

F A C T S H E E T

## Rock Blasting

*Rock blasting is the controlled use of explosives to excavate, break down or remove rock. It is a precise and highly engineered activity that uses a series of smaller blasts which actually work against the following blast to significantly reduce noise and vibration. It is stringently regulated by federal and state law.*

### Measuring and Monitoring to Ensure Compliance

**Seismographs** are placed at the nearest off site occupied dwelling per state law to measure the vibration and overpressure generated by each blast to ensure compliance.

**Ground vibration**, measured as peak particle velocity, is the speed at which vibrations move through the ground, not displacement of the ground.

**Air Overpressure (noise)** is measured in decibels which can also be converted to pounds per square inch. This is the energy released from the blast that moves through the air.

### Will Rock Blasting Damage a House or Well?

The United States Bureau of Mines issued guidelines to ensure homes are not damaged by quarry blasting. These guidelines are based on 50 years of data from scientific studies to determine exactly what levels of vibration or air overpressure can cause damage to residential structures. These standards are based on science, physics and engineering, and have never been successfully challenged in a court of law.

The US Bureau of Mines sets its guidance on the level of vibration or overpressure that can cause even cosmetic damage to residential structures. Virginia law allows vibration from blasting based on the US Bureau of Mines guidelines which range from 0.75 to 2.0 inches per second based on frequency.

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## Rock Blasting *continued*

### Did You Know?

Common household activities exert many times the stress and strain on a home than a quarry blast.

- Slamming a door produces 25% more stress on a residential structure than Virginia's vibration limits for aggregates mining allow.

Weather is the real culprit in routine cosmetic cracking and minor damage in residential structures. Changes in temperature, humidity and wind have been proven to cause the overwhelming amount of normal and routine cosmetic damage that occur in residential structures.

- Outside temperature change of 27 degrees causes stress on a home **8 times** what the state laws allow from a quarry blast.
- Humidity change of 35% is equivalent of a quarry blast over **5 times** allowable state limits.
- Winds of 23 miles per hour stress a home more than **2 times** what the state allows a quarry blast to produce.

### Blasting Facts:

- Blast records are open to state regulatory inspection.
- Each blast is designed and overseen by a professional licensed blaster.
- No explosives are stored on site.
- Bulk explosives are delivered to the quarry in an inert form and activated just prior to being placed in the rock formation.
- A blast lasts about 1-2 seconds.
- Dust from a blast settles in a couple of minutes.
- Large buffer areas around a quarry allow dust from the blasts to settle on site.

***Safety is the paramount concern of a blasting program –  
Your safety, your home's safety and our employees' safety.***