

## Joint Restraint Presentation

- A. Alternatives to restrained pipe joints
  1. Concrete thrust blocks
  2. Welded pipe
  3. Low pressure piping system
  4. Clamps and rods
  5. Threaded
  6. Glued
  
- B. Restrained pipe joints
  1. Traditional flanged piping, Class 150 flanges rated at 250 PSI (rigid joint)
  2. Specially made pipe joints
    - a. U.S. pipe: TR-Flex
    - b. U.S. Pipe: Field Lok gaskets for Tyton pipe
    - c. Clow: Tyton-Lok
    - d. Griffin Pipe & ACIPCO have their own as well
    - e. Certainteed: Certa-Lok, PVC pipe & fittings
  
- C. Reasons for use of restrained piping
  1. Above ground
  2. Bridge crossings, tunnels
  3. Meter or pump vaults
  4. Soil conditions may negate thrust block
  5. Immediate need to pressurize piping
  6. No room for thrust block
  
- D. Thrust blocks in critical light
  1. Weather influence
  2. Additional time required
  3. Additional space may be a problem
  4. Not immediately thrust worthy
  5. Reduce hydrant drainage
  6. Difficult to remove
  7. More costly

Conclusion: Only tradition keeps the thrust block in business. However, some cities have not used thrust blocks in 30 years.

- E. What you have to learn to use restrained pipe joints:
1. Be sure the restrained joint allows use of plain end pipe
  2. Spec needs to give " Lr " (length to be restrained)
    - a. Depends on-
      - pipe material
      - pipe size
      - bend angle
      - depth of bury
      - native soil
      - compaction
      - test pressure
      - safety factor
    - b. Available from DIPRA books (DI), DIPRA program (DI), EBAA literature (PVC & DI), EBAA program (PVC & DI)
    - c. Other suppliers of joint restraint may offer their own support program
  3. Publish applicable " Lr " for your district
- F. Write a specification
1. Generic description
  2. ASTM F-1674 PVC pipe restraint  
AWWA M-23 for PVC pipe  
AWWA M-41 for DI pipe
  3. Do a test installation
  4. Hydrant laterals
  5. Read instructions
  6. EBAA has a complete line of restraints for DI & PVC pipe
    - a. Easy to install with twist off nuts
    - b. Products maintain flexibility after installation
    - c. Special coatings are available