

STANCOR WASTEWATER PUMPS:

TYPE - LX

SPECIFICATION

SCOPE

FURNISH AND INSTALL _____ SUBMERSIBLE NON-CLOG WASTEWATER PUMPS. EACH PUMP SHALL BE EQUIPPED WITH A _____ HP SUB-MERSIBLE ELECTRIC MOTOR CONNECTED FOR OPERATION ON A _____ VOLTS, _____ PHASE, 60 HERTZ WIRE SERVICE WITH 33 FEET OF SUBMERSIBLE CABLE SUITABLE FOR SUBMERSIBLE PUMP APPLICATIONS. EACH UNIT SHALL BE SUPPLIED WITH A MATING CAST IRON _____ INCH DISCHARGE ELBOW CAPABLE OF DELIVERING _____ GPM AT _____ TDH. SHUTOFF HEAD SHALL BE A MINIMUM OF _____ FEET TDH. THE PUMP SHALL BE NON-OVERLOADING THROUGHOUT THE ENTIRE RANGE OF OPERATION WITHOUT EMPLOYING SERVICE FACTOR. SERVICE FACTOR SHALL BE A MINIMUM OF 1.15. PERFORMANCE DATA SUBMITTED FOR APPROVAL SHALL INCLUDE SOLIDS HANDLING CAPABILITY IN ADDITION TO HEAD AND CAPACITY PERFORMANCE.

PUMP DESIGN

THE PUMPS SHALL BE AUTOMATICALLY CONNECTED TO THE DISCHARGE CONNECTION WHEN LOWERED INTO PLACE, AND SHALL BE EASILY REMOVED FOR INSPECTION. THERE SHALL BE NO NEED FOR PERSONNEL TO ENTER THE WET-WELL WITH THE USE OF A QUICK DISCONNECT "QDC" GUIDE RAIL SYSTEM. MATING OF THE PUMP UNIT TO THE BASE SHALL BE ACCOMPLISHED SIMPLY BY THE DOWNWARD MOVEMENT OF THE PUMP GUIDED BY TWO GUIDE RAILS EXTENDING FROM THE TOP OF THE STATION TO THE DISCHARGE CONNECTION. SEALING OF THE PUMPING UNIT TO THE DISCHARGE CONNECTION SHALL BE ACCOMPLISHED BY A MACHINED METAL TO METAL WATERTIGHT CONTACT BETWEEN THE DISCHARGE CONNECTION AND THE GUIDE RAIL BASE.

PUMP CONSTRUCTION

MAJOR PUMP COMPONENTS SHALL BE OF GREY CAST IRON, ASTM A-48, CLASS 30, WITH SMOOTH SURFACES DEVOID OF BLOWHOLES OR OTHER IRREGULARITIES. SEALING SHALL BE ACCOMPLISHED BY METAL TO METAL CONTACT BETWEEN MACHINED SURFACES. WHERE WATERTIGHT SEALING IS REQUIRED SURFACES SHALL BE MACHINED AND FITTED WITH NITRILE RUBBER O-RINGS. NO SECONDARY SEALING COMPOUNDS, GASKETS OR OTHER DEVICES SHALL BE USED. EXTERIOR OF PUMP SHALL BE SURFACE TREATED WITH IRON OXIDE PRIMER AND CHLORINATED RUBBER PAINT TOPCOAT.

CABLE ENTRY

THE CABLE ENTRY SHALL BE DESIGNED TO PREVENT INGRESS OF WATER INTO THE MOTOR CHAMBER AS FOLLOWS: A) EACH CABLE LEAD SHALL BE STRIPPED, SOLDERED AND EPXY SEALED TO PREVENT ANY CAPILLARY ACTION PAST THE CABLE ENTRY, B) A MOLDED RUBBER SHOULDER, SECURED BY STAINLESS STEEL BOLTS AT THE MOTOR CAP, SHALL SURROUND THE CABLE ENTRY, PROVIDING A STRONG COMPRESSION SEAL THAT RESISTS STRAIN FROM BENDING.

MOTOR

PUMP MOTOR SHALL BE INDUCTION TYPE WITH A SQUIRREL CAGE ROTOR, SHELL TYPE DESIGN, HOUSED IN AN AIR-FILLED WATERTIGHT CHAMBER. THE STATOR WINDINGS AND LEADS SHALL BE INSULATED WITH MOISTURE RESISTANT CLASS F INSULATION WHICH WILL RESIST A TEMPERATURE OF 311°F (155°C). THE MOTOR SHALL BE DESIGNED FOR CONTINUOUS DUTY AND CAPABLE OF UP TO 15 STARTS PER HOUR AND A MAXIMUM PUMPED MEDIA TEMPERATURE OF 104°F. STATOR SHALL BE HEATSHRINK FITTED INTO THE STATOR HOUSING. THE USE OF FASTENING DEVICES REQUIRING PENETRATION OF THE STATOR HOUSING IS NOT ACCEPTABLE. PUMP SHALL BE EQUIPPED WITH BUILT-IN AUTOMATIC THERMAL OVERLOAD PROTECTION CONNECTED IN SERIES WITH THE STARTER SO THAT IF THE THERMAL SENSOR IS TRIPPED THE OVERLOAD OPENS. THE THERMAL SENSOR SHALL BE SIZED TO OPEN AT 130°C AND AUTOMATICALLY RESET AT 20°-25°C DIFFERENTIAL. THE MOTOR (5HP-30HP) SHALL BE EQUIPPED WITH A SEAL LEAK DETECTOR FOR AUTO CUTOFF IN THE EVENT OF SEAL FAILURE.

PUMP SHAFT

SHAFT SHALL BE CONSTRUCTED OF 400 SERIES MAGNETIC STAINLESS STEEL FOR MAXIMUM CONDUCTIVITY, TENSILE STRENGTH AND CORROSION RESISTANCE.

BEARINGS

PUMP SHAFT SHALL ROTATE ON TWO BEARINGS. MOTOR BEARINGS SHALL BE PERMANENTLY SEALED AND FITTED WITH HIGH TEMPERATURE GREASE GUARANTEED FOR 50,000 HOURS OF OPERATION.

MECHANICAL SEALS

EACH PUMP SHALL BE PROVIDED WITH A TANDEM MECHANICAL SHAFT SEAL SYSTEM CONSISTING OF A SOLID SILICON VS SILICON PRIMARY SEAL AND CARBON VS CERAMIC SECONDARY SEAL. SEALS SHALL RUN IN AN OIL CHAMBER LOCATED BETWEEN THE VOLUTE AND MOTOR. THE SEALS SHALL REQUIRE NEITHER MAINTENANCE NOR ADJUSTMENT AND SHALL BE EASILY REPLACABLE.

IMPELLER

THE IMPELLER SHALL BE OF GRAY CAST IRON CLASS 30, DYNAMICALLY BALANCED, NON-CLOGGING DESIGN HAVING A LONG THROUGHLET WITHOUT ACUTE TURNS. THE IMPELLER SHOULD BE CAPABLE OF HANDLING SOLIDS AND FIBROUS MATERIALS FOUND IN WASTEWATER. THE IMPELLER SHALL BE OF A SINGLE VANE, NON-CLOG CHANNEL DESIGN FOR MAXIMUM HYDRAULIC EFFICIENCY.

VOLUTE AND WEAR RINGS

THE VOLUTE SHALL BE SINGLE-PIECE GRAY CAST IRON AND HAVE FLUID PASSAGES LARGE ENOUGH TO PASS ANY SOLIDS THAT MAY ENTER THE IMPELLER. A WEAR RING SYSTEM SHALL BE INSTALLED TO PROVIDE EFFICIENT SEALING BETWEEN THE VOLUTE AND IMPELLER. THE WEAR RING SHALL CONSIST OF A STATIONARY RING MADE OF HARDENED BRONZE WHICH IS FITTED TO THE VOLUTE.