

POLE OWNER'S WARRANTY, MANUAL & MAINTENANCE **MUST BE FORWARDED TO THE END USER AND/OR CUSTOMER**

LIMITED WARRANTY & LIMITATION OF LIABILITY

Techlight warrants its poles and to be free from defects in materials and workmanship for the warranty period from the date of shipment. Techlight retains the right to either repair or replace any part of the equipment delivered hereunder which under normal and proper use proves to be defective in workmanship or material within the warranty period from date of shipment by Techlight. The correction of such defects by repair or replacement shall constitute fulfillment of all Techlight obligations with respect to the equipment sold hereunder.

It is expressly stated that Techlight assumes no liability for indirect, incidental, consequential damages of any kind or liquidated damages arising out of a breach of the sale, including any warranties arising there from, and buyer's remedy shall be limited to repair or replacement of defective parts as described above. Any finish damage or failure due to any circumstances out of the control of Techlight, including, but not limited to damages during shipping, handling, unpacking, or installation: damage caused by moisture or other contaminants; improper storage; damage or failure caused by acts of God; or other misuse or abuse will void all warranty claims. The liability of Techlight under this warranty for any loss or damage to the equipment or to the persons or property allegedly caused by the equipment, whether based on contract, strict tort liability, negligence or warranty shall not in any case exceed the cost of correcting defects in the equipment as herein provided and upon the expiration of the warranty period all such liability shall terminate.

Any assistance Techlight provides to the original purchaser outside of the terms and exclusions of these warranties will not constitute a waiver of the warranty terms and exclusions, nor will such assistance revive or extend the warranty. These warranties are given in lieu of all other warranties expressed or implied, including and without limitation, the warranty of merchantability and the warranty of suitability for a particular purpose.

Purchaser must notify Techlight in writing within 10 days of noticing the defect.

Techlight reserves the right to change the warranty period without prior notice and without incurring obligation and expressly disclaims all warranties not stated in this limited warranty.

TECHLIGHT WILL NOT ALLOW CHARGES FOR LABOR, TRAVEL, LIVING EXPENSES, INSPECTIONS, MATERIALS, ETC. THAT DOES NOT HAVE PRIOR WRITTEN APPROVAL BEFORE SUCH WORK IS IMPLEMENTED.

Notice of any warranty claim or request for warranty service should be sent to Techlight at the following address or fax number:

Techlight
2009 McKenzie Dr., Suite 110
Carrollton, TX 75006
Fax: 214-350-9137

Note: Catalog pages are for reference only. Specifications and dimensions may change without notice. The foregoing warranty is exclusive and in lieu of all other warranties of quality whether written, oral, express, or implied, including, but not limited to, any warranty of merchantability or fitness for a particular purpose.

LIMITED PRODUCT WARRANTY

TECHLIGHT POLE WARRANTY

Techlight warrants the structural integrity of its standard anchor base poles for a period of five years and the finish of its standard poles for a period of one year from the date of shipment. Direct Burial Poles - 2 years structural and 1 year finish. See warranty - Techlight Poles 1 Year Finish Warranty.

OPTIONAL GALVANIZED FIVE YEAR WARRANTY

Techlight warrants the structural integrity for its anchor base poles that have been treated with its optional Galvanized pole treatment for a period of 5 years and the galvanized finish for a period of five years. A galvanized treatment can be applied to any of our standard poles for an additional fee. Contact your Techlight sales representative for pricing. Direct Burial Galvanized Poles - 5 years structural and 2 years galvanized finish.

HARSH ENVIRONMENT WARRANTY EXCEPTION

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- 1) Within 60 miles of the coast line or a body of salt water.
- 2) Corrosive environments such as a waste water reclamation facility.

Techlight is not responsible for poles ordered with inadequate EPA ratings necessary for the location where the poles will be installed. Banners, flags, streamers, signs and other items attached to poles will have an affect on the poles' ability to withstand strong winds. Techlight is not responsible for any dangerous scenarios created with the unauthorized attachment of items to a pole and accepts no responsibility for any harm or damage that may be caused by their addition.

All warranties exclude defects resulting from improper handling, storage, installation, acts of God, fire, vandalism or civil disturbances. Furthermore the pole warranty specifically excludes fatigue failure or similar phenomena resulting from induced vibration, harmonic oscillation or resonance associated with the movement of air current around the product.

The following conditions will void the pole product and finish warranty:

- 1) Grouted pole bases without weep holes.
- 2) Base plate sitting directly on concrete or other corrosive surfaces.
- 3) Missing pole cap and/or hand hole covers where the pole is allowed to fill with debris.

Further, Techlight will not warranty the integrity of any custom made pole to fit existing anchor bolts in the field and accepts no liability for any collateral damage caused by the use of anchor bolts that may or may not be structurally unsound or improperly installed.

POLE OWNER'S WARRANTY, MANUAL & MAINTENANCE

INSTALLATION INSTRUCTIONS

WARNING: ALWAYS INSTALL FIXTURES ACCORDING TO NATIONAL ELECTRICAL CODE (NEC) AND LOCAL CODES. FAILURE TO DO SO WILL VOID THE WARRANTY AND COULD CAUSE DAMAGE TO THE FIXTURE OR MAY RESULT IN PERSONAL INJURY.

IMPORTANT: TURN ELECTRICITY OFF AT THE CIRCUIT BREAKER BEFORE INSTALLING OR PERFORMING MAINTENANCE ON FIXTURE.

This information deals with structures supplied by Techlight along with certain safety issues. It is **NOT** a comprehensive description of how to install these structures. Installation contractors must be relied upon for equipment and practices that meet the conditions of each job location.

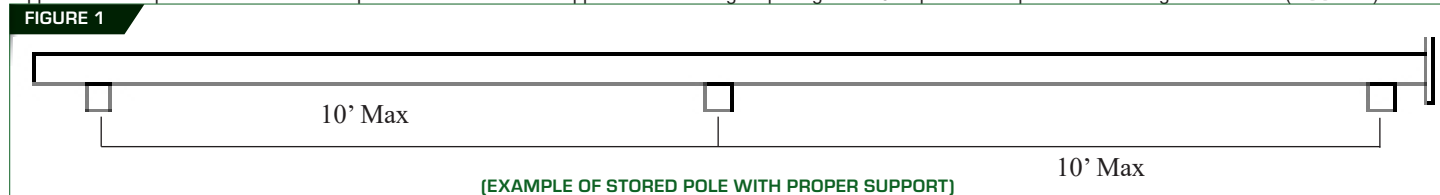
Techlight cannot be responsible for any damage that may occur during or after installation, or for any structure that has been modified by the purchaser or that is used in some way other than our application recommendations.

INSTALLATION

SHIPMENT - The Bill of Lading should be checked carefully to verify a complete delivery of all required material. Quantities of all material including boxes, cartons, crates, pallets, and poles should be verified. Shipment shortages and damages should be communicated immediately to the factory and must be clearly noted on the Bill of Lading by the person in charge of receiving the shipment; this will protect your right to file a claim. Techlight is not responsible for filing the claim or contacting the carrier on the behalf of the customer. All quantities as well as the condition of all material must be verified and noted on the Bill of Lading, including possible concealed damage. Failure to follow these instructions will may void any rights to file a claim.

UNLOADING - During unloading, only qualified personnel and equipment should be used. Forklifts and cranes are most commonly used for unloading and handling poles and related materials. When unloading with a crane, only use nylon straps to prevent damage to the poles surface and finish. When using a forklift for unloading and moving poles, either lift from the sides or use the spear technique. When side lifting insure that the forks do not come into contact with the pole surface otherwise the pole surface or finish will be damaged. When lifting a pole by the spear method, only do so from the base end of the pole ensuring that the hand hole frame and ground lug are not damaged as both are approximately 18" from the base plate. Also be careful not to damage the pole walls as this can be visible from the outside surface and can reduce the structural integrity of the pole. The spear method should only be done by experienced and qualified operators.

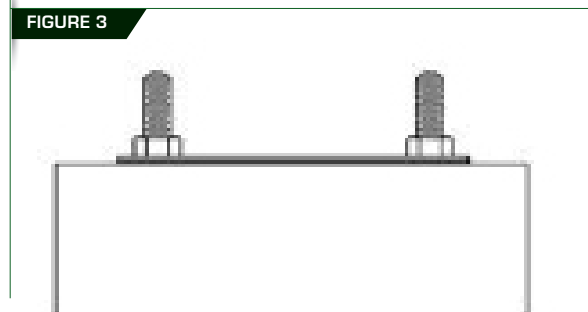
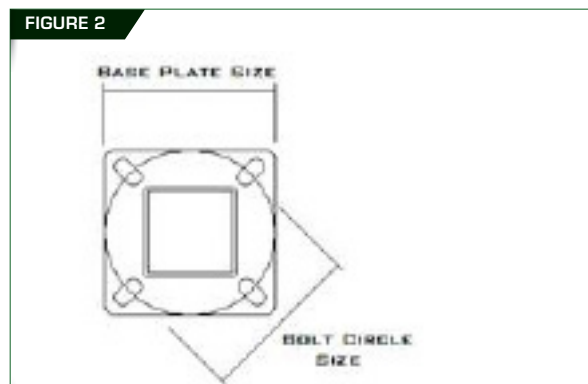
STORAGE - Poles which need to be stored prior to installation must be protected from moisture. All packing material should be removed prior to storage (see warning label attached to the poles). Adequate space between the ground and the poles is required to ensure safe storage. It is recommended that a minimum of 6" be maintained between the ground and poles during storage. Pole placed in direct contact with the ground presents a high risk of surface finish violation which will lead to the deterioration of the finish and void the warranty. It is also recommended that the supporting blocking (dunage) used to elevate the poles from the ground be made of wood, padded with foam or other padded material to ensure that the finish is not damaged during placement and storage. Poles stored on a hard surface will create impact damage to the finish and void the warranty. Excessive moisture will also attack the finish and void the warranty so the stored poles should not be subjects to prolonged moisture or water. The pole should be supported in multiple locations as level as possible and should be supported with no larger spacing than 10' to prevent the poles from bowing while stored. (FIGURE 1)



ANCHOR BASE FOUNDATION - The following written procedure is provided as a general guideline. It is recommended that foundation contractors with specific knowledge, familiarity, and experience be used when constructing these foundations. Work should not be performed until the appropriate design approval has been received and all necessary materials have been delivered and inspected. Local building codes must also be considered prior to installation as prevailing wind and soil conditions must be reviewed.

TEMPLATES - Paper templates are provided for each type of base configuration. The templates are marked for the specific job and are shipped with the anchor bolts. Anchor bolts and templates can be shipped with the poles or shipped early to allow for pier construction prior to the pole delivery. The paper template is typically used to transfer the correct hole pattern to a piece of plywood or steel sheet. The template is then used to ensure the anchor bolts are located in the correct location prior to the concrete setting (FIGURE 2)
up. Note: Rigid templates can also be purchased, please contact your sales person for availability and cost.

SETTING THE ANCHOR BOLTS - To set the anchor bolts, first align the template over the center of the foundation, typically resting on the top of the Sono-tube of form. Thread one nut onto each of the anchor bolts to allow the proper bolt projection above the concrete to accommodate the base plate, two flat washers, a leveling nut and top nut plus additional length for adjustment "leveling" (typically $\frac{1}{2}$ " +/-). Insert one anchor bolt into the template and push it into the concrete until the nut rests on the template. The hook on the anchor bolt can be facing any direction, but the preferable orientation is to point the hook outward, leaving at least 3" of concrete between the end of the hook and the edge of the augured hole or concrete. Care should be taken to ensure that the anchor bolts are set in the concrete plumb. Repeat this procedure for all of the remaining anchor bolts. Once all the anchor bolts are set and plumb, the concrete must be vibrated to ensure a strong bond exists between the concrete and the anchor bolts. The concrete must be allowed to cure to its full compressive strength before any loads can be applied. (FIGURE 3)



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SETTING THE ANCHOR BOLTS *continued* - When the foundation or pier has cured, the anchor bolts should protrude from the concrete in a vertical (90°) orientation from the top of the footing. Bolts should be equally spaced from one another and from the center point of the pier or footing. The anchor bolt pattern should easily accommodate the base plate of the pole structure. (FIGURE 4)

LEVELING - One leveling (the bottom) nut and one top (hold down) nut should be utilized per anchor bolt. One flat washer per leveling (bottom) nut and one per top (hold down) nut should also be utilized per anchor bolt. Space between the foundation and the base plate is required for ventilation. The base plate should never set directly on the foundation this will induce corrosion, void the warranty, and components in the concrete will attack the pole and finish. It should never be presumed that the pole base is level with the pole or flat. All poles should be leveled by use of a level to the opposing sides of the pole while reaching as high as possible. When leveling tapered poles you should take readings from both side of the poles and split the difference. (FIGURE 5)

GROUT-NOT RECOMMENDED - Techlight does not recommend grouting to seal the pole base to the foundation. Grouting does not allow for proper moisture drainage from the pole interior. Grouted poles have a tendency to hold water which causes internal corrosion. If grouting is to be installed, use the following guideline: Place a non-shrinking or expanding type concrete grout in the void between the base of the pole and concrete foundation. Puddle the grout around the edge of the pole base and firmly pack the space between the pole and the foundation. The pole base must be thoroughly vented with applicable weep/drainage outlet tubes. Use a short piece of small-diameter pipe to make a drain hole through the grout to the pole interior. Where possible, the tube should slope to the exterior of the base plate to induce drainage. Failure to weep the base plate will cause premature corrosion voiding the warranty and may possibly cause the pole to fail. (FIGURE 6)

VIBRATION & FATIGUE (HARMONICS) - Although very rare, vibrations severe enough to cause damage can occasionally occur in any type of pole structure. The conditions that induce vibration are a randomly occurring phenomenon caused by a constant low wind. This unpredictable course of nature requires structures to be inspected weekly for the first three months of operation. It is imperative to communicate any pole vibration to the factory immediately. Keep in mind that pole structures will "sway" in the wind. There is a difference between vibrations (i.e. harmonic) and pole sway. There are basically two types of vibration, typically the vibration will occur at the top of the pole however a second type of vibration can occur in the middle of the pole.

The first type of vibration or harmonics is the hardest to detect as this movement is at the top of the pole and can be confused with pole sway. Harmonic vibration is a cycle that repeats its self such as a back and forth movement that is the exact same distance and direction from the center of the pole without variation in the movement for an extended period of time. Any movement that does not repeat itself in an opposing direction is pole sway. The second type of vibration is detected when the middle of the pole moves side to side and the top and bottom of the pole remain stationary, this is also referred to as a "hula-dance" type motion. Both types of harmonics will damage the pole and void the warranty, prolonged harmonics will cause structural failure of the pole.

Harmonic vibrations most commonly occur when the pole is stood without the fixture and/or arms being installed. Harmonics are more likely to happen with a square straight pole rather than a round pole, and are even less likely to occur in tapered poles. Regardless of the of the type, size, and height of the pole, harmonics can occur as random acts and are unpredictable phenomena.

WARNING: DO NOT ERECT POLE WITHOUT THE FIXTURE AND/OR ARMS BEING INSTALLED

STRAIGHT ARM MOUNTS FOR ROUND AND ROUND TAPERED POLES –

Because the fixture heads and arms are installed onto the pole prior to it being stood up, extra care must be taken to ensure the arms are installed square to the pole. The mounting holes are oversized to allow for left and right adjustment prior to standing the pole. It is recommended that once all the fixtures have been secured to the pole, a final inspection and tightening of all mounting hardware must be performed to ensure the assembly will not drape or torque upon standing. To minimize the chances of this occurring it is recommended that Round Tapered poles specifically be ordered with a tenon and separate arm mounting hardware rather than mounting the arms directly to the pole itself.

FIGURE 4

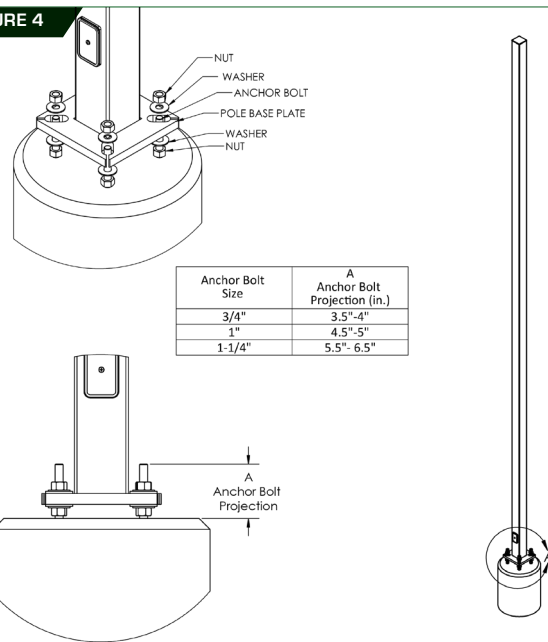


FIGURE 5

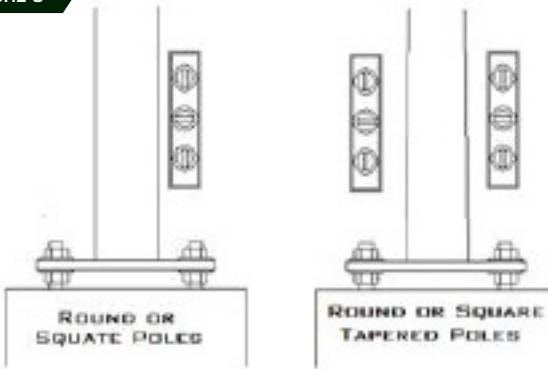
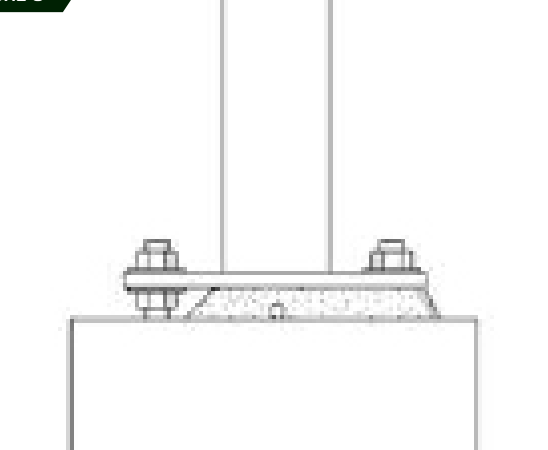


FIGURE 6



NOTES - Fixture must be installed by a licensed electrician. These instructions do not cover all details or variations in equipment, nor do they provide for every uncertainty related to installation, operation, maintenance, or mounting contingency. Should specific problems occur that are not covered sufficiently for the purchaser's purpose, contact Techlight for additional product or application information. Improper installation and/or utilization may void manufacturer's warranty. Techlight assumes no responsibility for claims arising out of improper or careless installation or handling of this product.

POLE OWNER'S WARRANTY, MANUAL & MAINTENANCE

INSTALLATION INFORMATION

This information deals with structures supplied by Techlight Inc along with certain safety issues. It is not a comprehensive description on how to install these structures. Installation contractors must be relied upon for equipment and practices that meet the conditions of each job location.

Techlight cannot be responsible for any damage that occurs during or after installation, or for any structure that has been modified by the purchaser or that is used in some way other than our application recommendations.

ANCHOR BASE FOUNDATION

If anchorage hardware is furnished by others, the correct size and strength must be used. When leveling nuts are used, the bottom of the lowest leveling nut shall not be more than 1" from the concrete surface. Large spaces between the pole base plate and the concrete can cause excessive stresses in the anchor bolts.

GROUNDING AND PROTECTION AGAINST ELECTRIC SHOCK

The purchaser and installer must provide proper electrical grounding and warnings about any electrical hazards in accordance with applicable codes.

EFFECTS OF VIBRATION

Although rare, vibrations severe enough to cause damage can occasionally occur in structures of all types. Because they are influenced by many interacting variables, vibrations are generally unpredictable. There is no single cure that will assure the preventions of all modes of vibration. Vibration is believed to be more likely to occur when structures are installed without attaching the equipment which the structures are designed to support. The intended equipment or devices should be installed at time of erection. Steel poles have been less affected by vibrations than poles of other materials. However, the user's maintenance program should include observation for excessive vibration and examination for any structural damage or bolt loosening.

INSTALLATION GUIDELINES

1. Attach sling to top of pole.
2. Attach luminaries and complete wiring.
3. Place leveling nuts and washers on anchor bolts.
4. Erect pole.
5. Position over anchor bolts and set on leveling nut washers.
6. Place anchor nuts and washers on anchor bolts and tighten once pole is plumb.

MAINTENANCE INSTRUCTIONS

MAINTENANCE

Once the pole is erected, an initial inspection should be performed. Any damage to the pole surface or finish should be cleaned and sealed with touch up paint in a timely fashion. The affected area should be removed including any rust or loose and damaged paint. This will protect the finish seal and prevent the undercutting of the finish (allowing rust to travel up the substraight or steel under the painted surface). An ongoing maintenance program must be maintained and must include periodic inspections for deterioration of the surface's protective barrier and review of the pole structure. The maintenance schedule should be on a semiannual (every 6 months) basis and is required to ensure timely resolution of minor problems that may occur to the pole in the field.

Each maintenance cycle should include a visual inspection of all poles on a jobsite. It is recommended that poles be inspected for scrapes, scratches, gouges, peeling, rusting and dents which should be repaired immediately as these will void the warranty if service is not performed in a timely fashion. While these items may appear to be minor their severity will increase with time. Poles with large dents should be brought to the attention of the factory as this may reduce the structural integrity of the pole and void the warranty. During the pole inspections the poles should be observed for harmonics.

Hand hole covers, pole caps and base covers should be in place and in good shape, these items should be replaced if damaged or missing. Anchor bolt nuts should be inspected to ensure all are in place and remain tight. The original installer must provide proper electrical grounding and warning about any electrical hazards in accordance with applicable local and prevailing codes. General maintenance should include a review of the display for warning signs is so required. Failure to implement and maintain proper warning displays as dictated by local code must be corrected.