

1.1.1 מגופי פלאג לשימוש בוצה, קולחים ונוזלים

- 1.1.1.1 Plug valves shall be of the offset disc type, 1/4 turn, non-lubricated, serviceable (able to be repacked) under full line pressure and capable of sealing in both directions at the rated pressure. The disc shall be completely out of the flow path when open.
- 1.1.1.2 All plug valves shall have a minimum port area of 80 percent.
- 1.1.1.3 Valves shall be rated at minimum 150 psi working pressure for all sizes and shall be capable of providing drop tight shut-off to the full valve rating with pressure on either side of the plug. Valves shall sustain liquid normal operating temperature of 60 degrees C.
- 1.1.1.4 All plug valves under this Paragraph shall be performance, leakage and hydrostatically tested in accordance with AWWA C517 and AWWAC111 except as modified herein.
- 1.1.1.5 At the above rated minimum working pressures, the valves shall be certified by the manufacturer as permitting zero leakage for 5-minute duration with full pressure applied in either direction.
- 1.1.1.6 At the direction of the Supervisor, the valve manufacturer may be requested to perform a valve seat leakage test, witnessed by the Engineer to prove compliance with this Section.
- 1.1.1.7 Valve bodies shall be of cast iron, 30,000 psi tensile strength, ASTM A126, Grade B, or of ductile iron, ASTM A536 and of the top entry, bolted bonnet design, cast with integral PN10 flanges as per I.S standard 60 part 1. All exposed bolts, nuts and washers shall be zinc or cadmium-plated, except for submerged valves, which shall have Type 316 stainless steel hardware.
- 1.1.1.8 The valve plug shall be one piece, cast iron ASTM A126, Grade B, or ductile iron, ASTM A536, Grade 65-45-12, removable without removing the valve from the line and have an integral upper and lower shaft which shall have seals on the upper and lower journals to prevent entrance of solids into the journals. Plugs shall have a full resilient facing of Buna-N. The plug shall have a cylindrical seating surface that is eccentrically offset from the center of the plug shafts.
- 1.1.1.9 Shaft bearings shall be permanently lubricated stainless steel or bronze at both upper and lower stem journals. The operator shaft shall have easily replaceable seals, which shall be externally adjustable and repackable without removing the bonnet from the valve, or shall have self adjusting packing.
- 1.1.1.10 The valve seating surface shall provide full 360 degree seating by contact of a resilient seating material on the plug mating with welded-in high nickel content overlay seating surface in the body. The seating design shall be resilient and of the continuous interface type having consistent opening and closing torques and shall be non-jamming in the closed position. Screw-in seats shall not be acceptable.
- 1.1.1.11 Valves 4 inch and larger shall be actuated via gearbox and hand wheel, unless mechanized, which shall require gearbox and actuator. A

suitably sized cast iron actuator mounting bracket shall be provided to provide an air gap between the actuator and the valve stem seal. Under no circumstance shall the gear box be mounted directly to the top body flange such that leakage could directly enter the gear box.

- 1.1.1.12 Unless otherwise required due to location or mechanized operation, each valve 3-in and smaller shall be provided with its own securely attached lever. Provide adjustable limit stops for both opening and closing and a clearly marked position indicator.
- 1.1.1.13 Plug valves shall be installed so that the direction of flow through the valve and the shaft orientation is in accordance with the manufacturer's recommendations. Unless otherwise noted, shaft shall be horizontal, with plug opening up.
- 1.1.1.14 All eccentric plug valves shall conform to AWWA C517 and AWWA C111.
- 1.1.1.15 For system with expected extreme high solids sludge the valve body and cover will be Glass lined for high viscosity sludge biosolids handling
- 1.1.1.16 The valves will be manufacture by DeZurik.

מגופי פלאג לשימוש בגז מעכלים 1.1.2

- 1.1.2.1 Plug valves on digester gas service shall be provided with NBR lined plug valve design.
- 1.1.2.2 Valves shall be dry seat tested for digester gas service.
- 1.1.2.3 Valve bodies shall be of ductile iron, ASTM A536 and of the top entry, bolted bonnet design, cast with integral flanges PN 10 as per I.S. Standard 60 part 1. All exposed bolts, nuts and washers shall be zinc, cadmium-plated, or 316 stainless steel hardware.
- 1.1.2.4 The valve plug shall be manufactured of 316 stainless steel. The plug shall have a cylindrical seating surface that is eccentrically offset from the center of the plug shafts.
- 1.1.2.5 The plug, bonnet, and body shall be covered by a resilient Buna-N compound or Neoprene or Nitrile, suitable for hot and fully saturated digester gas stream with high hydrogen sulfide of 3,000 ppm and sustained digester gas temperatures of 60 degrees C.
- 1.1.2.6 The valve bonnet or cover shall be fitted with a cavity to accommodate a packing set. The packing shall be externally adjustable and replaceable without removing valve actuator.
- 1.1.2.7 Shaft bearings shall be permanently lubricated, rigidly backed PTFE, 316 stainless steel at both upper and lower stem journals. Valves shall have replaceable sleeve-type bearings conforming to AWWA C517&AWWAC111.
- 1.1.2.8 Valve body seat shall be 95-percent Nickel, raised from the base material a minimum of 1/8-inch and a minimum 1/2-inch wide.
- 1.1.2.9 Plug valves shall be of the offset disc type, 1/4 turn, non-lubricated, serviceable(able to be repacked) under full line pressure and capable

of sealing in both directions at the rated pressure. The disc shall be completely out of the flow path when open.

1.1.2.10 The valves will be manufactured by DeZurik