SHARING GOOD PRACTICE
www.safequarry.com

Sharing good practice 2007/08

ENTRIES FROM THE HEALTH AND SAFETY BEST PRACTICE AWARDS

'07
Extending the Culture

Continuing Professional Development
CPD material

QPA
Providing Essential Materials

SHARING GOOD PRACTICE
www.safequarry.com

Fast route to:

- Best practice
- Incident alerts
- Hot topics
- Toolbox talks

Why?

Saves lives, prevents injuries and keeps you up to date with good practice.

When?

NOW! Updated constantly with new information and email incident alerts.

Who?

For you and your colleagues - sharing health and safety best practice.

Continuing Professional Development CPD material

www.safequarry.com

Introduction

This guide summarises the ideas and innovations to come from the Quarry Products Association's *Health & Safety Best Practice Awards* 2007.

In addition, the entries can be viewed at www.safequarry.com, where those from the previous seven years of the awards scheme can also be accessed. The website also features a database of incident alerts, toolbox talks and the latest on the industry's hot topics. By registering on the site, you will receive email alerts when new items are added and an "information basket" where you can store those that most interest you.

The resources are ideal for training purposes and for Continuing Professional Development (CPD). We hope that companies of all sizes will find them useful and accessible. To ensure that your browsing on **www.safequarry.com** is recorded for CPD purposes, you do need to **log in** every time that you access the website.

How to use this guide

This guide is a compilation of solutions that companies have applied to minimise and, where possible, eliminate health and safety risks arising from their daily operations. The ideas and innovative approaches are often very simple and inexpensive and could readily be applied to a range of common industry problems.

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

The guide has been divided into nine sections that reflect the most common areas or activities requiring particular health and safety consideration. 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.

We welcome your feedback via the safequarry website. Your involvement is crucial in helping the industry to achieve its ultimate target of zero incidents.

Contents

Driving in quarries - training and assessment initiatives

HIGHLY COMMENDED

ON VIDEO

Blasting Services > Company-wide > 01773 837672

An in-depth process is undertaken to ensure that drivers on the site are working safely and following company and client guidelines. Drivers are initially shown a presentation on how to drive safely in quarries before being taken on a drive-round of the site under the instruction of a safety officer.

A number of topics are covered including:

- vehicle checks of tyres, lights and obvious signs of wear and tear;
- speed limit awareness; and
- consideration of other drivers and people on the site.

This consistent approach to driver training has helped create a safer environment on site.

Dumper radio modifications

Lafarge Aggregates Ltd > Finningley Quarry, South Yorkshire > 01302 770235

One of the hazards related to mobile plant activity concerns dumptrucks with raised bodies risking collision with overhead obstacles such as pipelines, electricity cables, conveyors etc. The changes made at this site are to the Volvo A25C dumper.

As standard, this dumper is fitted with a body-up buzzer and a red hazard warning flashing light on the dashboard in the cab. To some extent this serves to alert the drivers of the hazard. There was a concern that the amount of noise generated inside a dumper, such as the two way radio, standard radio and engine running noises, could drown out the sound of the warning buzzer made when bodywork was raised. This could allow the driver to overlook the fact that the body of his vehicle was still in a raised position.

To overcome this issue an electrical device was installed in the cab circuitry to mute the main radio whilst the dumper truck bodywork was in the raised position. This allowed the operator of the truck to clearly hear the body-up buzzer in the cab. An additional light was also incorporated into the dashboard to indicate raised body. These modifications have given drivers of mobile plant a greater awareness of raised body on their vehicles and thereby reduced the chances of a collision with overhead equipment.

Bitumen safe delivery control unit

CEMEX > Local Asphalt Liverpool > 0151 4899791

A unit has been designed for the safe unloading of bitumen at this site. It has a front panel which is hinged and has spring loaded locking pins. When the tanker is not unloading, the door can rest upon the top of the unit and is locked in place by secure spring loaded pins. When the driver hooks up to the loading point, the pins are released and the door is closed. Once again the pins lock in place making the door secure.

If for any reason the filling pipe becomes loose or a seal fails, the bitumen would not spray dangerously but instead be contained in the unit and drop to the floor. This unit helps protect the driver and other members of staff.

Quarry traffic management

Lafarge Aggregates > Shawell Quarry, Leicestershire > 01788 860806

There was a need to improve the traffic system on this site due to congestion. A single weighbridge was previously modified into a twin weighbridge which helped ease the congestion. However, this did not completely resolve the issue.

Other previous attempts to manage traffic flows at the site had led to the introduction of a two way road system instead of the preferred one way system. The routing of vehicles was largely unclear particularly for those accessing the site for the first time.

The main entrance was also a significant bottle neck as there wasn't a designated safe sheeting area for tipper vehicles and the exit was narrow and offered poor visibility.

Several measures were implemented to resolve these issues. A large gantry sign was installed to provide clear directions for all site visitors. Parking areas for readymix trucks were clearly established as all site vehicles had to pass safely in front of the readymix plant.

The laboratory has an off loading/sampling point. A pedestrian barrier was erected to protect laboratory staff from the traffic. A culvert was installed to solve the problem of standing water at the plant, a particular problem for smaller vehicles. Whilst road sweepers were regularly hired to keep the area clean.

The new Lafarge sheeting policy requirements also had to be incorporated into the site traffic system. A safe area for the sheeting activity and facilities for drivers to ensure they don't climb onto the back of their vehicles had to be provided. The solution required more land and the introduction of a new site exit onto the nearby B road.

Planning permission was obtained relatively quickly as the local authority could see that the scheme would improve the access and egress from the site, making it safer for both site users and the general public.

The sheeting area design incorporated two trimming platforms to allow drivers to trim their loads and enable sheeting within a safe area free from passing vehicles. The overall congestion at this site has improved following these changes.

Vehicle height limit alarm

Yeoman Asphalt > Botley Depot, Hampshire > 01489 784438

This asphalt plant has a height limit of 3.15m for vehicles, which was appropriate when the plant was built in the 1970s. More recently however, the increase in the size of the vehicles entering the site has led to vehicles hitting the plant as they position under the loading point.

Initially the problem was addressed by erecting a goal post on the approach to the plant with a swinging plate suspended at the correct height. This alerted the drivers to the height restriction. However, this did not eliminate the problem as some drivers were unaware that they had struck the hanging plate. Another solution had to be found.

The solution was to adapt the detector beam sensor used on the sites' roller shutter doors. The sensor was developed to include an audiovisual alarm, that alerts drivers if their vehicle is beyond the size limit.

The alarm sound ceases after a short while to avoid prolonged disturbances to members of the public. This new alarm system has already averted potential problems and has allowed site personnel to talk with drivers that have activated the alarm to provide instructions on how to avoid a collision.

Control of on/off site transport interface - the ' right road'

Patersons Quarries Ltd > Dunduff Quarry, Lanarkshire > 01236 433351

A right-hand drive principle has been applied to this site to help traffic flow. This move came out of a request by the local enforcement authority to produce vehicle movement plans.

As the site has grown, segregation has been achieved between the on-site traffic and off-site traffic. This has been achieved by separate roads on the site. Driving on the right has created fewer 'cross-over' points, making the site safer.

New access platform for loading shovel

Tarmac Limited > Dolyhir Quarry, Herefordshire > 01544 232100

An operator suffered injuries on two separate occasions whilst accessing the cab of a loading shovel. He sustained injuries to his leg after slipping through the vertical rungs of the access ladder and he suffered injuries when falling to the floor whilst leaning back to open the cab door.

By designing and installing a purpose built access platform to the machine, safe access and egress is now possible and no similar incidents have been reported.

Editor's Note: See 'Are we being served?' - page 56

Safe access to lorry bodies

WBB Minerals > Preston Manor Works, Devon > 01629 822104

Following a regular transport review with M. Way and Son (WBB Minerals' contract haulier), the issue of climbing in and out of lorry bodies was raised.

To address the issue, WBB Minerals worked with the contract haulier to design and build a piece of equipment that would give safe access to the lorry bodies. The final design consisted of the following:

- A set of steps fitted with a handrail, wheels and extending handles (to enable easy manoeuvring); and
- a device to hold the tailgate open.

Drivers are now able to access the back of the lorries safely, enabling them to clean out the bodies. The successful measures have been introduced to other sites.

Management of contractors' national database

AWARD WINNER ON VIDEO

Lafarge > Shawell Quarry, Leicestershire > 01788 860808

There was a need to ensure that the performance of contractors working with Lafarge was consistent and up to those of the company's expectations.

As a result, a national contractor database was created. The system is quick and very easy to use and all computers within the company can access the information and search for contractors according to several criteria.

The system allows Lafarge to measure the performances of the contractors showing their good and bad practices and assigning them a star rating. If this rating is low they can be put up for review or even suspended.

The benefits are that any manager across the business can see actual reviews of contractor performance. It has had a positive impact on contractors who are now coming back to Lafarge to see how they can improve their performance.

Safety 5 pocket risk assessment tool

AWARD WINNER ON VIDEO

Blasting Services > Company-wide > 01773 837672

Blasting Services has developed a system to improve safety that they have issued to all their employees. The system is based on a five point safety guide and simple traffic light system that enables employees to determine and assess the hazards they face in the workplace. They can determine whether they are working safely or need to contact a supervisor.

The booklet contains advice on the following five areas:

- Identifying hazards and risks;
- Probability Calculator;
- Procedures;
- Quality Statement; and
- Personal Protective Equipment (PPE).

The guide uses a traffic light system that informs employees on what to do. It works as follows:

Red – Work stops and the supervisor(s) are contacted

Amber – Supervisor's advice may be required

Green – Workers are free to continue working.

This system has clarified how to deal with health and safety issues on Blasting Services sites.

Increased communication with contractors

CEMEX > Dove Holes Quarry, Derbyshire > 01298 77531

As a way to engage contractors with the safe practices of CEMEX, it was decided to forward the internal health and safety best practice alerts to them for their perusal. Contractors now benefit from the experiences of others working at CEMEX sites and are made aware of the incidents in the same way as CEMEX employees.

The intention of this process is to remove the traditional problem of a company and their contractors having different operating standards. Creating improved levels of health and safety understanding and awareness for contractors using the alerts has contributed to lowering the accident rate.

Standardised contractor site inductions

Tarmac > North Road, Nottinghamshire > 01777 713500

When a contractor visits one of the Tarmac Midlands Concrete sites they are required to have an induction to the business and the site. However, as there are 32 static concrete plants and two mobile concrete plants in the area there was a need to gain a consistency to the inductions. Inductions were amended so that all sites followed the same protocol, delivering the same information at each location.

A flipchart and PowerPoint presentation was put together, with a voice-over added to the presentation to act as both a training aid for managers to their employees and also to issue to contractors so they could brief their workers before work commenced at a Tarmac site. This was put onto CDs with the Tarmac Golden Rules and shown at inductions.

Authorisation sheets were produced for the inductions and an understanding test needed to be completed by the contractor. On successful completion of the induction, documentation is sent to the area office to confirm and add the contractor to an approved list that is issued to all sites.

Approved contractors can commence work at a site after completing a risk assessment and permit to work without the need for a further induction.

Editor's Note: During 2008, QPA will be publishing brief guidance on the Management of Contractors

Health and safety induction testing

Lafarge > A1 Jct 1-2 , Bristol Contracting

A problem was identified in trying to communicate the site requirements to some personnel.

To try and resolve this, a PowerPoint presentation was created. The presentation included photographs from the site to illustrate the messages. A voice-over commentary was also included to ensure a consistent explanation.

A multiple-choice test was used to confirm that employees had understood the inductions. Those receiving the induction are now better informed, and those giving inductions are also clearer about the aims and objectives of the induction and risks on site.

Brett contractor cards

Brett > Group Head Office, Kent > 01227 829000

Contractors at Brett sites have been involved in a number of measures to make sure they are working to an acceptable standard, including permits to work, analysis of risk assessments, method statements and inductions. It was possible though, with numerous people giving inductions across several operations, that contractors would be receiving several inductions. Also, the standard of induction could vary from person to person and from site to site so contractors would receive different inductions conveying a similar message. This had a potential effect of causing them to lose interest and miss important information with the potential for dangerous repercussions.

It was decided to standardise the induction across all operations. A list of 20 points related to the majority of sites was drafted and these points were condensed onto a small folded card that could be issued to all contractors to remind them of site standards.

The contractors sign for the receipt of the card so that a record of issue is maintained. The card also includes a 'three strikes' policy whereby if a contractor commits three minor infringements they are banned from Brett sites. Providing a contractor's card is in date, they will only have to be taken through site-specific hazards when they go onto a different Brett site.

Engineering contractor training

Bardon Aggregates > Melbur Works, Newquay > 01726 862244

Bardon Aggregates contractors have to follow the general company rules for contractors which details what is expected of them. They must sign to confirm their understanding of these guidelines and also complete a thorough induction before they are allowed to begin work. In the Cornwall area however, there is a wide use of engineering contractors, so it was decided to produce a tailored scheme for them.

All contractors are expected to participate in the EPIC Contractors Safety Passport scheme, but these courses were not held often in the region. One of the company's sites now holds regular courses to ensure contractors are receiving enough instruction. The situation is being further controlled by keeping records of inductions and reminding contractors when refresher courses are due.

All contractors are required to carry appropriate insurance, and this is managed on a database. Contractors are required to demonstrate sufficient cover on an annual basis.

To ensure their competence, contractors are involved in safety meetings, presentations and toolbox talks. For specific skills, such as lifting and slinging, courses are arranged to help maintain high levels of skills and behaviour and contribute to a safer working environment.

Contractor quarry safety inductions

WBB Minerals > Leziate Quarry, Norfolk > 07734 070354

A quarry specific induction was jointly initiated by WBB Minerals and Fox (Owmby) Ltd, developed from a close partnership going back to 2000. This scheme included sharing safety information; cooperation on training; joint site inspections and audits; and co-operation in working towards the OHSAS 18001 certification.

The induction was developed to focus on the operational safety within the working quarry. It was targeted at Fox's plant operators and supported WBB Mineral's existing induction programme for workers in the process area.

The induction works by offering multi-site safety information and allowing for site-specific information to be offered when it is required. It consists of training and assessments with operators receiving certification upon completion. The training is monitored and audited by a third party training certification body, the Construction Plant Register Ltd, to help achieve the high standards required.

Asphalt FM

Aggregate Industries > Doncaster, Yorkshire > 01302 888288

The asphalt plant at Doncaster is responsible for both collections and deliveries and as such the control of vehicle movements is paramount for safety. Control had previously been achieved using a tannoy system but this generated complaints from local residents over noise levels, especially early in the morning.

This problem was resolved by using an FM transmitter to communicate with customers. Upon entering the site, vehicle radios were instructed to tune into a specific FM frequency to receive instructions. The system was able to cover a 50 metre radius which encompassed the whole yard.

The system has been developed to provide loading instructions and health and safety messages to remind people of company standards.

Lock off and isolation register

CEMEX > Eversley Quarry, Surrey > 07733 001725

A register is maintained to record every time a 'lock-off' occurs. This document is kept in the switch house at the point of isolation. This supplements all the existing safety procedures, including permits to work.

The register records the following:

- Date;
- Equipment locked off;
- Person locking off;
- Time locked off;
- Time lockout removed;
- Date of removal; and
- Permit to work or worksafe used.

This is a further example of good documentation to provide information on a safety issue.

Not lost in translation

Lafarge Readymix > M1 Mobile Plant, Hemel Hempstead > 07803 953990

Before work began on the M1 Mobile Readymix plant, all drivers had to be present so the site rules could be explained to them to avoid incidents occurring due to a lack of understanding.

It became apparent that some Polish contractors were struggling to fully comprehend the instructions. Whilst many could understand spoken English and converse in the language, they struggled with written English.

To ensure that all contractors understood the rules it was decided that the site rules would be translated into Polish by one of the company's transport advisors, who happened to be born in Poland. The translated instructions were so helpful that they were forwarded throughout the business.

Several weeks later, plant operatives noted that they were receiving an increasing number of deliveries from Polish drivers. Even though operatives were assured that the drivers had been fully briefed, it was still felt that there was a risk when drivers discharged their lorry loads. A practical briefing was conducted, but for certainty, the silo sign was translated to provide instructions to Polish drivers.

The measures have ensured that incidents do not occur through a lack of understanding of written English instructions by Polish drivers.

CEMEX slips, trips and falls training film

CEMEX > Bromsgrove > 01525 575777

Slips, trips and falls on or near the ground still account for a large proportion of accidents within CEMEX. In addition to the recent work completed in this area, CEMEX decided to produce an animated video to show improper practices and the correct procedures on site. The video does not have dialogue so it can be shown around the world and has an element of humour to try and engage the workforce.

The film addresses some of the main causes of slips, trips and falls in the workplace and includes:

- Leaving tools lying around;
- Spillages;
- Access to and from mobile plant/vehicles;
- Carrying items on stairways;
- Running;
- Poor surfaces; and
- Weather conditions.

The film demonstrates how employees should act in the workplace and illustrates how slips, trips and falls are incidents that occur as a result of human behaviour and can be eliminated with the right working practices.

Site visits

CEMEX > Dove Holes Quarry, Derbyshire > 01298 77531

In an attempt to gain a greater understanding of the health and safety challenges facing the industry and the measures being used to overcome them, the CEMEX safety committee spent time visiting other sites.

Quarries and cement plants were visited, along with visits to industries outside of the extractives sector. This has broadened the outlook of the team and helped them to realise that there are several things they can learn and apply to CEMEX sites.

Brett near miss reporting

Brett Group > Group Head Office, Kent > 01227 829000

The Brett SHE team was aware of the importance of reporting near misses and so wanted to ensure that enough measures were taken to encourage workers to report near misses. A new and improved form was designed and a new system was put in to place to get more near misses reported.

The form was designed to go to three parties - the line manager, the SHE department and a copy kept for the person who reported the incident. This was an improvement on the previous system which was a single form put into a box.

Brett Electrical recognised to international standards

Brett Aggregates > Electrical Department, Sturry Quarry, Kent > 07764 626641

The new manager at the Brett Electrical Department wanted the high professionalism of his team recognised by an independent body. He decided to pursue recognition to three standards: OHSAS 18001, ISO 9001 and ISO 14001.

They studied the existing Group system – QHEST (quality, health, safety, environment together) to examine how they could apply these criteria to support their department.

Some of the specific improvements that were made to the electrical department included:

- Daily task based risk assessments;
- Twice yearly reviews for craftsmen;
- Weekly vehicle inspections;
- Control, management and correct disposal of redundant discharge lighting equipment;
- Structured and formalised apprenticeship scheme; and
- Monthly toolbox talks in line with current SHE themes.

Through implementing the QHEST system and applying specific measures to the electrical department, they have gained accreditation to OHSAS 18001, ISO 14001 and ISO 9001. This achievement means the professionalism of the department has been recognised by an independent body to international standards and has increased the morale of the workforce.

Golden rules interactive computer based training package

Tarmac > Company-wide > 07702 632855

The Golden Rules were established in 2003 and focused on the areas which have proven particularly hazardous in the quarrying industry and have contributed most towards serious injuries and fatalities. In 2006 the Golden Rules were revised and re-launched. The message had been conveyed to workers through DVDs, but a new system was created.

An interactive computer based training package has been developed with the ultimate aim of achieving full understanding of the Golden Rules for both employees and contractors. All Tarmac personnel and contractors must complete the programme, answering various SHE related questions, which predominantly concentrates on the identification of, and compliance with the Golden Rules.

The intention of this system is for everyone working on Tarmac sites to be fully aware of all the Golden rules and to abide by them.

Health and safety 'Golden rules'

Lafarge Aggregates > Dry Rigg Quarry, North Yorkshire > 01729 860411

A competition was held for employees at Dry Rigg Quarry to produce a list of health and safety 'golden rules' which would be applied to the site. All workers were encouraged to spend time thinking about the hazards they encountered and ways to overcome these through good practice. A prize was offered to the employee who suggested the most rules that figured in the top ten. This acted as an extra incentive to carefully consider the options.

Once the entries had been submitted, they were reviewed and a final priority list, based on how many times they appeared, was produced and provided back to the workers. Generating the site rules in this way has given employees a greater responsibility and understanding towards safety issues on site.

Hands on health and safety challenges

Bardon Aggregates > Westleigh Quarry, Devon > 07740 934114

Westleigh Quarry was asked to stage a health and safety day for the South West and Wales area of Bardon Aggregates. The event was designed by the quarry manager to ensure that it delivered a 'hands on' quarry based learning experience for everyone involved.

Five topics were included:

- Quarry Excavation Design – geotechnical experts explained the dangers, followed by a test paper;
- Working at height and face activities – looked at ladders and edge protection issues;
- Control of contractors operating mobile plant - a dumper was turned upside down and actors were employed for the day to stage a dumper coming out over an unprotected edge. This was also followed by a test paper;
- Fixed plant hazard spotting - 30 hazards were carefully placed around the area and ranged from tripping hazards and guarding to unsafe working. Actors were also used in this area and a written test paper was given; and
- Incident investigation – a dumper was reversed over a Landrover to demonstrate the damage that a dumper can cause. The teams then had to investigate what had happened and how, again actors were deployed in this area.

The day began with an introduction from the general manager and activities began thereafter. Each activity lasted for 30 minutes with 15 minutes travelling time around the quarry to the next event. Workers benefited from the interactive approach, clear demonstrations and the messages were reinforced through test papers.

Lorry body access steps

Tarmac > Dene Quarry > 01629 826768

AWARD WINNER

ON VIDEO

There was a need to help lorry drivers to access the body of their vehicles to clear any debris that remained from the previous load.

A set of steps was designed to enable this. However, certain measures were included which made the stairs a more effective tool. The steps have wheels making them easy to manoeuvre. They also lock in place once in position and can be locked to stop inappropriate use.

The steps also lower towards the body of the vehicle, improving the safety of the descent.

Overall, the risk to drivers when accessing the body is substantially reduced.

Dumptruck and excavator access retrofit

Lafarge > Mountsorrel Quarry, Leicestershire > 01162 303881

The team at Mountsorrel Quarry introduced three changes to reduce the risk of falls from their fleet of vehicles.

Each operator was provided with a back pack designed to accommodate a flask, lunch box, newspaper and mobile phone, so that drivers could maintain three points of contact when entering and exiting vehicles.

Improved access steps were retrofitted to all vehicles. Those with the highest risk of falls were retrofitted first.

A decision was made by Quarry management that all new plant would be fitted with an improved access safety system.

There have been no reported incidents involving mobile plant at all since the programme started.

Tanker loading spout

CEMEX Materials > Dove Holes Quarry, Derbyshire > 01298 77531

A problem arose on site when a customer required a product to be delivered into a tanker. The loading conveyor was designed for tipper wagons and quarry dumpers and in order to load the tanker, a rubber funnel had to be carried on to the top of the tanker and inserted into the hatch. This required manual handling and brought about the risks associated with working at height.

To avoid these issues a fitter has devised a chute, suspended on wheels, that can be moved in and out of position from ground level, removing the need for manual handling and working at height.

Access to screens and screening building

Lafarge Aggregates > Swarkestone Quarry, Derbyshire > 01332 701146

The only access to the secondary screening building was using a semi vertical ladder which in icy conditions was slippery, which increased the risk of incident or injury. To counter this, an inclined stair was fitted to aid access.

Employees also highlighted access to the screens for maintenance as an area of concern. In order to change screens they needed to access the area via the spring supports, which were very slippery when wet.

New stairs and platforms were installed to allow easy access to the screening surfaces for maintenance.

Access around the building is now greatly improved.

Retrofit programme for safe maintenance access

Lafarge > Mountsorrel Quarry, Leicestershire > 01162 303881

Traditionally the cause of incidents on the site has involved maintenance, especially when working at night. Developments were undertaken to address concerns over access and egress, manual handling and working at height.

The risk from falls at height has been reduced by removing the need to work at height wherever possible. For example, lighting poles have been modified to drop to the ground to remove the need for ladder access.

Other changes which have improved access and egress include:

- Safe access platform provided to the rotary slat for the Standard Havens coated plant;
- Extension of handrails on the full length of the Standard Havens conveyor;
- Additional walkways near to conveyors;
- Safe access to crusher bins; and
- Specially designed platforms to fit the primary crusher shaft during maintenance.

Access platforms for tankers

CEMEX > CEMEX House, Warwickshire > 01788 564252

Falls from vehicles was one of the most common causes of major injury to workers so it was decided to eliminate the risk completely by stopping drivers using the vehicle ladders and accessing trucks from platforms instead.

Interim measures were introduced for sites without platforms. This safe system of work included driver harnesses, mobile platforms with wheels that could be locked off and changes in working patterns and procedures.

Safe access platforms have now been installed across the business including satellite depots. The policy addresses one of the ten safety imperatives and incidents of drivers falling from height have been removed.

Safe sampling system

Aggregate Industries > Croft Quarry, Leicestershire > 07740 934436

A number of measures have been introduced at this quarry to improve the sampling process.

Drivers enter an area segregated from site traffic to avoid congestion. They then exit the vehicle to meet the technician, who closes traffic barriers.

A robotic sampling arm is used to obtain samples of asphalt and aggregates. This removes the need to enter the vehicle eliminating working at height issues. Samples are transferred to the preparation building via a chute which removes manual handling issues.

These measures have removed contact with hot asphalt, working at height and manual handling issues. There is improved access and egress which hasn't affected traffic flow.

Safe and effective control of a processing plant

WBB Minerals > North Park Quarry, Surrey > 07734 070354

In order to control the processing equipment and therefore the product quality at North Park Quarry, flows of water through the Hydrosizers require regular adjustment using an in line teeter water control valve.

Concerns were raised that a ladder had to be used to access the valves.

To eliminate the working at height hazard, a geared valve system was installed. As a result operators now control the teeter water valve from the same floor level as the Hydrosizer's sand density monitors.

This solution has eliminated the Work at Height hazard and stopped the repetitive actions required to control the processing equipment.

Pan mixer lid security

Bucbricks Company Limited > Martell's Quarry and Building Products Factory, Essex > 01206 230310

The pan mixer has to be cleaned thoroughly to remove all the material that builds up inside, over the course of a day. A large, hinged lid needs to be pulled back so workers can enter the mixer to clean it. The lid is too heavy to be lifted by hand and therefore it is raised by a ratchet wheel and wire rope. Concern was raised by the workers that if the wire rope snapped the lid could fall down causing injuries to anyone cleaning the mixer below.

A securing mechanism which was independent of the wire has been put in place to raise the lid. A second wire rope pulley system has been installed which can be operated from ground level that frees the securing mechanism and allows the lid to safely drop back to its operating position. This simple mechanism has helped remove manual handling risks, working at height issues and eliminated the potential of crush injuries.

Convex mirrors to check hopper bins

Lafarge Readymix > Marchwood RMP, Southampton > 07740 563362

The plant needed to change the materials in hopper bins on a regular basis to accommodate additional constituents to meet the demand for Value Added Products.

Previously this had been achieved by emptying the bins into a site vehicle before refilling them with the new material.

Concerns were raised that a ladder needed to be used to check that the bins were empty as there was no other means of access or Egress. It was felt that this was not an acceptable means of access.

To rectify this, convex mirrors were fitted on a scaffold pole above the bins. Now the plant supervisor can check the bins from his Batch cabin, without needing to go into the operational area.

Mobile access platform

Lafarge Aggregates Limited > Easton Quarry, Norwich > 01603 746317

Easton Quarry operates a mobile Powerscreen washing plant with an in-line Hazemag impact crusher. As is typical with such older manufactured equipment, access for maintenance was restricted.

Lafarge operatives looked to resolve access issues around the plant and decided that rather than attempting to install walkways and working platforms at each point on the plant a mobile working platform would be a better solution.

Using materials available on site a custom made platform was designed and assembled.

The platform has:

- Adjustable legs to provide a stable platform when working on uneven ground;
- A towing hitch to attach to the site loading shovel;
- The ability to lower conveyors through the sliding guard area to enable safe access to head drums; and
- Provision of a working bench and vice adjacent to the steps on platform.

The platform has removed the need to hire a Mobile Elevated Work Platform and the manual handling risks have been significantly reduced.

New platform for taking asphalt samples

Aggregate Industries > Daviot Asphalt Plant, Inverness > 01463 772058

Sampling from asphalt lorries was highlighted as a safety concern within the business. A new employee felt that the existing platforms were not suited to the vehicles being used.

As a result a new platform was designed with improved access for sampling and reduced manual handling.

Cleaning platform for premix chute

Hanson Aggregates > Kings Cross Premix, London

At Hanson's Kings Cross premix plant in London, there is a need to clean the underside of the discharge area below a chute under the pan mixer.

A lack of access into this chute prevented staff from easily cleaning out the hardened concrete. Using an air chisel meant great discomfort, caused manual handling issues and carried a potential fall risk.

To counter this, a working platform was fitted inside the chute to allow access for an employee to stand and work.

A task that was uncomfortable, claustrophobic and potentially dangerous, can now be undertaken with relative ease.

Mobile asphalt sheeting bay

Hanson Aggregates > Baston Quarry, Cambridgeshire > 01509 503161

Following a review of working at height activities at Baston, it was noted that several customers were standing on the back of their pickup trucks to sheet their asphalt loads.

When questioned, they stated that the lorry sheeting bays were not adequate and posed a risk to their safety.

It was clear that, despite the variety of sheeting arrangements available on site, there was nothing suitable for smaller vehicles.

It was decided that a mobile, low level sheeting bay that could adapt to various vehicle sizes was needed.

The result is a simple and safe solution to a potentially hazardous situation.

Eliminating confined space entry in asphalt plant

AWARD WINNER

ON VIDEO

Hanson > Penderyn Quarry, Mid Glamorgan > 01685 813179

Poor design of the asphalt plant at this South Wales quarry had caused avoidable risks for site personnel. On occasions when the over-size stone chute blocked, the only way to unblock it was to lower a harnessed worker into the bin and tackle the blockage from below – clearly a highly hazardous task. To resolve this, an external lockable access hatch was built which has enabled workers to access blockages from above, in complete safety, from outside the chute.

Editor's Note: This problem was resolved through the ingenuity of site staff. QPA is commencing a campaign to convince designers and constructors of process plant to pay far more attention to the health & safety of operational and maintenance personnel.

Lift devil - safe replacement of rollers on belt systems

RUNNER UP

ON VIDEO

Bardon Aggregates > Westleigh Quarry, Devon > 07740 934114

In order to replace return rollers on a conveyor belt it is necessary for the return belt to be lifted clear of the roller. The old roller can then be removed in a controlled manner and a new one fitted in its place.

In the past the most common way of doing this was by using a bar wedged under the return side of the belt and tucked under the handrails. The bar would then be tied off and the roller replaced. This was not considered a safe practice. Tension was left in the belt and it was hard to control the safe removal of the roller.

To improve on this situation the lift devil was created.

It comprises:

- Two lengths of medium grade pipe;
- A pair of adjustable spanners;
- A ratchet podger spanner; and
- A 6mm hexagon bolt for the safety catch.

The fitting of the lift devil is completed quickly and safely by just one person. The uppermost longest bar is placed across the top side on the conveyor chassis with the locator legs either side of the belt. The small short bar is then placed into the locater legs and the 6mm retainer bolt fitted. This bolt is fitted so the small bar cannot be dislodged from their locater legs. With the ratchet podger fitted to the hexagon bar on the end of the top bar, the adjustable spanner is used to turn the top bar. The ratchet podger stops the small bar from going back on its self and so holds the belt clear of the roller, which means it can then be replaced in a safe and controlled manner.

Hydraulically operated feeder safety plate

HIGHLY COMMENDED

ON VIDEO

Tarmac > Colchester Quarry > 01206 330795

The material from the ballast stockpile on this site had to be taken to the main plant using belt feeders. To access the material, a concrete structure was built to move in and out of. The danger existed in the recovery tunnel. Here the three feeders would require maintenance, but this was potentially dangerous as material could fall from the pile above onto the feeders – creating an entrapment hazard for operatives.

A safety plate was put in place to slide across and cover the gap which existed above the belt feeders. A hydraulic system was used which enabled the plate to move without workers having to place and remove it, which took away a potential manual handling issue too.

This measure has taken away the danger of workers becoming trapped or injured by the ballast stockpile and removed any need for operatives to physically move and remove the plate.

Creating a better working environment in the production plant

Tarmac > Gordon Blocks, Aberdeenshire > 01224 742408

There were certain manual jobs which had been traditionally undertaken at this site and three in particular required changes.

1. Screw conveyor installation – Spillages sometimes occurred when the pallet turner turned over the steel pallets for the cured blocks. These spillages led to the plant being shut down several times to shovel away the resulting dust and grit. The improvement was to install a steel cone shaped section under where the residue fell which now catches the grit before it reaches the floor.
2. Access – Block elevator units needed to be accessed for maintenance, but the only means of access was via a ladder. This was unacceptable so a work platform was installed.
3. Housekeeping – Traditionally, block machine moulds were stacked wherever they could be laid down, around the site. However, to create more space, purpose built racks were created to contain the heavy moulds.

The changes made around the site have provided the workforce with a better working environment.

Easy tracking and balancing of dryer barrel ring

CEMEX Materials > Melton Coating Plant, Hull > 07801 664121

The dryer barrel at this plant had been floating at an unacceptable level for several months due to 'flat spots' on the dryer ring and improvements were required. The fitter would take time trying to track the drum which involved manual handling, working at height and risk of injury.

A device was developed that would grind the rings without an operative having to come into contact with any moving machinery. The device involves putting a fixed block onto the chassis of the dryer that has a spring loaded grind stone that can be wound into position from outside the guarding. Over a period of time the grind stone wears the high spots from the ring of the dryer thus truing the circumference enabling the accurate tracking of the barrel.

There is now no need to remove the guarding or use heavy machinery and the need to work at height has been eliminated.

Truck overhead fill pipe installation

Lafarge > Rugby Readymix Plant, Leicester > 01788 860618

The task being undertaken at this plant was to fill the readymix trucks' header tanks with water. When the drivers were filling the header tank, the hoses were often being left on the ground where they could get damaged by vehicles driving over them.

This could lead to two problems:

- The discarded hose could pose a slip, trips and falls hazard; and
- Damaged connectors could cause water to be blown out under high pressure.

These dangers were removed by positioning a hanging pipe at the fill point. The pipes are kept cleaner, and are easier for drivers to use.

Mobile battery starting unit

Lafarge Cement UK > Northfleet Eastern (Chalk) Quarry, Dartford > 01474 833551

A decision was made to move to a new style of battery system following an incident at another works, which was highlighted at an internal safety meeting.

The new battery starter works by using different coloured cables for 12V (red) and 24V (yellow). One remote trolley unit contains both the 12 V and 24V systems.

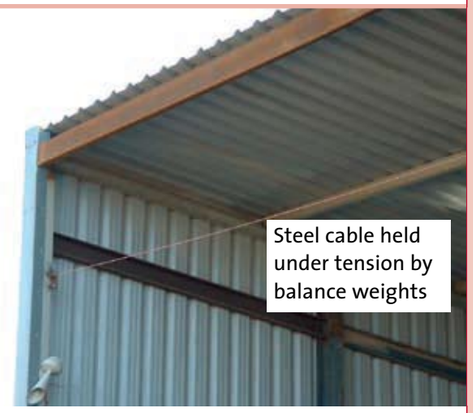
Different shaped Anderson plugs make cross connection impossible. The same principle applies to the positive and negative terminals to prevent incorrect connection, damage and flash-overs.

This system has been installed to make it impossible to connect batteries incorrectly and to prevent incorrect procedures for jump starting vehicles.

Bay roof protection system

CEMEX Eastern Region > Nottingham Coated Stone, Nottinghamshire > 01159 400171

Over the years, the size of the vehicles delivering aggregate has increase dramatically. When the vehicles tip their load into the aggregates storage bays there is a danger of the lorry body colliding with the roofing. Initially the problem was solved by hanging a brightly coloured steel tube from the roof in the hope that drivers would stop tipping or move forwards when the vehicle body came into contact with the bar. However, the bar would often get pulled down or damaged by the vehicle.



Steel cable held under tension by balance weights

It was decided that whilst this system had its merits, modifications were needed to make the installation fit for purpose. The old system relied on the driver looking up but it was hoped that an audible warning would inform the driver of the impending danger. The prototype version used tilt switches, but these were too sensitive to the wind and would activate without being touched.

The final version uses a steel cable that is tensioned by balance weights that are connected to a limit switch. The system is powered by either mains or battery and creates an audible warning for drivers. This measure has greatly reduced the risk of collision between the vehicle and the bay roofing.

Bucket level indicator

Tarmac > Dene Quarry, Derbyshire > 01629 822104

An inclinometer was fitted to the asphalt plant stock loading shovel following an incident where an arctic overturned at Dene Quarry. The artic trucks discharge their loads adjacent to the shovel, and when doing so need to drive slowly forward with the body fully raised to completely empty the load. It is vital that the ground is even as if it is not the artic trailer can become unstable and cause the vehicle to overturn.

The asphalt plant shovel drivers are instructed to ensure that the tipping areas are kept level and clean. Although the ground can appear to be level, even slight undulations can lead to an overturn. The inclinometers fitted to some vehicles were able to detect uneven ground not visible to the naked eye. Inclinometers were attached to the shovels and consisted of a sensor fitted to the front frame of the loading shovel and an indicator inside the cab.

Small inclines can lead to an overturn – especially when combined with windy weather and damp material sticking inside the lorry body. The display on the device indicates the extent (in degrees) and direction of any crossfall measured by a sensor. If required the driver can level the surface until there is no cross gradient in the tipping area.

Problem resolution through team work and lateral thinking

Tarmac > Rochford Asphalt Plant, Essex > 01206 330795

Consistent with an older site that has extended and grown in conjunction with changing technical and environmental requirements, the Rochford site was beginning to struggle to meet competing demands.

A number of areas of maintenance on the site were addressed in isolation such as: working at heights, lifting and slinging, access above six metres and unloading vehicles.

It was felt necessary to modify equipment to deal with all of these issues rather than having to address each one individually. It was felt that an adaptable additional piece of mobile plant with certain key characteristics would suffice.

It was agreed that the Bobcat T40140 fitted with 900 litre bucket, 3.5tonne lifting hook, pallet form and a man basket with controls was agreed to fulfill the required specification and duties and was purchased and put into service in 2006. This mobile plant has since been rolled out to other Tarmac sites to help with similar problems.

Maintenance of Roxon feeder

CEMEX > Pallethill Quarry, N Yorkshire > 01748 811496

When emptying material from the Roxon feeder, quarry staff needed to enter the hopper to clear the final amount of material from the reciprocating feeder plate. To carry out this task the team were required to follow the safe system of work which involved completing a permit to work, reviewing the risk assessment and implementing the lock off procedure.

Employees entering the feeder were required to wear a fall arrest harness and lanyard to access the hopper. Wooden blocks were lowered into the hopper to push the material forward as required. These blocks had to be placed into position one at a time which involved the person accessing the feeder a number of times. The person had to then leave the hopper, activate it to move the block forward and then to isolate and lock off before re-entry. The task was time consuming, had access and egress issues and involved manual handling.

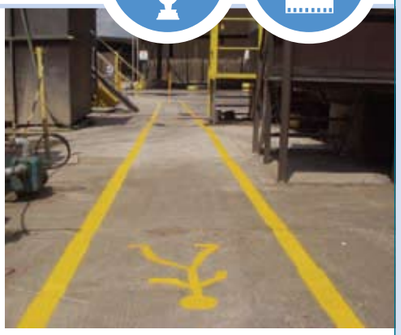
It was decided to manufacture a steel plate which would fit onto the reciprocating tray with a quick hitch attachment which could then be fitted to the site excavator. The excavator would then lower the plate into the hopper at the rear of the feeder plate and gradually push the material forward.

It has removed the need to enter the hopper to remove any material and has eliminated many of the areas of concerns involved in the previous method.

Asphalt depot safety

Tarmac > Whiteinch Quarry, Glasgow > 0141 9506476

AWARD WINNER ON VIDEO



A traffic control measure has been set up here to improve site safety. All personnel can be sure of a safe passage through the site away from vehicles. This has been achieved by a number of measures:

- Safety signs;
- One-way traffic system with 'no entry' areas;
- Speed limits;
- Signed and lined footpaths;
- Audio and visual warning crossing equipment; and
- An access platform for concrete truck mixers.

This has developed a genuine improvement in workers' attitudes towards health and safety at the site.

'Get a grip' campaign

CEMEX > Pottery Lane, Tyne & Wear > 0191 2612363

AWARD WINNER ON VIDEO

CEMEX ran a 'Get a Grip' campaign as part of its efforts to reduce incidents associated with 'Slips, Trips and Falls.' The scheme was developed following consultation with the workforce. The campaign included educational information to enhance employees' knowledge of safe practices. The physical hardwear on site has also improved, and now includes bright, non-slip paint for high visibility and special non-slip clips for steel walkways and steps.

Communicating with the workforce has been a key component of the campaign and has been conducted effectively in a variety of ways:

- Management and employee briefings have been carried out;
- Photographic images and PowerPoint presentations have been used and the presentation material has been made available to employees through a health and safety information folder; and
- A video has been produced for use throughout Europe and has been presented to the entire workforce.

There are 'Get a Grip' signs and stickers which are located at the foot of steps/stairs and on vehicles and are there to provide reminders of the correct hand and footholds required when accessing fixed and mobile plant.

'Best Practice' alerts are now communicated to all sites to continue the emphasis on correct practices on site. The campaign has made a significant contribution to a reduction in incidents, not only in terms of Slips, Trips and Falls, but in overall incident rates across CEMEX sites.

Safety roadshows

CEMEX > Wolverhampton Road, West Midlands > 07885 778233

HIGHLY COMMENDED ON VIDEO

Following the success of the CEMEX Safety Leadership workshops held in 2005, it was decided to introduce safety roadshows at several sites to help spread the company's safety messages.

Held onsite, where the employees are in their natural environment, workers can benefit from advice and presentations on such things as:

- Transport;
- Manual handling issues;
- Taking care of your welfare on site; and
- Confined space issues.

The benefits that have been gained so far include:

- The workshops and roadshows combined have achieved over 4,600 hours of training whilst being able to maintain 'business as usual' because workers do not have to leave their sites;
- The scheme has counted towards employees' continuous personal development records;
- The roadshows have promoted a positive safety culture; and
- Incident rates have been reduced.

Changing behaviour in the workplace

Hanson Aggregates > Area Office, Lancashire > 07725 794438

During April 2006, Hanson's north region recorded three lost work time injuries which could have been avoided and were directly attributable to behaviour rather than failure of plant and equipment.

It was decided that there was a need to carry out a safety-specific audit at all Hanson sites to gain a greater level of ownership for health and safety. A meeting was called amongst the operations managers to try and understand why workers had failed to report or rectify unsafe conditions or behaviours.

It was felt that the company had got the safety messages across but failed to practically demonstrate the behaviours expected and how to use the health and safety systems to deal with unsafe conditions. This analysis led to the development of the Behavioural Modification Exercise.

The objective of the exercise was to:

- Provide a clear explanation to employees on their personal performance regarding unsafe behaviour and how to deal with unsafe conditions;
- Explain to employees how violations of safe systems of work would be dealt with; and
- Inform employees of the tools available to deal with unsafe acts and conditions.

A system was devised to review a number of unsafe practices and decide what practical steps should be completed to remedy them. This was developed into a presentation which was given to the workforce. The result was greater awareness of potential risks in the workplace with buy-in achieved at all levels through a joint exercise rather than a lesson.

Premiere performance

Lafarge > Head Office, Leicester > 0116 2648251

Following the success of the Leader For Tomorrow campaign in 2004, Lafarge wanted to once again engage all employees in a drive to emphasise key messages and objectives surrounding health & safety.

To achieve the 'zero incidents' goal, it was deemed crucial that all employees were involved and shared the same vision, which the events were intended to instill.

The cinematic-themed event was organised into 22 half-day sessions over four days at eight different venues and was led by Lafarge managers from different parts of the business.

Some of the different aspects of the day included:

- Health and safety role plays, which were conducted to help illustrate possible situations and how to deal with them;
- Deterrents such as photographs of serious incidents and statistics as well as examples of dismissal for improper practices; and
- A DVD was shown in which employees from across the business shared why they think health and safety is important and the benefits it brings to employees and the company.

The event concluded with 'Oscar' style awards for recognition of exceptional performance in three areas: Pride in health and safety, passion for customer service and business performance.

Individuals and teams were recognised for their good approach to health and safety issues on things including improvements to working environments on sites, improved traffic systems and reporting unsafe acts and near hits.

Audio health and safety messaging

North Kent Roadstone > Robins Wharf, Kent > 01474 333186

Whilst signs can have some impact on site health and safety, it was felt that the communication process could be improved. This was achieved by issuing verbal instructions and requests around the site using a 'Speech Pod' which sends out audio messages to gain greater attention from workers.

The unit has movement and heat detection capabilities. Once a person is within the detection range a pre-recorded message is relayed. Up to seven messages can be stored and if required, these can be played in multiple languages.

The units are mounted in key area such as the 'In' and 'Out' weighbridge and they convey important messages such as instructions to remain in vehicles and the correct PPE that must be worn on site.

Rough terrain transport and discharge of explosives

Tarmac > Caldon Low Quarry, Staffordshire > 01538 308282

Explosives trucks could not be used to load holes on steep and uneven ground because of three main hazards:

- Explosives had to be manually handled by the shotfirer using a wheelbarrow;
- There was a risk of injury because of slips, trips or falls on the uneven terrain; and
- Explosives could have spilt on route to the blast site.

The innovation selected to overcome these issues was an attachment that was made to work on the quick hitch of the telehandler.

The attachment incorporated a plastic container inside a frame which could be filled with ANFO mix. This mix could then be transported to the blast site and the telescopic arms used to position the mix over the hole. The safe working load was calculated on the maximum lift capacity of the telehandler when the jib was fully extended.

The attachment was then lowered onto the ground to discharge any static electricity at which time the mixture could be released into the container in a controlled manner.

The mixing truck is able to remain on firm level ground to refill the container as required. This measure eliminated all of the three highlighted concerns.

Health and safety plan and annexes

CEMEX > South East Region, Surrey > 01932 568833

The health and safety plan is an aide memoire for all managers and employees which documents on a month by month basis what all locations must do, as a minimum, with regards to health and safety.

Examples of things that are included are:

- To communicate CEMEX health and safety policy;
- Review risk assessments;
- Inspect the first aid boxes and carry out inspections around the site;
- Conduct a fire risk assessment; and
- Promote the near hit / hazard alert card system.

Two Health and Safety Plans exist, one for operational and technical locations and the other for sales and office environments. This takes into account the different working environments at the two locations. In the annexes, further information is also provided on such things as:

- Brake testing;
- Noise;
- Health and Safety Committees;
- Risk Assessment;
- Control of Substances Hazardous to Health;
- Statutory inspections; and
- PPE.

The plan is made available to all personnel and is designed as a tool to engage both workers and management. The plan is part of an attempt to give the workforce ownership of safety and training on CEMEX sites.

Two sets of eyes are better than one

Lafarge Readymix > Bluebell RMP, Kent > 0780 3953990

The requirement for major refurbishments and replacement of plants has necessitated the recruitment of a project manager who was appointed to guide the projects and ensure best practice. One of the first projects to be addressed was the replacement of the Readymix plant at Bluebell Hill. A full site review took place which highlighted those issues that needed to be dealt with in the new plant and site layout. These were:

- The plant's location;
- Access and egress onto the site; and
- Water management.

Among the upgrades were:

- A 35 tonnes ground hopper with drive over grid – this was to allow the largest anticipated aggregate delivery vehicles to discharge a full load in one go;
- Start up alarm on the radial conveyor to warn the workforce before it begins operating;
- Remote control operation of the aggregate delivery system so staff weren't required to keep accessing and egressing the batch cabin;
- Cameras on all six aggregate bins to show stock levels;
- Auto cut off high level alarms on all bins to prevent overfilling;
- Second staircase direct from batch cabin to allow staff to access the mixer room direct; and
- Additional landing and access platforms around the panmixer discharge chutes for cleaning and maintenance and silo management system to prevent over pressurisation during filling.

Following the plant's commissioning and the first few days of operation, a follow up meeting was held with the managers, staff and drivers involved in the original plant to ensure all concerns raised at the start of the project had been addressed.

Any additional work that was required was then completed over the following month. A further meeting at the end of this period confirmed that all concerned were happy and the project was formally signed off and handed back to the local management team.

Scorton Quarry safety week

Tarmac > Scorton Quarry, North Yorkshire > 01748 811768

A 'Reinvigorating Safety Programme' had been rolled out to employees which was geared around desk based training and presentations. In a move away from the more theoretical aspect of training, a more practical event was needed to help engage workers in the safety issues.

A project team was drawn together to plan an event that would raise awareness on safety. The event was to be interactive and measurable and be attended by the whole workforce without bringing business grinding to a halt.

The time period for the sessions was therefore restricted to half a day. To try and broaden the knowledge that was gained, workers from various disciplines were put in to groups of 8-10. The areas that were covered included:

- Hazard spotting;
- Risk assessment;
- Tyre safety;
- All round vision safety;
- Truck mixer safety;
- Mobile plant isolation technology;
- Bitumen tanker safety;
- Mobile plant safety initiatives;
- Golden Rules;
- Conveyor safety;
- PPE;
- Mini digger challenge; and
- F1 pit stop challenge.

There was time for attendees to meet new people away from their workplace and discuss their thoughts with them. The day also presented new ideas to the workforce from which they could benefit. Throughout the day, teams worked through a questionnaire and workbook. This safety week has helped create an enthusiasm towards, and increased awareness of, safety issues.

The Mountsorrel near miss newsletter

Lafarge > Mountsorrel Quarry, Leicestershire > 01162 303881

Due to the physical size of the quarry at Mountsorrel it has always been difficult to ensure that messages from quarry management to employees and contractors on site were received.

There was a significant issue with near miss reporting and employees would often raise the near miss but could not always learn what action had been taken.

The majority of site employees would not be able to access an electronic briefing so the "Mountsorrel Near Miss News" was introduced as a way of getting messages to all employees.

The newsletter started by simply feeding back actions on near misses but rapidly developed into a means of communicating other information, including:

- Personal achievements such as certificates passed and apprenticeships completed;
- New safety rules or protocols;
- Best Practice websites such as "www.safequarry.com";
- Details of major sales contracts; and
- Social functions organised through the Mountsorrel Social Club.

The newsletter has led to an increase in near miss reporting and also means employee's achievements are recognised by their fellow workers.

Editor's Note: QPA promotes the term "near hit" as reflecting the potential outcome more vividly.

Bitumen ground pump suction delivery system

AWARD WINNER

ON VIDEO

Aggregate Industries > Topley Pike Quarry, Derbyshire > 01298 22351

There has been an improvement to the process of bitumen management and deliveries. Traffic modifications have allowed for better safety. The new one-way system eliminates the need for a vehicle to reverse towards a bitumen tank.

The tank location has also been assessed to maximise safety. The key difference is that a ground pump is now used. This is not pressurised so the risks are greatly reduced.

The benefits of the system are:

- Bitumen is drawn from the delivery vehicle so the pipeline is not pressurised. This reduces the risk of a flexible delivery line failing and thus reduces the chance of bitumen spillage / spray;
- The rate of bitumen delivery is controlled by the pump and not by the delivery driver as was the case previously;
- The pump removes the reliance on a driver to act quickly if there is a problem;
- There is less fuming; and
- The pump can shut down if there is a problem.

Preventing drill rig overturn

AWARD WINNER

ON VIDEO

Blasting Services > Alfreton, Derbyshire > 01733 837684

After two recent incidents in Europe where drill rigs overturned, Blasting Services developed equipment to try and tackle the problem.

The drill rig boom is often used to stabilise the rig when drilling occurs in awkward places. However, if the rig moves over uneven ground before the boom is centralised, it can topple. A solution was needed to stop this happening.

An isolator switch was fitted which prevents the tracking levers working whilst the boom is swung out too far.

The switch is triggered by a bullet sensor if the boom is extended too far resulting in a 'cut-out' of the tracking levers. Once the boom returns to a safer position the switch is de-activated and the tracking levers can be used again. The driver is then able to move into the next drilling position.

Both existing and new machines will be installed with this safety mechanism.

Transportable generator solves cable theft problem

HIGHLY COMMENDED

ON VIDEO

Tarmac > Maxey Quarry, Peterborough > 07702 632036

At Maxey quarry, sand and gravel is extracted and delivered to the processing plant 1700m away using field conveyors. In order to extract the materials, a long reach excavator is used. This discharges into a mobile receiving hopper and wing line.

The wing is continually moved to take the next load of materials. The cable that is used to run this system has been affected by vandalism. Unfortunately, the practice of burying the cables has not deterred thieves from stealing the cable.

The way forward has been to use a 16KvA generator and to adapt the hopper. This removed the need for temporary cable routes and took away the manual handling of long pieces of cable associated with work on the wing line.

The generator is positioned on a frame and can be moved quickly and easily at the start and the end of each shift and overall has helped resolve the problem of stolen cables and reduced the manual handling.

Dust foam suppression to impact crushers

HIGHLY COMMENDED

ON VIDEO

CEMEX > Pant-y-Pwll Dwr Quarry, Pentre Halkyn, Flintshire > 01352 780651

A dust suppression system has been incorporated into the new crushing and screening plant at Halkyn Quarry. This is a foam system which helps control the airborne dust created by impact crushers and the associated conveyer points found in the plant.

This system produces approximately 5,000 litres of foam for every 1 litre of 'DustFoam' solution used.

It is more efficient than the alternative systems, as the solution produces a better surface covering on the aggregate when sprayed.

There has been a massive reduction of water used on site which has helped in a number of key areas:

- Avoiding materials sticking to belt conveyers;
- Avoiding scraper problems with a build up of materials; and
- The plant has improved its appearance and housekeeping.

Mobile chute for concrete collection

Ennstone Building Products Ltd > Cadeby Works, Warwick > 01952 630300

When the concrete collection point was closed off for four months during site construction works, an alternative collection point was required. A redundant station in one of the production buildings was earmarked as a temporary solution. The new location had drawbacks as the concrete would need to be delivered to the station at high levels by a travelling bucket.

The excessive drop height created a potential hazard to nearby personnel and vehicles.

It was decided that a chute would help resolve the problem but a fixed chute was still not suitable as there was a risk of personnel falling during cleaning. A purpose-made mobile chute was created that not only helped the concrete flow but also allowed for safe cleaning.

Delivery spillage control

Lafarge Aggregates > Weeford, Sutton Coldfield > 01543 480132

Following a review of bitumen delivery, it was decided that there would be improvements in three areas:

1. Bitumen delivery pipes

   The delivery area was untidy and sand was used to contain the dripping bitumen from the pipes. There was a risk that the bitumen would spread around the site and lead to slip, trip or fall incidents. It was decided to restrict the bitumen to a confined area. Deflector covers were also installed to contain the bitumen if the flanged joint should leak during delivery.

2. Emergency showers

   The emergency shower for the delivery driver was moved to the driver's side of the vehicle so it could be accessed more easily in case of an emergency. The shower was modified so that it worked as soon as someone stood on the floor inside the housing.

3. Bitumen pipes to weigh-scale

   Concerns were raised by employees that should a break or leak occur hot bitumen might leak onto them from the pipes that were positioned over the walkway. This situation was improved by installing drip trays under the pipes to make the pedestrian walkway safer.

Bitumen delivery flange improvements

Tarmac > Coxhoe Quarry, County Durham > 0191 3770611

There was a bitumen spillage at a nearby quarry which prompted a safety meeting to discuss whether any improvements could be made to the bitumen delivery equipment. Suggestions were made to try and improve the "Stokes Flange" design.

Following trials, the team devised a pull over cover that could easily be fitted to all bitumen delivery flanges. If there is a disconnection during the discharge the cover will act as a safety enclosure to protect the tanker driver from bitumen sprays.

Any spillages that occur would be directed to ground via the cover, reducing the risk to delivery personnel.

Bitumen tank float gauge

Aggregate Industries > Halton East Works, North Yorkshire > 01756 709219

At Halton East there are a number of measures in place to accommodate safe working with bitumen. These include safety audits and a step-by-step procedure for dealing with bitumen delivery. All bitumen storage tanks are fitted with alarms and monitoring equipment. Although this has proven to be an effective system there are occasions when an unexpected event, such as a power-cut can lead to dangers. Therefore a manual system was required as a backup to work alongside the electronic system.

The system is a simple copper tube attached to a copper float that moves up and down a visible calibrated gauge as the storage tank fills and empties. This is marked with the tank readings, and corresponds with the electronic readings. It is also colour coded to match the electronic monitoring system:

Green - Safe level

Amber - High level

Red - Ultimate High.

This clearly visible piece of equipment has instilled greater levels of confidence in operators delivering the bitumen and storage tanks can be filled to a safe capacity.

Bitumen delivery point improvement

Lafarge Aggregates > Stansted Airport > 07803 953640

Concerns were raised by employees after an incident involving a flange coupling failure at another site, which caused hot bitumen to spill during the filling operation. A device was designed to overcome this that channeled the 'blow-out' of bitumen safely downwards.

Asphalt load-out cards

Yeoman Asphalt > Theale Depot, Theale > 0118 9302653

There are a high number of hot storage bins on two coating plants. Vehicles are loaded with the aid of CCTV. There have been incidents related to this activity that needed to be eradicated. Examples included lorry drivers taking their vehicles under the wrong bins and the weighbridge operator opening the wrong bin door. This could have led to asphalt being deposited onto vehicle cabs.

A way to prevent this was to make it clear to the driver which bin they were going to be loaded from. This was achieved by issuing each driver with a bin card indicating the correct bin to use. The weighbridge operator is in control of which card is issued to which driver.

Once a bin has been selected a green light by the bin comes on, removing confusion. Only the selected bin doors can be opened and drivers are instructed to only pull under the bin once this light has activated. There is a diagram on the card to help drivers to find the correct bin if they have not been to the site before. Incidents of damage to vehicles or incorrect material loading have now been removed.

Tamperhead safety chains

CEMEX > Lower Road, Kent > O1474 355917

During cleaning or maintenance of the press, it was important to prevent the tamper head from falling down and injuring the operative. The safety equipment that came with the machine includes two 35 mm diameter pins that were placed though a frame work to act as a back-up measure if the hydraulics should fail.

There is a problem with this arrangement concerning the mould tooling that is connected to the underside of the tamper head carriage. The tool is held in place with six hydraulic clamps. The clamp pins are 30mm in diameter and are not tested and they are only maintained and replaced when they become ineffective or are damaged.

To provide a safer environment, a safety chain has been designed which is placed around the tamper head and the mould tooling to prevent any movement at all in the tamper head, should the hydraulics fail.

Cleaning and maintenance can now take place under isolation without a concern of hydraulic failure.

Improvements in vehicle tipping safety

Aggregate Industries > Heights Quarry, County Durham > 01388 517381

Incidents where lorries have overturned when discharging material can most often be attributed to uneven tipping areas or badly loaded vehicles. The only stocking area at this quarry was on sloping ground, and so with this in mind, a review was undertaken of the stocking area and tipping procedures and led to the following recommendations:

- A survey of the stock area was to be carried out to establish the direction and angle of fall of each stock pile. From this information it was possible to reposition all the stockpiles so that vehicles could only tip on level ground.
- A tipping card is given to the lorry driver at the weighbridge. The driver must answer a number of safety checkpoints provided on the card before proceeding to the correct stockpile. A map is also provided showing tipping direction arrows for each stockpile. CCTV cameras are present so load distribution can be assessed.
- A facility was designed and constructed to allow lorries to safely tip off if concerns arose with the condition of the stocking area, bad load distribution, or there were mechanical problems with the lorry.
- A level concrete pad was laid in front of two aggregate sheds to allow articulated vehicles to tip parallel to the bays. The loading shovel then pushes up the load into the bay. Previously, restricted space meant vehicles could not align the cab and body when tipping.

Driver satisfaction and confidence has been improved due to a reduced risk of vehicles overturning.

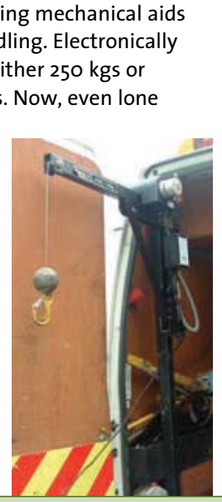
Van based hoist

CEMEX > Albion Works, Sheffield > 01142 418282

HIGHLY COMMENDED ON VIDEO

Hazards were present that were associated with the loading and unloading of equipment into and out of vans. Some of the equipment used on the site is heavy, such as Vibrating Plates, Pneumatic Breakers (Jackhammers) and Floor Saws and the manual moving of this heavy machinery can cause injuries to the workers.

The solution was based on the principle of using mechanical aids wherever possible to assist with manual handling. Electronically operated hoists with a safe working load of either 250 kgs or 500 kgs were incorporated into most vehicles. Now, even lone operatives can safely lift and lower equipment.



The overall benefits of this measure include:

- A reduction in manual handling injuries;
- Better protection of the equipment during the movement process; and
- Solitary workers can load and unload heavy items from vehicles.

Sidewinder – specialised machine for material placement in areas too small for pavers

Lafarge > A1 junction 1-2

HIGHLY COMMENDED ON VIDEO

There was a problem when it came to effectively placing material in areas too small for pavers or other traditional forms of machinery to work. In this circumstance, it was normal for the work to be carried out manually which was an arduous practice and could lead to inconsistencies in the quality of the work.

The Sidewinder has been created to overcome this issue. It can place up to 1000 tons of material per day which is considerably more than can be achieved through the use of manual labour. During the process, the material goes to the front of the hopper and can then be transferred to whichever side is appropriate.

The quality of the levelling is guaranteed by the placement arm and the use of a laser system. This is superior to the levels offered previously.

The benefits:

- Reduces the manual handling and possible injuries that can occur;
- Provides speed and accuracy; and
- Removes the workforce from the potentially dangerous areas.

Cement delivery hose restraint

Allen Newport > Fordham, Bury St Edmonds > 01638 720228

HIGHLY COMMENDED ON VIDEO

Allen Newport has developed a cement delivery hose restraint that will prevent a disconnected hose "snaking" when under pressure and causing injury to anyone caught in its path.

The issue came to light after such an incident at the Allen Newport site in Bury St. Edmonds.

The solution they came up with was inspired by a review of best practices featured on www.safequarry.com which looked at enhancements to the clamp securing the pipe to the delivery point.

Employees and management took this a step further by creating a fixed stand close to the delivery point to which the hose could be clamped following its connection to the delivery point.

This simple fail-safe device ensures that even if the hose becomes disconnected at the delivery point, it is impossible for it to snake.

Additive handling system

Aggregate Industries > Halton East Works, North Yorkshire > 01756 709219

HIGHLY COMMENDED ON VIDEO

Aggregate Industries undertook a review of additive handling at their Halton East Works. The existing system exposed operators to high levels of dust, noise, heat, fumes and the repetitive manual handling of the additive packs.

Following a review of commercially available solutions, Aggregate Industries decided to develop an in-house solution to overcome these problems that was based on a mini-silo. This was considerably cheaper than the alternatives on the market.

The silo has greatly simplified the process of additive handling for the operators and considerably improved the work environment when undertaking this task. The silo can be operated independently or via the company computer and also can be easily replenished.

Admixture conveyor guards and platform

Lafarge > Boroughbridge Rmp, North Yorkshire > 01423 324203

Before there were improvements at this site, admixtures were added to the conveyer belt from ground level. This was considered bad practice as there were risks from manual handling and entrapment.

To address these issues a metal grid was placed over the conveyor and attached to the top of the conveyor side guards. This boxed the conveyor in, eliminating the danger from the conveyor belt or any moving parts associated with the conveyor. To generate safe access to the conveyer, a platform was built which reduced the manual handling issues.

Skip elevator system for loading 'bagged admixtures'

Tarmac > Thornton Concrete, Blackpool > 07702 632234

Loading bagged admixtures to ready-made concrete presents a number of safety problems.

- Working at heights: climbing ladders to the truck mixer;
- Manual handling: involves repetitive movements;
- Contact with raw materials; and
- Slips, trips and falls:

The idea that was developed to overcome all these problems was taken from an existing elevator system which was modified to suit the needs of the site. The system uses a mechanical process which lifts bags of admixture via a skip / hopper elevator up to the truck mixer loading chute. The operation ensures the full contents of the skip / hopper is safely discharged into the truck mixer drum. Concrete can then be loaded into the mixer on top of the admixtures ensuring that the admixtures are mixed thoroughly.

This has removed all the dangers that were present beforehand.

Use of lightweight kerbs

Ennstone Thistle Ltd > South East Contracting, Fife > 01337 841950

This initiative focuses on sub-contractors using lightweight kerbs instead of heavy concrete kerbs to reduce the manual handling risk involved in the process. An example of when this has proven very successful was during a contract for Transport Scotland where the sub-contractor was encouraged to use a lightweight kerb made from recycled materials such as plastic.

The weight of each kerb is well within the kerb weight limit set by the HSE, and can be easily lifted by one worker. These kerbs remove the need for mechanical handling which helps to reduce the number of vehicles on site. The manual handling risks are also greatly reduced because of the weight reduction involved.

Pallet lifting device

CEMEX > Salford, Manchester > 01928 752752

Concerns were raised by operatives regarding the lifting and bending involved when batching. The operation involved adding steel wire which came in 25kg boxes. The wire had to be introduced slowly on to the material batch belt as the weight being lifted caused problems to the operators..

To overcome this issue, a pallet lifting device has been introduced. This has reduced the number of bending and lifting movements by plant operatives.

Manual handling during an asphalt plant mesh change

Aggregate Industries > Yeoman Asphalt, Croydon > 0208 6844303

The asphalt plant has seven screen meshes which causes manual handling issues when they need changing. Changing the screen meshes on the vibrating screen deck was the main concern. The hazards occurred when the screen had to be carried up steep steps and down a narrow walkway.

The company decided to expand the top walkway, using a large open area around the screen level. A team of engineers were tasked with designing a working platform and load bearing beams to enable the lifting of the screen meshes up to the top of the plant using an electric hoist or a manual pulling block.

This has significantly reduced any manual handling whilst undertaking this task and has reduced time spent changing the screens. It has also helped the company store larger spares securely and closer to the area where they would be needed.

Automated gravel bin doors

Tarmac > Lound Quarry, Nottinghamshire > 01777 818 787

Dump trucks are used to empty the site's storage bins as they become full. The bins are 30 years old and their discharge doors have always been manually operated. The dump truck is driven under the bins and the driver has to get out of the cab and climb up onto an adjoining gantry to manually open the bin doors, using a long extension bar attached to a manual lever mechanism. The mechanism is often stiff and awkward to operate and considerable force is required to open and close the doors.

This practice is risky for several reasons and could cause:

- Hearing damage because noise levels under the bins are above 90 decibels;
- Manual handling injuries from operating the door; and
- Slips, trips and falls from continual access and egress from the dump truck onto the gantry.

To remove these concerns, the doors were replaced with automatic ones. The doors are controlled via a remote control handset that the drivers uses from his cab. The dump truck reverses under the storage bins and once in position the driver uses the handset to control the opening and closing of the bin doors. Each bin has a separate signal button and frequency.

Hydraulic solution to problem chute

Aggregate Industries > Lee Moor Quarry, Devon > 01752 839723

A hinged chute required continuous maintenance work. It was necessary at times to change screen mats or inspect the chute linings. To carry out the work, the chute needed to be slid forwards and tilted through 90 degrees. Traditionally this had been completed by two people using bars and chainblocks - which involved manual handling and lifting.

The workforce involved in the process discussed a solution that would remove the need for manual handling and working with chainblocks. The new design means the chute can be moved forward and then tilted hydraulically. This operation can now be carried out by one person using a foot operated hydraulic pump to open and close the chute at a safe distance from the chute area. Overall, the screen changes and chute inspections are now safer.

Eliminating manual handling risk by improvements to water inspection hatches

Hanson > Shardlow Quarry, Derbyshire > 01509 503161

The task of inspecting the water tanks was proving too difficult for one employee to manage, as the manual handling risks were too great.

The hatches on the water tanks were too heavy to be lifted without assistance, presenting a danger to the operative during weekly inspections. The problem was increased in high winds.

Modifications have now been made to the hatch. A smaller hatch is available within the larger hatch. An operative can now carry out inspections of the water levels in the tanks safely and regularly.

Silo pressure relief device modification

CEMEX Readymix East Anglia > Colchester Mortar Plant, Essex > 01206 862222

This site has cementitious materials silos which have pressure relief devices fitted to them which are regularly inspected and maintained. These devices are hinged, heavy lids and as part of the maintenance require any hardened cement and the hinge pin to be removed. The problem arose during this cleaning process as the lid could only be taken back by 45 degrees which made cleaning difficult. As a result, the restraining chain had to be removed to gain better access for cleaning.

However, there was a risk that the shackle and the cement screw could fall down into the silo and that the lid could also fall and trap hands and fingers. To overcome this problem, a simple design was created involving an 8/10mm (carbine) carabiner, which when unhooked allows the lid to be quickly and safely tilted back for cleaning. Tools are also no longer needed to remove the shackle.

Hand added admixture chute

Lafarge > Selby Rmp, North Yorks > 01757 291473

Due to an increase in the volume of hand added admixtures to the concrete products at this works, a reassessment of the procedure took place. Previously this activity was carried out by lifting a small grid and then pouring liquid admixtures down a discharge chute into the rotating truck mixer drum. Investigations showed this to be bad practice.

A device was designed to reduce the health and safety issues associated with hand added admixtures. A six inch funnel connected to a flexible hose was fitted that extends down through the grid into the discharge chute.

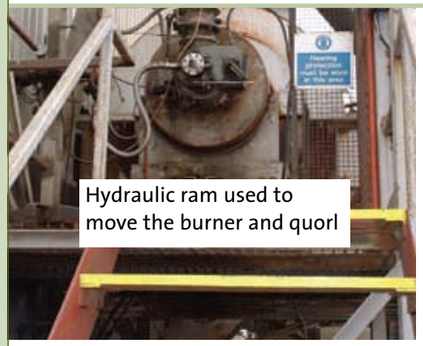
By fitting the hand added admixture funnel the company has reduced the potential for spillage which in turn has reduced the risk of slips, trips and falls.

It has removed the hazard of coming into contact with moving machinery which has eliminated the risk of entrapment, crushing and serious injury.

The chute can also be connected and disconnected as required to allow the production of special products.

Hydraulic burner removal system

CEMEX Eastern Region > Grimsby Coating Plant, Lincolnshire



Hydraulic ram used to move the burner and quorl

As part of the burner and dryer maintenance scheme, it is a requirement for the combustion chamber to be inspected monthly and replaced at twelve monthly intervals. However, to get access to the combustion chamber, the burner body has to be removed. This is a difficult task which can take several hours and involves a high level of manual handling.

Changes have been made which improve this task. The burner location system has been modified so it is easy to use. The track and burner cradle have been modified so the burner can move back without sliding to one side and a hydraulic ram has been installed to allow the burner to be jacked in and out in minutes rather than hours.

These measures have had the following benefits:

- Manual handling has been minimised;
- Operatives have been removed from the immediate area whilst the burner is being retracted; and
- The use of pry bars has been eliminated, minimising the risk of an accident.

Overall, a simple safe system has been created to remove the burner.

Slab palletiser improvements

CEMEX > Dereham Site, Norfolk > 01362 692195

During the manufacture of patio slabs there is a stage when the slabs are placed onto the conveyer to allow workers to check for seconds and rejects which can then be removed from the batch. Operators had to step up onto the conveyor to do this. This caused two safety hazards:

- Operators could slip or trip in the conveyor rollers; and
- Operators could suffer manual handling injuries when bending down to pick up slabs or when stepping up or down from the conveyor whilst carrying heavy slabs.

At the next stage of the process, once the seconds and rejects had been removed the slabs needed to be placed upright before banding. To do this a manual lever was used. With larger slabs however, the force required to operate the lever was larger than the manual handling forces recommended in HSE guidance. There was also a danger of someone loosing their grip whilst using excessive force and falling from the conveyor.

To overcome the first issue, the banding station was moved to the end of the conveyor where operators could remain at floor level. This allowed operators to work at a more convenient height whilst lifting seconds and rejects from the pallet and eliminated the need to climb onto the conveyor. The second issue was addressed by the installation of two hydraulic arms that replaced the manual arm, eliminating the need to manually pull the slabs vertical.

Slabs collated onto a pallet leaning against a support rail

Slabs at the end of the conveyor. Eliminating need to climb onto conveyor and hydraulic arms to straighten slabs.

Rail truck door security

CEMEX > Dove Holes Quarry, Derbyshire > 01298 77531

The doors on the rail load wagons are operated by pneumatics. If doors needed to be opened or closed, the loco had to be coupled up to provide the air source. It often took over 20mins to couple the train and a further 20mins to build the air to the correct pressure.

To couple and uncouple a train involves the manual handling of the chain links whilst walking up and down the sidings with the risk of slips, trips and falls.

A solid air pipe has been installed the full length of the sidings with multi stab-in points to make it a safer working environment for the operators working on the rails.

The operator can now walk along with a small pipe and couple the individual wagon to the air and operate the doors safely. The benefits of this change are:

- There is no need to venture on to the sidings across tracks;
- That the doors can be secured quickly; and
- That there is reduced spillage on the track which was a cause of potential derailments and a tripping hazard.

Leyburn hot store skip rope change

CEMEX > Leyburn Quarry, North Yorkshire > 01969 623197

The skip ropes on the hot storage systems at this plant needed to be changed regularly. This had traditionally been a time-consuming process taking up to four hours. Added to this was the manual handling dangers associated with pulling the new rope up through the system, particularly as the ropes did not come spool wound as standard.

It was recognised that if the new rope was wound onto a spool by the supplier then it would be far easier to pull through, as it would unwind itself as it was pulled into place.

The solution to this was a spool holder which was manufactured to fit onto the forks of the onsite telescopic loader. The loader could then lift the rope spool to approximately half way up the incline which would reduce some of the weight of the new rope and decrease the chances of it falling back.

By having the rope spool on the loader, employees don't need to stand underneath the rope pull and so the risk of injury by a falling rope is eliminated.

The machine operator is in the machine cab which has reinforcing on the cab roof window which ensures they are in a safe area during the pull. The change has halved the number of employees needed to pull through the rope.

Safe method of waste removal

CEMEX > Penrith, Cumbria > 01768 890202

Waste blocks needed to be removed from the production plant. Traditionally this had been undertaken using dumpers. However, there was a health and safety issue because the dumper had no safety belt or roll over protection. For this reason the practice was stopped.

A skip for use with a fork lift truck was introduced but issues with skip stability were raised. Therefore, a purpose built skip was designed. Instructions on how to use the skip safely are clearly displayed on the side of the skip.

Manual handling toolbox talk

Tarmac > Colchester Quarry, Essex > 01206 330795

After an employee attended a three day manual-handling course, a manual handling toolbox talk was set up and shared with the other workers on site.

The toolbox talk covers statistics on manual handling injuries, costs of injuries to the employee and the employer, types of injuries and safe lifting techniques. It was hoped that using one of Tarmac's own employees to convey the message would have a greater impact with the workforce as they would have more job and site specific knowledge than an outside trainer.

Getting the plant supervisors off their knees

Lafarge > M1 Mobile Plant, Hemel Hempstead > 07803 953990

The three silos on the M1 mobile plant were supplied with check points for the High Level alarms. To check that the alarms are working t-bars are placed down pipes that run adjacent to the alarms. The bar stops the rotation of the paddle on the alarm and activates the warning siren and lights.

The pipes had screw caps fitted when they were not in use. It was noted that the caps were difficult to turn by hand and required an operative having to position themselves on their knees and remove the cap with a wrench. There was a concern that whilst working on their knees they could become unbalanced which could lead to a fall as there was only a small protective rail.

A small T-Bar was positioned on top of the cap which ensures the operative can achieve leverage and open the cap whilst standing. This has created a safer working environment.

Manual handling assessments: a new approach

WBB Minerals > East Golds Works, Newton Abbot > 07771 870582

A workshop was held as part of efforts to improve the manual handling of the workforce, and in particular as a part of the 'Better Backs' campaign. Several manual handling tasks were filmed by the HSE's scientists and played back to attendees. The MAC tool, a colour-coded chart which allowed users to identify high risk workplace manual handling activities, was used. Although a simple measure, this was a way of engaging staff with the correct manual handling procedures.

A combination of the MAC tool and camcorder was then used to identify the six most hazardous tasks that can be carried out at the East Golds site. The activities were then replayed to the safety officer and those working on the equipment. They were able to analyse these tasks and as a result, several simple but effective solutions have been introduced in order to reduce the risks associated with manual handling operations.

The use of technology here and the involvement of the workers has helped to bring about some straight-forward solutions to dangerous tasks.

Safe system for changing hot storage skip ropes

Aggregate Industries > Back Lane Quarry, Lancashire > 01524 732261

There were concerns over the maintenance of the hot storage system at this asphalt plant. Material is transported up to the asphalt bins via a skip car propelled by two wire ropes on a winch.

For safety reasons, these ropes are changed every six months. Removing the ropes was a straightforward process but reattaching new ones carried with it safety issues. Reattaching the new ropes to the winch and re-tensioning them required an operative to hold the ropes on the winch, while another operative electrically wound the drum. This procedure carried manual handling and entrapment dangers.

New equipment has been put in place which protects the operative from the dangers of the winch and rope.

Before

After

Worker involvement in the new chemical installation procedures

WBB Minerals > Headon China Clay Works, Devon > 07770 263903

With the introduction of a new hydrogen peroxide plant at the site, a risk assessment was carried out to identify the potential dangers, which included:

- The use of corrosive chemicals;
- Potentially explosive and flammable chemicals; and
- The potential to cause environmental pollution.

The following issues were recognised too:

- Employee involvement with dangerous chemicals;
- The potential dangers of maintaining the equipment;
- The need to update all emergency procedures and written safety systems, not just hydrogen peroxide;
- The need to involve Devon Fire and Rescue service, for an "objective" view; and
- The need to ensure all PPE is suitable and effective for the task.

To address these issues the following was carried out:

1. Training - All employees involved with chemicals, received a one day "general chemical awareness" training session. In addition to this, WBB Minerals' principal scientist gave a tool box talk on chemicals. The site management also arranged a one day training and awareness day at the Solvay (suppliers of Hydrogen Peroxide) chemical plant in Warrington. All maintenance staff and anyone involved in receiving chemical deliveries attended.
2. Work procedures – A new robust system was put in place for chemical deliveries and a procedure was introduced to ensure all people delivering chemicals underwent a chemical delivery induction before commencing delivery.

   Site rules were amended to state that nobody was permitted to deliver chemicals unless they had received the induction training. A toolbox talk was given to employees on these new procedures.
3. PPE - A technical representative from a chemical PPE specialist advised and trained site personnel on the correct PPE. New relevant PPE was provided.
4. Emergency services – A meeting with the local fire service identified hazards. To address the concerns an evacuation procedure was produced and alarms installed. To ensure competence, a mock exercise was organised with the fire service to test procedures, and this will be repeated every six months.

Improved control of respirable crystalline silica dust

HIGHLY COMMENDED

ON VIDEO

WBB Minerals > Moneystone Quarry, Staffordshire > 07841 496440

A six month study was carried out to see what improvements needed to be made to reduce respirable dust and silica exposure on site.

The following points were raised:

- The dust masks being worn by baggers needed to be improved;
- Awareness training for operators of the risks associated with respirable silica needed to improve;
- Management needed to further enforce the wearing of PPE in the area;
- A working procedure needed to be drafted; and
- Representation from the staff who work in the area needed to be heard.

A team was established to address these issues. In relation to the use of PPE, a "Walk and talk" procedure has been introduced where the management team conducts walking tours on a regular basis. Any issues identified during the tour are recorded on an internal concern form for review/action by the management team.

Further improvements include:

- Operators have been issued and trained on air fed masks;
- A silica awareness presentation has been given to all;
- A new enforcement tool has been introduced to encourage managers to formally record both good and bad practice while talking to employees about their work activities;
- Good practice guides has been put up in the working area; and
- A new procedure for operating in the bagging area has been issued.

Crusher noise reduction hoarding

Lafarge > Methley Quarry, West Yorkshire > 01977 512371

Employees working near to the Pegson 900 auto cone crusher were in danger of damaging their hearing. At a distance of two metres from the machine a noise level of 87.7 decibels was recorded.

One of the options for reducing the noise was to completely house-in the cone crusher. However, because of the design of the plant, it was not possible to completely and permanently enclose the plant.

When maintenance work is being carried out, the cone crusher often requires a mobile crane to work alongside. It was decided that any safety device or enclosure would need to be easily removed to allow maintenance to take place.

The solution was an enclosure that could be easily installed and removed when maintenance work occurred. Two 4' boards of cladding timber were fitted onto brackets in front of the cone crusher. This has reduced noise levels to 83.7 decibels and means the workforce no longer have to raise their voices when in close proximity to the cone crusher. The boards are also easy to remove when required.

Improved communication methods for site personnel

CEMEX > CEMEX Rail Products, Birmingham > 01213 270844

There was a concern that visiting personnel were not paying heed to the signs and notice boards situated around the site. In relation to signs, it was felt that the information on them – such as site rules and correct PPE information – was being missed or ignored. There was also the problem of foreign visitors not being able to understand the instructions on signs.

Pictorial signs had resolved some but not all of the issues.

Problems with PPE compliance were addressed by the use of mannequins, wearing the correct PPE on the side of the road, eliminating any confusion about what is expected from visitors.

Notice boards regularly carry information that site personnel need to be aware of, but it was not known whether the information was filtering through to staff. So in addition to placing important information such as safety alerts on notice boards, notices were fitted to canteen tables underneath a perspex sheet. In this way the information could be read by site personnel when they were having their breaks.

Self cleaning panmixer – a batchers dream come true

Lafarge Readymix > M1 Mobile Plant, Hemel Hempsted > 07803 953990

The Readymix sector has always been aware of the dangers that are presented from panmixer cleaning. This is because it can involve operatives climbing inside the unit which has caused a number of injuries such as slips, trips and falls, contact with fresh concrete, manual handling injuries and being struck by the objects contained in the unit.

Automatic washout system have helped improve the situation but there is still a need for an operative to manually clean them.

The plant supplier McCrory Engineering suggested a system to overcome this problem. The system incorporates three retractable cleaning heads that withdraw from the panmixer to prevent any clogging. The heads are driven into position and held in place within the mixer using the water pressure from the washer pumps. Training was given to the operatives when the new plant was installed that covered how to use the equipment and the level of cleanliness expected. The cleaning process was nearly resolved, but a final process was added – a release agent, which is applied daily to help stop concrete sticking to the inside of mixers.

The panmixer is now almost fully cleaned. Operatives only have to apply the washout system, lift the lid of the pan and clean around the door seals with the high pressure lance. They then reapply the release agent ready for the next day's operation. This successful trial has resulted in the panmixer only needing to be serviced weekly and it has reduced the cleaning time from forty to ten minutes.

Cribarth Quarry fogging system

Aggregate Industries > Cribarth Quarry, Powys > 01591 620790

At Cribarth Quarry, crushed stone goes to a screen house for screening into different grades. The screen house uses a Finlay screen and a triple deck Parker screen which both produce a lot of dust. In the past, two people have shovelled this dust out of the screen house, but with the Workplace Exposure Limit (WEL) in place all contact with dust was required to be reduced.

The company recognised that a method of capturing dust out of the air, so it could be contained and then removed, was needed.

After consulting a company in Chester called Renby, it was agreed to follow their suggestion to trial a dry mist system called the Fogco, as used in odour and humidity control. The process works as follows:

- Clean water enters the Fogco;
- Water exits at very high pressure;
- The water passes through a micron filter;
- The water then passes through an ultraviolet lamp and radio frequency water softener; and
- Finally, the water passes through 65 nozzles set at 0.3 mm that atomise the water.

This process produces fog which fills the screen house as the dust particles rise. The fog clings to the dust particles and they fall through the cat-walk onto the ground where the dust can be cleaned out by a digger thereby removing the problem of high dust quantities settling on the floor.

Noise monitoring – ear protection

CEMEX > CEMEX UK Construction Services Ltd, South Yorkshire > 01142 418282

To comply with The Control of Noise Regulations 2005, CEMEX wanted to identify sources of noise in the workplace so it could ensure that workers' hearing was protected. Only certain areas of the company posed a health risk, but many activities conducted at CEMEX were above the legal limits, with operatives often having to shout to each other to communicate.

The monitoring process was designed to establish what hearing protection was most suitable for the noise levels that existed. Avoiding damage to hearing is important however it is vital that any hearing aids do not completely block out all sound as verbal communication and sounds such as vehicle reversing alarms need to be heard.

To overcome these issues, CEMEX had silicone hearing protection devices produced that were made from a soft acrylic material. The devices were designed for each individual to fit their ear for maximum effectiveness. As these were tailor-made and needed some time to complete, helmet mounted ear defenders were used in the interim.

These had a sound amplification unit built in that enabled the employee to hear speech but eliminated unwanted noise and had an on/off switch that allowed the amplification system to be controlled by the user. This worked well while the other hearing protection aids became available.

Transient welfare facilities

CEMEX > CEMEX UK Construction Services Ltd, South Yorkshire > 01142 418282

It is regular for the surfacing teams to work at transient sites where there are no fixed facilities for them to use. This means that employees at short-term motorway works, short-term town works and remote roadworks are usually eating cold food and drinks and washing facilities are often restricted to a cold water tap.

To comply with regulations and improve welfare arrangements for employees, a policy decision was made to upgrade to new vehicles. Seventy new vehicles were provided improving the quality of facilities offered. These included:

- Hot water washing facilities;
- Ready access to soap;
- Hot drinking water facilities; and
- Microwaves for heating food.

These improvements have helped provide better welfare facilities and higher quality of working life for the employees.

Dust extraction vacuum pipes

CEMEX > Dove Holes Quarry, Derbyshire > 01298 77531

Several areas of the plant required regular cleaning which involved manually removing fine dust. It was decided to replace the manual tools with industrial vacuums to reduce the risk of dust inhalation.

A system of pipes was installed in relevant areas of the plant to allow an extraction unit to be used with a light pipe by the operator in a relatively dust free environment. This change has significantly reduced the risk of dust inhalation.

Drug and alcohol policy

Lafarge > HR Department, Leicester > 07740 563374

As part of Lafarge's Health and Safety Roadshows, the company's drug and alcohol policy was launched to outline how it intended to deal with employees working under the influence of alcohol or non-prescribed drugs. Attending work in this condition is strictly prohibited and poses a significant safety risk to both employees and their colleagues.

Testing for alcohol or drug use was conducted when suspicions arose that an employee was under the influence at work. A clear procedure for organising and authorising a test was communicated to managers through the health and safety roadshows.

Tests are conducted by a competent 3rd party organisation on any site. The tests are conducted under strictly controlled conditions within 2 hours of being notified. Following the results, occupational health advisors offer their opinion and suggest appropriate actions to managers.

Although random testing was considered, this was deemed a step too far – although this could be a possibility if the policy is taken further in the future. If an employee admits to a problem, which they want to overcome, Lafarge has agreed to help them become "clean".

Panic alarm & remote emergency stop system

Aggregate Industries UK Ltd > Bardon Concrete, Lancashire > 01524 736933

Three measures were taken to improve the safety of employees on site:

1. Remote panic alarm

   This is a device to aid a lone worker who may suffer an injury on site and require assistance. The device is carried by workers and when the alarm's button is held for five seconds it sends a signal to the plant office which triggers an alarm. If the alarm is not noted immediately the alarm starts to dial a series of pre-set phone numbers (of nominated employees) until someone answers. Whoever responds to the signal is informed of where the problem is and can deal with the situation accordingly.

2. Remote emergency stop system

   This is a button that can also be found on the remote panic alarm and can be used to shut down the electrics on the plant if the worker is not near a site emergency stop button.

3. Horizontal alarm

   This alarm is triggered if an employee is in a horizontal position for 15 seconds and alerts other site personnel that an employee could have fallen or lost consciousness. As with the other devices, a signal is sent to a receiver in the plant office, setting off an alarm to make pre-selected site personnel aware of the problem. The alarm can be deactivated by an employee if they stand up vertically or by pressing the cancel button.

   The device is about the size of a mobile phone and is attached to a holster worn by the employee. It is water proof and robust enough so it can't be damaged when working in challenging conditions. It has helped protect the workforce from several dangers.

Public footpath safety flashing light system

AWARD WINNER

ON VIDEO

Lafarge Aggregates Ltd > Besthorpe Quarry, Nottinghamshire > 01636 892426

A public footpath existed at Besthorpe Quarry that passed through an area with mobile plant movements and posed a high risk. There was a concern that members of the public would not heed the danger when trying to cross at this point. So a traffic light system was installed to allow for safe crossing for pedestrians. The system is simple and safe and easily understood by both the public and the workforce.

The system works on a trigger system which is enabled when a pedestrian breaks the laser beam. The flashing lights are positioned on 2.5m poles to ensure they are clearly visible to mobile plant operatives. When the lights flash, all vehicles must stop allowing pedestrians to cross safely.

Reducing risk and improving bitumen delivery efficiency

Colas > Production, Warrington > 01925 632616

The large number of deliveries at this site created a high risk of vehicle collisions occurring. The design of the site did not allow for a one-way system as an option to overcome this problem.

An analysis of vehicle movements was made and it was identified that bitumen deliveries were the main contributor to the congestion. The supplier of the bitumen was contacted to help develop a safer workplace.

It was decided to improve the plant's storage capacity to reduce the number of deliveries. A storage tank was built with a capacity of 200 tonnes, so the site could accommodate six 29 tonne deliveries of bitumen each day. These deliveries were to take place between 18:00 and midnight, outside the normal working hours, to help ease congestion.

However, there were some problems related to this which needed to be resolved. The site would be unmanned during this time so a safe system of work for the delivery drivers was created. The system involved two vehicle deliveries occurring at the same time to avoid lone working. The discharge points for the tankers were also located adjacent to each other so drivers could monitor each others operation. Electronic contents gauges and high level alarms were fitted and a traffic light system employed.

As there had been two incidents involving bitumen spray from poorly sealed hose flanges in recent years, spray deflector hoods were also fitted to the discharge points. Noise levels were also considered because of the 'out of hours' delivery and were monitored to ensure they remained within acceptable levels.

These measures have helped to reduce not only the daytime deliveries but also the chance of an incident occurring.

Elstow visitor's site map

Lafarge Aggregates Limited > Elstow Coated Plant, Bedfordshire

Elstow is a complex site and historically there have been incidents of vehicles and visitors getting lost despite being directed from the weighbridge to their intended destination. This brought the risk of a dangerous incident for visitors to the site.

The solution was to produce a leaflet which showed the traffic flows, loading points and offices so that visitors and people unfamiliar with the site could find their way safely to their destination and avoid heavy traffic in the process. Also included on the leaflet were details of fire assembly and first aid points, site rules and instructions as well as an aerial shot of the site.

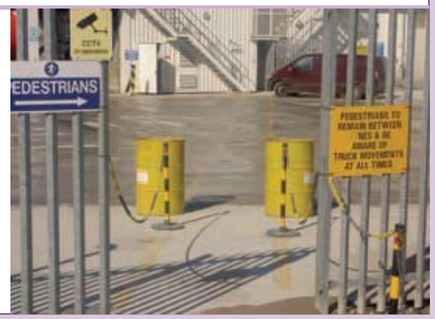
The leaflet has helped visitors get to their destination safely where they can undergo a formal site induction.

Pedestrian walkway

CEMEX North West Ltd > Gorton Manchester, Manchester > 01928 752752

Gorton is a busy concrete batching plant in the Greater Manchester area, east of the city centre. Generally, the site provides large contracts within Manchester but a number of small trucks also visit the site on a daily basis.

The high level of traffic movement at the site was causing congestion, leading to a greater chance of injuries to pedestrians. This is why there has been the introduction of pedestrian walkways to provide safe areas in the plant.



Retractable steps

CEMEX > Staveley Coating Plant, Derbyshire > 01246 475115

The tail end of the incline conveyor is situated in a concrete sump. A concrete ramp was used to access the conveyor to carry out any maintenance on the tail drum or to track the conveyor. These activities were hazardous in wet conditions, as the ramp could become unsafe to walk on, potentially leading to injury through a slip, trip or fall.

A set of steps needed to be fitted to make access and egress to the conveyer tail end safer. However, there was a further issue as access under the conveyer was required to clean up spillages and the steps would block this task.

The solution to this was to design a set of steps that could be moved into place for access and egress and moved away to facilitate cleaning, whilst at the same time avoiding manual handling. This was achieved by designing the steps to be foldable and controlled by an electrically powered winch. Raising and lowering the steps is achieved at the flick of a switch.

Access ladders and wedge shaped platform for working within primary crusher jaws

Hanson Aggregates > Keepershield Quarry, Northumberland > 01434 681893

During a site access survey, the safety issues involved in working within the swing and fixed jaws of the crusher were highlighted. The way that work had been carried out in this area previously, involved climbing over the side and sliding down onto a 45 gallon drum, wedged into the jaws. The drum was used as a working platform to carry out repairs and maintenance. An assessment of the risks identified that this practice exposed workers to potential falls as well as slips and trips.

It was necessary to design a safe means of access and egress and a stable and safe working platform. Special access ladders and a wedge shaped working platform were created. To eliminate any manual handling, lifting lugs were welded onto the platform to enable the equipment to be hoisted into position using the electric hoist above the primary crusher.

Once in position, the ladders can be accessed from outside the jaws. Workers can climb into the crusher and maintain three points of contact at all times. When on the working platform, maintenance can be carried out safely and without the risk of falling.

The equipment has met with approval from the workforce and is working effectively when maintenance tasks are carried out within the primary crusher jaws.

"Bonarius" hinged rear access step

Tarmac > Coxhoe Quarry, County Durham > 01913 770611

Several incidents of damage had occurred to the rear access steps of loading shovels when stockpiles were being 'pushed up'. One of the mobile plant fitters, Brian Bonarius offered suggestions on how this could be improved.

The access steps that were being damaged were not regular access steps and only used for routine servicing or maintenance. A step was therefore devised that could be locked in a raised position securely after maintenance and easily unlocked and lowered when required.

The cost of this measure was minimal and the steps no longer sustain damage when the loading shovel is pushing up stockpiles.

Modified & colour coded pneumatics on coating plant

CEMEX > Carlisle Coated Stone, Cumbria > 07795 302124

Access around the mixer at this site is narrow and so changes were made to improve the situation. It was decided to relocate the pneumatic control box and at the same time renew the valves and pipe work. This reduced the need for employees to work within the mixer room in a breakdown situation.

The site fitter built a new control box with spare capacity. In the event of a valve failure a spare valve could be fitted so that production could continue.

The new box was fitted to allow free access around the mixer, and in addition, all pipe work is now colour coded to allow easy identification of specific valves and rams.

These changes have improved plant efficiency, improved access and egress within the mixer room and reduced overhead hazards.

Crusher access improvements

Lafarge Aggregates > Wivenhoe Quarry, Essex > 07740 563216

The old crusher at Wivenhoe did not have a good enough reduction ratio because too much oversize was recirculating. To try and improve this, a second hand Baxter jaw crusher was brought in from another site. However, there was no easy access.

A new platform was designed that would give safe access and sufficient room to work safely. Manager-led discussions with the workforce led to recommendations on platform width, steps and handrail configurations.

The platform has been built internally and provides a safer way to work based on the ideas of the workforce.

Safe access to discharge sampling point

CEMEX > Shap Blue Quarry, Cumbria > 07795 302124

All water discharged from Blue Shap Quarry is sampled by the Environment Agency. There was some concern over the accessibility of the sampling point.

It was decided to clear a path through the woodland to a designated sampling point where an extendable pole was designed to obtain the water samples. All work is now carried out behind wooden fencing, which removes the risk of personnel leaning over the sampling point.

There is also a reduction to the risk of injury from vehicles as pedestrians are directed from a designated parking area, along a segregated walkway to the sampling point.

Elevated walkway for safer pedestrian passage

Aggregate Industries > Ghyll Scaur Quarry > 01229 770580

There are space constraints at this plant which create a danger for pedestrians as their paths cross that of mobile plant. The issue was resolved by the construction of a designated, elevated pedestrian walkway.

The walkway runs from the office block to a parking bay, large enough to accommodate the mobile plant fleet, creating a safer area for pedestrians.

Remote control of overflow bin doors

Aggregate Industries > Harlow Mill, Essex > 01279 636700

The problem at the asphalt plant at Harlow related to the overflow / reject bin inside the plant building. This bin collects aggregate either rejected by the screens or when one of the hot stone bins overfills. When there is a full signal on the plant, the loading shovel driver is informed to empty the bin. The emptying process involved the driver having to do several things:

- Drive to the bin and park the loading shovel under the bin;
- Climb out of the cab;
- Walk round to the door control button located on a structural leg of the plant;
- Empty the contents into the loading shovel bucket; and
- Climb back into the machine and take the aggregate back to the stock bays.

This procedure could be carried out up to ten times per day.

It was decided to try and reduce the access and egress carried out by the loading shovel driver to and from the cab.

A remote control device was installed so the overflow / reject bin door could be opened by the loading shovel driver from a button fitted in the cab of the machine. This has eliminated the need to regularly egress and access the cab removing the risk of falling and slipping from the machine steps.

Are we being served?

INDUSTRY EXPECTS MORE FROM PLANT MANUFACTURERS

Having announced further encouraging improvements in health and safety performance for 2007, Quarry producers are needing to focus ever more strongly on other stakeholders in the quest to maintain the pace of progress towards target zero.

FOCUS ON MANUFACTURERS OF PLANT AND EQUIPMENT

For some time, the QPA has been leading a campaign to press the global manufacturers and suppliers of loose plant to address the needs of the user – in short, to design plant that is *inherently safe as standard*. The clear message from the users, their regulators and insurers is that current designs fall significantly short of health & safety expectations.

GLOBAL PLAYERS ACKNOWLEDGE USERS CHALLENGE

Real progress is now beginning to become apparent, principally due to the 'quarriers' and their health and safety regulators having teamed up internationally – most notably with the USA and Germany – via the 'Atlantic Alliance', with the active support of UEPG, the European Aggregates Association. At the 2007 Atlantic Alliance conference, Alan Murray, then Chief Executive of Hanson plc, said: "A healthy workforce drives a healthy balance sheet. Hiding behind 'we build to code' is simply not good enough. Companies such as mine will pay a premium for superior equipment and that means safety as well as performance and reliability."

FOCUS ON "HILLHEAD 2009"

It is pleasing to note that the more proactive manufacturers of excavators, dump-trucks, loading shovels, dozers, graders, etc. are indeed listening and are reacting positively to the message being driven by the international members of the Atlantic Alliance. Viewing the static and working kit at the international 'Hillhead 2007' exhibition, however, underlined the fact that we are merely at the early stages in shifting some of the entrenched thinking from what was commonly accepted practice in the last century, to what is needed today. Whilst it is accepted that design changes take time, the job of influencing International standards is a cumbersome process. Such standards will always lag behind best practice, but this does not in any way blunt the user industries expectations of significant improvements appearing across a wide spectrum of loose plant in the coming years – 'Hillhead 2009' will be particularly interesting!

PROCESS PLANT DESIGN FAULTS? TELL QPA!

Quarry operating companies employ many resourceful and innovative people. But the industry should not have to rely on its own people to remedy the design inadequacies of the manufacturers. Commencing in 2008, the QPA and the Atlantic Alliance will be focusing attention on fixed and mobile process plant manufacturers, suppliers and turnkey contractors to ensure that safety is to the fore in designing not just for the operators but also for inspection and maintenance personnel.

If you know of a design problem with **your** plant – ***tell QPA!*** – help yourself and others! Email Martin Isles isles@qpa.org – it's the way to make us an even safer Industry

target zero

ARE WE BEING SERVED?

YES, BUT ONLY BY A FEW!

Images from Hillhead 2007 indicate the wide safety spectrum and the extent of the challenge facing manufacturers


Unacceptable first step


Commendable retractable access and stairway

Unsafe working at height


If a stairway is necessary for Hillhead . . .


Durably designed 'boxing ring'


Slippery sloping surfaces


Improving access and guarding for this drill rig


Retractable access – lighting to be added


Inadequate access


ATD access getting slightly better


Retractable stairway and 'boxing ring'


Poor engine access


Improved access to mobile crusher


Improved access to mobile crusher


Unguarded nip points


High-level fuel filler – no platform for access


Low-level fuel filler – well done, Doosan!

Index – keywords

continued overleaf

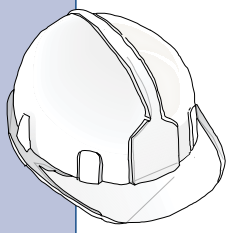
VEHICLES

QPA Guidance on Recommended PPE for Drivers

The following Personal Protective Equipment (PPE) is the minimum recommended standard for drivers making deliveries on behalf of QPA member companies.

Some items may vary depending on company site/contract specific requirements.

- All items should be checked by management/vehicle operator at least annually.
- All drivers must be aware of the PPE replacement protocols.
- All drivers should be familiar with standard PPE signage.



RECOMMENDED PPE

Safety helmet to BS EN397

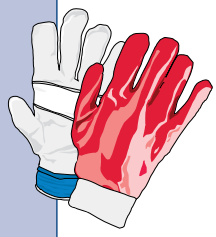
Must be correctly adjusted and worn when outside the cab. Should be white in colour. Safety helmets need to be replaced on expiry date or earlier if impact sustained or if showing signs of yellowing.

Long sleeved high visibility jacket, coat, waistcoat or long sleeved summer top – complying with BS EN471 Class 3

This includes 2 reflective strips around the waist and arms. This should be washed or replaced regularly to ensure visibility is maintained.

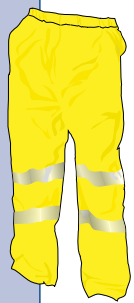
Boots that provide ankle protection, reinforced mid sole, steel toe caps and good grip

Some QPA members specify the type of footwear they permit.



Suitable gloves

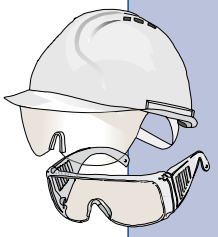
Two sets are recommended. Use PVC gloves to protect from oils & diesel etc. Use canvas based gloves for general protection from rope burns etc.



High visibility trousers or overtrousers

Full leg covering required. Colour can be yellow or orange.

PPE TO BE CARRIED

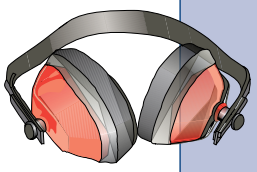


Eye protection

Safety glasses or goggles (preferably) or in-built helmet/visor. Use safety glasses or goggles when jet washing.

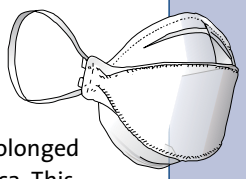
Ear protection

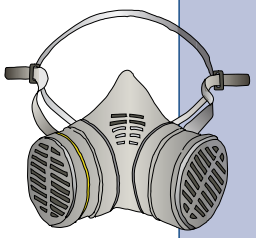
Ear muffs (preferably) or pop-ins – in either case there must be clean storage available – can be Tupperware type box. Also driver must be formally shown correct technique to use and self-check.



Respiratory protection

This may be compulsory in some locations which will be indicated with the appropriate signage. The main risk to health associated with airborne dust is from excessive or prolonged exposure to respirable crystalline silica. This hazard is most likely to be encountered at operations producing/handling silica sand, gritstone, sandstone (quartzite), granite, sand and gravel. Check if there are specific site requirements, for example cartridge masks.

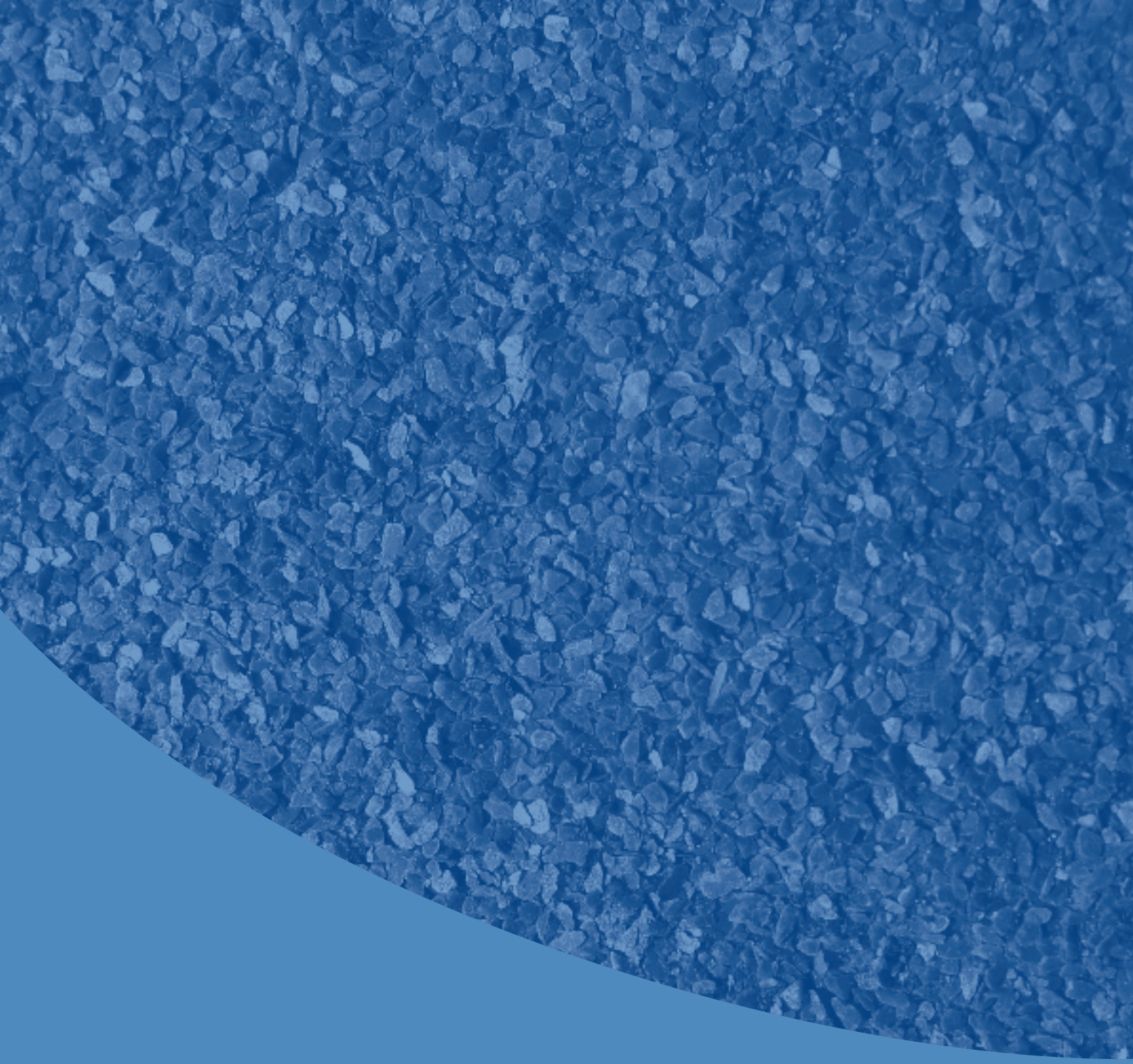




THIS DOCUMENT IS GENERAL GUIDANCE ONLY. PLEASE CHECK WITH INDIVIDUAL COMPANIES TO CONFIRM SPECIFIC PPE REQUIREMENTS.

REMEMBER!

PPE is the last resort. Minimise your exposure to site hazards by remaining in your vehicle wherever possible.



QPA
Providing Essential Materials

Quarry Products Association
Gillingham House, 38-44 Gillingham Street, London SW1V 1HU
Tel 020 7963 8000 Fax 020 7963 8001

Written by Daybreak Communications Ltd, Newbury
Designed by Publicity Project, Newbury
Managing editor: Martin Isles, QPA

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

www.safequarry.com