

Enhancing Durability at McGee's Heavy Plant Storage Yard

Heathrow, UK

Location

Heathrow, UK

Client

McGee

Starting Date

2025

Distributor

Smart Concrete



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SMART CONCRETE®

Background

McGee required a high-performance concrete solution for their external slab at a heavy plant storage yard, where it would endure constant heavy loads and traffic. Given the demands of the site, the concrete needed exceptional abrasion resistance to withstand years of wear and tear from heavy machinery.

The Challenge

According to the Civil Engineer's Handbook, "Cement paste does not have good attrition to abrasion." Traditional concrete surfaces can wear down quickly in high-traffic areas, leading to frequent repairs, increased maintenance costs, and reduced operational efficiency. McGee needed a durable, cost-effective, and sustainable solution to ensure their storage yard's long-term performance.

Solution

To meet McGee's durability requirements, Hard-Cem was integrated into the mix design at a dose of 3 bags per m³. As a concrete hardener that enhances abrasion and erosion resistance, Hard-Cem was the ideal solution for the heavy-duty environment of the plant storage yard.

Key Benefits of Hard-Cem:

1. High Performance

- Extends concrete lifespan, significantly reducing wear and tear in high-traffic areas.
- Provides superior abrasion and erosion resistance, ensuring long-term durability.

2. Low Risk

- Proven performance and backed by a 20-year warranty.
- No impact on concrete water demand, workability, strength development, or shrinkage.
- Compatible with other concrete admixtures, SCMs, and mix designs.

3. Safe

- Eliminates exposure to toxic chemicals, such as silica dust from dry shake hardeners.
- Improves site safety by being mixed at the batching plant, reducing on-site handling.

4. Cost-Effective

- No need for additional floor treatments or special finishing, lowering overall project costs.
- Prevents delamination issues that commonly occur with traditional dry shake or liquid densifiers.

5. Versatile

- Works with cast-in-place, precast, and shotcrete applications.
- Effective in horizontal, vertical, and inclined placements.

6. Sustainable

- Reduces carbon footprint by eliminating unnecessary cement consumption.
- Minimizes maintenance, repair, and replacement cycles, lowering long-term environmental impact.
- Extends concrete service life, delaying demolition and associated carbon emissions.

Client Testimonial

Right away, when we started pouring this concrete, we could see the difference that Hard-Cem was making. It was easy to work with and place, and now that it has cured and has been exposed to some use, you can see that the concrete is more durable than a regular mix. We have driven heavy machinery over this slab, and it still looks like it did the day it was poured!

Billy Powell, Construction Manager | McGee

Conclusion

For lasting concrete in high-impact environments, Hard-Cem offers the perfect solution. By eliminating the risks of surface-applied hardeners and providing deep, integral protection, Hard-Cem ensures long-term durability, cost savings, and sustainability.