

WHAT MAKES THE LIFESPAN SYSTEM® UNIQUE?

Several critical factors, taken together, make The Lifespan System unique.

- Proven materials
- Superior performance characteristics
- Worker- and field-friendly
- The only fully integrated system
- The best-value alternative

Proven materials

The Lifespan System® is made from and consists of proven materials. The Lifespan components are Ultra High Performance Elastomers, with a successful 50-year history in DOT applications, such as bridge bearing pads (see AASHTO M251, Elastomeric Bridge Bearings). In terms of chemical resistance, the elastomers used with Lifespan meet the current ASTM specifications for rubber in the pipe-gaskets and pipe-to-manhole boots (ASTM 923 and 443). The Lifespan System® meets AASHTO H-20 load requirements, which is the current standard for the load-carrying ability of castings. The cast iron cover meets ASTM A 48 Class 35 requirements.

Superior performance characteristics

This successful history of the elastomers' ability to absorb dynamic loads, their proven long-term chemical resistance and the ability to provide a tight seal (cover to frame AND frame to structure) provide the basis for superior performance characteristics that are (or should be) most relevant for manhole and catch basin structures. In addition, an ultra high performance elastomeric frame provides other benefits, including that the cover will not "rattle" or make any noise as a result of vehicular traffic or breakdown the top of the chimney area and lead to premature road surface damage in the area surrounding the frame and cover.

One of the major problems that all utilities face is that the casting is brought to grade with precast concrete rings and is "shimmed" when adjusted to grade. The precast concrete rings are rated by ASTM test standards at >3000 Coulombs (ASTM C1202), which is "very permeable". Hence, with exposure to the outside or inside of the manhole, these adjustment risers degrade very quickly and the casting "rocks, sinks and moves", as a result of freeze/thaw and other hydrostatic forces at the top of the manhole and the structure is no longer able to resist infiltration. (As well, it is no longer able to effectively carry traffic loads). The Lifespan System® includes two (2) tapered adjustment risers, which are rotated to match grade and ensure the structure is "adjusted" with materials that are load-bearing, impermeable and will never degrade, thus ensuring long-term performance.

The ability of the cover to seal to the frame is very important in addressing inflow. A cast iron cover is simply not heavy enough, (on a pounds per square inch basis), to provide an effective seal. The Lifespan System® incorporates a "cam" system to provide a positive seal from cover to frame. By way of example, Kansas City, MO has been using cams for over 10 years (albeit metal cover to metal frame). A cam system to an elastomeric frame is the best system yet developed to provide a positive seal at the top. This final component ensures "worry free" performance of the manhole structure, with respect to I/I and provides an additional "security" benefit through the use of the cams, which could limit unauthorized access.

Worker- and Field-friendly

The Lifespan System® is a high performance, but lightweight system. The frame and adjustment risers are approximately 100 lbs and the cover with cams is approximately 135 lbs making both easy to work with in the field without the need for additional equipment. Importantly, the total time to install The Lifespan System® (as was the case with the Naperville crew) was less than 20 minutes. This alone will provide a significant installation savings to Naperville in addition to the other benefits: lightweight components (worker safety); no rattling covers (fewer citizen complaints); security (no unauthorized access); frame and adjustment covers that will never corrode (impermeability); and the best I/I solution available (reduced basement backups and surcharging of lines).

The only integrated "system"

As you know, castings (frame and cover) are generally sold separately and do not include all the benefits of a "system", such as Lifespan. As a result, there are no additional inflow or infiltration materials required to achieve long-term sealing performance. A simple integrated system with better materials and better performance that is easier and cheaper to install.

The "best-value" alternative

The real and most powerful advantages of The Lifespan System® stand out when evaluating the total installed cost or the total cost of ownership. While the frame and cover can be bought separately a price that is competitive to others on the market, it is more relevant to look at the total cost of ownership for a particular structure.

From this perspective, it is necessary to evaluate the total installed cost (including premature re-work) of providing a true long-term "solution" for the top of a structure. There are no additional internal or external sealants required with Lifespan. The Lifespan System® includes one (1) elastomeric frame, two (2) elastomeric tapered adjustment risers and a cast iron cover with cams (including necessary butyl mastic and bolts).

Overall, The Lifespan System® is the best value alternative in the market for a true long-term solution for the top of manhole structures.