

## UNISORB® INERTIA BLOCK VIBRATION ISOLATION

To realize the full potential of your production machinery, quality control or laboratory equipment, it is necessary to create an isolated environment that controls vibration and provides a rigid base on which to secure the equipment and obtain accurate alignment. This environment can be created effectively and permanently with the construction of an isolated inertia block.

An isolated inertia block foundation consists of a concrete mass with a suitable isolator. Together these provide a system natural frequency which will isolate the sensitive machine from vibrations occurring in the environment, and control the vibrations from a source machine.

The concrete mass also functions as a rigid anchoring base, required to assure permanent alignment of the machine. This rigidity has become increasingly important as many machine builders have replaced cast iron bases with weldments to accommodate the demand for more varied designs.

### UNISORB® Isolation systems include:

**IB-500** isolation pads designed to employ standard foundation construction techniques to isolate vibrations typical to the manufacturing environment.

**GK Block** foundation isolation, a high efficiency isolator for sensitive equipment or severe environments.

**RG-80** foundation mounts designed for high isolation with extremely heavy loads in roll grinder and other large foundation applications.

## VIBRATION ANALYSIS SERVICES

Sensitive machines in severe environments may require an ambient vibration survey to determine exact site conditions. UNISORB stands ready to help you decide when this service is needed. We can work with the vibration analysis people to assure that the data collected is representative of actual site conditions. UNISORB also has the capacity to perform on site surveys of this nature. Typical surveys include a day at the site to collect data which is recorded for later analysis. The analysis can also be performed on site if necessary for immediate feedback. Contact UNISORB Engineering Department for details.

## FOUNDATION ENGINEERING SERVICES

UNISORB has the capability of developing certified construction foundation drawings that are customized to meet equipment support requirements. UNISORB can also offer the option of unique construction techniques that have been developed to help reduce installation costs. A Finite Element Analysis (FEA) can be performed for each unique machine to assure that the dynamic characteristics of the foundation will be compatible with the machine's operation. UNISORB can also provide in-depth post installation machine diagnostic services to aid in the optimization of machine operations. Contact UNISORB Engineering Department for details.

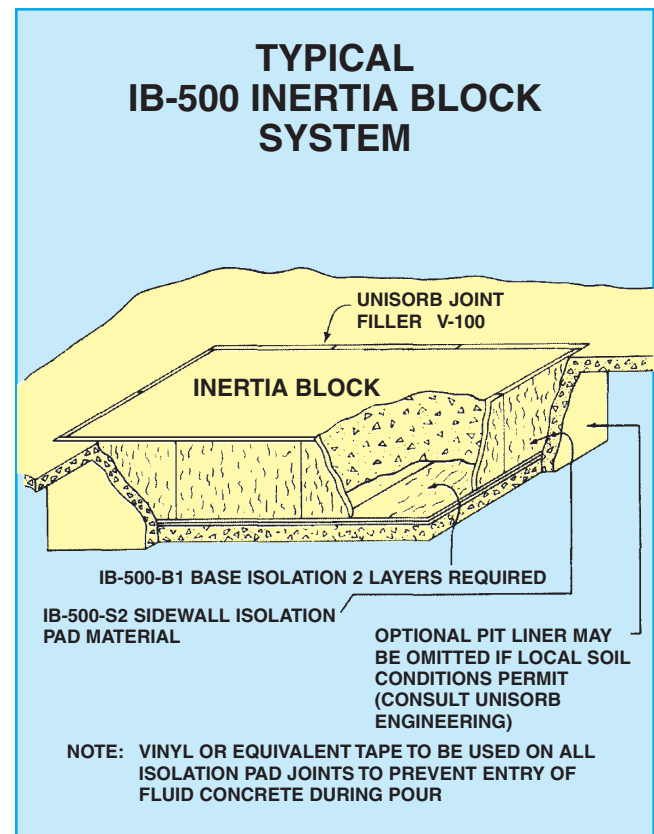
## UNISORB® IB-500 FOUNDATION ISOLATION SYSTEM

UNISORB isolation pad materials offer superior performance because they have been specifically engineered to provide optimum use of the inertia block foundation while using standard construction techniques. These products are unaffected by oils, coolants, cutting fluids and other liquids normally found in the industrial environment. UNISORB isolation pad materials are conservatively rated, providing a life expectancy which in most cases exceeds that of the machinery being installed.

The materials are manufactured in two densities: A less dense material, designated IB-500-S2, is used to isolate sidewalls of the inertia block; A more dense material, IB-500-B1, is applied to the base surface of the foundation (usually two layers). Both materials are manufactured in 1/2" thick sheets and are used in layers where greater thickness is desired. The material is available from stock in 3' x 6' sheets for fast delivery. Special sizes may be cut to exact dimensions at the factory or on the job site.

The isolation material is protected from moisture migrating from fluid concrete by a water resistant covering, which also provides a tough, abrasion and puncture-resistant surface.

Although there are several methods of installation, the proper approach depends primarily on the depth of the inertia block and condition of the soil. UNISORB'S installation engineers offer assistance in determining suitable materials and procedures to meet specific inertia block requirements.



# UNISORB® GK BLOCK FOUNDATION ISOLATION SYSTEM

## LOW FREQUENCY FOUNDATION BLOCK

The GK Block is specifically used for isolating equipment where low interfering frequencies are encountered. They are typically used under concrete foundations supporting either source or sensitive machines. The highly specialized rubber compounds used, unique geometrical shape, and carefully controlled load deflection characteristics make the GK Block an excellent lower cost alternative to installations normally required to reach system natural frequencies as low as 3.5 hz vertical and 1.5 hz horizontal. GK Blocks are rated from 4,000 to 18,000 lbs.

### Examples of GK Block Applications Include:

- Coordinate measuring machines.
- Precision optical equipment.
- Precision grinders.
- Vibrating conveyors.
- Lab equipment.
- Presses.
- Equipment operating in environments of unusually severe shock and vibration conditions.



For other Novibra products ask for UNISORB Novibra Catalog.

# UNISORB® RG FOUNDATION ISOLATION SYSTEM

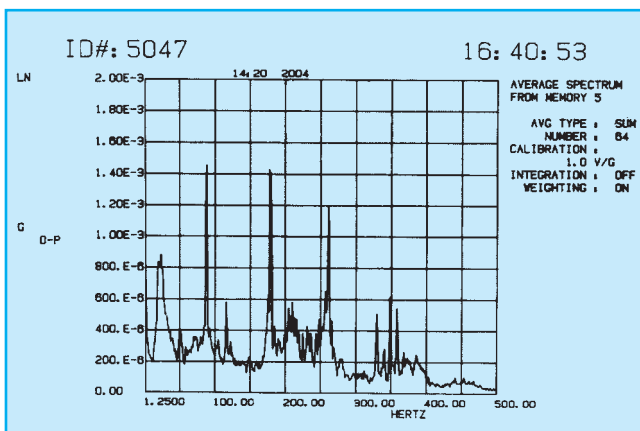
The UNISORB RG is a highly cost effective foundation isolation system designed for extremely heavy loads and can be applied to a broad range of equipment requiring a high degree of isolation. This system utilizes a UNISORB Titan Shock Pad to provide vibration isolation and the UNISORB Fixator to provide load sensing and load distribution. These functions are accomplished by adjusting the Fixator using a torque wrench. The steel frame of the RG housing is designed to permit service of the unit without the requirement of an expensive jacking system for lifting the foundation as required for spring systems. In most cases it is also possible to service the unit without taking the machine out of service. The RG System can be provided with load ranges from 30,000 to 150,000 lbs. per mount.



RG-80A

## TYPICAL RESULTS OF ISOLATED INERTIA BLOCK FOUNDATION ENGINEERING VIBRATION ANALYSIS

The charts show a vibration survey performed by UNISORB on an existing isolated inertia block installation. A grinding machine performing a rough grind operation on a crankshaft was installed on an inertia block isolated as shown on the typical IB-500 inertia block installation details. During the rough grind the machine generated vibrations were measured on the foundation. The left chart shows an average of 64 of these measurements.



Vibration measurements were also taken on the concrete floor immediately surrounding the isolated foundation. The right chart shows an average of 64 of these measurements which were also taken simultaneous to measurements on the left chart.

A comparison of the two charts is a graphic illustration of the high degree of isolation efficiency provided by UNISORB inertia block isolation materials.

