



ASTM specifications for weld fittings and flanges.
Grade & composition symbols for carbon weld fittings.

Weld Fittings

Weld Flanges

Material Specifications for Carbon Steel BUTT WELDING FITTINGS

ASTM SPECIFICATION A234		
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

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

*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.

* For fittings 2" nominal size and smaller

Low Temperature Carbon Steel

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