



Improved Dust Control

FOR OFF-HIGHWAY DUMP TRUCKS

FREE WHITEPAPER

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THERE IS AN EVER INCREASING FOCUS ON DUST CONTROL ON MINE SITES FROM GOVERNMENT AND COMMUNITY ORGANISATIONS AUSTRALIA WIDE.



Introduction

There is an ever increasing focus on dust control on mine sites from government and community organisations Australia wide. Groups representing communities based near mining activity are expressing concern about the health impacts of dust generated by mines.¹ Government has responded by installing dust monitors near key resource industry hubs.²

Recently, the New South Wales Environment Protection Authority (EPA) introduced the Dust Stop Program which enforces new standards on dust control, aiming to achieve an 80 per cent dust reduction. Other states are likely to follow suit.

The Problem – Dust Emissions from Dumping

Loading, dumping and moving overburden is a major source of dust emissions at coal mines.³ A typical coal mining operation can generate around 25% of their total dust emissions through the dumping process.⁴

A recent government report into management of dust from coal mines found that coal mines can and will need to improve their dust management practices by developing and implementing dust management plans for coal mining operations and properly maintaining dust-control equipment to ensure mitigation measures are available and effective, amongst other recommendations.

The report also identified as an issue that alternative dust control, such as slowing the tipping speed of coal into the ROM bin hopper was not being used resulting in dust generation.⁵

Mine sites currently manage dust emissions through tactics such as minimising road haul distances and traffic, use of enclosed conveyors and water sprays on stockpiles.⁶ There are however, no specific tactics currently employed to minimise the dust emissions generated specifically by dump trucks as they are dumping coal or overburden.

A TYPICAL COAL MINING OPERATION CAN GENERATE AROUND 25% OF THEIR TOTAL DUST EMISSIONS THROUGH THE DUMPING PROCESS.

THE WESTECH FLOW CONTROL BODY® HAS A REVOLUTIONARY FLOOR DESIGN THAT CONTROLS THE FLOW OF MATERIAL OUT OF THE BODY DURING DUMPING WHICH RESULTS IN IMPROVED DUST CONTROL.



Westech Flow Control Body's® unique Design

The Solution – Dust Suppressing Truck Body



Dust from standard body



Dust suppression with Westech Flow Control Body®

The Westech Flow Control Body® (patent pending) has a revolutionary floor design (see above image) that controls the flow of material out of the body during dumping which results in improved dust control.

The body's floor design keeps the center of gravity of the load forward of the rear axle longer while in the dump cycle, reducing material surge as the load leaves the truck body. In this way the flow of material is controlled.

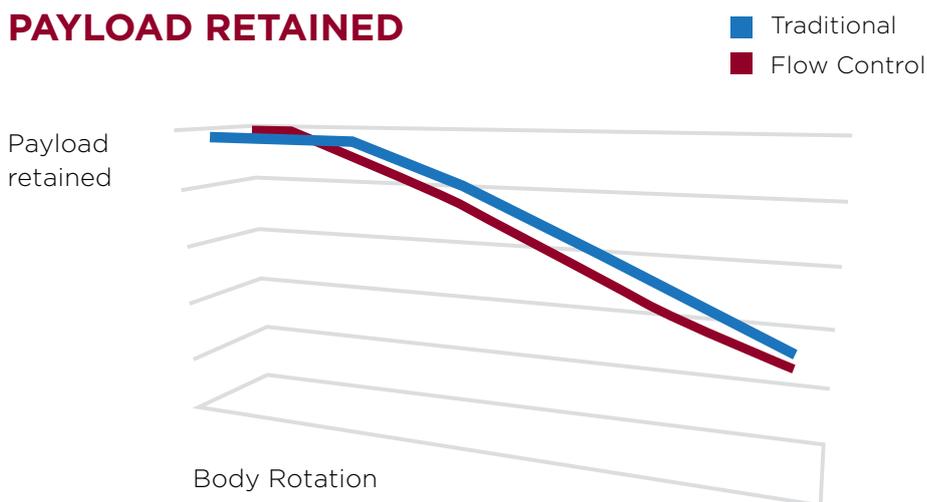
In a traditional dump truck body, the material being dumped exits the body by the material surging down the floor as the body rotates, releasing the majority of material during the last part of the dumping process.

The Westech Flow Control Body's® controlled dumping means that for the majority of the dumping process the material shears in layers rather than in a solid mass of material surging out of the body. This more even flow greatly reduces dust generated when dumping as demonstrated by the images on the left.

THE PAYLOAD RETAINED BY A TRADITIONAL BODY VS A FLOW CONTROL BODY® THROUGHOUT THE DUMPING PROCESS



PAYLOAD RETAINED



Along with improved dust control, the Westech Flow Control Body's® controlled dumping results in less friction on the steel floor of the body causing less wear to bodies, reducing the need for liner kits and extending body life. The reduction in material surge as the load leaves the truck body also eliminates lift at the front of the truck, making the truck much safer with increased stability.

The Flow Control Body is available for all truck brands and models in combo (coal and overburden), coal or overburden designs.

The Westech Flow Control Body® for off-highway dump trucks is manufactured by leading non-OEM engineer and manufacturer Austin Engineering.

More information about the Westech Flow Control Body® can be found at www.westechflowcontrol.com.au.

SOURCES

1. The Herald, 29 October 2012
2. The Australian, 28 January 2012
3. NSW EPA, 9 September 2013
4. Daunia Coal Mine Project - EIS, BMA, date unknown
5. Environmental compliance and performance report, Management of dust from coal mines, NSW Government 2010
6. NSW Mining, 23 August 2013