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**THE ISOLATOR**

Greetings from Kinetics Group!

Welcome to the 67th edition of The Isolator. This month, we are thrilled to bring you a curated selection of updates and insights straight from our specialized world of noise and vibration control.

Dive into our latest projects that push the boundaries of innovation and explore groundbreaking products designed to meet our client's most demanding project needs. This edition is packed with insightful updates on our most recent projects, and our products related technical discussions.

We also invite you to check out our latest YouTube video, where we highlight why Kinetics is an exceptional place to work. Don't forget to like, subscribe, and hit the notification bell to stay connected!

Thank you for your continued support and partnership.



## ABU DHABI FUTURE SCHOOL, PHASE 9



Kinetics Group LLC partnered with M/s. Nael Electromechanical LLC to deliver a comprehensive suite of products and engineering solutions. This collaboration included performing detailed stress analysis on both the chilled water riser and horizontal chilled water piping systems.

The project was part of Package 6, Phase 9 of the Abu Dhabi Future School Program. These schools are designed with sustainability in mind, utilizing eco-friendly materials and energy-efficient systems, aligning perfectly with Abu Dhabi's broader environmental sustainability goals.

Kinetics successfully delivered vibration isolators to eliminate the transmission of vibrations from Fresh Air Handling Units (FAHUs). Additionally, we installed a floating floor beneath the chillers, effectively reducing airborne noise in the area.

Nael Electromechanical has been instrumental in shaping some of Abu Dhabi's most prestigious projects through their expertise in the design and execution of turnkey construction, steel structures, interior fit-out, MEP infrastructure, and facility management.

Kinetics Group sincerely appreciates Nael Electromechanical LLC for their unwavering trust and collaboration in executing this project partnership.

## SHURA HOTEL 3, RED SEA, SAUDI ARABIA



The project features the development of a 159 SLS resort as part of Program 6 on the Red Sea's Shura Island.

Formerly known as Shura West Hotel 3, this luxury resort will incorporate innovative solutions to address environmental and operational challenges.

Shura Island, the central hub of the Red Sea, is uniquely shaped like a dolphin within an archipelago of 92 islands. It will be home to 11 premium, lifestyle-focused resorts and offer an array of experiences, including an 18-hole golf course, marina, beach club, and upscale retail options.

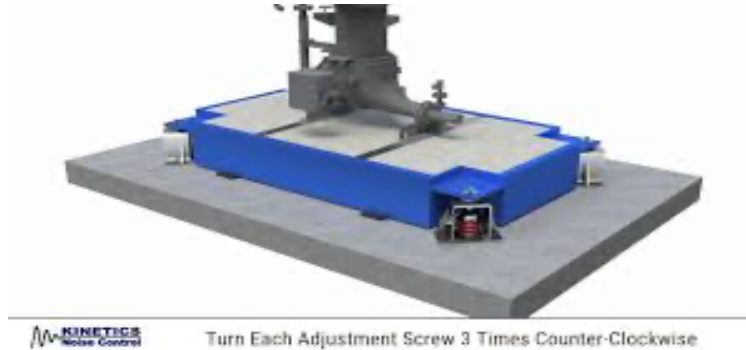
In partnership with Arwada Trading, Kinetics provided specialized expansion joints to address thermal expansion challenges in riser pipes. These solutions will ensure reliability and durability, accommodating temperature variations and maintaining system integrity across a wide range of conditions. Arwada Trading is the main distributor of Kinetics Products in the Kingdom of Saudi Arabia.



# TECHNICAL DISCUSSION:

## PURPOSE OF INERTIA BASE FRAME FOR HEAVY DUTY EQUIPMENTS

An inertia base frame with a spring vibration isolator is a critical component in managing the vibration and noise control for various mechanical equipment, particularly in HVAC systems and heavy machinery installations. Here's an overview of the technical discussion:



### Purpose and Design:

- An inertia base frame is designed to add mass and rigidity to equipment foundations, thereby reducing the amplitude of vibrations. It is typically constructed from reinforced concrete or steel, depending on the application and load requirements.
- The added mass helps to lower the natural frequency of the equipment-support system, making it more effective at isolating lower-frequency vibrations

### Application:

- Commonly used for pumps, fans, compressors, and other heavy-duty equipment where vibration isolation is crucial to protect the structure and ensure smooth operation.
- The frame's mass and stiffness are tailored to the specific requirements of the equipment it supports.

### Spring Vibration Isolators

#### Functionality:

- Spring vibration isolators are used to absorb and isolate vibrations from the equipment, preventing them from being transmitted to the surrounding structure.
- They work by decoupling the equipment from the building structure, allowing for controlled movement that dampens vibrations.

#### Design Considerations:

- **Spring Rate:** The stiffness of the springs is chosen based on the weight of the equipment and the desired natural frequency of the system.

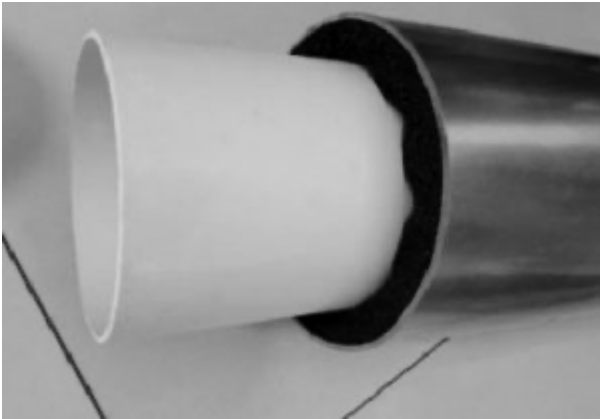


- **Deflection:** Adequate deflection is crucial to achieving effective isolation, with typical design deflections ranging from 25 mm to 50 mm depending on the application.
- **Damping:** Some spring isolators incorporate damping elements to reduce oscillations more quickly, enhancing overall stability.

#### Installation:

- Proper alignment and leveling are critical during installation to ensure even load distribution across the springs.
- The springs are typically mounted between the inertia base and the building structure, with precise positioning to prevent uneven load distribution or potential tilting.

## Product Highlight: Acoustic Lagging for Drainage Pipes



Kinetics model KINLAG model Pipe Acoustic Lagging consists of a mass loaded limp polymer barrier combined with a decoupling material, which consists of open cell, hydrolysis resistant, convoluted polyether PU foam.

This type of material combination is considered very safe and an alternative to fibre-based products which may have varying amounts of formaldehyde content and fibres that can compress and come loose over time. acoustic pipe lagging ensures compliance with BCA and other Specifier and Building Codes' Acoustic requirements.

#### Technical Details of Acoustic Lagging:

- Acoustic Performance -  $[R_w (C, C_{tr}) = 25\text{dB}]$
- Ignitability Index: 0
- Spread of Flame Index: 0
- Smoke Developed Index: 0-5
- Working Temperature:  $-20^{\circ}\text{C}$  to  $120^{\circ}\text{C}$
- Flammability / Fire Ratings as per AS1530.3, 1999 Australian Building Codes

#### Common Applications:

- Commercial Buildings—Offices
- Shopping Malls
- Hospitals
- Hotels
- Residential Apartments
- Mixed use Buildings
- Multi-Level Unit Housings
- Occupied Spaces
- Any Pipes/Ducts that requires breakout sound reduction



# Kinetics YouTube

## Working at Kinetics

We are thrilled to present our latest video, offering a compelling look into why joining the Kinetics family is an excellent choice. Whether you're considering a career with us or just curious about our dynamic workplace, this video provides an insightful preview of what you can expect. Don't miss out—watch the video and see for yourself why Kinetics is the place to be!



<https://www.youtube.com/watch?v=MOwi-qVwu9o>

#knowmore

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**“Overall, Kinetics was indeed supportive, from responding to inquiries to product delivery and post-sale support.”**

**Engineer Alan Rajan Mathew  
(International Electromechanical Services)**

**"Kinetics provided exceptional service, promptly responding to inquiries and ensuring the timely delivery of the Submittal and Sample Board".**

**Ahmad Bayomy  
(TechnomechElectroMechanical Works LLC)**

**“Kinetics made it effortless to follow up on submittal inquiries, site supervision, and inspection letters.”**

**Engineer Prijith John (Hills & Fort Construction LLC)**

**"Kinetics delivered outstanding end-to-end services ”**

**Mahmoud Assaf  
Al Ashram Contracting LLC**

