

ASME Welding Positions Comparison with ISO & EN

There is sometimes confusion in description of Welding Position in India. The most common and of widespread usage happened to be ASME. However with adoption of many EN standards & nomenclature by ISO and its subsequent incorporation in the Indian (BIS) standard it helps to have some authentic reference chart for equivalence.

It may be noted that the welding progression, (vertically upwards or downwards), must always be stated and it is an essential variable for both procedures and performance qualifications.

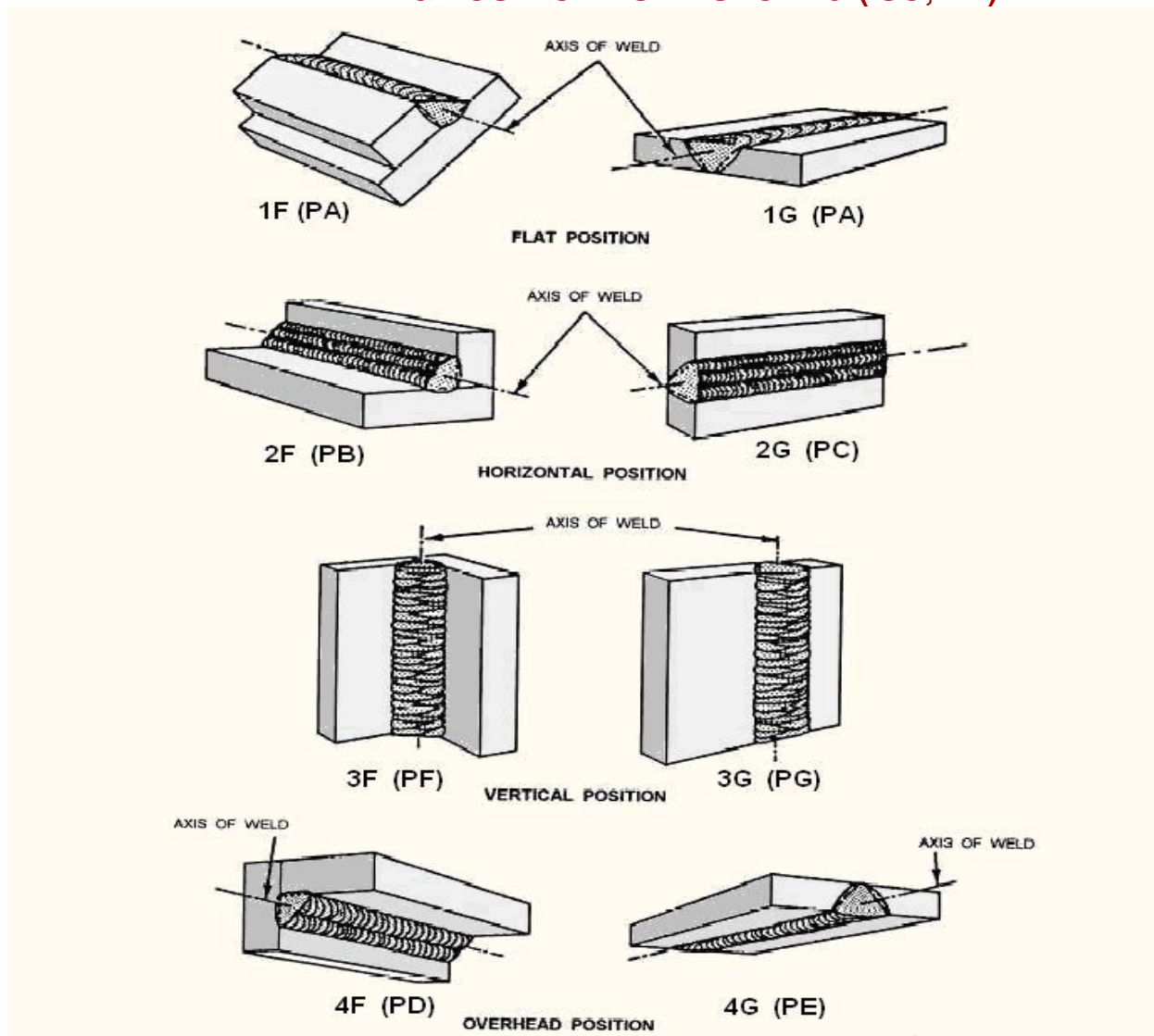
ASME Welding Positions For Groove welds:-

Welding Position	Test Position	ISO and EN
Flat	1G	PA
Horizontal	2G	PC
Vertical Upwards Progression	3G	PF
Vertical Downwards Progression	3G	PG
Overhead	4G	PE
Pipe Fixed Horizontal	5G	PF
Pipe Fixed @ 45 degrees Upwards	6G	HL045
Pipe Fixed @ 45 degrees Downwards	6G	JL045

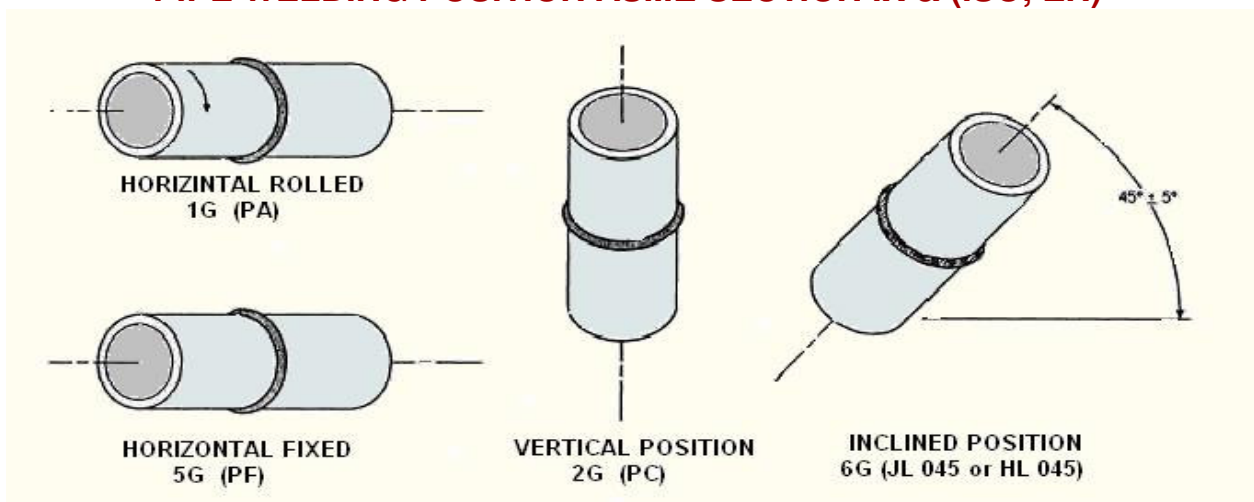
ASME Welding Positions For Fillet welds:-

Welding Position	Test Position	ISO and EN
Flat (Weld flat joint at 45 degrees)	1F	PA
Horizontal	2F	PB
Horizontal Rotated	2FR	PB
Vertical Upwards Progression	3F	PF
Vertical Downwards Progression	3F	PG
Overhead	4F	PD
Pipe Fixed Horizontal	5F	PF

PLATE WELDING POSITION ASME SEC IX & (ISO, EN)



PIPE WELDING POSITION ASME SECTION IX & (ISO, EN)



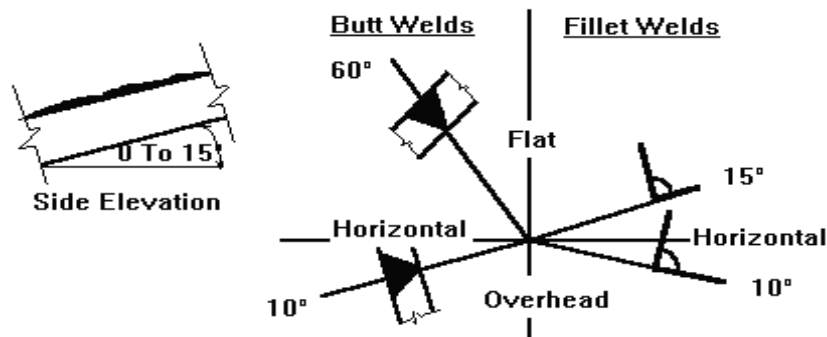
- The 1G and 5G horizontal and 2G vertical positions refer to the pipe position.
- The welding positions shown above are commonly used by ASME codes when qualifying welders

Welding Positions /Inclinations

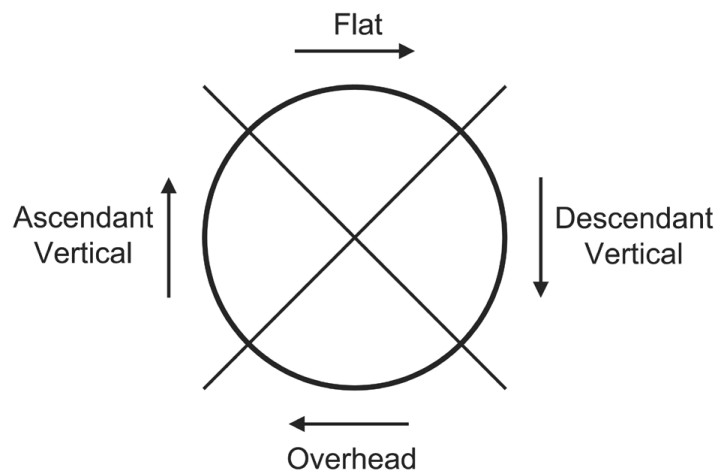
Basically there are three inclinations involved.

- **Flat**, which includes from 0 to 15 degrees inclination
- 15 - 80 degrees inclination
- **Vertical**, 80 - 90 degrees

For each of these inclinations the weld can be rotated from the flat position to Horizontal to overhead.

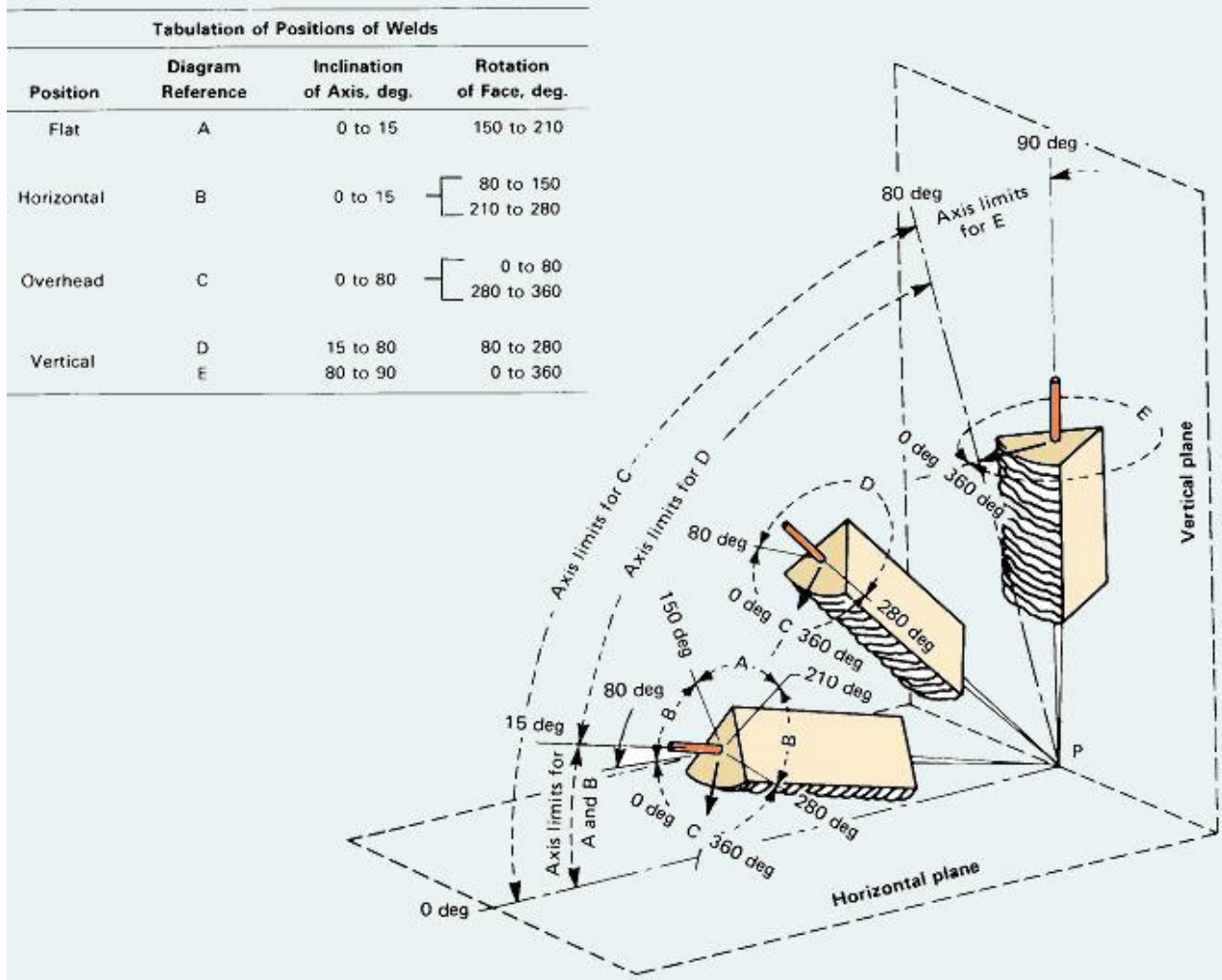


80 To 90° Side Elevation **All Positions Vertical**



WELDING POSITIONS ASME SEC IX

POSITIONS OF WELDS — GROOVE WELDS



GENERAL NOTE:

- The horizontal reference plane is taken to lie always below the weld under consideration.
- Inclination of axis is measured from the horizontal reference plane toward the vertical.
- Angle of rotation of face is measured from a line perpendicular to the axis of the weld and lying in a vertical plane containing this axis. The reference position (0 deg) of rotation of the face invariably points in the direction opposite to that in which the axis angle increases. The angle of rotation of the face of weld is measured in a clockwise direction from this reference position (0 deg) when looking at point P.

POSITIONS OF WELDS — FILLET WELDS

Tabulation of Positions of Fillet Welds			
Position	Diagram Reference	Inclination of Axis, deg.	Rotation of Face, deg.
Flat	A	0 to 15	150 to 210
Horizontal	B	0 to 15	125 to 150
			210 to 235
Overhead	C	0 to 80	0 to 125
			235 to 360
Vertical	D	15 to 80	125 to 235
		80 to 90	0 to 360

