

CHECK LIST

SPECIAL DESIGN

EXPANSION JOINT/-S

- Nominal diameter**
- Built-in length**
- Design and operating pressure (BarG)**
- Design and operating temperature (°C)**
- Medium**
 - Inside / outside / toxic / gaseous / liquid / flammable / corrosive
 - Fluid density
 - Concentration
 - Condensates
 - Flow velocity and rate
 - Flow pulsation
- Installation position (horizontal / vertical)**
- Movements (axial / lateral / angular / vibrations)**
- Spring rates**
- Bellow**
 - Material
 - No. of convolutions
 - Single ply / multiply / 2-ply testable bellows
- Connection inlet and outlet end**
 - Flange (standard/special, OD, ID, PCD, holes, material of flange, raised face dim)
 - Pipe ends (diameter of pipe, thickness of pipe, length of pipe, material of pipe)
- Inner sleeve (diameter, material)**
- Protective outer cover (outside diameter, thickness, material)**
- Tie rods (material, only for transportation, acting as movement limiters)**

- Design code (EJMA / PED / ASME VIII / ASME B.31.3 / AD-B13 / other)**
- Cyclic design life**
- Load case**
- Allowable loads on nozzles (connection ends of pressure vessels / turbines / pumps)**
- External loads (wind pressure / earthquake / snow load / moments and forces from own weight)**
- Piping layout - isometry**
- Bounding Box (maximum allowable dimensions of the sitting of expansion joints)**

QUALITY ASSURANCE

- Quality control in accordance with PED**
- 3.1 full traceability / 2.2 certificate**
- Control and tests**
 - Dimensional and visual control
 - Tightness test
 - Pressure test
 - Penetrant test
 - X-Ray
 - Ultrasonic test
 - Other/any 3. party surveillance
- WPS required**