

Control of health risk from silica dust in ballast handling – role for ISLG

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What seeking from today?

- Brief outline ORR position on silica in ballast dust
- Stimulate discussion, and share experience and intelligence
- Explore questions around what can and should be done
- Seek leadership and commitment from ISLG to take forward

What and where are the risks?

- *Respirable* crystalline silica in dust
 - Silicosis (scarring of lung, progressive)
 - Lung cancer (second only to asbestos in construction workers)
 - Chronic Obstructive Pulmonary Disease
- RCS in ballast dust but also risks in other construction jobs (e.g. stone cutting, drilling, boring)
- RCS levels generated can vary - parent material, new or spent ballast, whether material wet or dry
- Robust assessment, including personal monitoring, and control essential

Where are risks from RCS in ballast dust?

- Access to limited data on RCS exposures from ballast handling
- **What** are the potential high risk operations
 - **Loading/discharge of new ballast** – manually or mechanically (2009 RRV – at WEL within 40 mins)
 - **Ballast cleaning systems** – particularly cutter bar operator (2010 HOBC - 2 X WEL)
 - **Other ballast regulation activities** – tampers, track stabilisers, stoneblowers, track relaying machines?
- **Who** is at risk?
 - OTP/OTM operator (in enclosed cab?) but also
 - Protection, technical, supervisory, cleaning and maintenance staff ?

What you need to do - COSHH ACoP

- Workplace Exposure Limits under COSHH must be met
 - **RCS 0.1mg/m³** 8 hour time weighted average
 - RCS short term exposure 0.3mg/m³ over 15 minutes
 - Inhalable and respirable dust 10mg/m³ and 4mg/m³ respectively



What you need to do – COSHH ACoP

- Where prevention not reasonably practicable, exposures must be reduced below WELs
 - Give priority to controls which **minimise** or **contain** RCS dust
 - **Engineering and technical control** before putting workers in RPE
- For RCS as suspect carcinogen COSHH requires precautionary approach – for RCS HSE advise that **exposure should be controlled to below half the WEL – 0.05mg/m³ 8 hour TWA** as identifiable risk of developing disease at that level

What you need to do – COSHH ACoP

- Where RPE needed to control residual risk
 - Provide adequate protection
 - Fit properly – training, face fit testing
 - Maintained, examined and tested
 - Compatible with other PPE and demands of job (radio communication?)
- Health surveillance
 - Where risk significant exposure to RCS
 - Competent advice – health professional
 - Use results to protect employees' health

ORR inspection findings

- Issue raised RMT complaint 2010 re HOBC - number of pre-delivery washes new ballast?
- Dust, including silica, included in 2011/12 construction inspection work
- Found evidence of
 - Inadequate COSHH assessments – generic assessments not task specific
 - Insufficient monitoring results for RCS to inform COSHH assessments – lack clarity what measuring
 - Failure to consider risks to others working, or those involved cleaning and maintenance
 - Reliance on RPE – not appropriate to risk or job
 - Failure to consider engineering controls

ORR inspection findings

- Response from those involved has been positive
 - Improvement in RPE provision – FPF3 (minimum standard) plus investigation into compatible air fed
 - Cascade training to staff on risks and control
 - Health surveillance being introduced
 - Recognition of and commitment to further monitoring (needs to represent worse case scenario)
 - On-going work to reduce dust at source
- ORR review occupational health in rail – reactive approach to work related ill health
- Need see shift to prevention and real leadership on health

Moving forward

- Challenges for the main players – contractors and infrastructure managers in complying with COSHH and PUWER 1998
- Work is on-going but all options need explored
- Reduction RCS dust at source (quarry)
 - Substitution – can RCS content in new ballast parent material be reduced?
 - Alternative wetting additives?
- Reduction RCS dust at Local Delivery Centres
 - Improved dust suppression at individual virtual quarries
 - Changes to loading/unloading operations
 - Planning logistics to reduce use of ballast with > fines towards base of stockpile?

Moving forward

- Duties under PUWER 1998 those use or hire work equipment
 - Reg 4 (1) – equipment to be suitable by design, construction or adaptation for actual work provided to do
 - Reg 4 (2) – in selecting equipment, assess the location and risks to health (and safety)
 - Requirements for inspection, maintenance, information, training...
- Better technical and engineering control - maximise enclosure; door seals on cabs and forced air filtration; localised water sprays; remote monitoring to remove people from dusty areas

Moving forward

- Create a demand for engineering controls on new plant, but also...
- Proper consideration to what can be retrofitted on existing plant
- Better understanding of where exposures likely to be significant – shared industry database of monitoring results?
 - Anonymised and secure
 - Type ballast, plant and operation, location, date, weather conditions, job roles sampled, monitoring results
 - Cost effective to share intelligence?

Seeking leadership by ISLG

- Presents an opportunity to
 - show real leadership and commitment on health
 - share knowledge and experience (cost savings?)
- ISLG working group to take this forward?
 - Contractors in conjunction with infrastructure managers
 - Agree action plan
 - Set out expectations/standards for industry players
 - Communicate across rail industry community?