

# Explosion Mitigation Pit Covers Provide Peace of Mind for Australian Customer

## BACKGROUND

One of Johnson Screens' recent customers, the owner and operator of critical electrical infrastructure across the state, serves both above ground and underground power supply needs for commercial and domestic customers.

As part of its ongoing commitment to safety and operational excellence, the organization identified a critical issue: underground utility pits containing electrical cables and connections were at risk of gas buildup and subsequent explosion, posing significant hazards in public areas.

Traditional cast iron pit covers, while durable, were not designed to mitigate gas accumulation or explosive events. In fact, these covers often exacerbated the danger—trapping flammable gases below ground and launching high-mass debris during sparking events.

A safer, more innovative approach was urgently needed, and so in partnership with the company's Project and Asset Teams, Johnson Screens developed and tested a new class of engineered pit covers: Explosion Mitigation Covers (EMC).



## CHALLENGE

Our customer sought a solution that could:

- Reduce the risk of explosive gas accumulation in underground utility vaults
- Meet their strict design and installation standards
- Remain compliant with Australian Standard AS3996
- Address environmental concerns such as flood resilience
- Provide compatibility with current maintenance tools/workflows

The solution had to deliver high-performance safety upgrades without compromising installation efficiency or long-term durability.

## SOLUTION

From 2019 to 2021, trial units were deployed across various sites to validate functionality, compliance, and field performance.

These covers feature Johnson Screens' signature **Vee-Wire® technology**, offering narrow slot openings for enhanced ventilation, safety (HeelSafe design), and foreign object exclusion—all while allowing sufficient oxygen flow to minimize gas buildup.

## RESULTS

In 2022, after successful testing and refinements, the EMC solution was formally adopted by the customer and its municipalities. Johnson Screens now supplies both single and dual cover assemblies for ongoing installations and retrofit applications.

The collaboration demonstrates Johnson Screens' ability to engineer product solutions tailored to the unique safety and regulatory needs of major utility providers—while safeguarding communities in the process.

# ABOUT THE EXPLOSION MITIGATION COVER

The Johnson Screens Explosion Mitigation Cover (EMC) is a purpose-built solution designed to address the growing risks associated with volatile gas buildup in underground utility pits. Utilizing the renowned Vee-Wire® construction, this product offers a unique balance of ventilation, durability, and safety that outperforms traditional cast iron alternatives. Key product benefits include:

- **Explosion Venting Capability:** Engineered slot widths allow gases to escape before pressure builds to dangerous levels, dramatically reducing the risk of blast-related ejections.
- **HeelSafe Design:** Vee-Wire slot openings are narrow enough to prevent trip hazards and foreign object ingress while maintaining effective airflow.
- **ADA-Compliant Surface:** A slip-resistant outer texture improves pedestrian safety, even in wet conditions.
- **Anti-Theft & Easy Access:** Dual locking mechanisms (locking pin or patented foot design) provide security without requiring specialty tools for authorized crews.
- **Lightweight Construction:** Approximately 10–15 kg lighter than traditional covers, enabling safer, faster installations with smaller teams.
- **Versatile Aesthetics:** Optional custom graphics and flexible sizing tools make the EMC a fit for both utility and architectural environments.

Available for residential, municipal, and commercial settings, Johnson Screens' EMC solution has been thoughtfully engineered not only to mitigate risk—but to elevate the safety standard for modern infrastructure.



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