

“The Most Tested Expansion Joints in The Industry”

Joint Openings With Change in Elevation? We've Got You Covered.

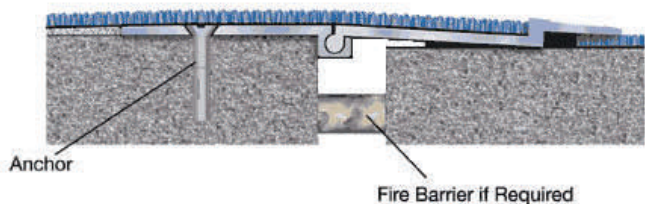
“Unplanned” changes in elevations in building structures can occur for various reasons. During construction, settling of the building may cause one section of the building to be slightly lower than originally planned. Thermal movement may also cause a portion of the building to “heave”, making it slightly higher. Although expansion joints are generally designed into a building structure to handle these conditions, the changes in elevation that result can cause potential issues for pedestrian and vehicular traffic.

To accommodate these conditions, EMS has several versions of a hinged aluminum cover plate to allow for a smooth transition over joint openings that have a change in elevation. There are several styles of hinged cover plates for interior applications where light duty and pedestrian foot traffic are a common occurrence, and heavy duty plate systems for parking structures and fork lift traffic.

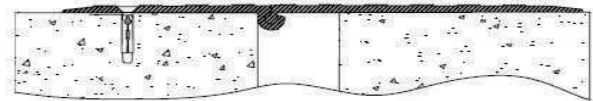
The hinged cover plate system is also designed to adapt well to areas where elevation changes cause a pronounced thump and bounce to tire traffic of fork lifts and cars. Our cover plates are ADA compliant with leading ramped edges to allow for smooth passage of wheel chair and foot traffic common to hospital and shopping facilities. Some of the features of the system are highlighted below:

- Articulating configuration allows for an angular elevation change from 0° to 25°.
- Depending on the application, the plate system will accommodate 2 – 4 inch (50 – 100 mm) change in elevation with joint widths from 2 – 6 inches (50 – 150 mm).
- Plate system is constructed from 6065-T5 material and may be color anodized on request.
- Systems for floor-to-floor type applications as well as floor-to-wall conditions are available.
- For interior applications where floors are carpeted or tiled, a plate system is available that will accept the carpet or tile over top of the articulating plate and adapt to changes in elevation while maintaining the architecture of the surroundings.
- For areas where moisture and waterproofing are a concern, several products are available which can be used in conjunction with the plate system.

- All of these plate systems can be accommodated with fire barrier as required by specifications. Fire barriers range from 2-6 inches.



Floor to floor with carpet



Floor to Floor interior and exterior heavy duty



Floor to Wall

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“The Most Tested Expansion Joints in The Industry”

Specialized Expansion Joint Seal Developed for Parking Garage Rehab Job

EMS was recently contracted to develop an expansion joint seal to replace existing seals in a steel strip seal expansion joint system, as part of a parking garage rehabilitation project. The specifications for the seal were as follows:

- Fit into existing steel extrusion cavity
- Be able to open up to 7.5" (190 mm) and close down to 2" (50 mm)
- Move in unison with any slab deflection created by vehicular traffic
- Move longitudinally if longitudinal wrack occurred
- Remain flush with the walking surface of the concrete deck to support pedestrian foot traffic and meet ADA requirements

Steel strip seal expansion joint systems have been used in parking structures for many years. Generally speaking, when steel strip seal expansion joint systems are used, this usually means a “rough road” is ahead for the expansion joint. Typical use of steel strip seal systems indicates several things:

- Heavy duty traffic loads
- Snow removal equipment possible
- Owner will invest in the long term benefits of the steel joint system
- Replaceable sealing element repairs to be made in a timely and cost effective fashion
- When damage occurs typically only the seal needs to be replaced, not the entire system
- Generally the system allows for greater vertical and longitudinal displacement than conventional joint systems, primarily due to the shape of the glands used in strip seal systems. The single thickness seal with bulbous “ear” protrusions lock the seal into steel edge shapes, allowing the seal to move freely without restriction.



Typical Steel Strip Seal Expansion Joint System

The only drawback with this system is the top of the joint glands do not comply with ADA regulations, nor do they offer much foot support. As can be seen in the drawings above, there is virtually no foot support for pedestrians, just a “V” three to four inches deep. Metal cover plates are employed to bring the joint system into compliance.

To meet the requirements specified for the project while still using the existing steel extrusions, a seal was developed specifically for this application (see drawing below). The multi-chambered seal allows for the movement specified (lateral, slab deflection and potential longitudinal) while providing sufficient support for foot traffic and meeting ADA requirements. The ability to install the seal in the existing steel extrusions allowed the repair to be completed in a very cost-effective and efficient manner.



Expansion Joint Seal developed for garage rehab (left, expanded; right, contracted)

If you have a unique application or would like to know more about the products and services offered by EMS, contact us at 716-542-3991 or send an e-mail to sales@eriemetal.com. Our experienced staff can work with you to provide a solution that will meet your needs.