BEST PRACTICE

LOCATION:	**Contracting - On-highway**	**ARTICLE YEAR**	**2018**
ACTIVITY:	**Contracting**	**COMPANY:**	**Aggregate Industries UK**
SUB ACTIVITY:	**No Sub Activity Available**	**COMPANY LOCATION:**	**Nationwide**
BEST PRACTICE No:	**BP2037**	**COMPANY TEL:**	**0000**
COUNTRY OF ORIGIN:			

TITLE

Reducing worker risk through automated inspection and testing during pavement construction

ARTICLE

DESCRIPTION

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

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

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

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

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

The system included the following elements:

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

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

BENEFITS

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

ARTICLE IMAGES

Click image to enlarge



Click image to enlarge

