

Mason U.K. Ltd

Vibration control products & acoustic floor systems



Theory and Application





Vibration definition





Vibration definition





Vibration definition





Defining a target





We need a target to design against, which could take many forms...

- VC curves
- dB loss
- Percentage reduction

What can actually be achieved?

Transmissibility





Transmissibility





Transmissibility





Transmissibility – damping



FREQUENCY RATIO (f_d / f_n)



VIBRATION CONTROL Test data





VIBRATION CONTROL "High" Frequency Sources









Formwork System

- Can achieve <10Hz
- Conventional Construction
- Risk of poor installation significantly affecting performance





Formwork System

- Great care must be taken to level mounts before floor is constructed
- Can achieve very high performance
- Maximise mass for stiffness and system losses





Jack-Up System

- Lower risk, better performance
- Quicker and more cost effective for larger areas
- Far more flexible





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VIBRATION CONTROL Floating Floor Systems - Impact





- Springs for negligible damping
- Lower than principle structural resonant frequency
- High mass relative to activity on floor
- Concrete system highest performing

VIBRATION CONTROL Floating Floor Systems - Impact





- Lightweight systems are possible but have limitations
- Improvement over rubber and can be cost effective
- Adjustable system greatly reduces risk of poor installation
- Maximise mass as far as practical

Walls and Ceilings





VIBRATION CONTROL Structural Bearings





- Generally Bespoke
- Size is dependant on natural frequency and imposed load
- Must be considered early on in project
- Designed to last the life of the building

VIBRATION CONTROL Structural Bearings





Structural Bearings





Structural Bearings





Inertia Bases / Specialist Design





VIBRATION CONTROL Mechanical





VIBRATION CONTROL Specialist Design





VIBRATION CONTROL Air Springs







Thank-you for listening

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