

## Protecting Against AI Chatbot Errors

Many businesses use artificial intelligence (AI) chatbots to enhance operational efficiency and improve customer satisfaction. However, as organizations increasingly adopt this tool, they may expose themselves to several vulnerabilities. It is imperative for business leaders to recognize these risks and take proactive steps to mitigate them. For example, utilizing AI chatbots without proper safeguards can expose businesses to the following:

- **Customer trust deterioration**—When chatbots provide inaccurate, biased or misleading information, customers may lose confidence in the brand.
- **Legal liability**—Businesses may be held accountable for the chatbot's misrepresentations about products, services or policies.
- **Financial impacts**—When chatbots make errors, businesses may face direct costs (e.g., refunds or compensation) as well as indirect losses (e.g., legal fees, regulatory fines and lost customers).
- **Regulatory scrutiny**—Chatbots that violate privacy, enable fraud or deceive users in harmful ways may attract enforcement from regulators. AI tools are subject to existing consumer protection laws and misuse can lead to investigations and penalties.
- **Security and privacy risks**—Chatbots often handle sensitive customer data, and if it is improperly secured, they can be vulnerable to data breaches.
- **Disinformation and reputational attacks**—Bad actors can manipulate chatbots to spread false information, impersonate individuals or generate harmful content. These tactics can damage brand reputation, mislead customers and undermine public confidence.

To reduce the risks associated with AI chatbots, organizations should consider the following actions:

- **Monitor and test regularly.** Organizations should continuously evaluate chatbot performance through automated checks, real-time monitoring and manual

audits. They should also conduct scenario-based testing with realistic customer interactions.

- **Ensure human oversight.** Organizations should establish clear protocols for human involvement in chatbot workflows, particularly for sensitive, complex or high-impact interactions.
- **Use clear disclaimers.** Organizations should clearly inform users that chatbot responses are generated by AI and may not constitute professional or authoritative advice.
- **Limit chatbot authority.** Organizations should tightly control what actions chatbots can perform and implement robust safeguards to keep chatbots within approved boundaries.
- **Train chatbots with high-quality, diverse data.** Organizations should train chatbots with accurate, current and context-specific data relevant to their products and services. Data should include representation across demographics and geographies.
- **Implement robust data privacy measures.** Organizations should implement strong safeguards to protect user data during chatbot interactions, including by collecting only the information necessary to fulfill their operational purpose. They should also obtain explicit user consent, offer opt-in and opt-out mechanisms and allow users to control their data.
- **Create incident response plans.** Organizations should develop specific incident response plans to manage the risks associated with chatbot failures.
- **Monitor and address disinformation campaigns.** Organizations should implement strategies to detect and mitigate AI-driven disinformation.

Proactive risk management is essential for organizations using AI chatbots. It helps protect customers and build trust by minimizing harmful errors. By anticipating and addressing these risks early, organizations can avoid costly legal and regulatory repercussions and support sustainable AI adoption. Contact us today for more risk management information.

# Preventing and Addressing MIC in Fire Sprinkler Systems

Fire sprinkler systems are a frontline defense against fire-related risks and are critical in protecting people and property. To help ensure these systems are operational, it is essential to be aware of threats that can damage them. One threat, microbiologically influenced corrosion (MIC), is significant but often overlooked. Over time, MIC can compromise the integrity of a sprinkler system, leading to leaks, blockages and even complete failure. Awareness and proactive management of this issue are essential for long-term safety and performance.

MIC is a form of corrosion caused, concentrated or accelerated by the presence and activities of microorganisms. These microbes can create highly corrosive environments that can erode metal. The corrosion often occurs in stagnant or low-flow areas of the piping, where biofilms can more easily establish and thrive. MIC can be found in dry pipe, wet pipe and pre-action systems.

Over time, the microbiological activity can lead to pitting, tuberculation (the formation of iron-oxide mounds on a pipe's interior), and the degradation of pipe material, which can compromise the integrity of the sprinkler system. MIC can also cause obstructions in the piping, reduce water flow, cause leaks or malfunctions, and lead to system failure.

New fire sprinkler systems are not immune to MIC, and preventing these instances requires proactive design, installation and maintenance strategies. *NFPA 13, Standard for the Installation of Sprinkler Systems*, published by the National Fire Protection Association (NFPA), requires water supplies for sprinkler systems to be evaluated for the existence of microbes or conditions that support MIC. Property owners should work with licensed professionals to develop a process to control MIC when these conditions are detected. Options include:

- Installing piping that won't be affected by MIC microbes
- Treating all water that enters the system using an approved biocide
- Implementing an approved plan for monitoring the interior conditions of the pipe at established time intervals and locations

- Installing corrosion monitoring stations and having an inspection program using those stations

Additionally, systems should be designed to prevent air pockets and stagnant water zones and ensuring consistent flow throughout the piping network. Installing fire protection systems with pipes and sprinklers that use corrosion-resistant materials can also prevent or delay MIC.

Warning signs of MIC can be subtle and easy to miss. Common indicators include leaks, water discoloration, foul odors, internal deposits, exterior corrosion and recurrent issues despite regular maintenance. Regular system inspections, especially in areas prone to low flow or stagnation, are essential for detecting early signs of MIC. Regular flushing, water quality monitoring at strategic locations (e.g., system riser main drains, the underground water main loop, remote connection points, fire pump reservoirs and tanks) and routine visual inspections of system components (e.g., joints, pipe fittings and sprinkler head orifice seats) can help detect MIC. Property owners should adhere to the requirements of *NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*, which requires regular inspections to detect early signs and symptoms of corrosion.

If MIC is confirmed, early intervention is key to preventing long-term damage and maintaining the reliability of fire protection systems. Common treatment options include flushing the system, chemical cleaning with nontoxic and environmentally friendly chemicals and replacing infected sections of piping. In some instances, chemical treatment is not recommended because it can accelerate pipe corrosion.

Long-term MIC prevention may also include modifying system components or flow patterns to reduce stagnant zones and improve water circulation. Consistent documentation and follow-up inspections are key to ensuring the system remains reliable and compliant with fire protection standards. Most importantly, property owners should work with a qualified contractor with experience in treating MIC in fire sprinkler systems.

Preventing and responding to MIC in fire sprinkler systems requires a proactive approach. By implementing best practices and remaining vigilant, building owners and facility managers can safeguard the integrity of the sprinkler system and help ensure reliable fire protection. Contact us for more risk management solutions.

MIC can compromise the integrity of a sprinkler system, leading to leaks, blockages and complete failure. Awareness and proactive management of this issue are essential for maintaining long-term safety and achieving optimal performance.