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THE ISOLATOR

As the new year gains momentum, it brings with it a renewed sense of purpose and the determination to stay aligned with our goals. With the **holy month of Ramadan** fast approaching, we are reminded of the timeless values of reflection, compassion, and community that guide us as we move forward together.

This edition of The Isolator showcases the impactful projects we've delivered, reflecting our commitment to excellence and innovation. From cutting-edge installations to the expansion of our portfolio in noise and vibration solutions, seismic restraints, HVAC systems, and custom fabrications, we continue to address complex challenges and exceed expectations across the GCC and beyond.

As we embrace the opportunities ahead, we remain steadfast in our mission to deliver quality, build trust, and drive meaningful solutions for our clients.

We hope these updates inspire and inform, and we look forward to collaborating with you to make 2025 a year of progress, innovation, and success.

Enjoy the read!

STAFF ACCOMMODATION, ABU DHABI, UAE



Kinetics successfully delivered advanced noise and vibration control solutions for a large-scale staff accommodation development in Abu Dhabi's Western Region. This high-profile project, part of a critical national infrastructure initiative, required stringent performance standards to ensure a quiet, comfortable, and sustainable living environment for residents.

To achieve these goals, Kinetics provided and installed high-performance vibration isolators to minimize structural vibration from mechanical equipment, such as chillers and pumps.

Additionally, inertia bases were implemented to stabilize heavy equipment and enhance operational efficiency, while acoustic lagging was applied to reduce airborne noise from ducts, pipes, and mechanical systems.

By integrating these solutions, Kinetics significantly improved noise control, structural integrity, and overall occupant comfort, supporting the project's broader commitment to sustainability and excellence in living standards

LARGE HEALTH CARE FACILITY IN JEDDAH, SAUDI ARABIA



A cutting-edge healthcare facility in Jeddah required advanced noise and vibration control solutions to maintain a quiet, stable, and comfortable environment for patients and medical staff. Given the complexity of the project and the high-performance standards required, specialized acoustic and vibration mitigation measures were essential to ensure uninterrupted medical operations and patient well-being.

To address these challenges, Kinetics provided floating floors to reduce airborne noise transmission, precision-engineered inertia bases to enhance the stability of heavy medical equipment, pipe expansion joints to accommodate thermal movements, and high-performance vibration isolators to mitigate mechanical vibrations. These solutions not only improved acoustic performance but also contributed to the longevity and efficiency of critical mechanical systems within the facility. By integrating innovative engineering techniques, the project successfully created a noise-free and structurally resilient environment, ensuring an optimal space for healthcare excellence.

TECHNICAL DISCUSSION: Shaking Up MEP Design: The Critical Role of Seismic Resilience

Seismic Resilience for MEP Systems: Why It Matters

Imagine this: During the 1994 Northridge Earthquake, over 1,500 hospitals across California reported significant damage to their MEP systems—broken pipes, malfunctioning HVAC systems, and disrupted power supplies. These systems, often hidden behind walls and ceilings, can become the silent victims during seismic events, and when they fail, it can have catastrophic consequences.

THE HIDDEN VULNERABILITIES OF MEP SYSTEMS

It's easy to think of an earthquake's damage as structural—collapsed walls, cracked floors—but the real challenge often lies in the MEP systems that keep a building functional. For example, in the 2011 Christchurch Earthquake, the city's public infrastructure was severely impacted by broken water mains and damaged power lines, but it was the compromised hospital MEP systems that caused the most disruption. These systems, essential for everything from emergency lighting to medical equipment, were completely knocked out in some cases.



WHY MEP DESIGN MATTERS IN SEISMIC ZONES

Hospitals, schools, and high-rise buildings, especially in earthquake-prone regions, rely on MEP systems to continue functioning during and after a seismic event. The critical role they play was evident in the 2010 Haiti Earthquake, where many buildings suffered structural damage, but the loss of functional plumbing and electrical systems was just as devastating. A failure in these systems can leave a building uninhabitable, or worse, unable to serve as a refuge in times of crisis.

REAL-LIFE IMPACT: THE 1995 KOBЕ EARTHQUAKE

The 1995 Kobe Earthquake in Japan is another stark example. Although the city's buildings had been designed with modern seismic codes, many older hospitals saw their MEP systems fail. Medical gas lines broke, electrical circuits were compromised, and water systems became inoperable—hampering rescue efforts and causing further harm. In contrast, newer facilities with updated seismic considerations for their MEP systems experienced much less damage, underscoring the importance of proactive design.



FIGURE 1 IMAGE FROM THE KOBЕ EARTHQUAKE

FATAL CONSEQUENCES OF NON-COMPLIANCE: THE 1976 TANGSHAN EARTHQUAKE

One of the most tragic examples of non-compliance to seismic standards occurred during the 1976 Tangshan Earthquake in China. The earthquake, one of the deadliest in history, claimed the lives of over 240,000 people. A significant contributor to the high death toll was the failure of MEP systems in the buildings. Many hospitals and residential buildings collapsed, but those that did not collapse still faced catastrophic MEP failures. In one tragic case, a hospital that survived the structural damage saw its medical gas systems and electrical systems fail. Without the ability to administer life-saving oxygen or power essential medical equipment, many patients died. This highlighted the dire consequences of neglecting seismic resilience in MEP design, where non-compliance can lead not just to destruction, but to loss of life.

THE CHALLENGE: COORDINATING BETWEEN STRUCTURAL AND MEP DESIGN

What many don't realize is how complicated it is to ensure seismic resilience for MEP systems. While the building's structure might be designed to withstand the forces of an earthquake, MEP systems must be considered separately. They are often more vulnerable due to their materials and their connections to other systems, making coordination between structural engineers and MEP designers essential for ensuring that these systems are as resilient as the building itself.

CONCLUSION: BUILDING FOR THE UNEXPECTED

Seismic preparedness isn't just about adhering to codes—it's about anticipating the unexpected. As demonstrated by the past, neglecting to address seismic design in MEP systems can lead to catastrophic failures and, as seen in the Tangshan Earthquake, even loss of life. By prioritizing resilience in these systems, we not only protect the infrastructure but ensure the safety, comfort, and continuity of service for those who rely on the building every day.

PRODUCT HIGHLIGHT

Kinetics KSWC Seismic Cables: Keeping the Pulse of Safety Vibrant

When you think of seismic restraint systems, your mind likely drifts to steel braces, snubbers, or anchors—reliable, steadfast, and essential. But what about the unsung heroes of the seismic world? Enter **Kinetics KSWC Seismic Cables**—a game-changer that is both dynamic and innovative in its approach to handling seismic forces. Let's dive into the world of these cables and explore how they maintain safety while being a subtle force of nature in seismic applications.



WHAT ARE KSWC SEISMIC CABLES?

Kinetics KSWC Seismic Cables are high-strength, flexible cables designed to provide lateral restraint for various types of equipment, piping, and duct systems during seismic events. Unlike traditional rigid restraints, these cables work on the principle of flexibility, allowing them to absorb and dissipate seismic energy, reducing the risk of damage. Think of them as the "shock absorbers" in your building's seismic safety system.

WHY GO WITH SEISMIC CABLES?

1. Flexibility Meets Strength

KSWC cables are like the perfect yoga practitioners—highly flexible and able to bend without breaking. But don't let that flexibility fool you. These cables are engineered to handle serious seismic forces. They offer the ideal balance of flexibility and strength, ensuring that your piping, equipment, or ducts stay securely in place during ground shaking.

2. Ideal for Space-Saving

Think of seismic restraint systems like a puzzle. Kinetics KSWC Seismic Cables allow for a more compact design, saving space compared to traditional bulky restraint systems. Their flexibility means they can easily be installed in tighter spaces, reducing the need for complex mounting solutions. For projects where space is at a premium, these cables offer a practical and efficient solution.

3. Durability Under Pressure

Just like the best sports teams, the Kinetics KSWC Seismic Cables can perform under pressure. These cables are crafted and designed to handle intense seismic activity without breaking a sweat. They are built to last, ensuring that they'll remain reliable even in harsh conditions.

4. Cable's Versatility: From Hospitals to Airports

Imagine a hospital, where lives depend on the uninterrupted operation of medical equipment. Seismic cables ensure that in the event of an earthquake, critical systems remain in place and continue functioning. Or think of an airport, where the cables help secure HVAC systems in the event of seismic activity, ensuring



the safety of thousands of passengers. From medical facilities to busy airports, seismic cables play a vital role in keeping everything in check.

5. **The Art of Installation: Easy Does It**

A unique feature of seismic cables is their ease of installation. They don't require complex tools or specialized training. Imagine putting together a LEGO set—it's straightforward and flexible, allowing you to create whatever configuration fits the need. Kinetics KSWC Seismic Cables are designed for quick and efficient installation, saving both time and labour costs.

6. **Seismic Trivia**

Did you know? The concept of seismic restraint isn't new. Ancient cultures, like the Romans, had their own form of seismic design in the form of flexible, interlocking stone walls. While they didn't have steel cables, their ingenuity set the foundation for today's seismic systems. Fast forward to modern times, Kinetics has taken this ancient wisdom and created a flexible and robust system that is both practical and powerful.

CONCLUSION: FLEXIBILITY WITH A PURPOSE

Kinetics KSWC Seismic Cables are not just another piece of equipment—they're part of a comprehensive solution designed to ensure safety and efficiency during seismic events. Whether you're looking to protect critical infrastructure like hospitals or simply looking for a space-efficient solution for your building, these cables rise to the occasion, flexing their strength when it counts the most.

So next time you think of seismic safety, don't forget about these flexible heroes. They may not be in the spotlight, but they're always in action, keeping your building and equipment secure, no matter what the ground may throw at you!



"Kinetics executed an excellent Job, right from inquiry to aftersales support."

**Chethan Anchan
KHANSAHEB CIVIL ENGINEERING**

"Kinetics ensured prompt responses and seamless handling of submittals and inspections without follow ups."

**Engineer Rakesh R.D
BW INTERIORS MEP**

**"Kinetics delivered excellent service in handling consultant comments and inquiries, ensuring smooth coordination."
Engineer Johnson Pinto**

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