462 POST-TENSIONING
(REV 11-10-21) (FA 1-12-22) (7-22)

SUBARTICLE 462-7.4.2.1.5.3 is deleted and the following substituted:

462-7.4.2.1.5.3 Operations:

1. Open all inlets, outlets, drains and ports before beginning the wax injection operation to remove standing water from duct. Capture and measure the water removed from the duct. If the volume of water is significant, as determined by the Engineer, then utilize compressed air, vacuuming, or other means deemed acceptable by the Engineer to dry the duct interior.

2. Protect concrete surfaces from wax spills, leaks, etc.

3. Inject wax in accordance with approved Wax Injection Operations Plan.

4. Use pumping methods that ensure complete filling of ducts and anchorage assembly with wax.

5. Ensure the entire mass of wax is fully liquefied prior to and throughout injection operations. Establish a non-turbulent, laminar system circulation by continuously recirculating the wax between the pump and the storage container prior to injecting the wax into the duct. Pump components must be at wax injection temperature prior to wax injection into duct. Do not allow wax to free fall during recirculation or injection operations. Maintain a positive head of liquid wax above all withdrawal and recirculation ports and do not allow air intrusion into the pumping system. Do not pour liquid wax into an open pump or hopper.

6. Inject PT wax at a continuous and steady rate in accordance with the approved Wax Injection Operations Plan at a flow rate through duct at a velocity between 40 and 70 feet per minute and pressure limited to 75 psi at the duct inlet and 145 psi at the pump.

7. For tendons in which vacuum assisted injection is used, provide a minimum of 90% vacuum in the duct prior to injection. Connect both the anchorage outlet and the cap outlet to the vacuum system. After the vacuum is established, lock off the air supply to the duct and monitor the vacuum for 1 minute. If the loss of vacuum after 1 minute exceeds 10%, repair leaks as directed by the Engineer and retest the duct. If the results are acceptable, reestablish and maintain a minimum 90% vacuum using the outlets at the higher end anchorage shown on Standard Plans, Index 462-001 while injecting wax using the inlet at the lower end anchorage shown on the same Standard. Close all outlets, inlets, and ports other than at injection and vacuum locations during injection procedure. Pump wax into inlet and continuously vacuum air at the outlet. After the duct is fully injected with wax and the wax reaches the vacuum end, close the outlet valve, turn off the vacuum pump and continue the injection pump. Bleed all outlets starting at the anchorage cap at the injection end and proceed to bleed every valve thereafter from injection end to vacuum end, ending with the anchorage cap at the vacuum end. When bleeding each valve, collect a minimum of two gallons of

continuously flowing wax free from air before closing the valve. After all outlet valves are closed, close inlet valve with locking pressure between 30 psi and 45 psi. Do not reuse discharged wax.

8. For tendons in which vacuum assisted injection is not used, inject wax under pressure at locations shown on Standard Plans, Index 462-001. Allow wax to flow from duct and anchorage discharge points until a steady flow of wax free from air is continuously discharged. Collect a minimum of two gallons of continuously flowing wax free from air at discharge point before closing outlet valve. Do not reuse discharged wax. After all outlets are closed, close the inlet valve at locking pressure between 30 and 45 psi.

9. Record the total volume of wax injected into the system.

10. Upon completion of wax injection, seal the duct in accordance with the approved PT system drawings. Remove all excess wax from exposed surfaces.