



9. SPACING OF THE BRACING MAY NEED TO BE REDUCED FOR EXAMPLE
  - BRACE BOTH SIDES OF PIPING, CONDUIT OR DUCTWORK AT FLEXIBLE CONNECTIONS;
  - BRACE TO AVOID COLLISION BETWEEN PIPING, CONDUIT OR DUCTWORK AND OTHER NON-STRUCTURAL COMPONENTS;
  - BRACE WITHIN 600mm OF CHANGES IN DIRECTION, WHETHER IT BE HORIZONTAL OR VERTICAL CHANGES;
  - BRACE WHERE COMPONENTS PENETRATE FLOORS OR CEILINGS;
  - BRACE IN BOTH DIRECTIONS AT THE TOP OF ALL RISERS WHERE RISERS EXCEED 900mm;THE SPACING OF BRACING ALONG A RUN OF PIPING, CONDUIT OR DUCTWORK SHOULD NOT VARY GREATLY IN ORDER TO ENSURE UNIFORM DEFLECTION AND LOADING.
10. EACH UNIT OF EQUIPMENT CONNECTED TO A RUN OF PIPING, CONDUIT OR DUCTWORK SHALL BE INDIVIDUALLY AND INDEPENDENTLY BRACED.  
THERMAL EXPANSION AND CONTRACTION FORCES, WHERE PRESENT, MUST BE CONSIDERED IN THE LAYOUT OF TRANSVERSE AND LONGITUDINAL BRACES.  
FLEXIBILITY SHOULD BE PROVIDED WHERE PIPES PASS THROUGH SEISMIC OR EXPANSION JOINTS OR CONNECT TO EQUIPMENT WITH VIBRATION ISOLATORS.
11. BRACING OF PIPEWORK SHALL BE AT EVERY SECOND SUPPORT BUT NOT EXCEEDING THE SPACING GIVEN FOR DUCTS.
12. SERVICES BRACED IN ACCORDANCE WITH AS 1170.4-2007 SECTION 8 SHALL HAVE A MINIMUM OF 50mm CLEARANCE FROM ALL CEILING HANGERS AND THE CEILING GRID.
13. DO NOT CORE THROUGH, CUT THROUGH OR OTHERWISE DAMAGE STEEL REINFORCEMENT IN CONCRETE SLABS, BEAMS OR COLUMNS WHEN INSTALLING SEISMIC BRACING.
14. FOR FURTHER INFORMATION REFER TO:
  - GRIPPLE SEISMIC INSTALLATION MANUAL.
  - TYCO FLOW CONTROL, 2002, UNISTRUT SEISMIC BRACING SYSTEMS.
  - FEMA E-74, JANUARY 2011, REDUCING THE RISKS OF NONSTRUCTURAL EARTHQUAKE DAMAGE - A PRACTICAL GUIDE.
  - SMACNA SEISMIC RESTRAINT MANUAL, GUIDELINES FOR MECHANICAL SYSTEMS, 1998,
  - SMACNA, SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION.