Entry for
Excellence in
Education, Innovation and Contribution
to the Erosion and Sediment Control Industry
Awards

FODS TRACK OUT CONTROL MATTING

JWA

01 | FODS TRACK OUT CONTROL MATTING

FODS (Foreign Object Debris System) is the eco-friendly solution to a common problem on construction sites – building and maintaining effective sediment control on site entry/exit points.

Current methods of constructing a rock pad and installing steel rumble grids each have their own limitations:

- Rock pads are not reusable, require constant monitoring for blockage, need regular top ups and not recommended for sticky clay sites.
- Steel rumble grids require digging for sediment storage chambers which are troublesome to desilt regularly, and are seen as a potential risk for truck damage.

Construction site entry/exit points sediment control can now be in place simply by laying down FODS matting.

Surface mounted means no trenching required and suitable on most surfaces including asphalt and concrete.

Made from robust and highly durable HDPE, FODS reduces the impact to environment as it:

- Replaces or reduces the need for single-use materials such as rock pads
- Does not require any digging or trench work
- Creates a layer of protection minimising ground disturbance
- Reusable
- 100% recyclable after their expected lifecycle of over 10 years under standard use conditions.

02 | THE ROAD TO FODS

Since 2003, JWA have been providing composite matting solutions for temporary roadways and work platforms. The effectiveness and reusability of matting have helped projects reduce the use of crushed rock and imported fill materials.

A common question from clients is whether there is a better approach to construction exit rock pads as the constant addition of rocks was wasteful.

Initial trials with composite mats led to an easy to clean roadway leading into and out of the vibrational grid however more vibrational action was needed.

In 2019, the search led to the discovery of FODS matting in the USA and initial impressions met our requirements.

- Its patented pyramid design not only creates the right vibrational action needed, but also gently splays tyre treads apart for further debris removal.
- It reduces the amount of extractive resources used by reducing the necessity and the amount of crushed rock required for creating construction exits.
- It is surface mounted making it possible to install on practically every trafficable surface from bare soil, compacted surfaces, asphalt and concrete. This meant a practical solution for sites that previously were not able to install any of the traditional track out methods.
- They are cleaned in situ which means that they do not have to be removed for cleaning, keeping site exits open longer and work continuing to flow.
- Made from robust and highly durable HDPE, FODS are 100% recyclable after their expected life cycle of 10 to 15 years under standard use conditions.
- They are rated for up to 80 tonnes meaning it can practically handle any load leaving construction sites.

MELBOURNE METRO TUNNEL

Eastern Portal, South Yarra, VIC
Rail Infrastructure Alliance
25 June 2019

Working with Adrian White, the Senior Environment Advisor, and site teams at the RIA, JWA entered an agreement to supply 5 FODS for a 30 day trial from the 25th of June 2019. The Eastern Portal in South Yarra was selected for the trial, and was to be the first site in Australia to deploy the FODS. The arrival on site was greeted with great anticipation by both parties to observe and assess how the units performed in the wild.

To the delight and with some surprise to some the FODS installation proved to not only work well as intended but demonstrated its robustness when the team on site had no choice but to run a steel cleat digger and an 80 tonne cleated piling rig across the mats.

03 | CASE STUDIES

The FODS are designed for tyred vehicles and in general, any confrontation between metal and plastic, metal will win out. In this case however, the installation came off with only slight shaving on the pyramids on the mats, effectively proving itself to be stronger than what has been reflected in the specification documentation.

Feedback from crew:

- Street sweeper runs were reduced by approximately 40% compared to previous track out system on site.
- Being a confined space with lots of underground services and immediately adjacent to an operational railway, the versatility and ease of installation of the FODs meant the crew didn't have to dig out to install rock/rumble grids. This allowed them to install the FODs at the exits they previously were unable to do so.

At the end of the 30 day trial RIA were so impressed by the benefits of the system that they elected to purchase the trial units outright. The units are still on site and have been in place now for just over 12 months.

MELBOURNE METRO TUNNEL

Arden St, North Melbourne, VIC
Cross Yarra Partnership Design and Construction Joint Venture
3 July 2019

Working with the CYP Environmental team based at the Arden Street site office, a 30 day trial of the FODS was arranged for three sites across the Melbourne Metro Tunnel project. One set of FODS was used at the Arden Street location which was placed after other mitigation protocols including a rumble grid and crushed rock.

In this image you can see the amount of additional spoil and debris that is being captured by the FODS even after the vehicle has traversed the other measures including the rumble grid.

03 | CASE STUDIES

The FODS were found to be beneficial on other sites across the project as well, as they are easy to redeploy and do not require digging a pit in order to be installed. This was a great advantage for tight sites with buried services, which might have otherwise struggled to implement any form of track out control measures.

12 months later the mats are currently still working across several sites on the project.

WEST GATE TUNNEL PROJECT
Inbound Portal
CPB Construction and John Holland Joint Venture
3 July 2019

Working with Nur Ezzati Daud, from the Environment team on the project who sought out and wanted to trial the FODS as an innovation on the West Gate Tunnel Project, an agreement was reached to deploy 4 FODS at the exit for the Inbound Portal work site for 4 weeks. The site team there were looking for an alternative to the rumble grids that they were using that would be more suitable and robust for the topography of the site.

Being a very tight site it proved tricky and time-consuming to remove the rumble grid for cleaning, effectively shutting down the egress everytime the rumble grid needed to be removed for cleaning. Due to the nature of rumble grids it is also very common (and was indeed was the case) for the units to be damaged during this process causing further delays for reinstating track out control measures.

03 | CASE STUDIES

Subsequently, additional FODS were acquired by the project, with one site noting that the FODS work more effectively than traditional rumble grids. The site have both measures in place with exiting traffic first running over the rumble grid and then the FODS. In this scenario the FODS are capturing a great deal of material that the rumble grid is failing to remove.

The WGTP have since ordered additional units to cover site exits across all the various zones of the project. The feedback filtering in from these additional sites has been extremely positive.

INCITEC PIVOT FERTILISERS

Townsville, QLD

Incitec Pivot

1 August 2019

JWA working with Ray Gofton, Regional Operations Manager – North, and Simon Smith, Site Manager at the Incitec Pivot Fertilizer Primary Distribution Centre in Townsville, Incitec Pivot decided to engage a 14 day trial of the FODS.

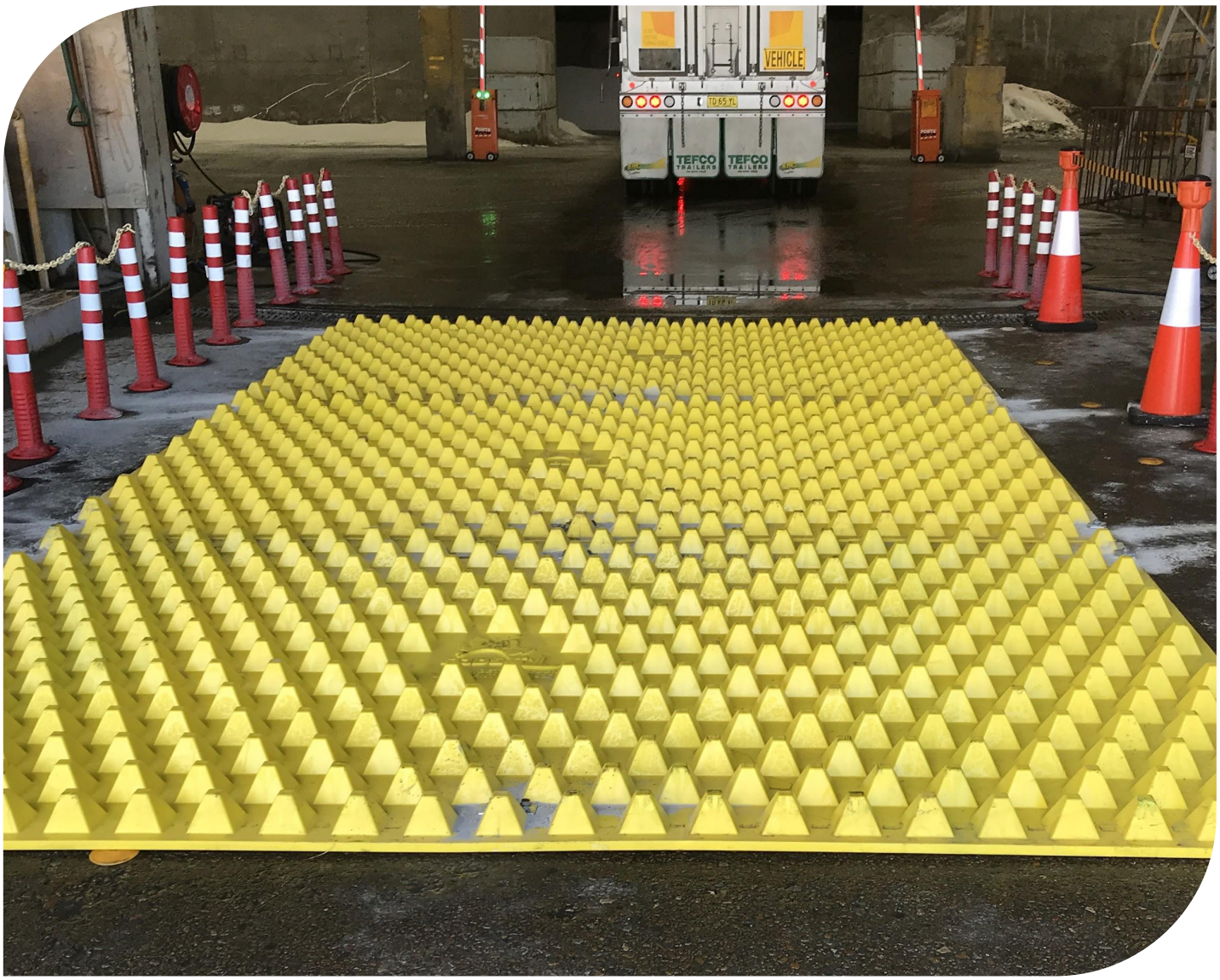
The team wanted to include the FODS in series with their other track out mitigation systems because of a design feature of the FODS that gently splays the tyre tread of vehicles allowing more granular material to be removed before vehicles leave the site.

On site however the team found that the FODS were more versatile to their operations. They found that by installing the FODS immediately after their wheel wash they could elevate the vehicles before they left site, which allowed more of fertilizer runoff water to be captured.

03 | CASE STUDIES

The team at the distribution center also found the design of FODS useful in creating an unmanned wash bay for cleaning the undercarriage of their forklifts and other vehicles used on site. Using the channel between the FODS to place a custom irrigation spray system, the team created a safe and effective under vehicle wash system that proved safer and more efficient for site personnel.

At the conclusion of the trial period, Incitec Pivot elected to continue on with the use of the FODS on a rental basis. The installation has currently been in place and working for 12 months at the time of this submission, and the feedback from site is that the FODS have become an integral part of their track out mitigation systems and processes on site.



04 | FEATURES & ACCOMPLISHMENTS

Unique Features

- Patented pyramid design for double sediment removal through rumble action and splaying of tyre treads.
- Surface mounted - compatible with more surfaces than traditional methods.
- Made from compression molded HDPE which
    - Provides ground protection and minimising erosion
    - Can be cleaned easily in situ
    - Can be reused over and over again
- Bright yellow in colour for easy identification of site exit and level of sediment.

Challenges

- Establishing initial Australian trials on a major infrastructure projects with multiple stakeholders.
- Convincing experienced crew to try FODS in place of accepted traditional methods.

Accomplishments

- Successful trial on Melbourne Metro Tunnel - Eastern Portal with Rail Infrastructure Alliance leading to sale.
- Successful trials on 3 sites across Melbourne Metro Tunnel - Arden St with Cross Yarra Partnership leading to sale.
- Successful trials on West Gate Tunnel Project - Inbound Portal with CPB-John Holland Joint Venture leading to rentals with additional orders.
- Secured exclusive distributorship for FODS in Australia.

05 | BENEFITS

For the Environment

- Replaces need for single-use extractive materials. Each deployment and redeployment of FODS has the potential to replace 3 truckloads of crushed rock.
- Can be used on sites where it was not previously practicable to do so allowing less mud and track out to escape into waterways and into local communities.
- Design to splay apart tyre treads increases effectiveness of sediment control.
- Minimal ground disturbance means less dust created and less remediation required.
- In situ cleaning allows more immediate effective sediment management without shutting the site down.

For the Community

- More effective track out control to prevent sediment leaving construction sites
- Less truck movements and dust from crushed rock delivery and top ups

For the Erosion Control Industry

- Provide a reusable and environmentally friendly approach to construction site exit pads.
- Through the trials, JWA has already put FODS under the scrutiny of multiple Tier 1 construction companies on major State projects.

For Our Company

- Strengthening our vision towards providing reusable solutions and reducing need for quarried materials.
- Complements our existing range of composite matting solutions.
- Entry into a wider range of construction projects.

06 | CONTACTS

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