BEST PRACTICE

LOCATION:	Asphalt/Coating plant	ARTICLE YEAR	2018
ACTIVITY:	Maintenance & Housekeeping	COMPANY:	Aggregate Industries and Driveline Engineering
SUB ACTIVITY:	N/A	COMPANY LOCATION:	Astley Asphalt Plant
BEST PRACTICE No:	BP2038	COMPANY TEL:	0000
COUNTRY OF ORIGIN:			

TITLE
MixLock® mechanical paddle shaft lockout system
ARTICLE

DESCRIPTION

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

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

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

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

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

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

BENEFITS

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

ARTICLE IMAGES

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