Kinetics KIP Fiberglass Isolators

CMSDANSKIN ACOUSTICS

Technical Data Sheet

Kinetics KIP fiberglass noise, shock, and vibration isolation pads offer advantages versus natural rubber, neoprene, and other elastomeric pads. Uniquely permanent and dynamically predictable, due to precise manufacturing methods using inorganic materials, this isolation media provides freedom of design and use unprecedented by any other material.

KIP pads are a high-density matrix of compressed molded fiberglass; individually coated with a flexible, moisture-impervious membrane, designed to allow controlled air movement in the fiber media. The pumping action of air between fibers provides viscous damping, reducing motion caused by transient shock and vibration.

A range of sizes, densities, and spring rates are available to provide load-bearing capacities from 0.35 to 35kg/cm^2 of pad surface area. The matrix of glass leaf springs is bonded at all fiber intersections with a water-resistant binder during the molding process, under controlled heat and pressure. The material is then stabilized by ten (10) pre-compression cycles to 300% the maximum published load capacity for the media.

KIP isolation pads uniquely allow a wide range of loading on a given isolator while maintaining a constant natural frequency. Natural frequency of KIP fiberglass media is controlled by isolator thickness rather than static deflection as with linear steel springs. To determine the natural frequency for other than 25mm isolator thickness, the 25mm thick isolator natural frequency is divided by the square root of the actual thickness to be used, i.e. the natural frequency of a 102mm thick isolator is one-half the natural frequency of a 25mm isolator at the same load for the same density material.

KIP pads are unique as a structural support in that applied loads are substantially below pre-compression loads thus providing 200% overload safety factor. The result is permanent resiliency with constant natural frequency.

KIP fiberglass isolation pads are non-corrosive, non-combustible, non-absorbent, and resists rust, ozone, mildew and fungus. It is vermin proof, will not shrink, swell, or decompose. Isolation characteristics of the media are constant over a temperature range of -40°C to 121°C.

APPLICATION

Kinetics KIP fiberglass isolators can be applied in a wide range of noise, shock, and vibration isolation uses. KIP isolators are recommended whenever predictable dynamic response and permanent load support characteristics are important. KIP isolators are available in a wide range of standard and special mount configurations for various load ranges, natural frequencies, and other support characteristics.

FEATURES and BENEFITS

- Inorganic fiberglass media
- Flexible, moisture-impervious membrane
- Constant natural frequency
- Permanent and predictable resiliency
- Predictable dynamic response
- High-energy dissipation
- Controlled viscous damping
- Load capacities 0.35 to 35kg/cm^2

Noise Isolation

Typical applications include the use of KIP fibreglass isolators intergrated into the RIM Floating Floor System, manufactured in the UK.

Vibration Isolation

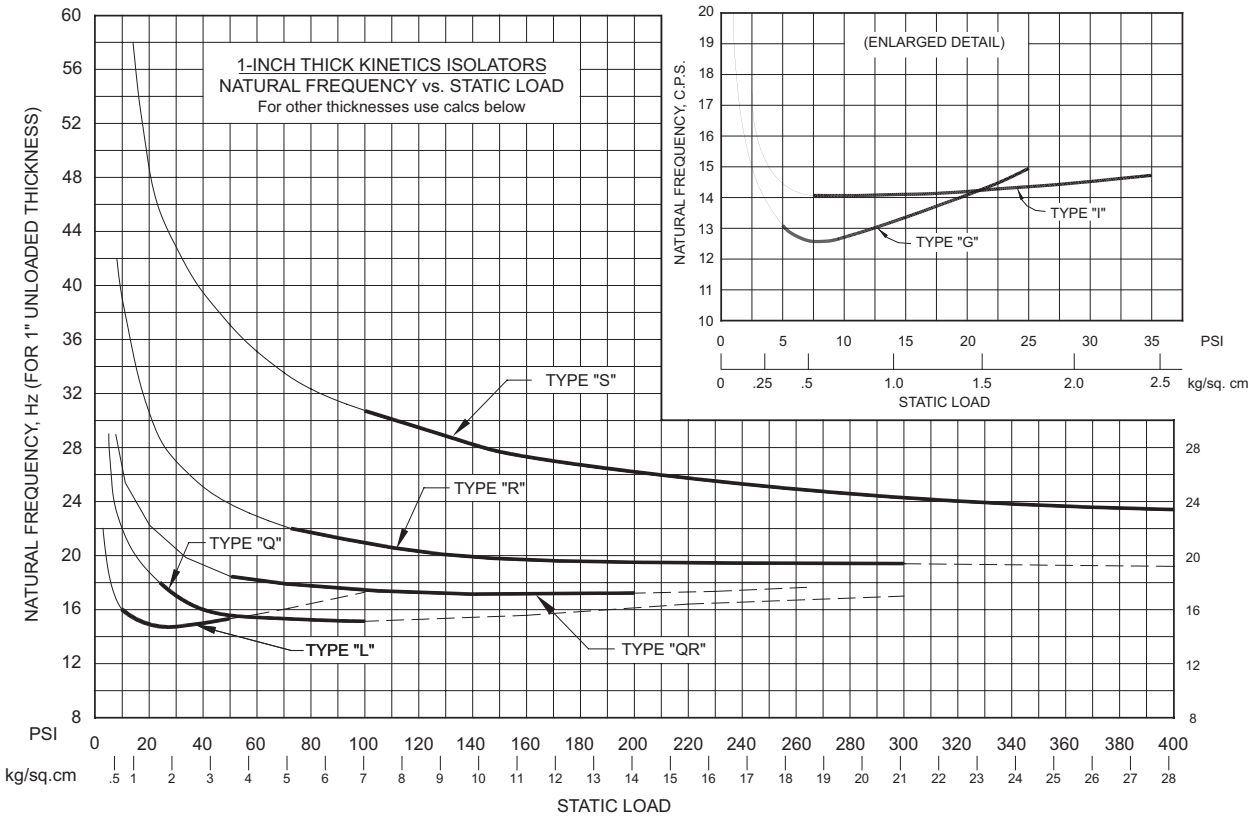
Typical applications include the use of KIP fiberglass isolators as support mounts for high speed fans, pumps, and chillers, on grade, having operating speeds of 1750 RPM and higher.

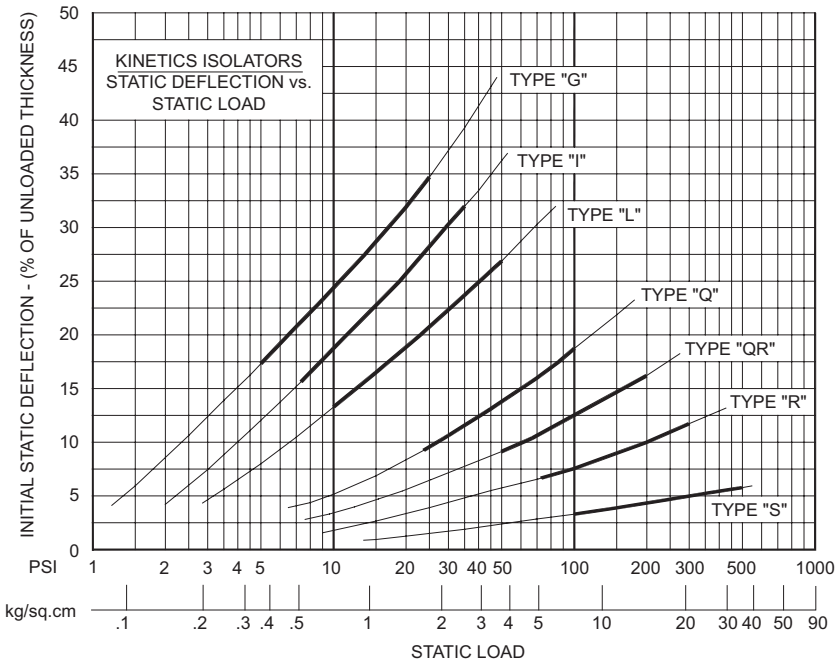
Shock Isolation

Typical applications include the use of KIP fiberglass isolators as support mounts for punch presses, metal shears, and similar industrial process machinery.

KINETICS Noise Control®

KIP Pad Natural Frequency and Deflection





To determine natural frequency for other thickness KIP pads.

- for 13mm pads, multiply 25mm natural frequency by 1.41
- for 38mm pads, multiply 25mm natural frequency by 0.82
- for 51mm pads, multiply 25mm natural frequency by 0.71
- for 76mm pads, multiply 25mm natural frequency by 0.58
- for 102mm pads, multiply 25mm natural frequency by 0.50

Note: Enlarged portion of curves indicates the optimal load range for various Model KIP isolators used in typical applications. Model KIP selection for floors exposed to high impact/shock loads will vary depending on the floor construction. Factors such as mass and stiffness of the floor assembly as well as stiffness of the entrapped air can affect the actual loads to which individual isolators are exposed under dynamic conditions.

Lightweight plywood floor assemblies on KIP are not recommended for heavy shock load (weight drop) applications.

Please contact CMS Danskin Acoustics for design guidelines to ensure proper isolator selection for this type of service.

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KINETICS Noise Control

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