



Review of HDC Blasting Conditions 26-51

Condition 26:

Compliance with the limits at an allotment, or notional rural boundary, will necessitate compliance at both residential and commercial or industrial properties. Previous monitoring and compliance was restricted to residential and low rise residential. Although may not impact on this project, may set precedence for any subsequent projects.

Whilst standards such as the Australian Standard AS2187.2 propose vibration (and overpressure) limits for commercial properties, these are higher than those applied for residential properties. The AS2187.2 suggests 5mm/s is applied for residential and 25mm/s for commercial. Suggestion that monitoring and compliance applied to residential properties, or if commercial is considered, alternative limits are applied.

Australian Standard extract is given below:

TABLE J4.5(A)

**GROUND VIBRATION LIMITS FOR HUMAN COMFORT CHOSEN BY SOME
REGULATORY AUTHORITIES (see Note to Table J4.5(B))**

Category	Type of blasting operations	Peak component particle velocity (mm/s)
Sensitive site*	Operations lasting longer than 12 months or more than 20 blasts	5 mm/s for 95% blasts per year 10 mm/s maximum unless agreement is reached with the occupier that a higher limit may apply
Sensitive site*	Operations lasting for less than 12 months or less than 20 blasts	10 mm/s maximum unless agreement is reached with occupier that a higher limit may apply
Occupied non-sensitive sites, such as factories and commercial premises	All blasting	25 mm/s maximum unless agreement is reached with occupier that a higher limit may apply. For sites containing equipment sensitive to vibration, the vibration should be kept below manufacturer's specifications or levels that can be shown to adversely effect the equipment operation

*A sensitive site includes houses and low rise residential buildings, theatres, schools, and other similar buildings occupied by people.

NOTE: The recommendations in Table J4.5(A) are intended to be informative and do not override statutory requirements with respect to human comfort limits set by various authorities. They should be read in conjunction with any such statutory requirements and with regard to their respective jurisdictions.

Condition 28:

Blasting in Areas 2, 3 and 5 associated with developing the portals and underground tunnels and portals is limited 10am to 3pm Monday to Friday and a 2-hour window on Saturday will limit advance to no more than 1 blast per day. The proposed condition is restrictive when compared to the current underground conditions which allow three blasting windows, particularly given that the tunnel will advance and not affect the same persons for an extended period.

Condition 29:

Blasting in the GOP and borrow pits limited to 10am to 3pm Monday to Friday. Confirmation required as to whether this would be restrictive based upon the proposed pit scheduling



For all open pit blasting, the condition has been updated to restrict blasting to 10am to 3pm Monday to Friday and a 2-hour window on Saturday.

Whilst it is acknowledged that overpressure can sometimes be perceived by occupants of buildings as a vibration related effect, experience at Waihi has shown that this has not occurred. The current automated monitoring system is not configured to allow overpressure monitoring. It would require a change to the “bunker” system to allow an external overpressure transducer mounting. Given most monitors are positioned on publicly accessible land, the potential for vandalism to the system which would increase and subsequently result in extended down time of the monitoring system. Based upon the low levels of overpressures that have been measured and the challenges of implementing an automated overpressure monitoring system, it is proposed that a roving monitor with overpressure capability is periodically deployed each quarter to measure the overpressure levels. This would be in addition to the investigation of any complaint that could trigger overpressure monitoring as part of the review process.

Condition 33:

Confirming blast procedures through risk assessments is consistent with best practices.

(e) Blasting at the Waihi operations has been shown to achieve compliant results using minimum risk practices. The current procedures will continue to be implemented with specific follow up reviews undertaken where outcomes differ from expected results. Where fumes, flyrock or elevated vibration occur, the blast designs and results are investigated and where necessary, adjustments to the design included. Given no verified fume events have been observed from any of the previous blasting and only a single flyrock has occurred and has been addressed through collaboration with the HDC and their advisor and has been shown to produce safe and efficient blast practices. It is not proposed that monitoring of fumes and flyrock be undertaken for every blast initiated in the GOP and borrow pits, but rather events that produce unexpected results are analysed and the design adjusted. These analyses may identify monitoring to confirm specific aspects of the design.

Condition 45:

As a general comment, the VMP is to address matters other than vibration, the plan may be better referred to as a Blast Monitoring Plan or Blast Management Plan.