

- (4) Pump discharge Outlets
 - (a) minimum # outlets
 - (b) Connections size
 - (c) Slow Operation Valve size
 - (d) Location
- (5) Pump Drains access
- (6) Pump Controls
 - (a) Engine brake disengagement
 - (b) Speedometer operation during pump
- (7) Pressure Control System
 - (a) rise in water pressure
- (8) Pump Operator Panel
 - (a) required Instrumentation
 - (b) Minimum Numeral Size Master Gauges
 - (c) Test Gauges
 - (i) Discharge pressure gauge range
 - (d) Gauge and visual display location
- (9) Ultra High Pressure Pumps
 - (a) engine governor system
 - (b) engine control throttle
 - (c) gauges & instruments
 - (d) pump body integrity test

h. Auxiliary Pumps & Associated Equipment

- (1) Pump Drive Systems
 - (a) Pump Engine Running Light
- (2) Engine Control
 - (a) Throttle control location

i. Water Tanks

- (1) baffles and swash partitions
 - (a) distance between walls and/or baffles
 - (b) partition arrangement
- (2) Tank-to-Pump rate
 - (a) <500 gal (2000L)
 - (b) >500 gal (2000L)
- (3) Tank Fill Line
 - (a) <1000 gal (4000L)
 - (b) > 1000 gal (4000L)

j. Aerial Devices

- (1) Obstructions Below Ladder
 - (a) Folding step load
 - (b) ladder rotation
 - (i) rated height&seconds of rotation
- (2) Aerial Ladder Rated Capacity
- (3) Aerial Ladder Water Delivery flow
- (4) Hydraulics System bursting strength

k. Foam Proportioning Systems

- (1) Water Backflow prevention
- (2) Swash Partitions
 - (a) pressure vacuum vent
- (3) Test Points
 - flow capacity at minimum pressure

l. Line Voltage Electrical systems

- (1) AC current Hz
- (2) Max voltage to portable equipment
- (3) Instrumentation on Operator's Panel
- (4) Power Supply Assembly
 - (a) Overcurrent protection
 - (b) Branch Circuit Overcurrent Protection
- (5) Cord reels
 - (a) Distribution Box
- (6) Power-Operated Light Masts
 - (a) Sustained wind requirement
- (7) Line Bonding & Grounding

m. Command and Communications

- (1) Location
- (2) Climate Control
- (3) Noise Levels
- (4) Lighting

n. Air Systems

- (1) General Piping & Installation
 - (a) threads
- (2) Compressor Drive System, Controls, Air Monitoring
- (3) Audible and Visual Alarms
- (4) SCBA/SCUBA Fill Station protection
- (5) Piping Systems low air warning %
- (6) Breathing Air Quality Std. NFPA 1989
 - (a) charging requirements of delivery

o. Winches

- (1) Winch Wire length
- (2) Load rating/line pull capacity

p. Trailers

- (1) Classification
 - (a) Type I, II & III
- (2) Wheel Chocks
 - (a) grade %
 - (b) requirements
- (3) Power Supply
 - (a) Combined electrical load for Type II & III trailer
- (4) Wheel chocks mounting

3. Test requirements: The Technician shall understand the test and delivery data requirements for a Pumper Fire Apparatus

a. Fire Pumps and Associated Equipment

- (1) Pumping System Capacity
 - (a) Pumps 3000 gpm or less
 - (i) 100% rated capacity at 150 psi
 - (b) Pumps < 1500 gpm
 - (i) suction hose length and lift for 1250 gpm
- (2) Vacuum loss %

b. Construction Requirements

- (1) Hydrostatic Test gauge pressure & time

c. Discharge Outlet Connections

- (1) Hydrostatic gauge pressure reading

d. Required Testing

- (1) Apparatus Pump System Certification
 - (a) > 750 gpm
 - (b) Third Party Certification
- (2) Pump Test Conditions for Test
 - (a) depth of water
 - (b) Water temperature
 - (c) engine-driven accessories
- (3) Test Gauges for certification test
 - (a) calibration time requirement
- (4) Engine Speed Check
 - (a) % change allowed of Manufacturer no-load governed speed
- (5) Pumps rated at <750 gpm, 750 to <3000 gpm, & >3000 gpm,
 - (a) total time of pump test
 - (b) time & % at rated capacity of 150psi, 200 psi and 250 psi
- (6) Ultra high pressure pumps
 - (a) Water tank capacity test
 - (b) Gauge & Flowmeter test accuracy
 - (c) Priming system test
 - (d) Conditions for test

e. Pumping Engine Overload Test

- (1) Pump Rated Capacity of 750 or greater but <3000
 - (a) test for net pump pressure at 165 psi for 10 min

f. Pressure Control System Test

- (1) Pumps rated at 3000 gpm or less
 - (a) gauge pressure at 90 psi, 150 psi, 250 psi
 - (b) time allowance to prime pump
 - (c) additional time for 4+” intake pipe

g. Vacuum Test

- (1) vacuum
- (2) vacuum drop

h. Volume Discharge Calculation

- (1) Rated Tank-to-flow till what % of discharge

i. Gauge and Flowmeter Test

- (1) Test capacity
- (2) re-calibration requirement

j. Manufacturer's Pre-delivery Test

- (1) Hydrostatic test requirements