

IBC VS30 METHOD: WHAT DOES IT REALLY TELL US?

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Putting aside the potential pitfalls and challenges of collecting seismic data, the IBC- prescribed surface wave method for determining average V_s appears to be straightforward. Also straightforward is the application of V_s and N-value tables for determining site class and, arguably, earthquake susceptibility.

However, several questions arise when:

- unusual stratigraphy is encountered,
- bedrock depths fall within the 30-meter depth range,
- presumed relationships of V_s and N-values do not hold up to scrutiny in certain types of saturated sediment, and
- bedrock velocities and site amplification factors are unknown.

Applying the methodology without examining the implications of the above complicating factors is problematic.

This presentation will examine a typical site involving shallow bedrock, unconsolidated overburden with low N-values and V_s values, and unknown bedrock characteristics. Multi-seismic analyses were performed to determine V_p and V_s of bedrock and unconsolidated overburden, as well as to determine the resonance frequency of overburden. The approach used will be examined to evaluate whether the intent of the IBC is met.