



## APM Hexseal Client Case Study

### PROBLEM

**Need easy access in sealing problems for various applications**

### SITUATION

The use of LEDs is finding its way into a myriad of electrical lighting (indoor/outdoor) and electronics equipment - some of which were not even imaginable just a few years ago. One such unexpected application is for large area illumination that was formerly dominated by incandescent, halogen, and arc lighting. For example, one leading outdoor lamp fixture company has successfully developed an outdoor ceiling mounted fixture incorporating numerous LEDs per fixture with day and night power output requirements controlled by micro circuits.



The enclosure is regulated by a microprocessor-controlled purge system that replaces the enclosure atmosphere with inert gas under slight

### SOLUTION

To meet this requirement, APM high-pressure self-sealing [SEELSKREWS®](#) were chosen and installed around the LED fixture's perimeter. Because these special stainless steel sealing fasteners feature an embedded silicone O-Ring, captured under the head in an asymmetrical groove, they are capable of sealing to 20,000psi internal/external against dust, dirt and moisture. For maintenance purposes, they can be frequently re-installed without degradation to the silicone O-Ring. LEDs that generate UV to cure ink in printing equipment also generate heat and APM Hexseal [self-sealing screws](#) are being used to seal the water jackets that cool the LEDs. Here too, APM self-sealing fasteners are an ideal sealing solution as they easily handle temperatures to +500°F (+260°C).



APM offers multiple Engineering Kits that include multiple sizes in [SEELSKREWS®](#), [SEELNUT®](#) and [Seeloc® Washers](#).

These self-sealing bolts, nuts, rivets and unique self-sealing washers seal to 100psi - 2,000psi depending on the product. All APM self sealing/locking fasteners are UL Recognized, RoHS compliant and contain no mercury. Self-Sealing fasteners are the ideal partner for optimizing your next LED architectural fixture design - indoors and outdoors. Non-Illumination Applications -

pressure. These sealed enclosures were installed in an exceptionally long automobile tunnel. Typical of all tunnels of this kind, a great deal of corrosive, penetrating concrete dust is formed over a period of time. To assure that the dust does not reach the LED fixture's internal control circuit or coat the LED's lens, it is imperative that the LED fixture be reliably sealed to operate for 15 years of continuous service without maintenance.

Also, considerable heat is generated by LED arrays as demonstrated by the new LED lamp replacements for incandescent lighting now marketed by leading lamp manufacturers. Each design requires elaborate heat sink technology and lends itself to APM's Self Sealing Fastener technology.

LEDs are more than just about light, they're also about heat.



Read more about [APM Hexseal's Self-Sealing fasteners](#). To obtain further information on this subject, ask for Fastener Catalog SF500A. [Free samples available on request.](#)

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