GLOSSARY OF FLANGES

FLANGES. A disc of material having a concentric bore. Thus, a disc with a whole in the middle.
Normally flanges have bolt holes drilled through which bolts can be fitted to pull up two flanges together.
Special uses may include

- Blocking off the end of a pipeline = blind flange
- As welded onto the pipe itself = weld neck flanges
- Screwed onto the pipe itself = screwed flanges
- Loose behind a stub (itself welded onto the pipe) = backing flange
- Cut plate – often used for a backing flange = plate flange

Adapter Flange: Any flange that will connect between two other flanges that would otherwise not connect. Usually a Double Studded Adapter (DSA), or a Single Studded Adapter (SSA).
Bolt Circle: The theoretical circle inscribed by the centre point of a series of holes, drilled equally spaced, near the mid circumference of a flange.
Bolt Torque: That rotational force applied to nuts on stud bolts to tighten and apply Tension to the bolts in order to hold flanges or other connections in Make-up. This force is usually expressed in Foot Pounds (FT/LBS). See Torque Wrench.

Flange, Blind: A flange with no centre opening, designed to close off an outlet or end connection.
Flange, Double Drilled: A flange with two Bolt Circles drilled through, or tapped for studs, so that it may join another flange of a lower working pressure.
Flange, Ductile Iron: A flange which is cast with the ductile iron fitting and is thus an integral part of the fitting
Flange, Instrument: A flange, usually made as a spacer with a ring groove on both sides to go between two other flanges, with special tapped connections through its side (O.D.), to facilitate the injection or sampling of fluid or the measurement of pressure.
Flange, Lap: Any flange, hub, or Other End Connector, not integral to body of an identified piece of plant.
Flange, Loose: Similar to the last flange description: any flange, hub, or Other End Connector, not integral to a body of an identified piece of equipment. Usually fits loose behind a welded-on stub flange.
Flange, Slip-on: Refer flange loose above.
Flange, Spacer: A flange, made with a ring joint connection on both sides, to go between two other flanges to space them apart for some special purpose.

Flange, Test: A flange with a tapped port in its centre or side to allow application of pressure or attachment of a gauge.
Flange, Threaded: A flange with an internal or external thread opposite its Ring Groove side to mate with standard threaded pipe.
Flange, Weld Neck: A flange with a butt weld neck for welding attachment to pipe or tubing. Material may vary from that required for Integral Flanges in order to facilitate field welding.
Open Face Flanges: API Spec. 6A permits the omission of raised faces on all other flange connectors.
Raised Face: That portion of the face of a flange near the I.D. raised above the face of the flange providing a sealing surface for a flat gasket or containing a ring groove to affect a seal with a Ring Gasket.
Schedule: A term used to indicate the wall thickness of standard pipe sizes (e.g. 4-inch Schedule 80 Pipe has a 4.500 inch outside diameter with a 0.337 inch wall).

SPECIAL NOTES - FLANGE DRILLING TABLE STANDARDS.
Flanges are ordered according to flange drilling tables.
Typical description is:
BS4504 (1969) TABLE 10 – 3
BS4504 (1969) = British Standard number 4504, issued in 1969.
This could equally have been ANSI = American National Standards Institute, or DIN (German or Deutsche), JIS (Japan) or EU (Europe), SABS (South Africa), etc. Some are imperial drillings (BS standards, or ASA/ANSI) and some are metric (BS4504, DIN, or others)
TABLE 10 – 3 = Drilling specification set out in table 10-3. The notation '10' refers to the pressure rating.
In the case of ANSI specifications such as ASA-150, it is important to know that the '150' detail refers to the pressure reference of saturated steam. That is the flange is rated for use, or is suitable for use, with saturated steam at 150 psig pressure (gauge).
However, the cold or ambient rating is 275 psig, which is substantially higher. This is the 'WOG' or 'water, oil gas' rating, but with the meaning of use at normal ambient temperatures.
Things are a little more complicated with lined pipe, because the pressure rating follows the steel rating with a slight down grading, because of the plastic lining.