



# QUICK RESPONSE

*Saving life and property through effective licensing, plan review,  
and inspection of fire protection systems.*

November 2008

## FIRE PUMPS – FOUNDATION

**NFPA 20 (2002 edition) Section 6.4** states that centrifugal pumps shall be securely attached to a solid foundation in such a way that proper pump shaft and driver shaft alignment is maintained. If the shaft from the driver is incorrectly aligned to the shaft on the pump, the rotation from driver will cause damage to the pump. The foundation shall be sufficiently substantial to form a permanent and rigid support for the base plate. The foundation, preferably made of reinforced concrete, needs to be designed to adequately carry the loading of the pump, driver, and other equipment. The pump is anchored to the foundation with foundation bolts to form a single structural unit.

After the pump has been properly secured to the foundation and proper alignment has been verified, the pump may then be grouted to the foundation. The base plate should be completely filled with grout, and it is desirable to grout the leveling pieces, shims, or wedges in place. Foundation bolts should not be fully tightened until the grout is hardened, usually about 48 hours after pouring.

Below are pictured two fire pump installations. The fire pump on the left has been installed on a proper foundation. The fire pump on the right is not in compliance with the **NFPA 20** requirements for an adequate foundation.

