

LIVING NEAR A QUARRY

BLASTING MANAGEMENT

HOW IS ROCK EXTRACTED IN A QUARRY?

There are a number of ways, but a common and effective method is controlled blasting.

The factors that determine whether blasting is necessary are the hardness of the rock, the amount of weathering and the presence of weaknesses in the rock structure.

Blasting is a very precise and carefully planned operation that involves drilling into the rock in a specified pattern and placing explosives in the holes. The explosives are then detonated in a precise sequence, designed to maximise the efficiency of rock breakage while minimising noise, vibration and dust.

One of the advantages of blasting is that it reduces the need to operate large, heavy equipment to extract the rock, which in turn reduces noise and greenhouse gas emissions.

Quarries play an important role in our day-to-day lives. They provide the stone, sand and gravel that's used to build our roads, hospitals, schools and our homes.

To ensure this important infrastructure remains affordable, it's important these natural materials are sourced locally – close to where they are used. That's why you find quarries operating in and around the communities that use their products. For the most part, you wouldn't know they are there.

The quarrying industry operates to strict conditions and is committed to minimising the impact of its operations on local communities and environments. But if you live close to a hard rock quarry, you may notice occasional noise or vibration arising from quarrying activities.

The following information will help to explain why this occurs, and what quarry managers and government regulators do to minimise any impact on those living nearby.



WILL I HEAR OR FEEL A BLAST?

Depending on how close you live to the quarry, you may notice some slight vibration or noise associated with blasting. When blasting is undertaken at a quarry, two types of vibration occur - ground vibration and overpressure. Ground vibration radiates away from the blast site with the effect reducing as the distance from the site increases. Overpressure is an airborne vibration in the form of airwaves, and can cause a vibration response in structures such as residences. While it can be felt, it's not always heard. Airborne waves tend to travel slower in the atmosphere and therefore arrive later than ground vibration.

It's actually in the best interests of quarry management to reduce both these types of vibrations because they substantially decrease the efficiency and economy of the blasting operation. However, even the best designed and executed blasts will generate some vibration.

Your individual response to a blast will depend largely on the vibration's magnification, duration and frequency. However, because the vibration magnitude varies from site to site, no common threshold exists. Your age, health, and to a large extent, previous exposure to similar blasts can be influencing factors, as can the activity you're performing at the time of the blast, for example, a person walking is less likely to feel vibrations when compared to a person sitting still.



WHAT SAFEGUARDS ARE IN PLACE DURING BLASTING?

Strict safety regulations apply with handling explosives. In addition, quarries implement blast impact abatement measures to protect neighbouring homes, buildings and public places.

Blasts are monitored at different locations with sensitive ground and air vibration equipment to ensure they remain within regulations. All blasts are monitored and exceedances must be reported to the relevant regulatory authority by the quarry operator.



CAN IT DAMAGE MY PROPERTY?

Blasting operations have prescribed limits stipulated by the relevant regulatory authority that are well below vibration levels that could cause structural or cosmetic damage. The limits stipulated in quarry licence conditions are well below the levels that could cause damage.

These limitations are applied at any point within the grounds of noise sensitive locations, such as residences or schools or hospitals.

ARE THERE ANY OTHER IMPACTS I SHOULD KNOW ABOUT?

Apart from vibration, the energy used in blasting to move and break rocks may also result in some noise and dust. The further you are away from the quarry, the less you will notice these impacts. A quarry's strict operating conditions require that every action be taken to reduce these impacts to safe levels.

IS THERE SOMEONE I CAN TALK TO IF I HAVE FURTHER CONCERNS?

Your local quarry will have community engagement strategies that include consultation with local residents. This provides a mechanism to raise any concerns you might have and at the same time allow the quarry manager to explain the operation in detail and provide assurances that its operations are safe and proper. You can find out more by contacting your local quarry.



Visit www.cca.com.au to find out more.