

# Sharing good practice 2018/19

WAYS TO MAKE YOUR WORKPLACE HEALTHIER AND SAFER



**ENTRIES FROM THE  
MPA HEALTH AND SAFETY AWARDS**





## *Service Information*

# Mobile On-Site Chest X-Ray Service for Employees Exposed to Respirable Crystalline Silica

Industrial Diagnostics Company Ltd offer a **mobile, on-site chest X-ray (CXR) Health Surveillance service.**

The service **fully aligns** employers with the recent updated guidance from the Health and Safety Executive (HSE) thus enabling them to demonstrate **best practice.**

The service delivers **state of the art mobile digital radiography (DR)** which generates the high resolution images necessary, capable of detecting the very earliest signs of lung disease.

All chest X-rays are viewed and reported from high resolution diagnostic monitors and are reported against the ILO pneumoconiosis classification scale.

By including exposed employees in a chest X-ray program, early cases of Silicosis will be identified and referred to an Occupational Lung Disease specialist for ongoing medical advice. **This will improve an employee's prognosis and enable effective management of the employee's future exposure to RCS as early as possible.**

Furthermore, all and any other abnormalities identified from the chest X-ray will be referred on to an appropriate medical professional for advice. Early diagnosis of conditions identified by chest X-ray will provide clear **benefits to the health and life expectancy** of employees.

Industry groups such as the **Mineral Products Association (MPA)** recommend entry into a chest X-ray program for employees exposed to 75% or above the Workplace Exposure Limit (WEL).

### *Service Features:*

- **An on-site service delivered from client premises. Up to 30 employees can be seen per day**
- **Brand new digital imaging technology**
- **Extremely low dose of radiation (equivalent to less than one short flight)**
- **10-minute appointment times reduces lost production costs by minimising time away from work**
- **Consent obtained from employees willing to allow their chest X-rays to be fully anonymised and used for research into Occupational Lung Disease**
- **Logistics allow small sites to share the service**

For further information or to discuss service requirements, please contact us on [imaging@industrial-diagnostics.com](mailto:imaging@industrial-diagnostics.com) or via the contact details shown below:

v1-1



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Applied to Life.™



NEW

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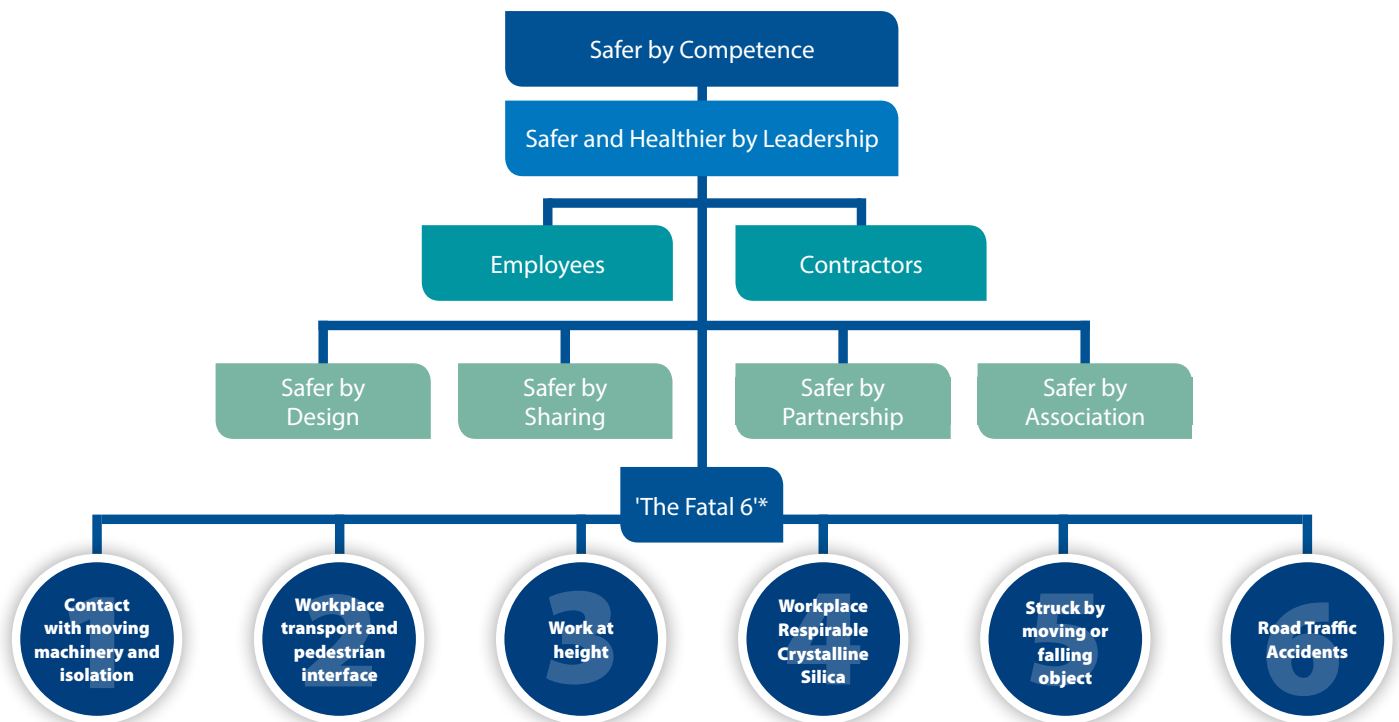
[www.3M.co.uk/AuraGen3](http://www.3M.co.uk/AuraGen3)

# Achieving Zero Harm

## Working with MPA to improve Health and Safety in 2019

Zero Harm will only be achieved when everyone in the industry is working with Health & Safety as their top priority. MPA facilitates a number of initiatives and services to help its members achieve this. Please review these and consider how you would like to utilise or support them in 2019.

### MPA's 'Safer by initiatives'



\* High consequence hazards

#### Safer by Competence

- Work with MPQC to enhance skills in the sector
- Utilise the driver's/contractors passport system
- Share the MPA safety resources within your company



#### Safer and Healthier by Leadership

- Work with MPA to support the 'Helping Great Britain work well' Strategy
- Sign up to the 'MPA Pledge' and commit your organisation to achieving Zero Harm
- Attend MPA Safer and Healthier Leadership courses
- Submit your safety statistics in a timely and accurate manner
- Champion the use of 'Mates in Mind' [www.matesinmind.org](http://www.matesinmind.org)
- Champion RCS initiatives and MPA's health surveillance programmes
- Submit your Nepsi data
- Champion Vulnerable Road User and Driver Training initiatives





# Supporting MPA Health and Safety Initiatives

## Safer by Partnership – Contractors

- Support the MPA Contractor's Charter
- Utilise MPA's Contractor Safety Forums
- Embed MPA (Avetta's) contractor's database

[www.avetta.com](http://www.avetta.com)



- Incorporate the MPQC-SPA Competence Map to enhance contractor skills
- Utilise MPQC's Contractor Safety Passports

## Safer by Association

- For smaller members and organisations without specialist personnel, trial the H&S site evaluation and improvement tools

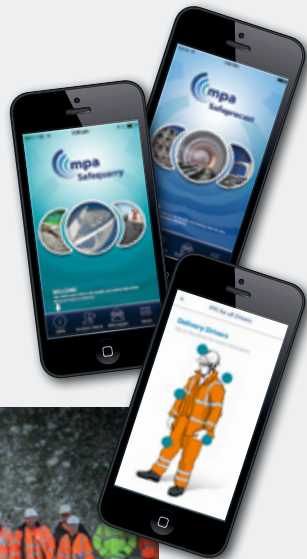
## Safer by Sharing

- Sign up to Safequarry.com or Safeprecast.com and share the safety alerts

[www.safequarry.com](http://www.safequarry.com)

[www.safeprecast.com](http://www.safeprecast.com)

- Sign up to the Safequarry, Safeprecast and Driver's Apps
- Support and attend MPA's Safer by Sharing Days



- Submit entries to the MPA Health and Safety Awards, then share the resulting Best Practice Guide
- Send your incident alerts, toolbox talks and other info to MPA
- Utilise QNJAC H&S guidelines and other guidance via safequarry



## Safer by Design

- Ensure new mobile plant complies with Safer by Design guidance

[www.safequarry.com/Safer\\_by\\_design.aspx](http://www.safequarry.com/Safer_by_design.aspx)



- Review how existing plant compares with Safer by Design guidance

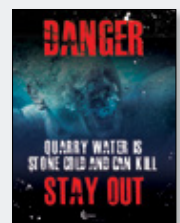
## 'The Fatal 6'

Support 'The Fatal 6' initiative by reviewing and acting on these high consequence hazards within your organisation:

1. Contact with moving machinery and isolation
2. Workplace transport and pedestrian interface
3. Work at height
4. Workplace Respirable Crystalline Silica
5. Struck by moving or falling object
6. Road Traffic Accidents

## Public Safety

- Support MPA's Stay Safe campaign and review your public safety risk assessments for active and disused sites. Review the RoSPA inland water safety document
- MPA Cycle Safe – support or host a cycle safety event
- Support the CLOCs and FORs initiatives



# Foreword



**The theme of the 2018 MPA Health and Safety Conference was 'Closing the Gaps ... Focussing on Priorities', reflecting our determination to reverse the recent decline in the industry's safety performance and progress towards our collective goal of Zero Harm.**

The conference recognised that more effective communication and supervision would be key elements in closing the gap between the industry's collective health and safety aims and the realities on the ground. The industry's agreement to focus its energies and resources on the 'The Fatal 6', the high consequence hazards that have been the main cause of fatalities over the last decade in our business, reflects another major step in helping us achieve this.

It was interesting to note that a high proportion of the entries were mitigating risks associated with one of the six themes within 'The Fatal 6'. In several cases, a serious incident had been the genesis for the innovation.

I believe that many of the innovative solutions and new processes highlighted can be adapted or applied to a wide range of other organisations. They will make a material difference to the safety, health and wellbeing of everyone working within the mineral products industry.

Part of a leader's role is to facilitate and encourage an open and trusting environment in which these types of initiatives and behaviours flourish,

encouraging a culture of continuous improvement and open and challenging dialogue.

MPA believes that success will only be achieved by strong leadership, collaboration and the sharing of health and safety information, case studies, alerts and best practices. Maximising the potential of this publication to help drive change in our businesses will be a good example of these beliefs in action.

Our commitment to safety also extends to members of the public who visit our sites and with whom we share the roads. MPA will continue to run its public safety campaigns and support the wide range of initiatives to improve the competence and safety of the industry's drivers.

## 'The Fatal 6'\*

1. Contact with moving machinery and isolation
2. Workplace transport and pedestrian interface
3. Work at height
4. Workplace Respirable Crystalline Silica
5. Struck by moving or falling object
6. Road Traffic Accidents

\*High consequence hazards

## Sponsors

MPA would like to thank the suppliers to the industry who have sponsored both our awards ceremony and this publication. The main sponsor was the Industrial Diagnostics Company (IDC). Individual sections show the companies which have sponsored them.



Lead sponsor



The Sir Frank Davies Trophy for companies with less than 1000 employees: **Winner – Kilwaughter Chemicals**



Trophy sponsored by 3M



The individual award winners from the Health & Safety Conference

## Entries from 29 companies – MPA members, contractors and suppliers:

Aggregate Industries	Day Group Ltd	GRS	Marshall's PLC	Smith & Sons
Atlantic Pumps	Driveline Engineering	Grundon	McGee Group	(Bletchington) Ltd
Brett Group	EPC UK Ltd	Hanson UK	Midland Quarry Products	Tarmac Ltd
CEMEX UK	Finning	Hillhouse Group	Sapphire Energy	Wainwright
Colas Ltd	FM Conway	Imerys Aluminates	Sibelco	Wincanton plc
Creagh Concrete Products	Forterra	Lhoist UK	Singleton Birch Ltd	



# Introduction

## **This Guide summarises the best ideas and innovations from the MPA's Health and Safety Awards 2018.**

This Guide is a compilation of solutions that MPA companies, contractors and suppliers have applied to minimise and, where possible, eliminate health and safety risks arising from their daily operations in the mineral products industry. The ideas and innovative approaches are often very simple and inexpensive, they can be applied to a range of common industry problems. Organisations of all sizes will find entries within this publication that will be relevant to their own activities.

Please ensure that this Guide is shared with colleagues at all levels within your company. Electronic versions are downloadable from the Safequarry and Safeprecast websites. The digital versions include embedded links to short videos that show the innovation or new process in action and interviews with site operators talking about the benefits that have been realised.

This publication epitomises the industry's belief that we will all be **'Safer by Sharing'**.



## How to use this Guide

It is hoped that by reviewing this Guide, particularly those sections relating to your main area of work, you will recognise solutions that could either be implemented within your own workplace or will generate an idea for an alternative solution.

The Guide has been divided into eight sections to reflect the categories used in the MPA Awards. They focus on those areas that have the most impact on improving health and safety in the workplace. We have indicated which entries were prize winners, and which have video clips available. To help you locate entries relating to a certain subject, we have provided a keyword index. If you would like more information on an entry than is available via Safequarry and Safeprecast websites, please send an email to [info@safequarry.com](mailto:info@safequarry.com) or [info@safeprecast.com](mailto:info@safeprecast.com). Please quote the entry number, which is located immediately to the left of the entry title.

Where an entry shows the video symbol the video can be viewed via the Safequarry and Safeprecast websites or the Mineral Products Association YouTube channel.

The blue circles with numbers highlight that this entry illustrates a way of mitigating a high consequence hazard associated with 'The Fatal 6'. The number in the circle reflects which theme it is related to.

**The sharing of best practice is crucial in helping the industry to achieve Zero Harm.**

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# 1156 Taking the guess work out of edge protection

Sibelco > Dingle Bank Quarry 2



## DESCRIPTION

Judging the correct height of edge protection for mobile plant can often be subjective. At Sibelco's Dingle Bank Quarry the edge protection on the haul road needed frequent repairs due to weathering. An audit of the edge protection had revealed significant variances in its height and individuals using a range of adhoc measures for checking it. Whilst wanting to ensure that all the edging was at the correct height, they did not want operators or others carrying around measuring sticks or having to jump in and out of cabs to check edging heights.

D Wardle Plant, who provided the earth work services at the site, operated a fleet of eight articulated dump trucks (ADTs). They devised a simple and easy means of ensuring the correct height of edge protection for the fleet. All ADT's were fitted with a simple marker sticker which provided a visual guide to the minimum height for the edge protection. This quick, easy and visual reckoner removed any doubt about whether the edge protection met the minimum height.

A training campaign on edge protection was also introduced. This included a toolbox talk to all ADT drivers. Edge protection was also made a discussion point in each daily pre-start briefing. The campaign was supported by the management of Sibelco and D. Wardle, who ensured that the safety messages on edge protection were communicated to everyone working on the site.

D Wardle Plant have now implemented the vehicle sticker and training programme across the sites they operate within Sibelco and at other client's quarrying and construction sites.

## BENEFITS

- Simple, visual marker to confirm edging meets standard
- Easy to adopt on other sites or with different operators
- ADT drivers have confidence to report concerns over edge protection
- Low cost system to implement
- Safer operation for ADT drivers and others.







# 1236 Working with contractors

Aggregate Industries UK > Project Sence > Bardon Hill



## DESCRIPTION

Aggregate Industries' multi-million-pound Bardon Hill Quarry extension includes the removal of 7.5 million cubic metres of waste clays, installing a new primary crusher and constructing over 4km of overland conveyors. The five-year construction project stretches over a 250 hectare site and is due to complete in Summer 2019.

The health and safety of the construction workforce and quarry operators on this project is the highest priority. Long before construction commenced, a strategy was developed for managing the interaction between the construction and quarrying activities – Project Sence

All construction activities are undertaken under CDM 2015 Regulations, whilst quarry development and waste removal activities fall under Quarry Regulations 1999. K Home International (KHI) were appointed as the Construction Management Contractor as well as Principal Contractor/Principal Designer under CDM 2015.

The following measures were put in place to ensure the safety of all involved with the project and the effective management, control and separation of the quarrying and construction activities.

**Selection of Contractors** – Safety was central to the procurement process. As part of their tender submission, each contractor was required to provide evidence that adequate resources were available to correctly implement the Construction Phase Plan (CPP). A detailed HSE profile was prepared for all submissions which informed the selection of a contractor with a proactive and positive safety culture.

The CPP is formally issued to each contractor prior to commencement of work activities in order to ensure that they have been made aware of the HSE requirements, expectations and issues associated with the project. All contractors must ensure that the CPP and all other relevant information are issued and communicated to all their subcontractors, before they enter the site.

**Segregation** – Construction and quarry areas were clearly defined and segregated in order to inform communication and to control access, egress, mobile equipment movement and on-site logistics. Light vehicle routes have been established to separate them from the quarry plant and to control where and how they interact. Light vehicle routes were continually reviewed to ensure segregation as the project evolved.

**Transfer of Responsibility (TOR)** – A TOR process was used to formally release the control of project areas from the quarry management teams to the principal contractor. TOR planning meetings were held between all parties to define the extent of construction areas, expected interface between quarry operations and construction activities and how this would be safely managed to ensure compliance with CDM 2015 and Quarry regulations 1999.

**Safety Systems** – All contractors received a Project Sence induction when they arrived on-site which included; site rules, expected behaviours, PPE, RAMS and emergency procedures. Contractors were responsible for delivering their activity specific induction to their workforce.

Risk assessments and method statements were submitted by contractors for every task prior to any work commencing. Once they were accepted by KHI, a permit to work was issued. Regular site visits and audits were undertaken by KHI and the contractor to ensure compliance.

The construction workforce undertook personal dynamic risk assessments prior to commencement of any activity using the KHI 'Take five booklet'.

The KHI Safety Observation booklet is a pro-active tool that helps to identify hazards and trends.

The booklet can also be used to identify good practice, safe acts, safe behaviours and safety suggestions. Weekly feedback to the workforce including progress against hazards identified.





# 1236 Working with contractors – continued

## Bardon Hill Quarry extension 1 2 3



**Communication and engagement** – Regular coordination meetings between the Project Sence Management Team, KHI and the Quarry Management teams were essential in establishing and maintaining a consistent and positive safety culture amongst the construction workforce.

This included kick off meetings prior to the commencement of construction work to establish the goals and objectives for the project, to communicate essential HSE information, to

establish individual responsibilities and to communicate interface arrangements.

Daily co-ordination meetings and weekly contractor progress meetings were held covering all aspects of safety. These were reinforced with daily and weekly site inspections, pre-shift meetings, weekly HSE bulletins and toolbox talks based on the project schedule and upcoming risks. KHI actively engaged and listened to front line workers in order to promote safety and understand what safety issues and challenges they faced.

### BENEFITS

- To March 2018, 616,774 hours have been worked with one LTI
- 34 incidents and 60 near misses reported
- 888 days worked since the last LTI was reported
- Strong safety culture across all staff
- A safer and healthier environment for all.

# 1145 Permission to tip

## Day Aggregates > Southampton Depot 2



### DESCRIPTION

Repeated near misses were being reported at Day Group's bagging depot at Southampton, this was due to the nature of the site. The layout and shape of the yard made it difficult to operate the production facility and to dispatch bagged materials safely.

The stocking bays, which are located in the main thoroughfare, are regularly traversed by delivery lorries, tele-handlers and loading shovels. It was essential that delivery lorries, which were re-stocking the bays, waited until they were instructed to tip. However, on occasions, impatient drivers moved to the stocking bays without waiting for permission. This resulted in an unacceptable and unsafe practice. Drivers would tip in an uncontrolled manner in an area where other vehicles were present, giving no opportunity to ensure a safe and controlled tipping zone.

The solution was to introduce a traffic light system that would stop the tippers before they entered the stocking bays. It was also necessary for the shovel driver to be able to control the lights and to have some way of checking whether the lights were on green or red.

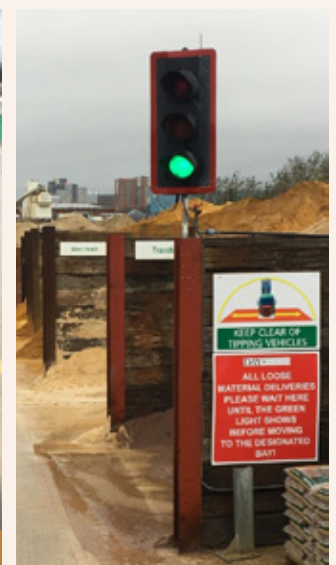
A second-hand traffic light was purchased and customised, so it operated as a simple stop (red) or go (green) sign. A remote control was fitted so the traffic light could be operated by the loading shovel operative. A small green flashing light was installed behind the traffic lights, so the shovel operator would know when the light was on green.

### BENEFITS

- The yard is a safer environment
- Shovel operative has more room to work
- Better control of vehicle movements around site
- Safer tipping zone for lorries
- No reported near misses since installation.



Remote control



visit [www.safequarry.com](http://www.safequarry.com) for more details or email: [info@safequarry.com](mailto:info@safequarry.com)





1232 **Thinking outside the confined space**

Aggregate Industries UK > Barton Under Needwood **1 4**



Entrance to mixer – confined space

**DESCRIPTION**

The semi-dry concrete batching process used in the manufacture of Aggregate Industries' concrete products required an in-depth, daily clean-down.

The cleaning process was an unpleasant task. It required an operative to enter into the confined space of a mixer drum, use pneumatic vibration and hand tools to break-off the cured concrete residue for the internal mixer workings. The hour long process was essential to return the mixer to a condition which enabled it to efficiently produce concrete to the desired specification.

The task was physically demanding, involved the operator working in cramped, hot and dusty conditions whilst wearing appropriate PPE. The operative was exposed to risks associated with respirable crystalline silica, HAVS, machinery entrapment, confined space working and COSHH exposure.

As no facility existed to deal with water wash down systems at the semi-dry process factories, the range of alternative cleaning options to mitigate these risks were limited.

The problems have been resolved using a counter balanced and ergonomically designed, ultra-high pressure, pneumatic wash-down system. The system can operate at up to 55,000 PSI of air flow. The jet of air and vapour is powerful enough to remove the cured concrete from the internal mixer drum. The system allows the cleaning operative, who is positioned outside the drum, to hold and manoeuvre the lance easily, enabling him to remove all the internal debris.

The system can feed four litres of atomised water a minute through the high pressure lance. The operation produces a minimal amount of slurry that is easily disposed of without additional plant and equipment.

**BENEFITS**

- Eliminates the need to work in a confined space
- Reduces operator exposure to HAVS
- Reduces operator exposure to respirable crystalline silica
- Improved productivity – 20% reduction in cleaning time
- A safer and cleaner working environment for all
- Easily transferable to other applications.



1176 **Silo ground level testing****Marshalls Plc > Nationwide** **3****DESCRIPTION**

A SHE review at Marshalls recognised a concern about the number of times staff were working at height on the tops of silos. It was estimated that there were over 300 manual inspections at the top of silo's every week and circa 1,000 silo fills per week. It also revealed high levels of environmental discharges from the silos and, in one serious incident, a filter unit had been blown off a silo.

These findings led Marshalls to undertake a detailed survey of its 150 cement and PFA silos which are located across 24 sites. The survey identified that 50% of the silos had either below standard or under-capacity pressure relief valves (PRVs), faulty safety sensors or showed signs of a contents discharge. There was virtually no standardisation of safety equipment across the estate and the silos were assessed as being a high risk to the environment. Marshall's staff were climbing the silos on a regular basis to inspect and work on the silo tops.

A plan was developed to undertake remedial engineering work and reduce the potential for silo discharge during deliveries. The priorities were to design an engineering solution that could be standardised, systemised, was legally compliant and would work across the entire Marshalls network. In addition, the system should be fail-safe, enable tanker drivers to check spare capacity prior to discharge and would integrate with the factory's Allen Bradley plc's – so data could be recorded for root cause analysis.

In partnership with Hycontrol, modifications were undertaken over a year with an investment of £1.1million. Marshalls is now in the process of informing local councils about the new systems and anticipates that the number of compulsory checks on the top of silos will be reduced.

**BENEFITS**

- 90% reduction in operators checking top of silo
- Significant reduction in working at height
- Exceeding current PPC permit requirements
- Standardisation of PRV's, silo fill valves, high level sensors, and over-pressure sensors
- Installation of standardised level gauges and displays
- All silo safety systems NOW tested prior to fill
- Automatic stop on fills if a high level or high-pressure event occurs
- Sensors check functionality of PRV's and silo tops
- Since installation the modifications have
  - Detected and prevented 338 over-pressure events
  - Detected and prevented 163 high level alarms
  - Detected and prevented 11 PRV alarms (preventing discharge)
- Silo servicing frequency extended from three to six months
- Safer and cleaner environment
- Safer and easier for tanker drivers to make deliveries
- Systems easier to maintain and manage.

*New systems installed**Drivers check capacity prior to discharge*

visit [www.safequarry.com](http://www.safequarry.com) for more details or email: [info@safequarry.com](mailto:info@safequarry.com)





# 1111 Penta tumble drum chute wear plate improvements eliminates confined space hot work

Brett > Southampton Depot > Poole



## DESCRIPTION

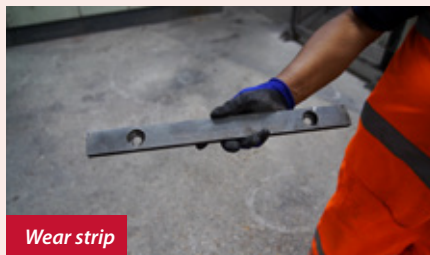
At Brett's site in Poole, the fully automated Penta Line 'ages' concrete block pavers by tumbling the cured blocks inside a rotating steel tumbler drum fitted with lifter bars. The tumbling action is extremely abrasive and causes both significant wear on the feed chute and drum, this is compounded by impact damage. The wear and damage are minimised by installing wear strips on the feed chute. However, the interior had to be inspected on a weekly basis and repairs made. This required operators to work in a confined space where hot work was undertaken such as welding to replace damaged wear strips taking about two hours.

The operators were exposed to risks associated with HAVs, oxygen depletion and fumes, use of gas cutting and arc welding, whilst working with restricted space inside the tumble drum. Control measures were in place to minimise the risk from these hazards. However, it was recognised that the process needed to be made safer.

The solution was to reinforce the tumble drum chute and fit bolt-in wear bars instead of welding in wear strips. The bolt in wear bars were also extremely hard wearing. The bolts holding the strips in place could be undone from the outside. The installation cost was £ 4,300 with estimated annual costs of £3,350 per annum.

## BENEFITS

- Eliminated weekly hot work and grinding of wear strips
- Eliminates category three work in a confined space
- Saving of four hours of maintenance per week
- New plates easy to replace and long lasting
- Safer and more efficient working environment.



# 1148 Safe access platform for lorry body cleaning

Smiths & Sons (Bletchington) Ltd > Gill Mill Quarry **3**



## DESCRIPTION

Smiths Bletchington was concerned about the vehicle body access ladders provided by manufacturers, these varied in both design and quality from truck to truck. In most cases, having reached the top of the ladder on the vehicle body, drivers had to turn through 180° and then descend backwards into the body. The ladders could be damaged and were often slippery.

Smiths Bletchington formulated a design to allow safe access to vehicle bodies via a robust fixed platform structure. It is equipped with a set of steps that can be lowered by a winch, into the vehicle body. This enables the driver to safely descend into the vehicle body and then use a pressure washer to clean it.

An innovative self-locking gate was added to the design. This prevents the HGV driver leaving the platform until the steps are fully raised, ensuring a driver cannot forget to retract the steps before driving off. **The access platform is featured in Smiths haulier induction video - password Smiths.**

## BENEFITS

- Feedback from hauliers very positive
- Reduced risk of slips, trips and falls
- Safer working at height
- System easy to fabricate for other sites
- Safer and more efficient wagon cleaning.





# 1149 Elimination of manual handling & pinch point injuries

**Breedon Roof Tile Works > Lagen Tile**



## DESCRIPTION

A plant operator caught the tip of his finger whilst replacing the slipper on the ridge plant extruder during a changeover procedure. The subsequent incident investigation also identified manual handling risks associated with moving the 35kg slippers from the storage table to the point of use.



## BENEFITS

- Removed the hazards associated with this maintenance task
- Project demonstrated management's commitment to improving safety
- Maintenance operators like the new, user friendly system
- Employees engaged in finding solution – enhances safety culture
- More efficient and easier process
- A safer working environment for all.

To eliminate both hazards an overhead beam together with a trolley fitted with an electrical winch were installed. The weight of the slipper was fully supported by the winch whilst it was moved into position. A handle was attached to the slipper, to aid finer positioning during installation, and lifting eyes to simplify connecting to the winch cable. A storage table for the slippers with lockable wheels was also introduced, the table can be moved along in line with the beam.

The system was successfully trialled in a controlled environment before introducing to plant operators. A video was used to help train operators on the correct installation procedures and a new risk assessment was prepared for the task.



# Download the free MPA Apps

MPA Safequarry App

MPA Safeprecast App

MPA Driver's App



All the videos highlighted in this guide can be watched on your mobile devices using the Apps or via the MPA YouTube channel [www.youtube.com/MineralProducts1](http://www.youtube.com/MineralProducts1)

For info call MPA +44 (0)20 7963 8000 [www.safequarry.com](http://www.safequarry.com)

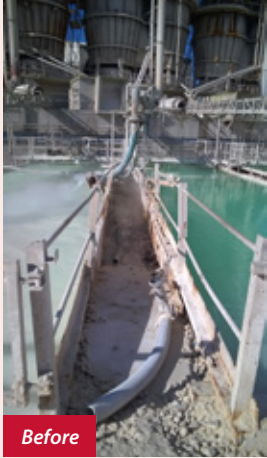
For info e-mail [info@britishprecast.org](mailto:info@britishprecast.org) or call +44 (0)116 232 5170 [www.safeprecast.com](http://www.safeprecast.com)





# 1182 Maerz Kilns wet gas scrubber improvements

Singleton Birch Limited > Melton Ross Quarries



Before

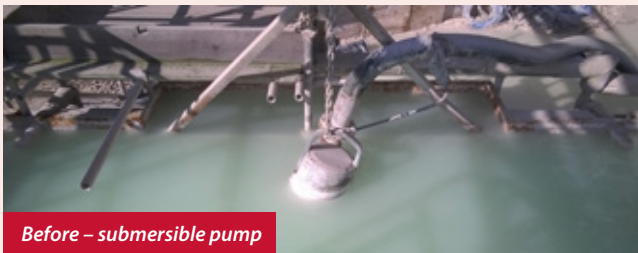
## DESCRIPTION

Singleton Birch Limited operates four, natural gas fired, 300t/d twin shaft Maerz kilns at its Melton Ross production site which are being upgraded. The project included an overhaul of the recirculation settlement tanks, pumps and pipe network. Dirty water from each scrubber flows by gravity to one of four 85m<sup>3</sup>, steel, settlement tanks before being returned to the scrubber via four individual submersible pumps

With health and safety at the forefront of the project, key personnel were involved at each stage of the design including operators, contractors and safety reps. Key elements of the project included;

1. Replacing the steel resettlement tanks with concrete tanks
2. Centrifugal and positive displacement pumps, housed in a separate compound for ease of maintenance
3. Installation of feed and return pipework including an access gantry for operators when systems are maintained
4. Installing all valves and similar equipment where they can be easily accessed from walkways and/or compounds away from potential hazards

The existing system, which was 30 years old, would not meet new standards and exposed operators to a range of hazards when essential maintenance tasks were undertaken.



Before - submersible pump

The settlement tanks progressively silt up with sediment. Each tank is emptied once a month, and resultant slurry is transported to a lagoon to dewater. Cleaning the tanks included the movement of submersible pumps, a very manually intensive operation that required the use of lifting equipment and scaffolding for access. Operators were also exposed to the risk of being scalded with hot water when moving a return pipe between the settlement tanks. There was limited space between tanks, issues with poor access and egress, uneven ground and moving around steelwork.



New pump compound

## BENEFITS

- Significantly reduced risks of injury
- Project involved input from all key stakeholders
- Plant complies with new standards and legislation
- Effective use of design to reduce risk
- Operation and maintenance of the system safer
- More efficient operation
- Reduced environmental impact
- New EA limit 20mg/m<sup>3</sup> – new system achieves 8mg/m<sup>3</sup>
- A safer working environment for all.



New tank and access



# 1245 Tower light raise/lower

FM Conway House > Vestry Road **2** **5**



### DESCRIPTION

FM Conway undertook an investigation following an incident where a tower light had overturned injuring an operative and falling close to a pedestrian area open to the public.

Prior to the accident, the tower light had been moved a short distance but the stabilising legs had not been redeployed, even though the light was extended. It is believed that when an operative leaned on the mast it toppled over. It was also noted that, on this model, the handbrake was not connected to the mast – this safety mechanism automatically lowers the mast when the handbrake is released. However, the handbrake had been applied in this instance, so this was not a contributory factor.

Initially, the cause of the accident was identified as the failure to lower the stabiliser legs, but on further reflection, it was changed to design failure. The switch that allows the tower light to be raised should not function if the stabilisers are not deployed. Similarly, if the stabilisers are raised, the light should lower automatically.



As an initial measure, it was decided to suspend the use of any other equipment that did not have the handbrake mechanism connected to the mast and to retrofit older models with this safety device. Whilst this was being undertaken the workshops were asked to review other options that would prevent the mast being raised if the stabilisers were not deployed.

Research revealed no existing mechanism that worked in conjunction with the stabilisers. Following a period of trial and error, the workshops demonstrated a prototype based on location sensors that would not allow the mast to be raised until the legs were deployed. It would also lower the mast to a safe position



New sensor and fail safe mechanism



if the stabilisers were raised. Suppliers were contacted and the information shared with them. The FM Conway specification for new lighting towers was updated to include this feature.

Trime UK, a manufacturer, took the concept and modified it. FM Conway have subsequently purchased 18 lighting towers from them and retrofitted existing towers to meet this specification.

### BENEFITS

- Potential hazard from toppling light towers removed
- Safer environment for anyone working under temporary lighting
- Fail safe system being adopted by manufacturers
- Adoption of 'Safer by Design' principles.





# 1191 Field conveyor cleaning scoop

Aggregates Industries > Garside Sands



## DESCRIPTION

Garside Sands silica sand operation in Leighton Buzzard comprises of two sites that are split by a main road. Both sites use conveyor belts to move sands and, as with many bulk materials, there is always an element of spillage under the conveyors caused by either wet sand sticking to the belt, non-operating head or tail drum scrapers and build up on return rollers.

Some of the conveyors have been designed with little or no access for mechanical cleaning. The traditional way of clearing spillage from under these conveyors is with shovels, creating manual handling issues, putting employees at risk of serious back and lower body injuries.

To overcome this problem and following a lengthy evaluation of the sites' conveying systems, the on-site maintenance team designed and built a scoop. This was designed to fit onto a CAT Telehandler which could insert the scoop under the conveyor and remove spillage. Manipulation of the boom by the operator afforded further flexibility and reach.

The 'Scoop' was constructed from an old loader bucket utilising a CAT quick hitch attachment. This enabled the 'Scoop' to be easily moved around the site when required.

This project was a good example of the application of Aggregate Industries' ACE (Agility, Collaboration and Empowerment) ethos, the implementation of a simple solution to an otherwise high risk area.

## BENEFITS

- Reduced manual handling risks
- Employee led design and implementation
- Reduced plant down time
- More cost effective and timely spillage removal
- Concept can be adopted for use on other sites
- Safer working environment.



# 1180 Innovative sliding pump base for an easier and safer work environment

Atlantic Pump and CEMEX > Angerstein Aggs Wharf and Concrete



## DESCRIPTION

Slurry pumps are large and notoriously difficult to maintain and repair. It is a task that usually requires more than one person and the use of lifting aids. The operators involved are exposed to several risks.

At CEMEX's Angerstein Wharf, the mains water pump used to take one day to strip, replace and rebuild. The process involved the high risk manual handling of heavy pump casing and pipework. It required a full day's downtime.

One of CEMEX's priorities is to minimise the potential for musculoskeletal disorders (MSDs) from hazardous manual handling, a safer and more effective way of undertaking this task was therefore required.

The introduction of a 'SlurryPro Sliding Base' in conjunction with their Warman 6x4 slurry pump has significantly reduced this risk. The bespoke design is the work of Atlantic Pumps following discussions with CEMEX and other colleagues. The new design means that the suction pipe no longer needs to be removed and replaced and the pump casings stay connected to the frame. Access to the wear parts of the pump is achieved by unbolting four casing bolts and sliding the wet end and motor apart.

## BENEFITS

- Elimination of a high risk manual handling task
- Reduced risk of hand injuries and MSD injuries
- Reduced downtime by 50%
- Increased production (additional £30,000 of product).



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# 'The Fatal 6'

At the request of MPA Council and Board, the MPA Health & Safety Committee looked back at the fatal incidents over the last decade, identifying 6 high consequence hazards, 'The Fatal 6', have been the main cause of fatalities over that period. MPA and its members have agreed that they will focus their resources on tackling the issues associated with 'The Fatal 6'.

**1**  
Contact  
with moving  
machinery and  
isolation

**2**  
Workplace  
transport and  
pedestrian  
interface

**3**  
Work at  
height

**4**  
Workplace  
Respirable  
Crystalline  
Silica

**5**  
Struck by  
moving or  
falling  
object

**6**  
Road Traffic  
Accidents

A working group involving MPA members has been established for each theme. They will develop industry best practice and guidance, raise awareness and develop useable tools for reducing risk.

The new Guidance and other resources will be accessible via [www.safequarry.com](http://www.safequarry.com) and from other channels







1220 **Real engagement!**

**EPC-UK Ltd > Alfreton**



**DESCRIPTION**

EPC-UK has a distributed workforce of nearly 250 people working across the UK.

Remote workers responsible for blasting and drilling can spend long periods on their own, while drivers ferrying hazardous materials up and down the country are often out early and late in difficult road conditions. These remote workers make up 50% of the EPC-UK workforce. Ensuring these workers did not feel neglected or isolated was important for their health and wellbeing. EPC wanted to engage with them on a human level, not just a work level. The management of occupational ill-health risk is vital.

The company has committed to 'The Workplace Wellness Charter'. This Charter is an evidence-based award scheme which is seen as a statement of intent, showing EPC-UK's commitment to the health and wellbeing of its people. The charter allows EPC-UK to audit and benchmark its health and wellbeing results against an independent set of standards.

In 2017, EPC-UK launched its 'Commit to be Fit' initiative, this aimed to support all employees, especially the hard-to-reach remote workers both on a mental and physical level.

The nationwide programme included presentations from various experts in mental health and wellbeing. Nutrition and daily physical activity were two of the three focal points of the programme's first year. However, the one that made the biggest impression with employees was the focus on sleep. Dr Neil Stanley,

an independent sleep consultant, toured all sites to explain how lack of good sleep affects us.

All employees were issued with a Garmin fitness activity tracker and given access to a Wellness Programme Portal, which aims to keep them engaged and motivated as they work towards a healthy, well-adjusted lifestyle. The Garmin package included the software and the portal, through which various voluntary challenges both locally and globally could be launched. An example of a challenge is the 100-kilometre walk. This encouraged employees to take short 15 minutes walks whilst at work and achieve a 100km within a year.

The 'Commit to be Fit' initiative has been a huge success throughout the business with support from the MD downwards.

**BENEFITS**

- Improved health and wellbeing culture across business
- 100% engagement from employees
- High level of voluntary participation in challenges
- Absenteeism is now less than 1.5%
- The number of smokers reduced by 70%
- Initiative has developed into family engagement for some
- Use of technology helps supports engagement and relevance
- A healthier and more balanced lifestyle for employees.





# 1219 Safety culture on the A1 Darrington to Dishforth contract 2 6



Tarmac Contracting > A1 Motorway Maintenance Depot

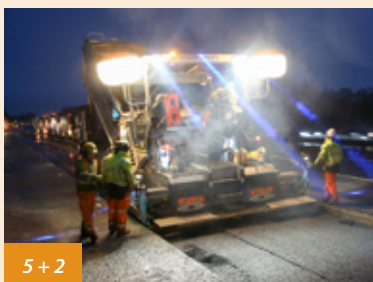


### DESCRIPTION

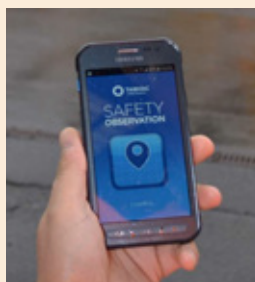
The A1 (M) Darrington to Dishforth project is a long-term maintenance and operation contract delivered by Tarmac on behalf of Road Management Services (RMS).

The strong health and safety culture of the workforce was rewarded when the project team reached an incredible milestone of seven years and 350,000 hours worked with no recordable accidents or lost-time injuries. This achievement reflects Tarmac's safety culture and an ethos that ensures the proactive identification and correction of potential hazards is second nature to all those involved.

Tarmac safety initiatives take a holistic approach to safeguarding both the physical and mental wellbeing of operatives. Through ensuring that everyone returns home unharmed at the end of each day, including customers, contractors, suppliers, employees and the public – Tarmac will achieve the ultimate goal of 'Zero Harm'.



5 + 2



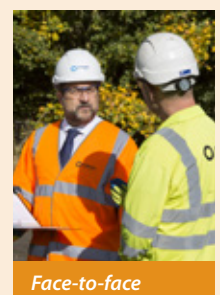
Tarmac's leadership has introduced a range of initiatives that have contributed to the achievement of the safety record on this contract, they include;

- A proactive approach from the start of every project. Early contractor involvement is vital to allow risks to be mitigated and, where possible, eliminated in the preliminary design stages.
- A 'collaborative ethos' – all the partners put teamwork and collective responsibility at the heart of meeting the safety challenge, ensuring that best practice is shared.
- Frequent joint operations meetings on the project that have helped to highlight and manage health and safety concerns.

- Proactive identification of safety hazards due to the relaunch of an innovative Safety Observations programme and mobile app. Operatives can also choose to fill out cards. The system has been promoted by management. **'Say it, sort it and report it!'**
- A culture of approachability and personal interactions, ensuring colleagues can relate to any problems they are experiencing. This helps to identify emerging problems at an early stage. The management team has a target to increase personal contact with the workforce by undertaking at least four face-to-face meetings a month.
- Implementation of Tarmac's 5 + 2 system that provides operatives with a guide to the safety exclusion zone around mobile plant.
- A third-party Employee Assistance Programme enables operatives to seek professional help for any health and wellbeing issues outside of work.
- Sharing lessons more widely throughout the highways community. Tarmac has hosted several Highways England Roadworker Safety Forums.

### BENEFITS

- Strong health and safety culture throughout workforce
- Recognition of management's commitment to safety
- Individuals and teams recognise their responsibility for safety
- Open approach to the discussion of safety issues and willingness to address them
- Excellent safety record – 350,000 hours without an LTI
- 1,000% increase in safety observations from 27 in 2014 to 250 in 2017
- Targets for face-to-face safety meetings exceeded by circa 14%
- A safer environment for all.



Face-to-face

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# 1147 Contractor / haulier induction interactive video

Smiths & Sons (Bletchington) Ltd > Gill Mill Quarry **1 2 3**



Drivers in induction suite

The video inductions are delivered in a dedicated induction suite on-site, this allows inductees to focus without distraction on the visuals and key information being provided. The feedback has been very positive, with the hauliers finding the video engaging and providing the safety information in a clear and interesting format.

**To view the videos readers must copy the links below and use the password: Smiths**

<https://vimeo.com/260909803> – Contractor Induction

<https://vimeo.com/260909806> – Haulier Induction

### BENEFITS

- Everyone is given a consistent and clear message
- Very well received – some inductees saying it is the best site induction they have experienced
- Ensures contractors and hauliers understand site procedures
- Information presented in an engaging and clear format
- Option to adapt concept for use on other sites
- A safer environment for all



Exert from video



Exert from video

### DESCRIPTION

The health and safety interaction of both contractors and hauliers when visiting quarries is an area of high importance. To fully engage site contractors and hauliers with its safety culture, Smiths Bletchington have developed an interactive, drone based, video induction in partnership with ECP Video Ltd. These videos have now become part of the structured induction programme that is given to contractors and hauliers at Gill Mill Quarry. The contractor and haulier videos focus on the topics detailed below:

- Clearer site orientation
- Key Hazards
- Extraction Phases
- Local Rules
- Product Locations
- Isolation Practice (LOTOTO)
- Safe HGV Tipping

1234 **'Stand up for Safety' campaign****Sapphire > Dunbar Works****DESCRIPTION**

Sapphire (a wholly owned subsidiary of Tarmac) launched a new multi-site safety initiative in 2017 focused on empowering the four sites to achieve a strong and effective leadership style. The objective was to achieve sustainable changes in behavioural safety and improve the safety culture through engaging communications and accountability.

The 'Stand up for Safety' campaign name was chosen by the sites. The campaign promoted preventive safety achieved through the support and engagement of all members of the teams. A system was set up that would reward the site teams and individuals for progress and, recognise where employees had 'gone the extra mile'.

The scheme involved each site manager completing a PowerPoint presentation every four months and presenting it to the Sapphire Senior Management Team (SMT). All managers attend the meeting.

The PowerPoint presentations focus on the six criteria below. The information provided includes both quantitative and qualitative measures of what has been achieved over the period being reported. An example of evidence provided would be before and after images highlighting the impact of a change.

1. Statistics on: Lost Time Incidents, Medical Injury, First Aid
2. Near hits reported by type: unsafe acts, unsafe condition and near miss
3. Ratio of the total near hits reported by number of individuals on-site
4. Housekeeping status and improvements
5. List of new safety actions and initiatives launched
6. List of safety actions and initiatives implemented

The criteria and guidelines for each element were shared and agreed by all, in advance. For each site and criteria, the SMT determine a score using a scale of one to 5. For each review period, the members of the site receive points equal to the average score obtained but only if equal to four or 5, as the objective is to reward good performance.

Points are accumulated by each individual. Lists of low monetary value point-based items are made available and the team members personally manage their points based on their preference.

The Sapphire GM appointed one member of the SMT to be the Safety Sponsor for each of the sites, this has meant that support and assistance is available to encourage full team engagement, progress and validation of the sites' efforts.

The images show the sort of on-site improvements that were achieved, in this example in the re-organisation of the way recycled tyres were stored.

**BENEFITS**

- Extremely well received within the sites
- Increased reporting and reviewing of unsafe acts and unsafe conditions (+22%)
- Significant housekeeping improvements across the sites
- Individuals taking real pride and responsibility for their environment
- Improved safety behaviour and culture across all sites
- Stronger safety leadership, engagement and effectiveness
- Increased communications between the sites and awareness of what other sites doing
- Improved sharing and adoption of best practice
- Encouraged engagement and contributions from all members of site team
- Improved communications and feedback between site teams and management.



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1213 **Aircrete load security – void guards**

Tarmac Building Products > Aircrete Linford and Alfreton

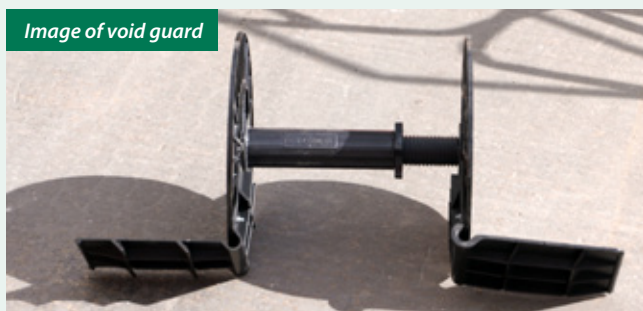
**3 5 6**



**DESCRIPTION**

Due to their lightweight construction, packs of aircrete products can be double or treble stacked when being transported. A gap or 'void' is left down the centre of the load to enable the crane grab to access the packs during offloading. This also enables the clamp trucks to load the vehicle.

The gap creates a 'weakness' in the load when it is strapped up, as there is nothing to prevent the packs moving towards each other during transit. To protect against this, a driver was required to insert some form of brace between the packs whilst they were being loaded. This required a driver to either climb on the load or stand on the deck. The driver was exposed to the risks associated with working at height and the possibility of being hit by either the crane or a pallet.



To overcome these risks any solution also needed to meet the following criteria;

1. The bracing device would need to be adjustable, as the size of the void can vary depending on how it is loaded.
2. It would need to work with a range of different vehicles and cranes that are used within the haulage market.
3. It would need to allow the driver to insert and remove the device without climbing onto the vehicle.
4. It would also need to be lightweight and easy to store on the vehicle.
5. It would need to be available at an acceptable cost for the haulage sector.

The building products transport team at Tarmac worked on various solutions; engaging with suppliers, drivers, haulage companies and a local university. Various concepts were trialled using materials such as polystyrene, wood and metal. Eventually, a plastic design was adapted by introducing 'wings'. The wings allowed the guards to 'rest' on the top of the load without falling in.

The various solutions were trialled with the drivers and cameras were installed on selected trucks to measure effectiveness in transit.

A gantry was designed that enabled the drivers, using a tool adapted for the purpose, to insert the void guards into the load prior to strapping. The driver does not need to step onto the loaded vehicle. The device is lightweight and storable on the vehicle, and it can be removed by the crane grab on the customer site.

**BENEFITS**

- Reduces risk from working at height on vehicle
- Reduces risk of operator being struck during loading
- Flexible and low cost device
- Increases the amount that can be loaded onto vehicles
  - From 32 packs to 38 packs (+19%)
  - No increase in haulage cost
  - £267K annualized saving
- Improved aircrete products' security in transit
- Reduced breakages and product damage
- High level of user/driver engagement in process
- Can be applied by other organisations
- Improved safety on both production and customer sites.





1168

## Safety partnership – haulier engagement

Tarmac Ltd > National **2** **6**



### DESCRIPTION

Tarmac operates from more than 400 sites across the UK and transports over 70 million tonnes of materials by road each year. Over 21,000 drivers are used across a fleet of 16,000 contracted and company owned vehicles that include artics, tippers and ready-mix trucks. Consistent messaging and communications across this large and diverse group of hauliers and drivers is difficult. Tarmac wanted to improve its relationship with them and to ensure that they all shared Tarmac's safety values.

A six-month programme of research was undertaken to ensure that Tarmac had a clear understanding of the views of the hauliers and drivers on the issues and where improvements should be made. An important part of the process was to raise Tarmac's awareness of best practice within the industry and in other sectors, identify key trends and issues, to focus the proposed actions on those areas where effective changes or improvements could be made.

The information gathering was undertaken in the sequence outlined below.

1. Engaging with senior leadership to review issues, incidents and consider a way forward.
2. Reviewing external best practice in FORS forums etc.
3. Surveying the operational team for opinions on hauliers and transport safety culture.
4. Surveying hauliers and drivers for their opinions on Tarmac and safety communications/engagement.
5. Running a workshop with operational leaders to review survey outputs and design solutions.
6. Establishing a dedicated working group to deliver solutions.
7. Running a workshop with external/collect hauliers – to understand their views, what wider industry does, how Tarmac could improve.
8. Running a final workshop with operational leaders to review the proposed approach.
9. Launching the 'Safety Partnership'.

### Safety Partnership

The outcome from this activity was the 'Safety Partnership', a new engagement programme that was designed to help bring Tarmac teams, hauliers and drivers closer together, to improve collaboration and strengthen the relationships. These activities would build a greater level of trust and help create a 'One Team' feel within the business.

The programme was launched by Martin Riley, the Senior Vice President of Tarmac. Central to the launch was a transport



focused safety week that was held at all Tarmac's 400 sites in November 2017. Each site had a dedicated information pack that had interactive content with a different theme for each day.

This enabled sites to engage drivers in the activities and helped to facilitate safety discussions between the drivers and the site operatives. Over the five days, the process started to build a more open environment and a shared understanding of the issues. Importantly, the feedback from the week also enabled some site-specific actions to be put in place. An example of this was the conversion of an old storeroom to create a rest room for drivers.

Following on from the safety week, monthly meetings now take place involving the drivers and site personnel, these meetings provide the basis for open discussions, feedback on progress and the identification of any new issues.

### BENEFITS

- Reduction in incidents involving drivers
- More near hits now being reported and actioned
- Improved engagement with drivers and hauliers across Tarmac
- Better understanding of issues for drivers at site level
- More consistent messaging and feedback from drivers
- Improved facilities for drivers
- Progress in achieving 'One Team' feel and shared safety values.



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## 1233 Tyre telematics

Day Aggregates > Transport Fleet **6**



### DESCRIPTION

It is estimated that there are between 150 to 400 wheel detachments each year, they are responsible for three to seven deaths annually. They also result in serious traffic incidents involving damage to other vehicles and injuries to other road users.

Day Aggregates wanted to reduce its exposure to these risks and improve tyre management across its fleet of over 150 vehicles.

TrucTyre and Day Aggregates agreed to partner in a trial of a tyre monitoring system. In 2016, they were awarded a two year Innovate UK government grant to assist in the development of this system.



The system consists of a sensor which straddles two-wheel nuts and is held in place with a bracket, the sensor is activated by a 1mm movement. When the wheel nuts start to work loose, the switch opens, and an RF warning is sent to the driver via a receiver to the cab. In addition, via the TyreWatch telematics platform, a warning is sent to the traffic office of the imminent danger of a loose wheel.

The system also monitors tyre pressure and temperature. By monitoring these elements and taking appropriate corrective action, the operator is able to improve tyre life, enhance the durability and safety of the tyre casing.

The system reduces the reliance on the driver to check and monitor the vehicle tyre. The processing of data and reporting directly to the transport department is automated and continuous.

The driver is warned and able to stop their vehicle before a wheel becomes detached or a tyre blows out or runs incorrectly inflated, avoiding an incident that could have potentially catastrophic consequences.



### BENEFITS

- Reduces risk of tyre failure leading to accident
- Safer Transport – drivers, tyre fitters and third parties
- Increased vehicle uptime, less traffic congestion
- Lower environmental footprint
  - CO<sub>2</sub> emissions
  - Lower fuel consumption
  - Less tyre disposal
- Reduction in workshop maintenance time





# 1133 Preventing vehicle tip overs

CEMEX UK > Grinding Plant > Tilbury 2 5



## DESCRIPTION

CEMEX's grinding plant is located on the wharf at Tilbury docks, the site is exposed to strong south-westerly winds. A number of articulated tippers have been blown over as they were delivering raw material on the ramps into the apron belt feeders.

To prevent the possibility of this happening again, a covered tip over frame has been constructed. Vehicles now reverse into the fully covered frame and before they off-load into the safe tipping area. It is now impossible for vehicles to tip over regardless of weather conditions, mechanical failures such as a ram collapse or a tyre puncture.

## BENEFITS

- Eliminated risk of tip over
- Reduced risk of injury to drivers and pedestrians on-site
- Reduced potential for environmental pollution from dust
- Potential to apply design in similar situations
- Safer environment for all.



Tipping prevention frame



# Driver's Handbook



The Handbook is a tool for working drivers to help them understand and manage the risks that they face and create when driving and operating vehicles for work. It will help people make safer choices about the way they drive and behave around vehicles.



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# 1137 Managing pedestrian risk

## CEMEX UK 6



### DESCRIPTION

CEMEX launched a new safety campaign in January 2018 aimed at pedestrians – 'Don't chance it ...'. The campaign is designed to raise the awareness of pedestrians to the risks they may be exposing themselves to when in close proximity to or crossing in front of LGV's. This builds on the success of CEMEX's industry leading safety campaign to educate cyclists.

Part of the motivation for the campaign has been the involvement of CEMEX drivers in the fatality of three elderly pedestrians. These separate and tragic incidents all occurred within an 18 month period. While all three drivers were found to be non-culpable, it has been devastating for all concerned. In each case, the pedestrian killed had stepped out in front of the truck in slow moving traffic and had assumed the driver could see them.

The pedestrian campaign aims to educate vulnerable road users about the dangers around heavy goods vehicles such as the 'blind spots' as well as highlighting key road safety messages.

Pedestrians account for a quarter of all fatalities on our roads. In London, the figure is a shocking 53%. Nearly a third of pedestrian fatalities involve 60+ year olds.

The problem is growing as the number of pedestrians being killed on UK roads is increasing, this may further accelerate as traffic levels increase. Whilst there are identifiable higher risk groups of vulnerable road users, anyone who walks is part of the audience for the campaign.

One of the challenges for CEMEX was to find a way to maximise the exposure of the safety message to a wide and diverse audience. With a fleet of approximately 900 CEMEX vehicles covering around 39 million miles every year, using the sides of these vehicles to promote the safety messages seemed an ideal opportunity to generate mass visibility to the public.

The 'Don't chance it ...!' message has been applied to some aggregate tippers in London and the North West, this application will continue in a rolling programme across the CEMEX fleet.

A simple logo featuring a truck and different 'people' variants, representing the most at risk groups has been developed. The safety messages are reinforced using the logo, a road safety leaflet and a video. The leaflet and video highlight a number of road safety messages besides those directly related to heavy goods vehicles, such as always using a crossing, ensuring that you are visible and keep looking and listening.

As well highlighting the key message of 'Don't chance it' to pedestrians, CEMEX is also providing drivers with specific training related to this group of vulnerable road users. Training drivers was also an integral part of the campaign.

In addition to the campaign, CEMEX operates three low-entry cabs where the 90% increased visibility has a significant impact on its ability to keep all vulnerable road users safe.

### BENEFITS

- Industry leading initiative
- Helps educate and raise public awareness
- Will facilitate further engagement by other stakeholders
- Improves safety of CEMEX drivers
- Visual demonstration of corporate responsibility
- Safer environment for all





## 1178 Trief and Kassel factory program reduces manual handling and concrete cutting

Brett Landscaping & Building Products Ltd > BLBP > Barrow **1** **4** **5**



Before – manual handling moulds



Aligning curves on saw table



3-dimensional curves online

### DESCRIPTION

Brett's factory at Barrow produces 11,000 tonnes per annum (tpa) of containment and bus-stop kerbs which can weigh up to 300 kilograms. Most of the products are processed on a Coote manufacturing system, this uses six steel moulds held within a carrier. The moulds are mechanically inverted and release the kerbs before they are lifted by powered chain hoist for finishing.

The remaining 1,000 tpa of production had to be cast in floor moulds as the steel carrier moulds could only have curves in two dimensions. These kerbs are curved in three dimensions, needing rubber formed moulds that the standard carriers could not release.



New moulds to reduce sawing

On average, these special kerbs weigh over 100kg and can be as much as 170 kg. After curing, two operatives manually strip them, turning them out onto a moveable stand before transferring them onto pallets. Though the moulds were never lifted clear of the stand, it needed significant manual effort and coordination to release the kerbs, with one operative standing on the movable stand.

In addition, around 600 tpa of Coote line kerbs had to be cut to specific dimensions to meet customers' radius requirements. A grab truck was used to transfer these 230kg kerbs on and off the saw table. However, they still required to be manually aligned on the 1m diameter saw bed using crowbars. The concrete sawing also releases RCS dust into the factory despite water suppression being fitted.

A full review of the floor moulds and sawing was undertaken to develop a program to reduce the occupational health exposures.

The team conducting their review identified the commonly sawn sizes and purchased moulds with these dimensions. Now they can be cast directly on the mechanically controlled Coote line. This change enables the transfer of 500 tpa of production onto the machine, an 80-90% reduction, and eliminated the need to manually align these kerbs on the saw table.

By working with local mould suppliers, Olympic Moulds and Dixon Engineering, the team produced a new carrier design. This opens on the side and has a crossover design of steel, moulded rubber and wood frames. This enables 3-dimensional, curved kerbs to be mechanically cast. This has allowed 33 of the original 45 floor moulds to be moved onto the Coote line.

A 500kg overhead gantry crane was installed which, together with a specialist handling aid, enables the remaining floor moulds to be turned mechanically to release the kerb from the mould.

The total investment in the new carriers, moulds, crane and handling aids was circa £90,000 over two years.

### BENEFITS

- Elimination of the majority of manual handling of floor moulds
- Elimination of the majority of manipulation of sawn kerbing
- Reduced requirement for sawing
- Reduced levels of RCS dust generation in the factory
- More efficient and mechanised operation
- Team effort in finding solution enhances safety culture
- Safer and healthier environment for all.



Specialist handling aid



New overhead gantry crane

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# 1246 Educating the workforce on respirable crystalline silica and other work-related health issues

FM Conway > Conway House > Vestry Road **4**



## DESCRIPTION

Following a review of the available training courses covering construction related occupational health risks, FM Conway was disappointed by the lack of industry specific courses and resources available. Therefore, it decided to develop its own in-house training course.

To start this process, the individuals responsible for the development of the course needed some special training. They attended the NEBOSH Occupational Health and Well-Being Training Courses. They used the knowledge gained to develop a bespoke training course for FM Conway's employees.

The first phase of the training programme was to deliver the course to the managers and supervisors working across all of Conway's sites. It is now being re-tailored for presentation to operatives.

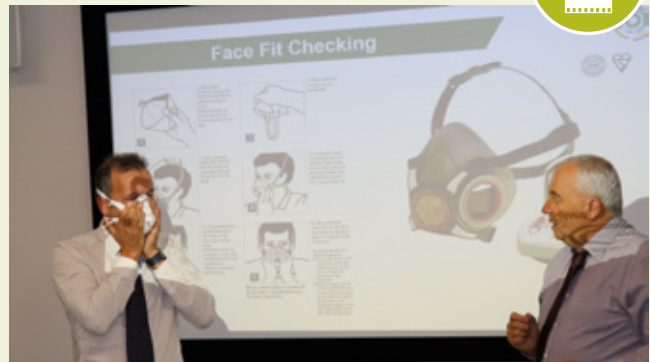
The course covers a wide range of health issues. It uses a variety of techniques including interactive sessions, videos, in-house and externally produced resources to facilitate the course's delivery. Topics covered include legislation, psychological health, HAVs, silicosis, coronary disease, diet and many other health related topics.

At the beginning of the course, the delegates are asked to state their top hazards involving health and safety. Most of the candidates focussed on safety related hazards, very few mentioning health related construction hazards. Although not unexpected, as historically the managers and supervisors training has concentrated on these areas, these responses illustrated the need for the training programme on health issues.

Typical examples of how topics were covered are detailed below:

**Silica and Silicosis:** Use of the IOSH 'No Time to Lose – Fake or Real' question set. Explanation of the various types of silicosis. The benefit of X-Rays, health surveillance including lung function testing. The adoption of the correct control measures including local exhaust ventilation, use of dust masks and the importance of face fit testing, dust suppression and vacuuming techniques.

**Hand Arm Vibration Syndrome (HAVS):** Provides information on exposure levels and control measures. It introduces the attendees to FM Conway's HAVS Calculator which is an adaptation of the HSE HAVS Calculator. It incorporates spreadsheets that assist recording and automates the calculation of exposure points and levels. The course also includes instruction on safe working practices such as job rotation.

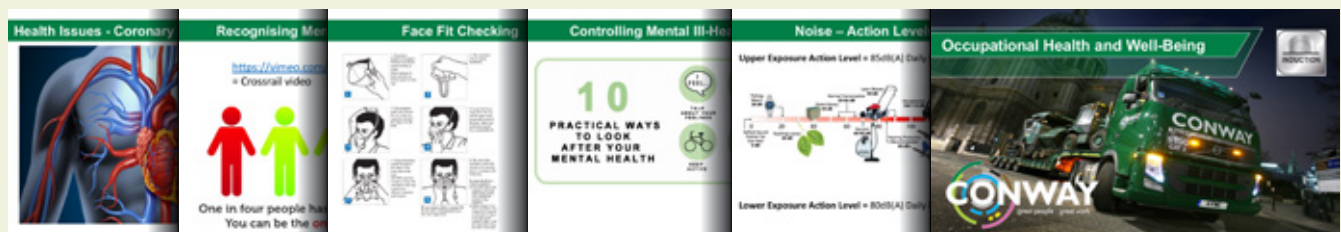


**Mental Health:** An explanation on the different types of mental health conditions including psychosis (such as Bi-Polar Disorder), personality disorders, schizophrenia and neurosis. The more common type of mental health problems, such as anxiety, depression, panic attacks, phobias are also covered. This is followed up with videos and discussions on recognising such issues and what can be done to help manage and control them.

Phase one of the programme, delivering the training to managers and supervisors, is nearing completion. Phase two, the delivery of the training to operatives will commence shortly. The feedback and learning from Phase one will be used to modify and tailor the Phase two delivery.

## BENEFITS

- Managers and supervisors better equipped to deal with health hazards
- Managers and supervisors better able to understand the requirements of the health improvement plan
- Managers and supervisors have a better appreciation of WHY health is important
- Managers and supervisors understand the improvements that can be made
- Circa 150 managers and supervisors trained
- Developing a more balanced health and safety culture in FM Conway
- Helping to change attitudes, understanding the behaviour of employees.





# 1157 Vending machine for PPE

Sibelco UK > Kingsteignton 4



## DESCRIPTION

Operators at Sibelco's East Golds site had to collect all their PPE from stores at its Preston Manor site. When new dust masks were required, a special journey was required to collect them, the supply was in boxes containing 100 masks face masks. Once at East Gold, the boxes were stored in a dust contaminated area of plant. Operators would help themselves to a mask without any record being kept.

A further difficulty for operators at East Golds was that the stores at Preston Manor were only open between 8am – 4pm. On occasions, it was not possible to provide operators with replacement masks if the stock had run out outside the opening hours.

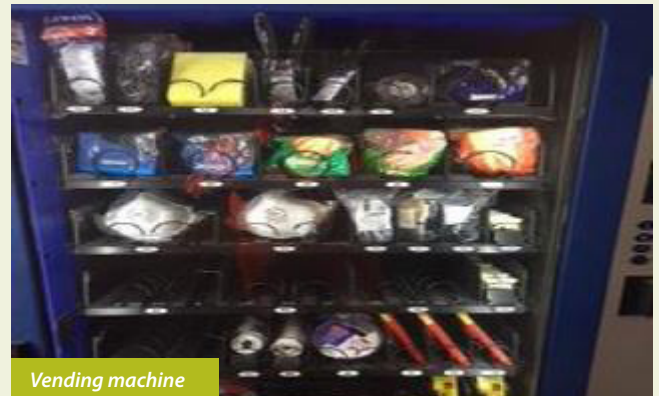
The solution was to install a card operated, PPE vending machine at East Gold. This allowed operators, maintenance workers, management and contractors access to PPE 24 hours a day, seven days a week.

The supplier of the vending machine provided training on issuing users with cards and how to access the items in the machine. Cards

were issued to all the individuals on-site who required access to the PPE dispensed by the machine. A partnership was established with Hayley, the PPE supplier, to monitor stock levels via remote software and replenish as necessary.

## BENEFITS

- PPE available from a clean and secure source
- System enables activities of individuals to be recorded
- Ensures operators are being issued with the correct sized dust masks
- PPE always available and easily accessible on-site
- Removed need to travel to Preston Manor and consequent loss of time
- A stock of masks is always available
- Reduced risk of exposure to silica.

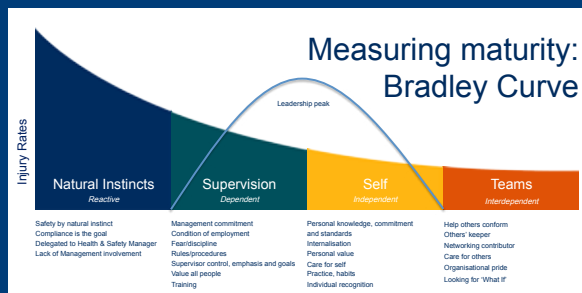


# Safer and Healthier by Leadership



MPA is running a series of workshops at different locations throughout the UK in 2019, contact Ian Gibson at [ian.gibson@mineralproducts.org](mailto:ian.gibson@mineralproducts.org) for more details.

A programme that will help leaders to understand how leadership behaviours influences their organisation's development. Also to analyse their business, to develop their strategies and inspire their workforce to achieve 'Zero Harm'.







# 1118 Dynamic risk assessment

Kerneos and Imerys Aluminates > Purfleet **1**



## DESCRIPTION

Kerneos has been using on the job dynamic risk assessments (DRAs) for many years, but they were little used and difficult to complete.



The size of the book was too large, and the system was not being fully utilised.

At last year's annual safety day, a team lead by the maintenance department, but including both production operatives and non-operational staff, decided to revamp the DRA form.



They reviewed other forms used in industry, both by MPA members and companies from other industry sectors such as Rio Tinto and DuPont. The objective was to identify best practice and learn from others. They recognised that a smaller, pocket-sized form would be appropriate for their business. The existing question list was reviewed, both adding some more relevant questions and taking out others that didn't add value.

The site merged this system with the parent company's 'Take 5' program and relaunched the newly designed, risk assessment book in September 2017.

It was agreed, that as a minimum, any task that requires a permit or lock off, must have a dynamic on the job risk assessment regardless of whether there was a formal risk assessment already in existence.

While formal risk assessments might consider risks on tasks and suitable control measures, it can't always account for the hazards faced, especially those faced by maintenance employees in break down situations. The dynamic risk assessment tool allows them to take account of unusual hazards and importantly, helps them to consider any co-activity which might not have been present when the formal risk assessment and SSOW were produced.

The form follows five easy steps that help to ensure the team have taken extra time to consider the risks in front of them before jumping on the task.

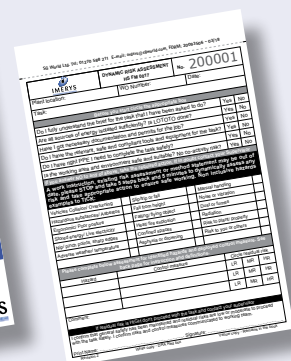
## The five steps are:

1. **Think through the task**
2. **Look for exposure**
3. **Assess the risk**
4. **Take precautions**
5. **Do the job safely**

The team have real ownership of the system and the form which they designed.

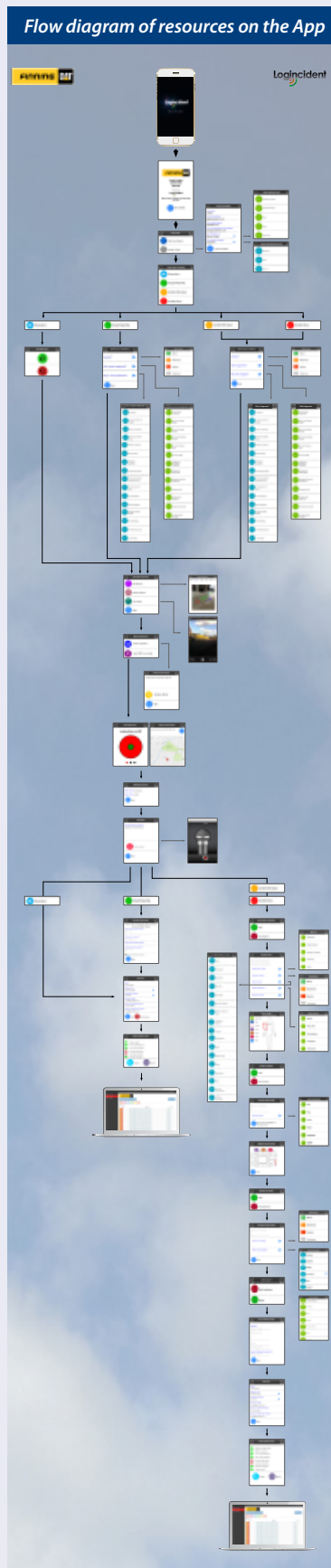
## BENEFITS

- Risks more effectively identified and managed before task commences
- Operators and contractors safer
- 2,000 dynamic risk assessments from an operational team of around 40
- System monitored by management and constantly evolving
- System still being tweaked with suggestions from the team
- Often used as central part of behavioural safety tours
- Form has been adopted on-site by some of the regular contractors
- Enhanced safety culture on-site
- Commitment from everyone on-site to system they developed.



1113 **Transformation in safety reporting**

Finning UK &gt; National

**DESCRIPTION**

Finning UK & Ireland initiated a company-wide analysis of the reporting of behavioural safety observations, hazards and near misses. It wanted to understand why relatively few were submitted for an organisation of its size and diversity. The analysis highlighted that front-line employees did not have a reporting capability while off-site, identifying the limitations and inefficiency of its traditional, paper-based reporting system.

Following further research, it was decided to introduce a digital solution integrated into mobile phone devices for all front line personnel. Working with an external provider, the business developed a reporting concept which was then trialled by 50 employees for a period of six weeks. The pilot group selection process ensured that there was a full representation from each market sector and core job function. Throughout the trial, the focus group were fully involved and engaged in the project. They provided continuous feedback and suggestions which were invaluable in refining the concept.

At the end of the trial, 93 submissions had been made via the digital reporting app compared with 85 from the circa 1,400 personnel in the business still using the paper-based system.

Finning decided to move from the paper-based reporting system to the digital mobile concept. The new system would also incorporate further development opportunities identified during this period.

The system enables users to log their visual GPS position, attach and annotate photos, attach videos and record voice over commentary. Managers receive email alerts and a direct link to any submissions. Before being able to close out any submission, the corrective and preventive action is required to be recorded. Any comments and/or feedback will then be forwarded to the originator.

The APPs three key functions are:

**Positive observation** – Finning’s employees work across all industry sectors both in the UK and internationally. They are often presented with significant health and safety challenges whilst on-site. The individuals involved will implement suitable safety control measures. However, the safe and innovative solution they

adopt is often unnoticed or unreported. The system enables this information to be captured and shared, helping the business as whole to continually improve and learn.

**Hazard / Near Miss** – This provides employees with an instant and easy to use reporting capability at their fingertips. During the trial, several hazards were captured via the app in environments where a paper-based system was not available or impractical to implement. Each submission provides the opportunity to take positive, proactive and preventative action, reduces the potential for an accident. The system ensures that each stage of this process is logged and communicated to appropriate individuals.

**Accident reporting** – Using the old system, accidents were often reported 24 hours after the event due to limitations of the reporting capability. Employees are now able to report an accident immediately from any mobile device. This ensures that all essential and critical information is available to assist line management and the SHEQ team to complete a thorough investigation.

The new system was launched on 31st January 2017 to 500 users. It includes an interactive management reporting system. This enables management to track and report action taken to resolve any issues identified and to identify trends.

**BENEFITS:**

- Over 3,200 submissions received via the app since launch
- 20% of the submissions are positive behavioural safety observations
- On target to roll out to all employees by Q2 2018
- Communication plans adapted to incorporate key trends
- System is flexible and can grow organically
  - Successful Safety at Work’ alerts
  - Managers Monthly Tour and Safe on-Site process
- All parts of business involved in finding solution
- Buy-in and commitment from all employees
- A safer environment for all.





# 1162 Dry silo mortar loading – driver assistance

Tarmac Building Products > Mortars DSM > Croxden Quarry **2**

## DESCRIPTION

DSM Mortars held a team safety stand down event at Croxden Quarry. The event brought together front-line operatives, hauliers, fitters and engineering. They created a site hazard map based on all the activities associated with vehicle movements in different areas of the site.

The area where drivers raised and lowered the gantry which allowed them access the top of their vehicles was identified as the location for persistent near hits and incidents. The gantry also showed evidence of damage from recent contact with the tankers.

A check of the historical records and other incidents at similar sites over a 10-year period showed a trend of frequent impacts with the gantries and damage to this driver safety device. One incident had involved the replacement of the gantry due to the extent of damage.

An action group was formed to develop a solution that would prevent future collisions. Short term actions included a revision of the site inductions and introducing the policy of holding the driver's keys when his vehicle was being loaded. These actions helped to reduce the risks, it did not eliminate them.

The team then developed a light and drivers key control system to aid both drivers and operatives to manage safe movements on and off the weighbridge. This involved the following features:

- Green and red LED light strips were attached to the underside of the gantry, drivers can clearly see on entering the weighbridge if all items are in the 'up position' – lights green and safe to proceed.
- The LED strips also indicate the bottom edge of the gantry to aid drivers positioning themselves under the loading point on entry
- Improved visual assessment for drivers to assess whether their truck is too high

- As the driver lowers the gantry and loading sock, the LED strips become red at both the entry and exit of the weighbridge. Drivers are therefore aware that the equipment is engaged with their vehicle and not to move.
- Once ready to load the drivers put their keys into an electrically interlocked box next to the batcher's office – the keys are only released once the loading sock and gantry are fully raised after loading.
- A 'mimic' panel is located in the batchers office so the batcher can see the status of every item and whether it is safe for the driver to proceed onto or off the weighbridge.

## BENEFITS

- New system has been well received
- No impacts since installation
- Safer for driver and operatives
- Reduced repair costs for vehicles and gantry
- Enhanced safety culture on-site
- System now being rolled out to other DSM sites across the UK.





# 1184 Reducing worker risk through automated inspection and testing during pavement construction

Aggregates Industries UK > Nationwide **2** **6**



## DESCRIPTION

The surfacing process requires the gathering of quality data both during and after the laying activity. This traditionally requires the presence of one or two technicians with each surfacing gang to gather and record the data. The data set includes laying temperatures, density, surface texture and surface profile, as well as weather and positional data.

Several serious incidents across the industry involving technicians led Aggregate Industries to review whether it was possible to change the testing process. The goal was to remove the requirement for on-site technicians, eliminating their exposure to a range of hazards.

Some of the hazards significantly increased during night working or in situations where visibility was reduced. The hazards included the following;

- Proximity to live traffic
- Proximity to construction vehicles
- Manual handling
- Muscular-skeletal injuries
- Hot material interface
- Trip hazards
- Night working
- Lone working



Working with MATtest Southern Ltd, a suite of new testing methods was proposed. In addition to removing technicians from the need to be on-site, the system would also improve asset management data for customers and compliance with Building Information Management (BIM). The new system was trialed in collaboration with Aggregate Industries clients on a few contracts.

The system included the following elements:

- Equipping pavers with GPS, automated weather stations, infra-red (IR) sensors and a data recording unit gathering essential, quality information at an appropriate sampling rate.
- Equipping rollers with GPS and IR sensors which linked to the paver to help manage the compaction process, record the rolling temperature and the number of passes.
- Combining the roller and paver data to provide a complete record of the laying process with zero risk to technicians.
- Equipping a survey vehicle with GPS, a laser scanner and a video recording capability. This provides a complete picture of the pavement surface profile and texture with improved accuracy. It also provided a rolling straight edge testing on the completed pavement. These activities are traditionally manual operations with elements of lone working.

Before – manual testing



Following extensive trials to confirm the accuracy of the information gathered, the AIT system is being deployed across all regions.

## BENEFITS

- Fewer personnel involved in the paving process
- Elimination of high-risk transport and pedestrian interface
- Technicians removed from exposure to hazards
- The automated process is quicker and more efficient
- Removes all manual recording and transfer of data
- Equipment manufacturers delivering a factory fitted solution
- Retrofit solution available for existing plant and equipment
- Data from factory-fitted and retrofit solutions is consistent
- Releases skilled operatives for redeployment in period of skill shortages
- A safer environment with fewer incidents.







# 1181 MixLock® mechanical paddle shaft lockout system

Driveline Engineering and Aggregate Industries UK > Astley Asphalt Plant **1**



## DESCRIPTION

Driveline Engineering identified that the asphalt industry worldwide did not have an established mandatory, proven safety procedure to 'mechanically' lock-off asphalt mixer shafts. The lock-off must be completed before personnel enter the mixing chamber to undertake maintenance duties such as replacement of paddles, tips and wear plates.

The only established industry safety procedure upon lock-off is to isolate the power supply to the mixer. However, this procedure does not lock-off the paddle shafts from rotating due to stored energy or an applied force when personnel are within the mixer chamber.

A range of ad-hoc methods are used to mechanically ensure paddle shaft lock-off, these include using a chain block and tackle or rope around paddle shafts, lifting slings tied to paddles shafts, a crow bar wedged between synchronizing gears and even a flat metal bar tack welded temporarily across both mixer paddle shafts. These ad-hoc procedures can fail and do not provide a 100% guarantee of personnel safety within the mixer chamber. Their installation or presence can create further potential hazards.

Driveline designed, patented and manufactured the MixLock®. A device that provides the global asphalt production industry with a 'mechanical' safety lock-off system guaranteed to be effective.

The system involves a simple locking plate that can be installed once the power supply has been isolated using LOTOTO procedures. The fitter removes the caps from the paddle shafts, rotates them until he can install the plate. The plate is then secured using isolating pins and padlocks.

Driveline worked closely with Aggregate Industries Asphalt Operations Division to ensure MixLock® was trialled within the industry. It has now been installed at various sites within Aggregate Industries. The MixLock® safety system from concept through to installation was independently tested using Finite Element Analysis (FEA) to ensure guaranteed safety of design, manufacture and application.

## BENEFITS

- Eliminates risk of paddle movement due to stored or applied force
- Potential for serious injury has been removed
- User friendly system that is simple to apply
- Requires zero maintenance
- Its application does not introduce any new hazards
- Aggregate Industries leads world in the application of this safety improvement
- System could be applied world wide
- Could be used as a mandatory, standard procedure in this application.





# 1122 Asphalt loadout door cradle

Tarmac > Mountsorrel Quarry **5**



## DESCRIPTION

The load out doors on the KVM plant at Tarmac's Mountsorrel Quarry needed to be replaced. This task is difficult and exposes the maintenance fitters to risk. No special tool was available to assist with the removal and fitting of the doors.

Fitters at the quarry designed a cradle that was shaped to fit the door. The cradle can be picked up by a telehandler which enables the door to be easily moved into position to support and hold the door in place whilst it was either being fitted or removed. Work is now underway to further improve on this design.

## BENEFITS

- Significant reduction of risk to fitters when working on doors
- More efficient operation to fit and replace doors
- Low cost and simple solution
- Principle can be applied to other similar situations.



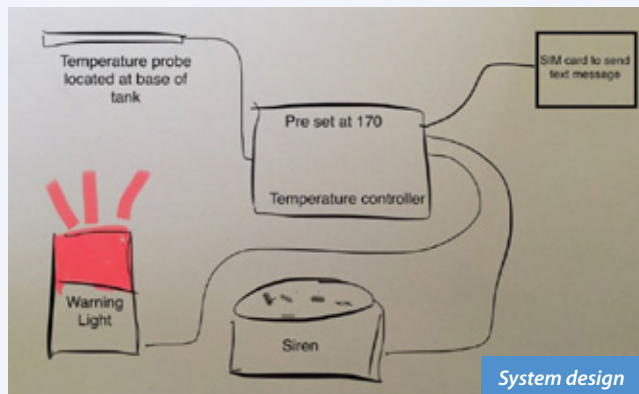
Doors in situ



Door cradle

# 1132 Bitumen system telemetry protection system

CEMEX UK > Local Asphalt Sheffield



## DESCRIPTION

CEMEX undertook an investigation following an incident in which a bitumen tank went well over temperature, the bitumen nearly reaching its flash point.

The study identified that the design of the bitumen tank heating systems on all CEMEX's aging tanks could allow them to go over temperature. If this occurred, it was possible that the tank would rupture, for the tank to catch fire or, in the worst-case scenario, to explode and cover the surrounding area with bitumen.

The investigation also found that, in the previous twelve-month period, there had been two other instances where a bitumen tank had overheated. Fortunately, this had been picked up by plant staff before critical temperatures were reached.

This fault arose because it was possible for the main contractor to fail and weld itself in a position where the power supply was locked permanently on, overriding all the other safety circuits.

Once the fault had been identified, it was recognised that a solution would need to be designed and implemented quickly. Within a month, a system was installed that monitors tank temperatures. If the temperature in the tank deviates from the pre-set high and low temperature points, the system will sound a siren, trigger a flashing light and send out a text alert to relevant personnel. This system has been further enhanced by incorporating it within the trace heating at the Sheffield plant.

## BENEFITS

- Significant safety hazard has been removed for old bitumen tanks
- The system was low cost – circa £5K fitted
- Automated warning system
- Exploring whether system could be used in other applications e.g. bearing failures.



New monitors



Text alert

visit [www.safequarry.com](http://www.safequarry.com) for more details or email: [info@safequarry.com](mailto:info@safequarry.com)





# 1136 Trace heating for cold feed bins

CEMEX UK > Local Asphalt Sheffield **3**



## DESCRIPTION

At CEMEX's Local Asphalt Sheffield plant, the traditional, steel framed feed bins are filled from above using a loading shovel. The sloped sides of the bin then enable the aggregate to flow under gravity. However, in very cold weather conditions the material

can freeze and stop flowing. To clear the blockage, staff would be required to work at height to access the bins and attempt to clear it using manual handling techniques and tools.

Staff and contract fitters were consulted on how to improve safety in this working area.

Working with Cross Electrical, (an Avetta vetted contractor) an insulated, cladded frame with thermostatically controlled trace heating was installed.

## BENEFITS

- Risk of working at height reduced
- Risk of manual handling reduced
- Risk of slip, trip or fall reduced
- No production lost due to bin storage blockage in cold weather
- Employee involvement in finding solution.

# 1175 Fire protection project

Tarmac Ltd > Ipswich **3**



## DESCRIPTION

Tarmac at Ipswich had a serious high-level baghouse fire, believed to be due to an accumulation of soot in ducting. The fire cost the company many months of lost production. The design of the plant is relatively unusual in having two driers, the high-level drier handling RAP. The plant, as originally constructed, had insufficient walkway access, so internal ductwork could not be inspected via hatches.

To prevent any recurrence, remedial work included additional high-level walkways and extra pyrometer probes to alert the plant operator about the conditions in various parts of the plant.

In the event of a fire being detected, the baghouse can now be isolated by a newly installed fire door and upstream, by shutting down the RAP drier.

These two additions are complemented by a photo electric cell to detect naked flames, plus a long-stop solution in the form of a water-based fire extinguisher system.

## BENEFITS

- Risk of a fire significantly reduced
- Plant better protected by new systems and physical measures
- Safer access for operators carrying out maintenance tasks
- Reduced risk of significant downtime due to fire
- Safer environment for all.



New probes



New walkways



# 1183 Asphalt plant mixer shaft replacement

Colas Ltd > Carnsew Quarry



## DESCRIPTION

The foreman fitter at Carnsew Quarry, demonstrated an innovative approach to changing a 2.5 metre mixer shaft weighing 900kg, without any personnel needing to be present on the mixer platform.

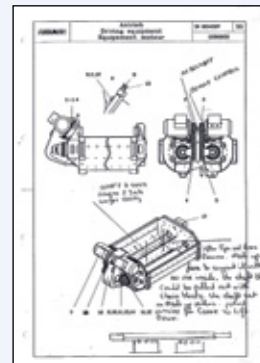
This task was necessary due to abnormal wear on one shaft bearing, due principally to a poorly designed filler chute directing filler onto one of the bearings, constantly abrading the shaft bearing. This chute has since been re-aligned.

Ammann, the Swiss plant manufacturer advised that a two-week shutdown would be necessary.

The foreman fitter decided the task could be more effectively performed in-house using the following procedure;

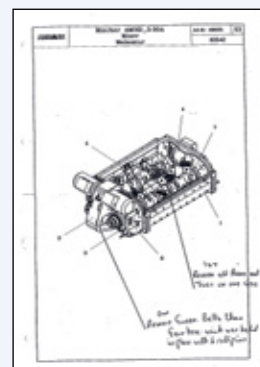
- A new steel plate was added to the floor surrounding the mixer, so that a trolley jack could be used to remove the gearbox.
- A system comprising of a supporting frame of angle-irons fabricated and welded to the internal base of the mixer, was used to take the weight of the shaft (minus paddle arms & tips) thus allowing both end bearings to be removed.

- One cladding panel was removed, allowing the shaft to be pulleyed outside the building onto an improvised platform above the skip track utilising the two sets of plate-mounted rollers. A 16-tonne crane was used to lower the worn shaft to the ground. The procedure was then reversed to install the replacement shaft.



## BENEFITS

- High potential hazard of working in close proximity to shaft during removal
- Plant downtime halved by using this in-house approach
- Cost saving of circa £96K achieved by this approach
- This procedure can be used on other similar Ammann coating plants.



## JP MEDIA TRAINING

James Pearce has been a BBC broadcaster for two decades and is now one of the UK's leading communications trainers. He founded his own agency in 2013 and since then has worked with many of the country's best-known athletes and business executives. The England football teams are his highest profile clients, but he also works closely with many of the country's top FTSE 100 CEO's and other business leaders.

James uses his learnings from twenty years of conducting interviews, including with all five of the UK's most recent Prime Ministers, to deliver a masterclass on effective communications that will change the way that you approach any important conversation. This is aimed at anybody working in the world of business. These are skills that you will be able to take into meetings, presentations or just the snatched conversation next to the coffee machine. It could help you increase sales or improve interdepartmental relationships. James will teach you how to prepare key messages and then how to deliver them with maximum effect. You will also learn the art of handling difficult questions from colleagues or clients without losing the trust of your questioner – an essential tool for so many of us. When staff have these skills a business becomes so much more robust. It is an entertaining and extremely educational session. You will quickly understand why James is credited with transforming the communications skills of so many of his clients.

Following his appearance on the Communication Panel at the 2018 Health and Safety Conference, James is offering a 15% discount to anybody who mentions MPA when they contact him.



For more information you can go to [www.jpmediatraining.com](http://www.jpmediatraining.com) or email [james@jpmediatraining](mailto:james@jpmediatraining)





# 1210 Adjustable height sheeting platform

Aggregate Industries UK > Express Asphalt Darwen **3**



## DESCRIPTION

The issue of safe sheeting of vehicles has a long history dating back several decades. The industry has addressed this risk through a variety of on-vehicle sheeting systems, varying from netting or even metal lids, some manually deployed from the ground, others fully automated via the touch of a button.

At Express Asphalt, Darwen, there is a substantial 'collect' trade comprising vehicles of all sizes, the majority of which do not have on-board sheeting systems. In the past, many drivers of 7.5 tonne vehicles were spotted clambering onto the backs of their vehicles. The biggest risk identified was from drivers climbing up onto the tops of 'Hot Boxes' to sweep asphalt spillage off the hinged metal lids. Although there was a stand to assist with sheeting, it was only ideal for one size of larger vehicle and therefore, was not used by many drivers.

To provide a sheeting system for these customers at Darwen, Aggregate Industries and Invertech Solutions designed and built an adjustable height, sheeting platform. This was powered using a hydraulic lift mechanism that has been salvaged from a fork lift truck.

The system is wholly controlled by the customer who reverses into a dedicated caged bay, raises the platform to the required height of their vehicle and then steps inside to carry out tasks safely.

Additional protection is afforded from a multitude of fail-safe features including:

1. Traffic light and reversing beams, the platform can only be used when parked safely.
2. Proximity sensors to ensure all gates are in the correct position before operation.

3. Light beams to prevent the unit from descending onto someone stood beneath.
4. Timers to prevent unauthorized use outside of operating hours.
5. Maximum height and lifting capacity capped to prevent misuse.

A three-step guide using a simple diagrammatic format to promote universal understanding was provided to customers. In addition, a one-to-one induction and training session was given at an open day.

## BENEFITS

- A 5-fold increase in the number of customers using the facility
- Almost all hotboxes and larger vehicles utilising the platform
- Drivers have safe access to sheet vehicles
- Safety cage has significantly reduced the risks
- Drivers do not need to use a harness system
- A quick and simple sheeting solution for all
- Reduced the risk of injury from jumping down from a vehicle
- Technicians can safely access different vehicles to test
- Reduced risk of fall from height
- System could be applied to other sites
- Safer for other road users if vehicles properly sheeted.





## 1209 Customer loading screens

Aggregate Industries UK > Express Asphalt Darwen **3** **5**



Target box shown on vehicle

### DESCRIPTION

At Express Asphalt Darwen, one of the biggest safety concerns and reports of near misses during 2016/2017 involved customers exiting their cabs to check their vehicle position whilst under the mixer. This presented significant risks of injury from falling material (up to two tonnes) and exposure to very hot temperatures (up to 170°C), dust, noise and vehicle fumes.

In the event of incorrect loading, customers would climb onto the back of their vehicle to manually relocate the product, creating exposure to hazards associated with manual handling, falls from height and hot materials.

At Darwen, the mixer operator is stationed at the opposite side of the building with no direct line of sight or means of communication with the driver. Customer surveys revealed that the loading tunnel on-site presented visual difficulties as drivers moved from daylight into the darker tunnel. Customer feedback said that the acuity of the loading zone needed to be improved but they also needed an indication of when the mixer door was about to open so that they didn't leave the safety of their cab or move their vehicle.

Following a staff brainstorming session it was decided to install two outdoor LED screens that were visible to the customer from their cab.

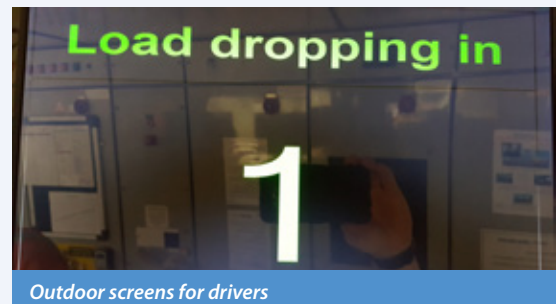
The upper screen is linked to a high definition camera located adjacent to the mixer door which points directly onto the rear bed of a vehicle under the mixer. On the screen is a 'Target Box' showing the driver exactly where the load will drop.

The lower screen provides revolutionary real time plant information giving a five second warning of the impending discharge of hot material via a countdown clock. This screen can also be used to visually communicate with the customer. There are several pre-set messages which can be sent at the click of a button along with a free text option for unusual situations such as warning the driver about a hazard in or around their vehicle.

Once loading is complete, the screen flashes bright green, indicating that the loading process is finished and that it is safe to move out and sheet up their load.

### BENEFITS

- Reduced risks associated with exposure to falling materials and burns
- Loading accuracy has significantly improved
- Huge reduction in the necessity for people to access their vehicles
- Turnaround times on-site have improved
- Reduced site congestion and improved workplace transport management
- The free text option has already proved invaluable
- Reduced levels airborne dust or rogue hot material exposure
- No incidences of drivers leaving their cab whilst under the mixer
- Very positive feedback from customers
- A safer environment for all.



Outdoor screens for drivers





Title	Video Link	Page number	Entry number	Fatal 6	Asphalt & Coated Stone	Quarry, recycling and waste	Ready mix & Mortar	Concrete & Precast	Cement & lime	Contracting	Transport & delivery	Marine	Company wide	Contractors	Dust and fumes	Maintenance	Guarding & isolation	Mobile plant	Hazards & incidents	Risk Assessments	Safer processing	Induction & training	Manual handling & storage & HAVs	PPE and emergency equipment	Working at height & confined spaces	Traffic management	Mobile technology, videos, camera, radio	Health and wellbeing
Taking the guess work out of edge protection	●	6	1156	2	●												●	●								●		
Working with contractors	●	7	1236	1,2,3	●									●				●	●	●		●				●		
Permission to tip		8	1145	2	●						●															●		
Thinking outside the confined space	●	9	1232	1,4			●								●	●	●						●	●				
Silo ground level testing	●	10	1176	3							●		●		●	●							●	●				
Penta tumble drum chute wear plate improvements eliminates confined space hot work	●	11	1111					●							●	●							●	●				
Safe access platform for lorry body cleaning	●	11	1148	3	●						●						●									●		
Elimination of manual handling & pinch point injuries	●	12	1149					●								●							●	●				
Maerz Kilns wet gas scrubber improvements	●	13	1182		●				●							●							●	●				
Tower light raise/lower	●	14	1245	2,5						●			●					●										
Field conveyor cleaning scoop	●	15	1191		●											●		●					●	●				
Innovative sliding pump base	●	15	1180									●				●							●	●				
Real engagement!	●	17	1220										●															●
Safety culture on the A1 Darrington to Dishforth contract	●	18	1210	2,6						●				●					●	●		●				●	●	●
Contractor / haulier induction interactive video	●	19	1147	1,2,3	●						●			●			●	●	●			●				●	●	
'Stand up for Safety' campaign		20	1234										●						●			●						
Aircrete load security – void guards	●	21	1213	3,5,6				●			●														●			
Safety partnership – haulier engagement	●	22	1168	2,6																								
Tyre telematics	●	23	1233	6							●																	
Preventing vehicle tip overs	●	24	1133	2,5					●		●				●											●		
Managing pedestrian risk	●	25	1137	6																								
Trief and Kassel factory program reduces manual handling and concrete cutting	●	26	1178	4				●							●								●	●				
Educating the workforce on silica and other work-related health issues	●	27	1246	4									●		●								●	●				●
Vending machine for PPE		28	1157	4											●									●				
Dynamic risk assessment	●	29	1118	1																								
Transformation in safety reporting		30	1113										●						●									
Dry silo mortar loading – driver assistance		31	1162	2		●					●															●		
Reducing worker risk through automated inspection and testing during pavement construction	●	32	1184	2,6	●					●																●	●	
MixLock® mechanical paddle shaft lockout system	●	33	1181	1	●										●	●	●						●	●				
Asphalt loadout door cradle		34	1122	5	●											●									●			
Bitumen system telemetry protection system		34	1132	1	●																●							
Trace heating for cold feed bins		35	1136	3	●																●		●	●	●			
Fire protection project		35	1175	3	●																●				●			
Asphalt plant mixer shaft replacement		36	1183		●											●												
Adjustable height sheeting platform		37	1210	3,6	●						●																	
Customer loading screens		38	1209	3,5,6	●						●															●	●	●

■ CONTRACTORS' SAFETY   
 ■ ENGINEERING INITIATIVES   
 ■ BEHAVIOURAL SAFETY, SAFETY CULTURE & LEADERSHIP   
 ■ REDUCING OCCUPATIONAL ROAD RISK   
 ■ TRANSPORT INITIATIVES  
■ OCCUPATIONAL HEALTH AND WELL BEING   
■ WORKER INVOLVEMENT   
■ BITUMEN, ASPHALT & CONTRACT SURFACING

# Health and Safety Working Groups

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Andrew Graham	Lhoist UK Ltd
Darren Presgrave	Lhoist UK Ltd
Lindsay Downes	Singleton Birch Ltd
Andy Howe	Tarmac Cement & Lime Ltd
Graham Cooper	Tarmac Cement & Lime Ltd
Ian Gibson	Mineral Products Association

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Glyn Barnes	Bam Richie
Paul Mack	Barry Wood Plant
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Ian Knott	EPC-UK
Darryl Hodgett	Finning (UK)
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Roseanne Hayward	MPQC
Jason Craig	QUBE Electrical Maintenance Engineers
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The Mineral Products Association is the trade association for the aggregates, asphalt, cement, concrete, dimension stone, lime, mortar and silica sand industries.

Written by Daybreak Communications Ltd, Winchester  
Designed by Generate UK  
Managing editor: Kevin Stevens, MPA

Printed on paper and board which is totally chlorine-free and produced from pulp from sustainable forests.