



# Wastewater *case study*

## Megaflex Valves Installed at Psyttalia Wastewater Treatment Plant Near Athens

A sewage treatment plant on the Island of Psyttalia serves the needs of the nearly 4 million inhabitants of the Athens region. Psyttalia is located about 2 km from the mainland coast in the Saronic Gulf. The plant is designed to treat approximately 1 million m<sup>3</sup>/day.

The General Secretariat of Public Works of Greece was in the process of upgrading the Psyttalia Wastewater Treatment Plant when Athens was granted the 2004 Summer Olympic Games. The project is a joint venture of Themeliodomi S.A., Elliniki Technodomiki S.A., Athina S.A., Passavant Maschnentechnik GmbH and Giovanni Putignano & Figli S.r.l.

Phase I of the treatment plant was constructed on the 57 hectare Island of Psyttalia because there was no comparable space on the mainland. The upgrade, Phase II, includes biological treatment of the wastewater to remove the detrimental organic compounds of carbon, nitrogen and some phosphorus. This phase was planned to meet the European Union's Urban Wastewater Directive to reduce organic discharges.

Red Valve products play a key role in upgrading the Psyttalia Wastewater Treatment Plant. Red Valve has supplied four (4) 500 mm (20") and eight (8) 1200 mm (48") Type A pinch valves with duplex pneumatic modulating control systems. The Type A Megaflex pinch valves are installed on the sludge line and divide the flow into the final precipitation tanks. The bioreactor/aeration tanks are 9.4 meters high.

The Type A valve features a fabric reinforced elastomer cone-style sleeve mounted inside a pressure containing metal body. Applying air pressure to the annular space between the sleeve and the body actuates the valve. Throttling control is accomplished by adjusting the operating air pressure. The cone sleeve provides an extra thickness of elastomer on the downstream side of the cone to increase its service life. It also provides

tighter control with a 20:1 turndown ratio and 0.89 pressure recovery factor.

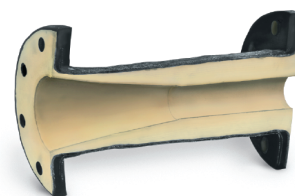
The pneumatic control system is designed to control either of two valves by using a panel mounted selector switch to choose the valve to be controlled.



Psyttalia Wastewater Treatment Plant



Eight 1200 mm Type A Megaflex pinch valves installed on the sludge distribution line at Psyttalia WWTP.



Red Valve fitted each valve with a Cone Sleeve to increase the service life in the sludge application.

Large Diameter