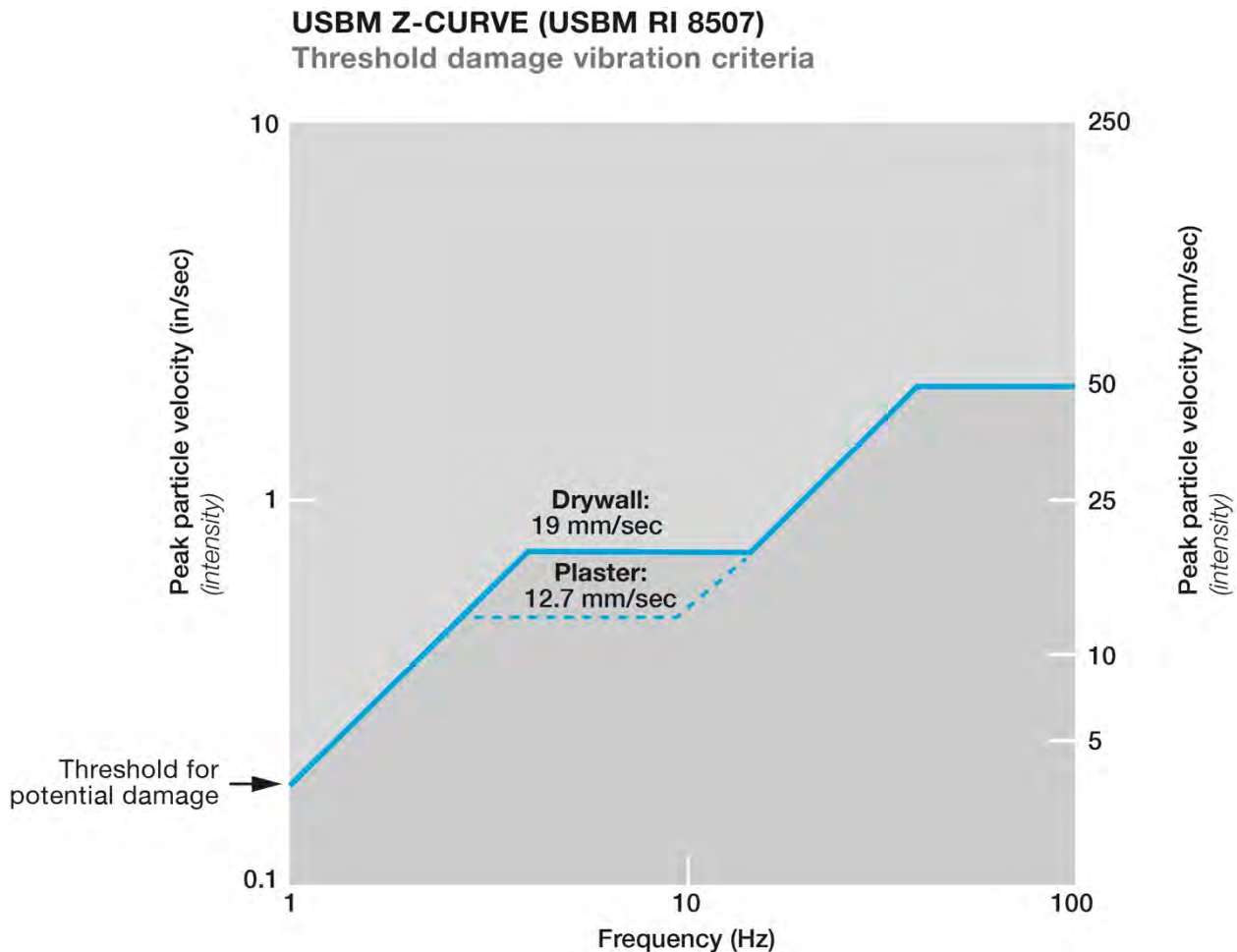


## Understanding the Z-Curve

The Z-Curve line establishes a limit above which damage becomes possible, but it is crucial to note that damage does not automatically occur once this limit is breached. Damage would not actually occur in the average residence until ground vibrations reached significantly higher intensities than those outlined by the USBM Z-Curve. If the Z-Curve criteria is exceeded, the probability of damage is merely introduced and will incrementally increase with higher and higher vibration amplitudes.



Vibrations are occurring around us every day and are highly subjective. Each individual's perception and tolerance will influence the degree to which vibrations are a nuisance or objectionable. Humans and animals are far more sensitive to vibrations than a two-storey timber framed house, bridge or other structures.

## Permanent Monitoring Units

West Calgary Ring Road			92 Cougarstone Manor SW, Calgary, AB		9555 2 Avenue SW, Calgary, AB		128 Cougarstone Manor SW, Calgary, AB		152 Cougarstone Common SW, Calgary, AB		65 Cougar Ridge Close SW, Calgary, AB		109 Cougar Ridge Close SW, Calgary, AB	
26-Apr-21	WCRR-203	16:06	0.76mm/s	113.5dB(L)	0.64mm/s	120.9dB(L)	0.43mm/s	126.7dB(L)	0.24mm/s	114.6dB(L)	0.86mm/s	125.9dB(L)	2.16mm/s	115.6dB(L)
27-Apr-21	WCRR-204	16:05	0.64mm/s	123.2dB(L)	0.25mm/s	98.8dB(L)	1.41mm/s	107.2dB(L)	0.73mm/s	111.0dB(L)	0.44mm/s	109.2dB(L)	0.38mm/s	105.5dB(L)
28-Apr-21	WCRR-205	16:13	1.52mm/s	130.2dB(L)	1.02mm/s	118.7dB(L)	0.93mm/s	133.5dB(L)	0.67mm/s	119.5dB(L)	1.65mm/s	129.2dB(L)	2.29mm/s	129.8dB(L)
29-Apr-21	WCRR-206	16:05	1.27mm/s	127.0dB(L)	2.92mm/s	121.8dB(L)	1.10mm/s	132.5dB(L)	0.88mm/s	120.9dB(L)	1.43mm/s	127.3dB(L)	1.65mm/s	130.5dB(L)
30-Apr-21	WCRR-207	16:07	0.38mm/s	134.3dB(L)	1.65mm/s	128.3dB(L)	0.48mm/s	140.7dB(L)	0.17mm/s	126.7dB(L)	0.41mm/s	133.6dB(L)	0.51mm/s	132.9dB(L)

Please note: None of the controlled blasts on April 26 to 30 generated ground vibrations of a sufficient amplitude to produce a seismograph waveform report.