Fabreeka Products and Services – *Building & Construction*

If you would like additional information related to these industries or any other industries/applications, please visit our website at www.fabreeka.com or contact us at 1-800-322-7352 or 781-341-3655.

Building and Construction

Fabreeka's isolation solutions prevent disturbing shock and vibration from causing structural damage or acoustic discomfort for occupants in buildings and other structures. Many buildings have been successfully isolated from subway or other environmental inputs by providing materials for the base slabs and column footings. Fabreeka pads, washers and bushings have long been used to eliminate objectionable structure-borne noise in buildings from the operation of passenger elevators.

Fabreeka Bridge Rail pads, Lamp Post pads and Bearing pads are an excellent and economical way to dampen shock and vibration induced by wind and traffic. Additionally, Fabreeka Drain Trough material is specified as a flexible water drainage system for bridge applications.

Fabreeka structural expansion bearings provide a durable sliding surface with a low coefficient of friction to allow for thermal expansion and contraction for buildings, bridges, pipe supports and vessels.

Cranes

Fabreeka Crane Rail pad material is used to reduce vibration, relieve girder stress, improve load distribution and eliminate mechanical wear and tear associated with bridge, gantry and ore crane operation, thereby reducing maintenance costs.

Industrial Machinery & Equipment

Fabreeka isolation materials and machine mounts provide vibration isolation and leveling for proper machine tool installation. Designing foundations supporting machine tools requires sound engineering principles for a reliable result. Fabreeka engineers can help with material recommendations and foundation design.

Power Generation

Fabreeka isolation materials are used to control structure-borne vibration and noise generated from power and distribution transformers and reactors. Isolation pads, washers and bushings can be used in wind turbines to provide vibration isolation under gear boxes and generators. Fabreeka materials are also used to prevent metal to metal contact on rotating parts with the rotors to reduce wear and fatigue. Fabreeka engineers also work with consultants who design power generation facilities involving steam and gas turbine foundation isolation and other turbo-machinery vibration attenuation requirements.

Rotating/Vibrating Equipment

Fabreeka engineers work closely with OEM's as well as end users to obtain the operating frequencies, dynamic (unbalanced) loads, critical alignments and isolation mount specifications for a complete isolation solution for equipment that produces vibration during operation. Applications requiring isolation pads, washers and bushings include fans, blowers, motors, reciprocating and screw type pumps and compressors, engine-generator sets, gear boxes and generators.

Transportation

In the railroad and public transportation industries, vibration and noise resulting from wheel rail loads can be easily transmitted through the vehicle journal boxes and springs and into the vehicle body. Fabreeka isolation pads have been used for over 50 years on journal boxes, spring planks, center plates and under bolster springs to reduce vehicle/car wear and fatigue. Fabreeka bearing pad materials are also widely used as tie plate pads under rails and crossings and as bridge deck pads on railroad bridges.

Fabreeka Products and Services – *Heavy Industry*

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Metal Forming

Fabreeka isolation pads in the form of bumpers or mounting pads have been successfully used on metal forming equipment to reduce shock and vibration transmission within a machine's structure. Fabreeka pad is widely used in forging hammers to absorb the energy of the blow and protect the hammer supporting structure.

Mining

Fabreeka pads, washers and bushings have long been used to eliminate impact shock and vibration in a wide variety of mining operations including draglines/shovels, mine cars, crushers, chutes/hoppers, grizzlies, rock breakers, feeders, screens, pulverizers and smelting operations. In these applications where foundations and structures are broken or damaged due to large impacts, Fabreeka pads are used to protect and prolong equipment use. Fabreeka pad material is also used to improve the service life of the upper and lower rails on draglines and shovels by reducing the high roller load stress.

Petroleum/Gas

To eliminate excessive vibration within gas transmission and petrochemical piping, a properly designed mechanical restraint is required. The application of Fabreeka Preformed Fabric Pad within these mechanical restraints can provide reduction of piping vibrations, thermal flexibility, reduction of unwanted noise and prevent non-uniform clamp contact pressure. Fabreeka Pad is available in a range of thicknesses to accommodate any design application and is available with a PTFE Teflon® surface for thermal expansion and insulation for high temperatures.

Fabreeka also provides isolation materials for drilling rig equipment such as mud pumps, compressors, generators and other rotating equipment, to make the rig as "quiet" as possible and reduce structure fatigue.

Pulp & Paper

Mechanical and chemical pulp and paper mills both have equipment in their processes which produce high levels of vibration and shock. Fabreeka pads, washers and bushings, as well as Fabcel pads have long been used to eliminate impact shock and vibration in many pulp and paper applications including debarkers, chippers, hogs, conveyors and pump stations.

Previous installations have shown that Fabreeka pads have reduced high frequency vibrations by as much as 80% in critical printing press applications, while remaining stiff enough to maintain press alignment and trim.

Steel

In a steel mill, Fabreeka pad is used to protect equipment, structure and foundations from damage by impact shock and vibration. The design and installation of Fabreeka pad greatly reduces fatigue of metal parts and deterioration of concrete supporting structures, thus lengthening their service life and reducing downtime and cost of maintenance. Fabreeka pad is specified as a bumper to reduce impact shock on cold bar shears, mill tables and coil drops where steel ingots or coils of steel are handled and dropped, creating large forces and stresses within the equipment. Fabreeka engineers work closely with consultants who specialize in steel mill production to provide shock and vibration solutions for equipment within the steel manufacturing process.

Fabreeka Products and Services – *Sensitive/Precision Equipment*

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Metrology

The measuring speed and accuracy of Coordinate Measuring Machines (CMM's) are improving every year. Newer CMM's are being designed and built to be shop floor "hardened" so they can function with repeatability right on the production floor. Vibration is one environmental factor which can compromise a CMM's accuracy and repeatability. When isolation is required, it is typically low frequency (less than 30 Hz) vibration that requires attenuation. Fabreeka pneumatic isolators provide significant vibration isolation for metrology equipment requiring low frequency vibration control.

Microscopy

Due to the ultra-high resolution requirements in biomedical research and other sciences, microscopes can be installed on low frequency, pneumatic isolation systems where human footfalls and structural vibration can otherwise decrease performance and accuracy. Cell biologists and electro physiologists conducting cell injection, in-vitro, patch clamping and neuro analysis require a "vibration free" environment that can be obtained using a vibration isolation table.

MRI/NMR

Fabreeka has provided vibration isolation solutions for all types of high resolution MRI, NMR and Cryostat equipment ranging in size from 300 MHz to 900 MHz. All pneumatic isolator hardware for NMR applications is made non-magnetic using stainless, aluminum or brass and is designed to interface with the existing magnet support brackets at the desired height.

Precision Equipment

Fabreeka provides precision equipment manufacturers and end users with low frequency vibration and shock isolation systems to maintain the designed accuracy of precision and ultra-precision equipment. Some applications require structural analysis and design of the support structures and frames used in conjunction with the isolation system integrated in the machine design.

Fabreeka Products and Services – *Test Equipment*

Testing

Fabreeka's solutions for auto testing include the design of test equipment support foundations (reaction masses) including structural and dynamic analysis. Applications include dynamometers, rolling roads, road simulators, multi-axis shaker tables and other test equipment, which create large vibration and shock amplitudes.

When performing testing of large spacecraft or hardware that will be launched into orbit, it is necessary to conduct the tests in a space-simulated environment. To achieve this, a vacuum chamber or thermal vacuum chamber is used, which creates an environment to simulate the pressure and thermal effects of space travel in orbit. It is necessary to decouple the spacecraft/payload from the chamber using vibration isolators to attenuate environmental vibration from the testing. In some cases where feasible, the entire chamber with payload is decoupled from the test facility.

Additionally, Fabreeka provides isolation solutions for material testing machines including tensile, compression and fatigue testing equipment that can create vibration and shock.