



Railway Ballast Newsletter March 2020

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The Ballast Dust Working Group has been re-established by Route Services – Supply Chain Operations (SCO) led by Caroline Meek, head of safety, health, environment and quality. The group brings together industry members to look at how they can improve and reduce the exposure to ballast dust (now classified as a carcinogen in Feb 2020 in the EH40).

The workstreams being reviewed

- CoSHH risk assessments - to make sure alignment - and incorporation of the new classification this year
- Health and safety by design of rail fleet - water suppression/chemical suppression
- Plant and on track machines health by design - building in requirements for dust extraction/suppression
- Communication and engagement of health messaging



A second meeting was held on the 11 February 2020, including representation by the Office for Rail and Road (ORR), supply chain and rail industry members. The next meeting is planned 1 July'20.

Ballast suppliers and Aggregate Handling Depots (AHD's)

There are several ongoing improvements and workstreams which are either underway or being considered. These include:

- **Secondary rinsing plant at Tarmac Mountsorrel quarry** this has been embedded as business as usual. Ballast is now receiving a secondary rinse on its way to the rail loading point. Initial feedback is that this is helping to increase the ballast quality with reduced complaints regarding the level of fines / dust being reported.
- **Ability of the quarries to speed up the turnaround of sample test results** to provide these to SCO Aggregate Handling Depots (AHD's) prior to the bulk ballast train being unloaded. To certify that any material unloaded onto our stockpiles is compliant with the Network Rail specifications. Where this is not the case – this allows for a quick response to quarantining the wagons, prior to unloading.



- **Business case for testing labs at AHDs** is nearing completion. With support from the supplier quality assurance team in SCO. Once finalised, this will be presented to the SCO Senior Leadership team for discussion on funding and implementation.



Ballast Washing

- **Suppliers are investigating the feasibility of options to wash and/or screen our ballast as it's loaded into possession trains at the AHDs.** The main challenge is creating a practical mobile operation. Implementing a static washer/loader may not be possible at each AHD, as the trains can't be drawn under a static loader as they have the potential to foul other yard operations.

Assessment of ballast dust liquid stabilisers

Earlier this year we were advised of several chemical products that were available on the market to help reduce the release of ballast dust from ballast operations. Unfortunately, there was a lack of quantitative data to support the suppliers' claims. To help guide a decision on the use of an appropriate stabilising agent that could be used to act as a health and safety dust control measure, we employed the services of AECOM to assess the effectiveness of four stabilising agents. Each had the potential to suppress respirable dust and respirable crystalline silica (RCS). The laboratory tests compared each suppression agent with ballast exposed to simulated rainfall as a means of suppressing dust, and an untreated ballast sample, acting as a control.



The tests were carried out under laboratory conditions, using a shake table to consistently provide agitation to the ballast. Concentrations of dust and RCS produced under these conditions were quantified using industry standard particulate matter monitoring instrumentation. An investigation into the chemical composition of the runoff from simulated rainfall was also performed.

Whilst each product was deemed to positively reduce the potential for dust being released (during the shake table testing of the treated ballast samples), it was evident after the tests that for some products a "paste" coating was created on the surface of the ballast. This was likely created from more dust being created by the ballast rubbing against each other and being held by the binding from the stabilising agent. This could result in the strength and stiffness properties of the ballast being altered, with the coating acting as a lubricant. We are in the process of discussing the results from the assessment with track specialists in Network Rail, before engaging further with the suppliers and considering the products suitability for field trials (AHDs first, followed by an engineering worksite).





Respiratory Health Surveillance



A Route Services health surveillance paper is currently being drafted and is to include a programme of ongoing health assessments for employees exposed to specific occupational hazards. These hazards include • noise • vibration • respiratory hazards • skin irritants and • fatigue from night working. Health surveillance is introduced to identify ill-health at the earliest possible stage to enable stronger health and wellbeing controls to be applied. Health surveillance is also a valuable way to enable employees to raise concerns as to how their work may be affecting their health.

Unlike Hand-Arm Vibration Syndrome (HAVS) health surveillance, employees are not automatically enrolled onto respiratory health surveillance. The employees line manager is required to refer for an appointment via the Occupational Health portal, however this wasn't routinely being done. This may be because managers are unaware of how to refer employees, a general misunderstanding of what is required to be done by law, or not fully understanding the risks that respiratory hazards pose. Within recent months SCO have organised for Optima Health to attend various sites to conduct respiratory health surveillance clinics for all our identified higher risk Route Services staff.



For any further information/questions please contact nigel.bownes@networkrail.co.uk