New electric rotary drills cut dust, noise and vibration without reducing productivity

**Pneumatic rock drill vs. electric rotary hammer drill: Productivity, vibration, dust, and noise when drilling into concrete**


**Key Findings**

- Productivity levels, measured in millimeters penetrated per second, were essentially the same with the electric and pneumatic drills.
- The mean peak noise level for the pneumatic drill, 130.4 dBC, was significantly greater than for the electric drill (117.7 dBC). The noise level for both drills would require hearing protection, but the levels for the pneumatic drill would require double protection (e.g. earplugs and earmuffs).
- Handle vibration levels were much higher for the pneumatic than the electric drill. To comply with ISO vibration exposure limits, a worker would be limited to 8 minutes per day operating the pneumatic drill, while a worker could operate the electric drill for nearly four hours.
- Respiratory silica levels were an astonishing 40 times higher with the pneumatic drill than with the electric drill.
- The authors recommend that structural contractors consider switching from pneumatic rock drills to electric rotary drills for drilling large holes into concrete, such as dowel and rod work, in order to protect the health of construction workers.