Required Calculation Input

There are several pieces of information that are required for Kinetics Noise Control to perform an analysis on an equipment installation. Some of this information is project and/or code related and some is equipment related. The input requirements will vary depending on the project building code.

The appropriate building code for the project is required and is the first piece of information to be determined, as it governs everything else. Since the codes vary with time and local jurisdiction, and because there are periods during which it may be possible to use different codes for the same project, it is critical that the code, and code version, used are consistent with the project requirements.

More recent codes require project site data that impacts the seismic design forces. This includes soil type and, in the 97 UBC, the type and proximity of the nearest fault. This data is not something that can be quickly pulled from a map, and as such is not something that it is available to anyone offsite who is attempting to perform an analysis.

The end use of the building also needs to be identified. Factors are assigned in the course of the analysis based on the end use, and the project impact (safety and/or cost) can be significant if the wrong factors are used.

Once the general information is identified, specific information relative to the equipment and system is required. Besides the obvious geometric and weight data for the equipment (height, width, length, weight, approximate center of gravity location, and locations of any mounting hardware), generic material as to what type of equipment it is and whether its continued function is needed for life safety must be determined. The 95 NBC (Canada), 97 UBC, 2000 IBC, 2003 IBC and TI-809-04 all require that the mounting elevation of the equipment relative to the roof height of the structure be known as well.

In some cases, some of the required data must be estimated. Kinetics Noise Control will attempt to do this conservatively, and in so doing the net result is a more conservative analysis and potentially costly installation. While attempts are made to make “reasonable” and “conservative” estimates, it remains the responsibility of others to compare these values to the actual equipment and indicate to Kinetics Noise Control if something appears to be inconsistent. All values used in the analysis are provided on the output; the responsibility to review this data will normally fall to the general contractor or the engineer of record.

To aid in collecting the appropriate information to perform analyses, the following checklist has been developed and should be filled out for each piece of equipment addressed by the project.

KINETICS Noise Control
DUBLIN, OHIO, USA • MISSISSAUGA, ONTARIO, CANADA

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Seismic Checklist

General Data:

Project:_____Date:_____

Seismic Code:

o SBC o UBC o BOCA o UBC (Calif) o IBC

o NBC-Canada o Other _____

Code Year of issue:

o 1993 o 1994 o 1995 o 1996 o 1997 o 2000

o 2003 o Other _____

Accel factor or Proj location (Av, v, Z, or S_{DS} (.2 Sec Response Accel)):_____

Optional Minimum "G" factors from Spec:_____Horiz, _____Vert

Building Use:_____

Total Occupancy:_____

Addition data for 1997 UBC

If Av = .4, provide distance to nearest fault and source type.

o <= 2 km o > 2 km ,< 10 km o > 10 km

o A (Frequent Lrg Magnitude) o B (Other) o C (Rare Sml Magnitude)

Addition data for 2000 IBC, TI-809-04

Equipment Importance Factor (I_p):_____

Failure of this Equipment will result in a life safety issue:

o Yes o No

Addition data for 1997 UBC, IBC and TI-809-04 codes only:

Soil Type:

o Sa (Hard Rock) o Sb (Rock) o Sc (Dense Soil/Soft Rock)

o Sd (Stiff Soil) o Se (Soft Soil) o Sf (Other-Backfill, etc.)

Provide detail data on soil conditions if Sf selected.

Addition data for the NBC-Canada Code only:

Foundation Factor:

Failure of this Equipment can release Hazardous Materials: o Yes o No

Tag Data:

Equipment Location in Building:

o At or Below Grade

o Above Grade

o If 1997 UBC, IBC, TI-809-04 or NBC Roof Elevation _____

Equipment Mounting Elevation_____

Type of Equipment:_____

Equipment Weight: _____

Height from base of Equipment to Vertical CG:_____

The Equipment will be attached to:

o Concrete Anchors o Through Bolt to Steel or Concrete o Welded

o Bolt to Wood (Thickness, width, and type of wood required.) Include structural drawings if available showing unit location with respect to structural members.

Equipment Geometry (Include Drawing)

REQUIRED CALCULATION INPUT

RELEASE DATE: 10/11/04

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