GLS 100R® Electrically Insulating Coating insulates up to 193,000 Volts and is the proven solution to OLE low clearance issues
What is **GLS 100R®**...?

Developed and Trademarked by GLS Coatings Ltd, GLS 100R® is a spray-applied coating which is TOUCH-DRY in UNDER 10 SECONDS.

As an Approved Supplier to Network Rail, GLS Coatings Ltd holds a Framework Agreement for the Application of GLS 100R® Insulating Coating throughout the UK Rail Network.

Operating from our self-contained Transit-sized Coating vehicles, equipped with the latest plural component spray machines, our Accredited and Trained Technicians can carry out the coating process on substrates within reach of the 50 metre application hoses.

GLS 100R®’s strength lies in the fact that it has 300-400% elongation properties. This allows it to move with the substrate without cracking, while maintaining its integrity.

**Conformity**

We NEVER use sub-contractors to apply GLS 100R®. And we NEVER supply GLS 100R® to other companies. This is because our Technicians carry out FULL Test Procedures, on every job which, together with photographs, are recorded on their iPad Reporting System to ensure full conformity from start to finish.

GLS Coatings, have developed our Trademarked GLS 100R® to provide solutions to the many issues encountered throughout the UK Rail Network.

Andy Evans
Director

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Director
GLS coatings are extremely hard wearing and are typically used in the following rail environments:

- OLE and Bridges
- Platforms and Footbridges
- Chemical Bunds
- Rail Coatings
- Electrical Insulation
- Touch Potential
- Depot Doors
- OLE Booms and Drop Pipes
- Lighting Columns
- Signalling Location Cases
- Anti-slip Flooring
- Protecting Concrete Structures

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GLS 100R® had been used successfully on bridges on existing electrified lines with known clearance issues, but hadn’t been used as part of a design proposal for new electrification. Andromeda recommended using GLS 100R® on the Cardiff Intersection Bridge project.

Alongside AMCO, our Technicians have worked on the Cardiff Intersection Bridge every Saturday night since January 2018.

- Arriving on site in self-contained spray vehicles, our PASMA-trained Technicians quickly erect the track-mounted scaffold beneath the area of the bridge to be coated.
- Checks and preparation work to the substrate are recorded on the iPad Reporting System.
- Technical details, including ambient conditions, application data and spraying parameters are recorded on the iPad Reporting System.
- GLS 100R® is spray-applied to the underside of the bridge.
- GLS 100R® is TOUCH-DRY in UNDER 10 SECONDS, allowing full conformity checks to be undertaken immediately.
- Elcometer thickness checks are carried out across the coating.
- Holiday Spark-testing and other testing is carried out over the entire surface, to ensure the integrity of the coating.
- Photographs are taken throughout the process, together with a narrative detailing any issues encountered. These are all included in the comprehensive iPad Report, which is signed-off by the Client.

“Don’t lower the track or higher your bridges - use GLS 100R®”

Cardiff Intersection Bridge - from Concept to Coating with GLS 100R®
GLS 100® - Wins Major Innovation Award

GLS Coatings Ltd, in collaboration with Andromeda Engineering, Network Rail, and Siemens were awarded the prestigious 2018 Railway Industry Innovation Award at a ceremony held at London’s Paddington Hilton Hotel.

The Guest speaker was Network Rail's Chief Engineer, Jon Shaw and our winning entry was for our GLS 100® Electrically Insulating Coating on the Cardiff Intersection Bridge on Great Western’s main line.

- Cardiff Intersection Bridge has very low clearances between the Overhead Line installation and the bridge, with the cost of bridge renewal in the region of £40 - £50 million as well as causing extensive rail disruption.

- A collaboration with Network Rail Wales Infrastructure Projects (IP), Wales Route and Safety, Technical and Engineering (STE) and Andromeda Engineering led to a radical new solution at a combined design and installation cost of below £1 million.

- Testing commissioned by Network Rail and carried out at Southampton University, proved that GLS 100® Electrically Insulating Coating insulates up to 193,000 Volts. Siemens surge arrestors were also tested as a further mitigation measure.

- Immediately following the successful Research Project, GLS Coatings Ltd Technicians began coating the underside of the bridge with GLS 100R® in January 2018, ready for the electrification of the line.
Specialist coatings for Rail Infrastructure

ONLY GLS 100R® has been approved for removing touch potential up to 193,000 Volts and has been independently tested by Southampton University.

GLS 100R® has been approved for the electrical insulation of steelwork on OLE and is proven to last up to 30 years.

GLS 100R® rapidly cures in only 10 seconds and is Network Rail approved, CE Certified and VOC-free.

Our rail coatings provide a fast return to service, allowing work to be completed during off peak hours.

GLS 100R® is abrasion resistant and protects against harsh environments. It also offers anti-graffiti and anti-static properties. GLS Coatings use Accredited PTS trained Technicians to carry out all work.

GLS 100R® coatings are applied by our PTS trained technicians. GLS Coatings’ mobile rigs include a spray machine, a portable generator and an air-compressor. Completing the kit is a collapsible spray-tent, with GRP mechanics. This ensures it complies with Network Rail’s safety requirements.

ONLY GLS Coatings Ltd hold a Network Rail Framework Agreement No: LNW/17-18/006 for the Application of Electrical Insulation
GLS 100R® - always on track...

GLS 100R® offers outstanding rust, corrosion and waterproof protection for rail infrastructure. GLS 100R® allows for improved asset protection, project performance and site safety.

GLS 100R® is high performance Class 1 fire rating coating that is touch dry in 10 seconds. It offers protection against weathering and UV exposure and is able to withstand heavy impacts, heavy loads and vibration. GLS Specialist Protective Coatings - applied by our Accredited, PTS-trained Technicians - provide the complete solution to coat and protect the whole range of rail infrastructure.

GLS 100R® offers a fast return to service and is used extensively through the rail industry. From platform roofs, to floors and from lift shafts to chemical bunds. From anti-slip on stairways, to electrical insulation coatings on location cases and gantries. We can even coat the line-markings on platforms and level crossings.

GLS 100R® Applications

- Coating above the OLE in low clearance areas to prevent flash-overs
- Coating for Station refurbishment
- Waterproofing for roofs
- Anti-slip flooring for footbridges and platforms
- Electrically insulating lighting columns and gantries against touch potential
- Insulating Panwells
- Relining Diesel and other Chemical Bunds
- Protecting and Electrically Insulating trackside RRBs
- Coating Depot Doors to prevent pigeon strikes
Wessex and other Routes have insulated their Location Cases covered by the ORR Notice I/20121220/JSM (SIN 119)

Using the GLS 100R® Coating, Location Cases from Waterloo to Southampton were electrically insulated while they were still 'live', meaning there was no interruption to the network.

GLS Coatings Technicians, with their fully mobile, self-contained spray units, travelled over 1,000 miles in two weeks to prepare and insulate ALL of the platform-sited Location Cases to over 193,000 Volts.

Using top-of-the range coating units, complete with generators and compressors, our PTS-trained Technicians tackled the diversity of the work head-on. From LOCs under stairs at Waterloo to some set into embankments on the more rural stations, the Wessex work was completed in just TWO WEEKS.

GLS 100R® stops pigeon strikes on depot doors

Pigeons flying between the ‘cut-out’ in concertina depot doors and the OLE have been shutting down the line as the current arcs through the bird.

Once again, GLS 100R® Electrically Insulating Coating is being used to solve the problem:

GLS Coatings technicians prepare the steelwork of the doors around the OLE and then spray-apply GLS 100R®. This dries instantly and electrically insulates the door.

At Longsight depot, Manchester, GLS Coatings technicians insulated 24 Depot Doors with GLS 100R®, putting an immediate end to line-trippings at the depot.

GLS Coatings has carried out similar work on Depot Doors at Liverpool Edge Hill Depot, Clacton Car Sheds, Allerton Depot and Bounds Green Depot in London.

GLS 100R® Insulates LOCs

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GLS Specialist Trackside Marking Solutions, applied by our Accredited, PTS-trained Technicians, provide ease of application, longevity and fantastic performance. While traditional line markings on level crossings can fade in a few months, GLS 100R® has been proven to last years.

Following testing by their laboratories in Germany, Strail are now only recommending GLS 100R® for their Level Crossing coatings. Applied by our Accredited and PTS trained Technicians, there is no need for the trucks and crews traditionally used to lay down thermo-plastic.

Whether you need to mark a few lines on a platform or overhaul your level-crossings, GLS 100R® is a resilient marking solution that will stay the course and remain bright and clear.

GLS 100R® is a cost effective and long-lasting alternative to thermoplastic marking or conventional marking paint and is also much easier to work with.

GLS 100R® is Network Rail approved and can be applied directly to the Strail section of level crossings. GLS 100R® offers high durability for long-term trackside presence and superior reflectivity in both wet and dry conditions making it an ideal solution for a the full range of marking applications.

Our Technicians spray-apply the coating and IT IS TOUCH-DRY IN UNDER 10 SECONDS!
The footbridge at West Byfleet Station, with its tiled surface became slippery in wet weather. So South West Trains turned to GLS Coatings Ltd for a unique solution: GLS 100R® anti-slip coating.

The work was completed in just two nights. The team of three Technicians arrived on site at West Byfleet Station at 21:30 on Tuesday, 15th September. The safety of passengers and staff is paramount, so barriers were erected at all access points.

The entire area was ground using specialist diamond grinders to remove the glaze from the top of the tiles. The area was then cleaned and all the dust was removed. It was noted there were signs of water oozing up between some of the grout lines. The technicians cut the wet grout out and introduced a PU sealant in its place to completely stop the water ingress.

Work began at 23:19 on the second night, with the area being swept clean, before being chemically wiped to remove any residual grease. Next, a chemical Primer was applied to the tiles, to prepare the surface to receive GLS 100R®.

Finally, GLS 100R® Specialist anti-slip coating was spray-applied to the entire walkway. Because GLS 100R® is TOUCH-DRY in under 10 seconds, the team had completed the whole job, which was signed off by the Client at 03:18.

Later the same day, early morning commuters were streaming over the footbridge to catch their trains, completely unaware that less than 4 hours earlier, the bridge had received an entirely new, anti-slip coating.
GLS 100R® comes into its own for Train Maintenance Depots. From waterproofing roofs, to the refurbishment of inspection pits and workshop floors, GLS Specialist Coatings provide a unique solution.

With time at a premium in a workshop that never closes, nothing compares to the fastest return-to-service time provided by GLS Specialist Coatings. They are spray-applied and TOUCH-DRY in UNDER 10 SECONDS.

This means that a train inspection pit can be coated, back in service and taking light foot-traffic IMMEDIATELY it is finished.

The Chemical resistance of GLS Specialist Coatings means they are unrivalled for coating diesel and chemical bunds, without the need for costly rebuilds – saving time and money. As with all GLS coatings, the bund or tank is back in service the same day.

When it comes to trackside PSPs or other assets, only GLS Specialist Coatings provide the instant solution to leaking and rusting substrates.

Our protective bund and tank coatings are the long term cost-effective guaranteed solution and offer the following benefits:

• Resistant to a wide range of chemicals
• Approved for contact with potable water
• Anti-slip for platforms and walkways
• Used in cold storage facilities
• Suitable for water waste facilities
• Extremely durable and hard-wearing
• Same day return to service
GLS Coatings’ Specialist seamless roof coatings will significantly extend the lifespan of the roof without the expense of a complete re-roof.

And our work carries a manufacturer’s warranty of up to 30 years, to give you complete peace of mind.

When combined with our Spray-Foam Insulation, over-coated with our Specialist Coating, this fully complies with the new Part L Building Regulations, governing the insulation properties, when existing buildings are being renovated.

Our Technicians spray-apply the coating and IT IS TOUCH-DRY IN UNDER 10 SECONDS!

Our industrial roof coatings are used extensively to seal and prevent flat roof leaks in industrial and commercial buildings. GLS Coatings’ Roofing Systems can be applied over most common roof surfaces including concrete, tiles, bitumen, hardwood and plywood boards.

Our Technicians operate from mobile coating units, complete with top of the range coating machines, compressors and generators. As with any coating, surface preparation is everything - whether they are coating steel, concrete or timber, our technicians will ensure the substrate is correctly prepared to receive GLS’ specialist roofing coatings.

GLS 100R® is the PROVEN solution when complete protection is needed.
GLS Coatings’ specialist roof coatings are seamless, maintenance free and fast drying (10 seconds), which will INSTANTLY seal and protect all exterior roof areas. Our industrial roof coating provides a totally weather resistant surface which will withstand extreme temperatures. AND it can be applied in all temperatures, from -50°C to 120°C.

Our industrial roof coatings are used extensively to seal and prevent flat roof leaks in industrial and commercial buildings.

GLS Specialist Roofing Coating is also an excellent solution for waterproofing the leaky metal roofing of trackside PSPs. The flexibility of the system means it will easily absorb the natural expansion and contraction cycles of the metal roof without tearing or fracturing. This is critical for a long and successful service life.

The speed of application available with the GLS roof coating ensures that the roof is back in service far quicker; with less disruption than conventional roof applications. Faster return to service keeps costs to a minimum and saves you money.

GLS Coatings’ Specialist Roofing System is applied by our own accredited roofing Technicians and has the following benefits:

- Long Lasting – up to 30 years
- Quick to Apply
- Touch Dry in Seconds
- Seamless
- Eco-friendly
- Anti-slip
- 300% Elongation

Our industrial roof coatings are used extensively to seal and prevent flat roof leaks in industrial and commercial buildings.
GLS Coatings' Accountability

There are strict controls on HOW GLS 100R® must be applied to ensure full conformity. From start to finish, GLS Coatings Projects have complete traceability.

Our Technicians are supplied with an iPad Reporting System on which they digitally record every part of the process. And when the work is completed, the job is signed off on the iPad by the Client.

In addition to the technical data, the iPad Reporting System requires a series of Photographs to be taken, recording every stage of the work.

Bespoke iPad Digital Reporting

The bespoke computer program requires the inputting of all the data records relating to:

- The full data from the plural component application equipment, including balance, temperature and pressure, throughout the application process.
- Ambient conditions, including air temperature, dew point, wind-speed and relative humidity.
- Batch numbers of any Primers used.
- Batch numbers of all components (A&B)
- Substrate condition, including substrate temperature and moisture
- Thickness checks
- Holitech Holiday Spark Tests across coated areas.

At the end of the process, the work is signed off by the Client - confirming that it has been completed in accordance with agreed Specification.

An Elcometer is used to measure the thickness of the GLS 100R® coating.
GLS 100R® The Future...

GLS 100R® paves the way for an innovative alternative to costly structural modification when minimal OLE Clearance is encountered.

GLS Coatings Ltd worked with Siemens and Network Rail Safety, Technical and Engineering Team for a series of test carried out at Southampton University’s High Voltage Laboratory to determine the minimal clearance between the OLE and overbridges.

In the test lab, 193,000 Volts were applied to a test plate insulated with GLS 100R®. The electrical insulation properties of GLS 100R® were so good that the under-bridge arm actually TOUCHED the coating without any collapse in voltage or detriment to performance.

Based on the success of these tests, work began coating Cardiff Intersection Bridge with GLS 100R® in January 2018, ready for the electrification of the line.

The project has been a success for the devolved structure of Network Rail. The Network Rail Wales Route team have been able to act as a committed client for this work and drive the necessary changes.

This has set a culture and appetite for bold technology changes in the Wales Route - with the work being done within the requirements of all existing Network Rail internal standards.

A desktop study of bridges between Cardiff and Swansea (prior to the electrification scheme being halted) concluded that bridge intervention costs could be reduced by up to 70% with the model easily being replicated across other schemes.

It is hoped that this in turn will encourage more routes and projects to adopt this approach for real cost savings in electrification.

“The project has provided the most significant step change in electrification cost efficiencies in a decade.

By demonstrating that this approach can be made to work, the project leaves a considerable legacy for all future electrification business cases.”