



LIGHTING STANDARDS

Recommended Guidelines for Lighting Standards
Installation, Inspection, and Maintenance

General Items

The following recommended guidelines provide general information pertaining to installing, inspecting, and maintaining typical pole standards utilized for lighting applications. These guidelines are not intended to be all-inclusive, covering every type of installation or site-specific issue. The owner should consult with, and utilize, qualified contractors for all lighting standard installations. Please note that WJM is not responsible for any damages that might occur during or after unloading and/or installation. In addition, WJM is not responsible for any damages to, or by, poles that have been modified, relocated, or utilized for any reason other than their original intended application, except as approved specifically in writing by appropriate WJM personnel. Please refer to WJM's General Product Warranty/Terms and Conditions of Sale. Contact WJM if any questions arise.

Surface / Corrosion Protection

Poles should be inspected thoroughly, at the time of unloading, noting any apparent damage to the structure or the surface finish. The unloading and installation of poles should be performed by qualified personnel using proper equipment and procedures. To protect the surface finish during unloading and installation, use nylon straps if cranes are used and protective pads on forks, if forklifts are used. Poles stored prior to installation should have all packing and shipping materials removed. Poles should be stored on non-damaging dunnage at least 12" above grade and kept well-ventilated and protected from moisture retention. After installation is complete, inspect the pole again for any damage which might have occurred during unloading and storage. Utilize factory-provided touch-up paint as needed, following proper procedures. For galvanized poles, use "Hot Stick" or something similar to repair damage.



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Foundation details should provide for the drainage of water, including any condensation inside the pole, away from the base of the pole. Refer to Anchor Bolt Foundations found elsewhere in this document. Weathering steel poles require special considerations in addition to those noted above. Exposure to moisture with few or no drying cycles should be avoided. Contact with water, debris, excess vegetation, soil, etc., can result in accelerated corrosion. Pole sections need to be kept open for ventilation. Weathering steel can “bleed” down, causing staining on objects in the immediate vicinity of the pole. Weathering steel poles should have, in addition to proper design and fabrication details, a thorough inspection/maintenance program to help ward off potentially severe corrosion damage, possibly resulting in major degradation of the pole’s structural integrity. Anchor Bolt Foundations Typical anchor bolt-type of pole foundations included a reinforced concrete pier designed by a qualified geotechnical engineer familiar with poles and site-specific soil conditions. Anchor bolts, which are normally installed in a vertical position, should be provided with two (2) nuts and two (2) flat washers each (one washer and one nut each under the base plate, on each on top of the base plate). Prior to pouring concrete, confirm that the anchor bolt size, quantity, projection, and bolt circle are correct (utilize the anchor bolt setting template if provided). Also verify the anchor bolt orientation is as specified. Leveling nuts (lower nuts) should be located within 1” of the top of the concrete foundation to minimize potentially excessive bending and axial stresses in the anchor bolts. KW recommends the use of high-strength, non-shrink grout under the base plate for proper bearing surfaces. The detail of the grout shall include a tube or channel placed such that adequate drainage will be provided to ensure ventilation of the inside of the pole and to prevent standing water inside or under the pole. Failure to take these precautions can lead to corrosion problems, possibly resulting in structural degradation of the pole.

Grounding / Electrical Shock

The power and installation contractor must provide electrical grounding and warnings about any electrical hazards in accordance with appropriate specifications and applicable codes utilizing the provided grounding provisions on the lighting standard. Special attention must be paid to hinged poles during installation. The electrical wiring must pass through the heavy-duty flexible plastic wire protector at the hinge point in order to prevent the possibility of damage to the wire insulation during raising and lowering operations. Damaged insulation could result in a dangerous shock to personnel.



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Inspection and Maintenance

The owner should develop and implement an inspection/maintenance plan for lighting standards, utilizing qualified contractors and/or inspection companies. The typical frequency should be at least every six (6) months. Certain sites, such as those located in areas of unusually strong winds, highly corrosive environments, wet regions, etc., might require more frequent inspections. Typical items to inspect for include such things as general appearance, damaged surface finish, loose or missing hardware, cracked welds, structural damage, corrosion, damage to electrical wiring and/or grounding system, loose or missing handhole covers, loose or missing base or nut covers (if provided), missing step bolts (if provided), damage to luminaires fixtures, safety climbing system (if provided), evidence or observation of excessive vibrations, etc. The owner and his contractor should include any other items which they feel should be inspected. During the inspection process, all noted abnormalities should be recorded. The owner and his contractor should then develop a plan to correct all noted damage as required. Contact KW if any questions arise.

Vibrations

Wind-induced vibrations severe enough to cause structural damage to lighting standards are very rare, and the phenomenon which can produce them is also very rare and unpredictable. This phenomenon is typically vortex shedding, in which wind flowing around a pole produces later vortices which in turn produce oscillations perpendicular to the wind direction. Observations indicated that structures installed without attaching all the specified equipment (fixture, bracket, arms, etc.,) are more vulnerable to vibrations. Therefore, all such equipment should be attached when the pole is installed. If the owner or his representative observes evidence (such as loose hardware, damaged fixtures, cracked base welds, vibrating poles, etc.,) of vortex shedding vibrations at or in the vicinity of the specific site, KW should be contacted as soon as possible. Depending on the specific situation, the installation of the oscillation-damping device(s) might mitigate the occurrence of potentially damaging vibrations. But please, note—There are no absolutely guaranteed fixes that will prevent all modes of vibration.

