

# SPORTS FIELD IRRIGATION TIPS



By Kurt Marrone

When constructing an irrigation system for a sports field, whether it is football, soccer, or baseball, there are four steps that need to be followed to insure proper coverage.

**Step 1:** Get your Flow. Depending on the water source, you will need to determine the available gallons per minute (GPM) and at what pressure (pounds per square inch (PSI)) the water flows. If the source is city water you can contact the local municipal utilities authority to determine your flow. If the water source is a well, you will have to contact the well driller. Once the available water flow is determined, a series of pressure reductions will follow. All appliances (zone valves, back flows, etc.) will have a predetermined friction loss that must be deducted from the available flow. The resulting flow number will now be used to calculate the number and size of each head as well as the spacing between them. All major producers will supply flow charts for each respective head.

**Step 2:** Layout your system. Now that we know what sprinkler head to use and how far to space them apart, we can layout our system. Distance and spacing information comes from the sprinkler manufacturers specifications. An example of this might be that a certain head will spray 50 feet at 50 PSI flowing 14 GPM but may only spray 45 feet at 45 PSI. You must choose the appropriate head from the manufacturers catalog based on your available flow. Remember that each head should cover the next head (i.e. head to head coverage). The next step in layout is

having matched precipitation. A full circle head takes four times as long to cover an area as opposed to a quarter (1/4) circle. A full circle head will have a larger nozzle than that of a part circle head.

**Step 3:** Zone the system. The amount of heads per zone is determined by the size of the nozzles that were chosen in Step 2. A good rule of thumb is to not exceed more than 75% of the available flow. If the available flow is 100 GPM, then design each zone to use 75 GPM. This allows for fluctuations in the water supply. Layout your zones keeping in mind any environmental concerns. Examples include zones that are in shaded or low lying areas that might collect water.

**Step 4:** Choose your pipe wisely: The goal in this step is to flow the water to the heads as efficiently as possible. The job specifications will dictate what type of pipe to use in the system; however, it is your responsibility to choose the proper size. In the back of most irrigation specification books you will find pipe flow charts. Use these charts to choose the appropriate pipe size while taking into consideration the amount of flow required by each zone. Larger pipe will be gradually be adapted down in size depending on how many heads are being fed.

These four steps will serve as a good foundation in building an efficient sports field irrigation system. For more information contact your local dealer.

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Jeffery Antoniewicz, Rutgers Undergraduate Student (l) was awarded the 2010 SFMANJ Rutgers Student Scholarship by Don Savard, CSFM, CGM and President, SFMANJ (r) as part of the Rutgers Turfgrass Student Awards Banquet on Rutgers Cook Campus on November 6, 2010.

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