Concrete Pipe Installation Procedures briefly outline some important steps in concrete pipe installation. They are intended only as a guide and do not replace or supersede project specifications or contract documents.
Preparation & Jointing

Doing This

- Carefully clean all dirt and foreign substances from the joining surfaces of the bell or groove end of pipe.
- Lubricate bell jointing surface liberally. Use a brush, cloth, sponge or gloves to cover entire surface. Only approved lubricant should be used.
- Carefully clean spigot or tongue end of pipe, including the gasket recess.
- Lubricate the spigot of the pipe, including the gasket recess. Lubricate the O-ring gasket thoroughly before it is placed on the spigot or tongue.
- Place a clean, dry offset gasket onto a clean, dry spigot. Lubricate the gasket once it is placed on the spigot.
- Fit the gasket carefully. Equalize the rubber gasket stretch by running a smooth, round object, inserted between gasket and spigot, around the entire circumference several times.

Prevents This

- Improperly prepared bell jointing surface may prevent homing of the pipe.
- A bell not lubricated or improperly lubricated may cause gasket to roll and possibly damage the bell.
- Improperly prepared spigot and gasket recess may prevent gasket from sealing properly.
- Gasket may twist out of recess, and excessive force will be required to push the pipe to the home position if lubricant is insufficient.
- Unequal stretch could cause bunching of gasket and may cause leaks in the joint or crack the bell.
- Improper alignment can dislodge gasket causing leaks or possibly break the bell.

Jointing Procedures

- Small Pipe
  - Don’t: Joint should not bounce back when homing pressure is removed. If this occurs, it may be an indication of an improperly installed joint.
  - Do: Wedge bar against a wood block placed horizontally across the bell end of the pipe. Pressure on the bar pushes the pipe into the home position.
  - Mechanical pipe pullers or "come-along" devices are anchored to an installed pipe section several sections back and connected by a cross beam to the section to be installed. By mechanical force, the joint is brought into the home position.

- Medium Pipe
  - Join by placing a dead man blocking inside the installed pipe several sections back from the last installed section. This is connected to a wooden cross beam placed across the bell end of the pipe section being installed by a chain or cable and mechanical pipe puller. By mechanical force, the joint is brought into home position.

- Large Pipe
  - Join by placing a dead man blocking inside the installed pipe several sections back from the last installed section. This is connected to a wooden cross beam placed across the bell end of the pipe section being installed by a chain or cable and mechanical pipe puller. By mechanical force, the joint is brought into home position.

Backfilling

- Approved backfill material should be placed carefully along the pipe and compacted under the haunches. Material should be brought up evenly in layers on both sides of the pipe.
  - Do: Approved backfill material should be readily compactible and job excavated material and should not contain large stones, boulders, frozen lumps or other objectionable material. Backfill should be placed and compacted in layers as specified.
  - Don’t: Shoving pipe sections together with excavating equipment should be avoided unless provisions are made to prevent localized overstressing of the pipe joint.

- Backfilling Around Pipe
  - Do: Backfill material should not be bulldozed into the trench or dropped directly on the pipe. Material should be placed in such a manner so as not to displace or damage the installed pipe.
  - Don’t: Backfill material should be placed carefully along the pipe and compacted under the haunches. Material should be brought up evenly in layers on both sides of the pipe.

- Final Backfill
  - Do: Backfill material should be readily compactible and job excavated material and should not contain large stones, boulders, frozen lumps or other objectionable material. Backfill should be placed and compacted in layers as specified.
  - Don’t: Shoving pipe sections together with excavating equipment should be avoided unless provisions are made to prevent localized overstressing of the pipe joint.
**Unloading**

- **Do**
  - Balance
- **Don't**
  - Do Not Drag

**Handling**

- **Do**
  - Support on Barrel
- **Don't**
  - Support on Bell

**Stockpiling**

- **Do**
  - Even Fill
- **Don't**
  - Voids

**Pipe Bedding**

- **Do**
  - (support on barrels)
- **Don't**
  - (support on bells)
- **Don't**
  - (nonuniform support)

**Excavation & Foundation Preparation**

- **Do**
  - Trench Too Wide and Shallow
- **Don't**
  - Sub-Trench

**Alignment Line & Grade**

- **Do**
  - Do check line and grade as each section is installed. Use proper excavation techniques to adjust.
- **Don't**
  - push, pound or rock installed pipe with excavator bucket to establish grade.
- **Do**
  - remove pipe section
- **Don't**
  - adjust pipe alignment or grade with pipe in the home position.
- **Do**
  - operate heavy construction equipment over the pipe until adequate cover is in place.