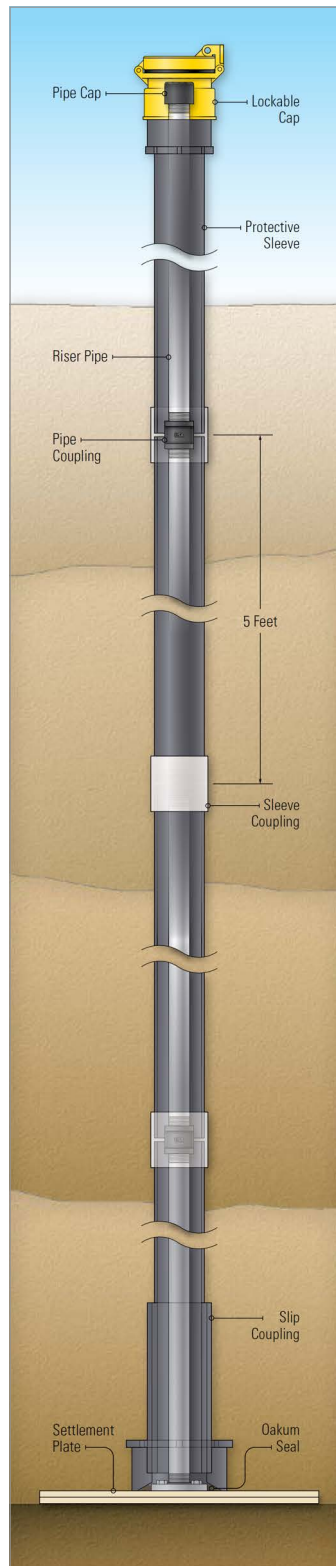


# Model 4625 Settlement Plate Instruction Manual



## 1. INTRODUCTION

The Model 4625 Settlement Plate System provides an inexpensive means of monitoring in areas where significant settlement or substantial material displacement is expected. Settlement plates are most commonly installed on an existing ground surface prior to placement of an embankment, however they may also be successfully utilized in deep excavations. They may be deployed alone or in conjunction with other instrumentation, including piezometers, remotely monitored settlement systems, and horizontal inclinometers.

Baseline elevations established at installation should be referenced to a known benchmark on a fixed datum located well outside the embankment fill area. After the embankment is complete, the top of the riser pipe is surveyed periodically, as its elevation will change as the base plate settles beneath the fill over time. As measured settlements are generally quite small, it is recommended that the surveys should be taken to the greatest accuracy obtainable under expected field conditions.

## 2. INSTALLATION INSTRUCTIONS

### 2.1 SYSTEM COMPONENTS

- Base Plate: 24" square, double-thick 3/4" PT plywood with galvanized steel floor flange (steel option: 1/4" steel plate, red oxide primer, galvanized floor flange)
- Riser Pipe: 1.5" SCH40 galvanized steel, 5 ft sections, male threaded on both ends
- Coupling: 1.5" SCH40 galvanized steel, female threaded on both ends
- Pipe Cap: 1.5" SCH40 galvanized steel, female threaded (prism adapters available)
- Protective PVC sleeve: SCH40 PVC, 3.5" O.D., 10 ft or 5 ft lengths
- Sleeve Coupling: 4" O.D. PVC
- Slip Coupling: 9" range PVC plate adapter, for telescoping/adjusting sleeve length
- Locking Cap: Includes padlock and reduction adapter

### 2.2 INSTALLATION STEPS

1. To prepare the base, excavate a shallow pit and level the subgrade. Set the base plate firmly on the level surface.
2. Thread the first 5 ft riser pipe section into the floor flange on the base plate.
3. Position the slip coupling over the riser pipe, seating it on the base plate.
4. By hand, pack oakum evenly around the full circumference of the annular gap between the riser pipe and the base of the slip coupling. This prevents debris/backfill from entering the annulus from below.
5. Install a protective sleeve into the slip coupling. Keep the riser pipe and protective sleeve plumb throughout the installation process.

6. Survey the top of riser pipe and base plate before any backfill is placed and record this initial elevation.
7. Backfill and compact by hand in thin layers around the base plate and slip coupling, no mechanical compaction near the plate.
8. As fill approaches the top of the riser pipe/protective sleeve, add a coupling, the next riser pipe section, then the next sleeve coupling, and sleeve section. Re-survey the new top-of-riser elevation each time.
9. Once the desired elevation is reached, thread the pipe cap onto the top of the riser pipe, then install the locking cap on the protective sleeve to complete the installation.

**Note:**

- Decoupling: The sleeve isn't fixed to the base plate or riser pipe; it's a loose-fitting casing. As fill consolidates and drags down on the sleeve, that force isn't transmitted to the riser pipe, so the settlement reading reflects only base plate movement, not sleeve friction. If there is a chance the outer pipe may settle more than the plate, slip joints can be used.
- Debris exclusion: The oakum seal at the base prevents soil/debris from working up into the sleeve annulus from below. If some debris gets in, the system remains operational.