

J1 Rubber Expansion Joints Installed on Cooling Water Lines at New Bank One Stadium

Bank One Stadium, home to the Arizona Diamondbacks Major League Baseball Team, is the newest and one of the most advanced stadiums in the U.S. Built on a 22-acre site, the building measures 1,450,000 square feet, with a total interior volume of 120 million cubic feet.

Rising 300 feet above the playing field, the stadium's roof is composed of 6 telescoping panels that open to reveal nearly 5 acres of open sky. In the heat of the Arizona sun however, the roof will be kept closed and a massive air conditioning system will be used to cool the building. 8,000 tons of electric cooling equipment will take nearly 4 hours to cool the building from 45°C down to 25°C. The system uses 9.5 m³/min of domestic water during peak demand periods, 2 m³/min are needed for cooling tower evaporation alone. The massive volume of flow, combined with high pressures and temperature swings, places incredible demands upon the piping system.

To handle these difficult conditions, Rob Zellinger from University Mechanical turned to Red Valve's Redflex® line of expansion joints. University Mechanical had used Redflex® joints extensively in the past on wastewater projects, and were familiar with their excellent performance. The design called for large diameter joints that could handle 1.7 MPa/250 psi, with high temperatures outside and cold water inside.



Four 18" x 12" Redflex® J-1 Single Arch Expansion Joints with retaining rings and control rods were used on the cooling towers. Rated at 250 psi, the joints are installed on the discharge side of the condenser water system pumps to help isolate vibration.

In addition, four 24" x 14" Redflex® J-1 Double Open Arch Expansion Joints with retaining rings and control rods are used on the chilled water system. Even these large diameter joints are rated to 250 psi, and are constructed of EPDM to cope with the direct sun and temperature swings.

Read more about construction of the **J1 Expansion Joints**..

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CONTACT US

our new contact details:

MeasurIT Technologies Ltd.

Craan, Craanford,
Gorey, Co. Wexford, Ireland

phone: +353 (0)53 942 8962
fax: +353 (0)53 942 8963

email: info@measurIT.com
www.measurIT.com