

UNLOADING, HANDLING AND STOCKPILING OF REINFORCED CONCRETE PIPE

Unloading and Handling

Unloading of pipe should be coordinated with the construction schedule and installation sequence to avoid re-handling and unnecessary equipment movement. Access to the jobsite shall be provided by the Contractor to ensure that the pipe manufacturer's trucks can deliver pipe to the unloading area under their own power. Each shipment of pipe is loaded, blocked and tied down at the plant to avoid damage during transit; however, it is the responsibility of the Contractor to inspect the pipe prior to unloading to confirm that no damage occurred during transit. Total quantities of each item should be checked against the delivery slip and any damaged and/or missing items should be recorded on the delivery document. *If a pipe is damaged during delivery or unloading, the pipe should be set aside. Damaged ends, chips and cracks which do not pass through the wall can usually be repaired.*

Unloading of pipe should be controlled to avoid collision with other pipe sections or fittings and care should be taken to avoid chipping the bells or spigots. The use of mechanical equipment is necessary for unloading large diameter pipe and can usually expedite the unloading of smaller pipe as well. A forklift can be used for unloading pipe sections; however, the following manufacturer recommendations should be adhered to:

1. Confirm that the equipment can handle the weight of the pipe or box section to be unloaded by checking the load charts for the respective equipment. This may apply to certain lifting devices being used for the unloading as well.
2. Always handle the pipe from the bell end if at all possible.
3. Drive into the pipe straight and lift at the top/center of the pipe with the forks level. This prevents the pipe from twisting and having to center itself.
4. If handling two (2) pipe sections at a time, leave a gap between the pipe when traveling.
5. Tilt the forks slightly up so that the pipe is tilted slightly back toward the machine when traveling.
 - a. Fork pads are an option as well but not required to successfully unload the pipes.
6. Avoid sitting the pipe on debris or uneven surfaces that could point load the bell. Dunnage or bell holes are recommended.
7. Always travel on the smoothest possible terrain when transporting pipe. Avoid rough terrain if possible.
8. Do not allow the pipe to roll together either on forks (if picking up from one side) or on the ground when transporting more than one piece at a time.
9. Avoid letting pipe bounce on the forks. Forks that are 6' or longer in length work the best.
10. Do not allow the back or heel of the fork to be in contact with the pipe when lifting or traveling with pipe as the radius at this location can cause damage. A small gap is necessary.

If the pipe has to be moved after unloading, the sections should be rolled or lifted and should never be dragged. Pipe sections should not be rolled over rough or rocky ground.

If a lifting device is required, the device (slings, chain, steel wire, cable, rope, etc.) should enable proper and safe handling without damage to the pipe. The lifting device should be placed around the pipe and arranged so that the pipe is lifted in a horizontal position. Padding should be provided between the pipe and lifting device if the device could chip or damage the pipe. Devices such as these should NOT be passed through the pipe. Other devices which are designed to pass into or through the pipe should not touch the spigot or bell jointing surfaces and should extend far enough beyond the end of the pipe for adequate clearance of lifting lines. When pipe is provided with lifting holes, the lifting device should pass through the wall and distribute the weight along the inside barrel of the pipe. The most common lifting device for use with lifting holes consists of a steel threaded eye bar with a wing type nut and bearing plate. If a specially designed lifting device is not readily available, a single looped sling can be passed through the lift hole into the bore of the pipe and then around a piece of timber of adequate length and cross section to ensure structural stability.

Pre-installation Inspection and Evaluation

Pipe should be inspected in accordance with AASHTO R-73 prior to installation of the pipe.

Stockpiling

Any stockpiling of pipe should be as near as possible to where the pipe will be installed while maintaining safe clearances for the stored material and installation. Pipe sections can be stacked; however, the height of the stacks should not exceed six (6) feet. The bottom layer should be placed on a level base and adequately blocked to prevent shifting as more layers are added. Dunnage or bell holes are required in order to prevent damage to the bells at this level. All the bells should be positioned so that they are located at the same end. The bells in the next layer should be at the opposite end projecting beyond the spigots of the pipe sections in the lower layer. All pipes should be supported by the pipe barrel so that the joint ends are free of load concentrations.

Where there is only one layer of pipe being stockpiled, the bell and spigot ends should alternate between the adjacent pipe sections.

All flexible gasket materials not cemented to the pipe, including, but not limited to joint lubrication compounds, should be stored in a cool dry place to be distributed as needed during the installation process. Rubber gaskets and preformed or bulk mastics should be kept clean, away from oil, grease and excessive heat and out of the direct rays of the sun.