

Test Pit Infiltration Test Method

The following infiltration test method is modified version of the percolation test procedure in [Appendix A of DEQ Circular-4](#), which better simulates the higher head seen in typical underground stormwater infiltration facilities in Missoula.

1. Dig or bore holes a minimum of 6 inches in diameter with vertical sides. Abide by all OSHA regulations for open trenches. The depth of the test holes must coincide with the elevation of the infiltrative surface for the proposed infiltration facility (10 feet from finished grade to bottom of drain rock for a standard dry well). Place 4 inches of clean 3/4-inch gravel in the bottom of the hole for splash protection and install a 4- to 8-inch diameter pipe. If using an open pit without pipe, ensure bottom of pit is scarified and splash protection is provided. If pipe is perforated then backfill void space between the pipe and the walls with the clean gravel or drain rock.
2. Presoak the hole by maintaining at least 1-foot depth of water in the pipe for a minimum of 2 hours. Alternatively, add the expected volume of water from the 2-year, 24-hour storm for the largest drainage area the test results will be used for. Provide the calculations used to determine this volume with the test results.
3. Immediately after presoaking begin the infiltration test by filling the pipe to the top of the operational height of the proposed infiltration facility. Water depth should not exceed the design head for the facility. For a standard 8-foot dry well, water should be kept between 5 to 7 feet from the bottom of the pipe, or as close to 6 feet as possible. A head depth of 6 feet coincides with the top of the slotted barrel. The water level shall be allowed to drop for one hour or until 2 feet of headloss occurs. Record the time required for the 2-foot headloss. Use of a water level meter tape is recommended.
 - a. If it takes longer than one hour for the water level to drop 2 feet, the test shall be repeated until two consecutive readings do not vary by more than 10%. The final reading shall be used as the infiltration rate.
 - b. If it takes less than one hour for the water level to drop 2 feet, the test shall be repeated until four consecutive readings do not vary by more than 10%. An average of the four readings will be used as the infiltration rate.
4. Variations in the test procedure may be allowed upon prior approval by the City of Missoula.