

Health, safety and environmental issues go hand-in-hand with cost savings



The upstream oil and gas industry has its own unique set of health, safety and environmental (HSE) challenges. Drilling, completion and production have become increasingly specialized and complex. Some techniques, pose an inherently high risk to the environment and to worker safety. The purpose of HSE technology is to provide products and services that minimize those risks.

■ HENRY TERRELL, Contributing Editor

DURA-BASE is an interlocking mat system that provides stable worksites and ground protection, supporting drilling rigs and completions operations. The system can also be used to construct temporary roadways for rugged or sensitive terrain.

In the broad categories of health, safety and environmental products and systems, the overlap is so complete, it becomes obvious why this field is known simply as “HSE.” A product that improves workplace safety is clearly beneficial to worker health, while another that mitigates environmental problems likewise contributes to public safety and quality of life. The three are inseparable.

It’s also true that the “E” in HSE could just as easily stand for “economics.” In purely dollars-and-cents terms, risks to worker health and safety, or to public safety, or a sound environment, are expensive. A trained, skilled employee is a valuable investment to be protected. Additionally, risk to a company comes not just from loss of production, added downtime and the necessity of training new workers, but in individual and class-action lawsuits. Damage to a company’s reputation and brand are less quantifiable but just as real. Safe environmental practice is good business.

Composite mat system. The first line of defense in safety and ground protection for drilling and completions operations is the mat. The DURA-BASE Advanced-Composite Mat System from Newpark Mats & Integrated Services is used widely throughout North America and other parts of the world for stable

worksites and ground protection. The system is also utilized to construct temporary roadways for accessing difficult or sensitive terrain. In environmentally sensitive areas like the Marcellus and Utica shale plays in the northeastern U.S., the mat system is deployed atop spill-containment poly-liners to safeguard against premature failure resulting from wear and tear. DURA-BASE is part of an integrated system that includes ramps and berms, as well as a fully automated mat-cleaning system that minimizes the use of water and speeds up remobilization.

Each mat measures 8 ft × 14 ft × 4.25 in. thick and is tested to support loads up to 1,000 lb/sq in. The mats are made of an advanced-composite formulation that weighs half as much as wooden mat alternatives. This lightweight design allows more mats to be carried on each truckload (45 DURA-BASE mats vs. 20 wooden mats), not only reducing fossil fuel consumption and emissions, but also lessening road wear. The composite material also contains an additive that eliminates potentially dangerous static buildup.

The mat system features a connection system that interlocks on all four sides. This minimizes differential movement, helps prevent load destabilization and creates a continuous, temporary work surface that reduces the risk of trips, slips and falls. The twist-lock fasteners and overlapping lip system ensure a continuous barrier between ground and work surface, eliminating the possibility of individual boards coming loose and damaging equipment, and also preventing the pinching and tearing of liners. This complies with environmental regulations and significantly reduces maintenance and rig downtime, due to liner repair and leak mitigation.

DURA-BASE mats are 100% recyclable and can be reused multiple times, typically lasting five times longer than wooden alternatives. A specially designed tread pattern and anti-skid surface material prevents slips, and improves pedestrian and vehicle traffic.