IRISH STEEL AWARDS 2025

in association with RFL STEELS LIMITED

Shortlisted Finalist | Voting ID: #6605

Finished Projects

Industrial Engineering - Equipment Manufacturing

Terex MDS

M300 Product Development

Voting ID: #6605 | Industrial Engineering - Equipment Manufacturing

M300 Product Development

Project Story:

Purpose and Project Overview

This project delivered a next-generation mobile scalping screen designed for high-throughput, low-maintenance operation in tough environments such as quarrying, mining, and recycling. The goal was to overcome limitations of traditional screening systems through smarter engineering and
durable materials.

Key Features and Innovations

At the core is a twin-deck vibrating grid with abrasion-resistant components, designed to handle high-impact loads. Extensive mechanical modelling ensured durability and extended service intervals.
The hydraulically adjustable grid angle offers flexibility across material types. To ensure stability under dynamic loading, real-time feedback systems and fine-tuned valves were introduced.

A split conveyor system, with independently controlled belts, improves flow control and reduces wear. Engineers refined hydraulic circuits to handle torque distribution and speed synchronisation.
A swing-out engine frame enables full service access, with vibration-damping mounts ensuring structural integrity. Relocating the power unit and hydraulic cabinet improved weight distribution while airflow and protection systems reduced overheating and contamination.

The one-button control system simplifies operation. To maintain reliability, ruggedised enclosures, fail-safes, and diagnostic tools were developed.
A discharge height of 3.96m enables efficient stockpiling, supported by a reinforced undercarriage tested for static and dynamic loads.

Manufacturing and Testing

Key components were precision-built using CNC and robotic welding. Modular sections simplify transport and maintenance. Quality assurance included static and vibration testing under real-world conditions.

End-User Benefits

- High productivity with minimal operator input
- Reduced downtime and servicing ease
- Flexibility across site conditions
- Enhanced safety and lower long-term costs

Conclusion

This mobile scalping screen sets a new benchmark in field performance—combining technical excellence with real-world resilience.

Project Team:

Engineering Manager - Steven Keenan
Senior Design Engineer - Muhammad Shakeel Qamar
Operations Director - Nicky McNeill
Director - Marijus Zdanavicius (Production Supervisor – Machine Shop and Weld)
Production Supervisor – Assembly - Audrius Logvinovas
Purchasing Manager - Barbara McCarey
Production Controller - Faryha Fatima
Graduate Electrical Engineer - Cameron Stewart

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M300 Product Development

The Nominee thinks this deserves to win an award because:

A Next-Generation Scalping Screen That Sets a New Standard

This advanced mobile scalping screen marks a major leap in material processing technology. Purpose-built for quarries, mines, and recycling sites, it delivers higher throughput, extended uptime, and unmatched adaptability.

A heavy-duty double deck vibrating grid, variable angle adjustment, and split belt conveyors ensure faster, cleaner, and more consistent material flow. Features like the swing-out engine frame, abrasion-resistant components, and simplified controls reduce maintenance time and unplanned downtime.

Designed with manufacturing precision in mind, every component was optimised for durability using high-tensile steel, CNC machining, and robotic welding. The full-scale prototype underwent rigorous real-world testing, validating reliability under high-impact loads and harsh conditions.

What sets this machine apart is not just what it achieves technically, but how it addresses real operational challenges. It's a forward-looking, field-proven platform that raises expectations for quality, performance, and innovation in the scalping screen category.

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