		C-0.35 max.	
MINIMUM PHYSICAL REQUIREMENTS	TS-60,000 YP-30,000	TS-70,000 YP-36,000	TS-60,000 YP-30,000	TS-70,000 YP-36,000
HEAT TREATMENT	Hot forged with finishing temp. above upper critical Cooled in still air		Normalized	

### GRADE AND COMPOSITION SYMBOLS FOR CARBON STEEL BUTT- WELDING FITTINGS

<b>WPA</b>	Seamless Pipe.....	ASTM A106 Grade A
	Plate.....	ASTM A285 Grade C
	Forgings.....	ASTM A105 Grade 1
	Bars*.....	ASTM A107 GR. 1008-1022
<b>WPB</b>	Seamless Pipe.....	ASTM A106 Grade B
	Plate.....	ASTM A515 Grade 6S
	Forgings.....	ASTM A105 Grade 11
	Bars*.....	ASTM A107 Gr. 1025-1030
<b>WPC</b>	Seamless Pipe.....	ASTM A106 Grade C
	Forgings.....	ASTM A104 Grade 11'

\*For fittings 2" nominal size and smaller

### Low Temperature Carbon Steel

<b>WPLO</b>	Seamless and Welded Pipe.	ASTM A332 Grade O
	Plate.....	ASTM A300 Class 1
	Forgings.....	ASTM A350 Grade LF1

\*Material specifications for the ASME Boiler Code are the same ASTM except the letter S is prefixed thereto.

A 35% Carbon maximum for flanges which are to be welded has been established by ASTM A181 and A105.