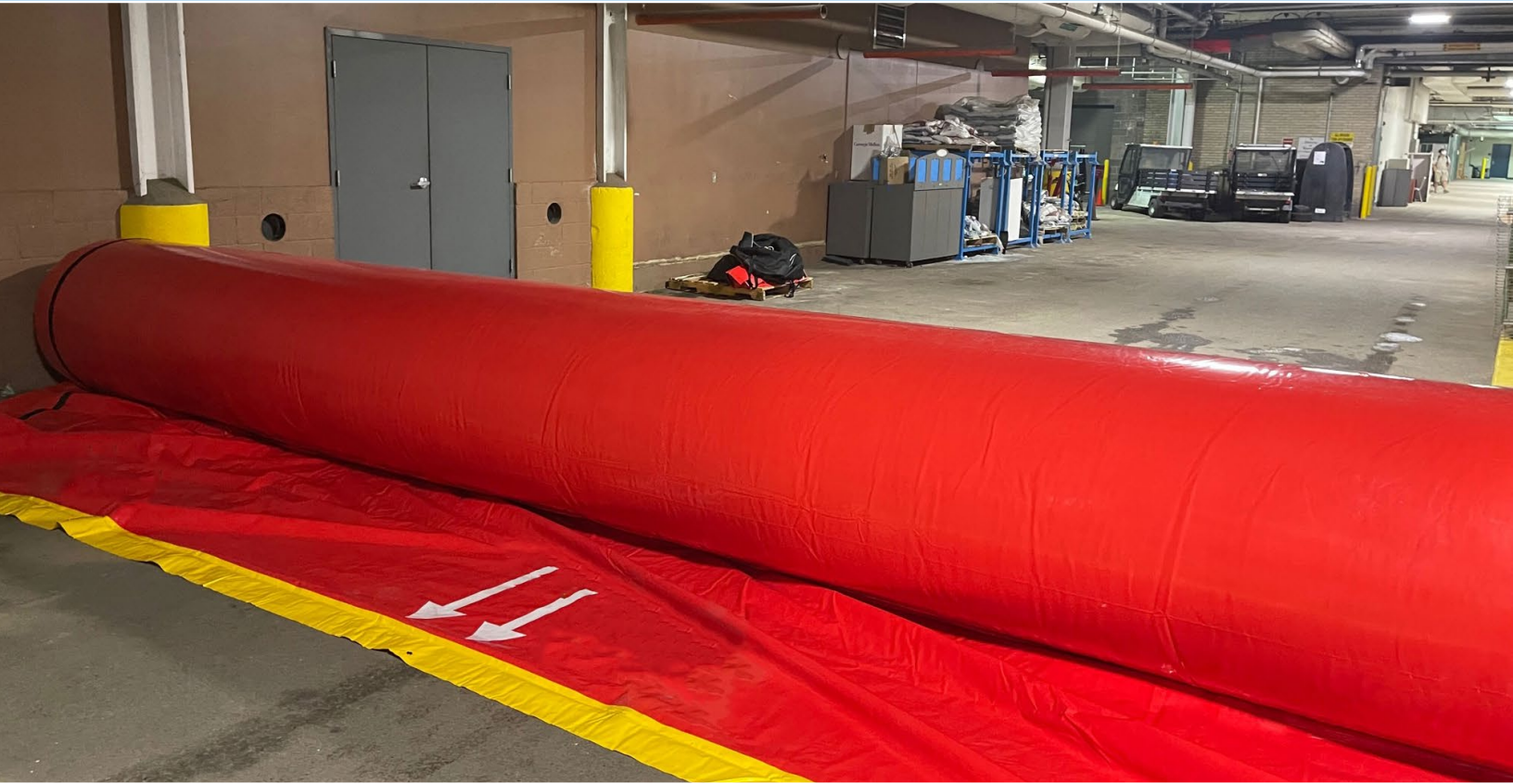


Serpent® Inflatable Flood Barrier Carnegie Mellon University



SERPENT INFLATABLE FLOOD CONTROL TUBES

Introduction

Carnegie Mellon University, a revered institution located in Pittsburgh, PA, has confronted notable challenges with floodwaters infiltrating its parking garages and other campus buildings. With increasing storm intensities, resulting in heavier rainfall and concurrent runoff, the university has faced significant stormwater damages, amounting to millions. To tackle this recurring issue, the institution deployed Garrison's Serpent® flood barrier – a state-of-the-art solution for holding back floodwaters.

Background Information

Carnegie Mellon University, founded in 1900, has a beautiful campus with buildings located on a hillside in Pittsburgh, the university's location and changing landscape and construction over more than 120 years, has resulted in certain areas being vulnerable to heavy rainfall from hurricanes and other storms. It has grappled with recurrent stormwater damages, specifically flooding within their parking garages. This has not just led to infrastructure damages but also operational challenges.

Garrison's Serpent® Flood Barrier:

Garrison's Serpent® flood barrier, which was chosen as a solution to the University's garage flooding boasts innovative design and functionality:

Rapid Deployment: A key feature is its ability to be quickly inflated using an air pump, ensuring timely protection during sudden flood events.

Ease of Storage: After usage, it can be deflated using the air pump, rolled up, and stored with ease.

CASE STUDY: Serpent® | Carnegie Mellon University

Durable Material: Fabricated with robust composite PVC mesh fabric, the barrier resists tears and cuts, ensuring longevity.

Size Variability: The Serpent® barrier is available in 15ft and 30ft sections and can be seamed together using an included seaming section, allowing for customizable deployment.

Height: The Serpent® barrier protects against waters levels up to 40”.

Extended Skirting: The Serpent® skirting plays a dual role, preventing water seepage and ballasting the barrier upon water contact, ensuring stability. This skirting is unfurled and extended on the water side of the barrier.

Strap Anchor Loops: These loops facilitate tying the barrier to each other for extended runs and allow for anchoring sections firmly to the ground or to fixed objects.

The Challenge:

The facility department at Carnegie Mellon faced a daunting challenge: a regular flood of water streaming down their parking garage ramp. This inundation was not just an inconvenience but was causing infrastructural damage and inconvenience to users of the facility. There was an acute need for an efficient, reliable, and deployable flood barrier solution.

Understanding the gravity of the problem and its financial implications, Carnegie Mellon’s facilities team chose the Garrison’s Serpent® flood barrier.

The Solution:

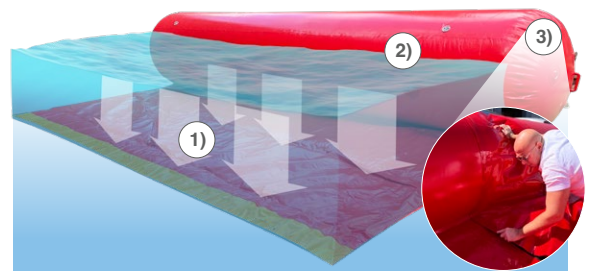
Strategically placed at the entrance of the garage, the Serpent® barrier stopped floodwaters from trickling down into the multi-level underground facility. Given its inflatable nature, deployment is swift, ensuring timely protection. The skirting feature and the strap anchor loops further enhanced the defense protecting, providing stability and preventing seepage of water under the barrier.

Results:

Post-implementation, Carnegie Mellon witnessed a stark reduction in flood-related interruptions. The parking garage remained safeguarded against flooding, preserving the infrastructure and ensuring unhindered operations. Feedback from the facilities department and stakeholders, including the ordering of an additional Serpent® barrier underscores the success of the Serpent® in mitigation flooding, validating its efficacy and efficiency.

Conclusion:

Carnegie Mellon University’s experience with the Garrison’s Serpent® inflatable flood barrier underscores the imperative of innovative solutions in flood management. This intervention not only safeguarded valuable infrastructure but also exemplified the fusion of technology and practicality. It offers a roadmap for similar institutions facing flood challenges, and it stands as a testament to proactive and strategic flood management.



How Serpent® Works

1) Pressure Creates Support

Flowing water over the skirt of the Serpent® will create pressure, keeping the Serpent® positioned securely when protecting against flooding.

2) Damming Ability

We recommend damming to within 2" of the top height of the barrier, such that each 40" tall barrier is suitable to protect against floods of roughly 38".

3) Ability to Connect

Serpent® tubes can be fastened together using the velcro tube connector sheet for added protection length.