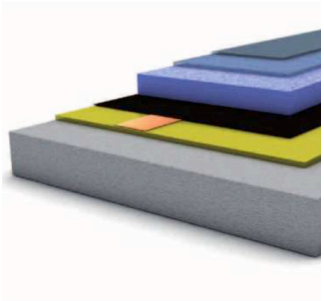
RINOL *QCR AST LE*
ELECTRICALLY CONDUCTIVE COATING SYSTEM

1. System description
RINOL QCR AST LE is a four-layer, low-emission multi-coat coloured quartz epoxy system that ensures safe electrostatic discharge for sensitive environments. It is designed for medium to heavy-duty use and certified under the RINOLGreenCoat Line for sustainability.

2. System composition



- **Optional sealer** RINOL PU-TS688
- **Transparent Sealer** RINOL EP-T718
- **Intermediate layer** RINOL EP-C528AS
- **Conductive layer** RINOL EP-E480 or RINOL EP-E480AS CH
- **Primer / Regulating layer** RINOL EP-P218
- **Substrate**

3. Areas of application
The RINOL QCR AST LE system is specifically designed to be applied in various types of industrial environments, adapting to the needs of several sectors, including:

- Explosion Proof Areas
- Operating theatres
- Clean rooms
- Power stations
- Transformers and substations
- Electronics industry
- Heliports
- Chemical and pharmaceutical industry

4. Properties
- Low odour during application
- Electrically conductive with minimal use of copper tape
- Durable and long lasting
- Anti-slip surface
- Non-dusting
- Jointless
- Good chemical resistance

5. Certifications
The individual products within RINOL QCR AST LE are certified to meet high standards of sustainability and safe indoor environments.

Indoor Air Comfort Gold certifies very low VOC emissions, meeting stringent worldwide indoor air quality standards such as:

AgBB: Complies with the criteria of the German Committee for Health-Related Evaluation of Building Products (AgBB), ensuring low VOC emissions and suitability for use in environments where indoor air quality is a priority, such as residential and commercial spaces.

A+ French VOC Emissions: Awarded an A+ rating, demonstrating very low VOC emissions, suitable for applications focused on indoor air quality, such as schools and healthcare facilities.

BREEAM: Supports compliance with BREEAM criteria, contributing to sustainable building practices and environmental performance.

LEED: Compatible with LEED standards, helping projects earn credits for indoor environmental quality through low VOC content and durability.

6. Technical data
The RINOL QCR AST LE system provides detailed technical data, including physical and mechanical properties:

Technical Data		
1	Thickness	3 - 4 mm
2	Maximum service temperature	60 °C
3	Compressive strength (DIN EN 196 / ASTM C 109)	80 N/mm²
4	Flexural strength (DIN EN 196 / ASTM C 190)	27 N/mm²
5	Adhesive strength (DIN ISO 4624)	> 1,5 N/mm²
6	Abrasion resistance (Taber CS10 wheel) (DIN 53754 / ASTM D 1044)	80mg / 1000 cycles
7	Shore D hardness (DIN 53505 / ASTM D 2240)	84
8	Resistance to earth (DIN 51953 / DIN EN 1081)	< 1 x 10⁶ Ω
9	Colour stability (scale 1-8, best=8) (DIN EN ISO 877)	6
10	Slip resistance (DIN 51130)	R9 - R13

7. Chemical Resistance
The RINOL QCR AST LE floors, under ambient temperature conditions, demonstrate resistance to:

Weak mineral acids, such as hydrochloric, nitric, phosphoric, and sulfuric acids.
Alkaline substances, including sodium hydroxide up to 50% concentration.
Standard cleaning agents used for floor maintenance.
Sugars, even with repeated contacts.
Mineral oils, diesel, kerosene, and gasoline.

8. Available colours

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The RINOL QCR AST LE system is available in a wide range of colours, offering a broad selection to meet the aesthetic preferences of any project.

9. Application Instructions

9.1. Substrates

9.1.1 Suitable substrates are concrete, polymer modified concrete or screeds, anhydrite or magnesite.

9.1.2 The substrate should have a minimum tensile strength of 1.5 N/mm^2 and compressive strength of 25 N/mm^2 measured to an approved national standard.

9.1.3 The substrate should be visibly dry. For concrete and polymer modified concrete, the moisture content should not exceed 4% by weight when measured according to a recognised standard. RINOL range includes primers that can optionally be used when the static moisture content reaches 6%, measured using CM (calcium carbide) Method. For anhydrite or magnesite substrates, moisture contents up to 0.8% by weight are acceptable.

9.1.4 The substrate must be clean and free from dust and loose particles. All traces of contaminants such as oils, fats, greases, paint residues, chemicals, algae and laitance should be removed.

9.2. Preparation

9.2.1 The preferred method of surface preparation is vacuum blasting. Other methods such as scabbling, grit blasting or grinding may be used but are generally less satisfactory.

9.3. Priming / Regulating layer

9.3.1 The primer RINOL EP-P218 is mixed using an electric mixer, taking care to avoid the inclusion of air. When the mixture is homogeneous, add a mixture of dry quartz sands as following: approx 500g/m^2 RINOL EP-P218 mixed with 250g/m^2 RINOL QS10 and 250g/m^2 RINOL QS20. When homogeneous, the mixture is poured onto the prepared surface and spread using a smooth metal spatula.

9.3.2 Don't scatter sand over the primer / regulating layer.

9.3.3 RINOL primers must not be applied when the temperature falls or is expected to fall within 3 °C of the dew point.

9.4. Application of the conductive layer

9.4.1 The conductive layer RINOL EP-E480 should be applied when the primer is hardened but not completely cured. This will normally be after 12 - 15 hours.

9.4.2 Before applying the conductive layer, copper tapes are fixed to the surface of the primer.

9.4.3 Mix the two components of RINOL EP-E480 using an electric mixer, taking care to avoid the inclusion of air. This mixture is then poured onto the surface of the levelling layer and spread with with a short pile roller at a rate of 90 - 100 g/m^2.

9.4.4 RINOL EP-E480 must not be applied when the temperature falls or is expected to fall within 3 °C of the dew point.

9.5. 9.5. Intermediate layer

9.5.1 The two components of RINOL EP-C528AS should be mixed using an electric mixer, taking care to avoid the inclusion of air. When the mixture is homogeneous, add dry quartz sands as following: approx 800 g/m^2 RINOL EP-C528AS mixed with 200 g/m^2 RINOL QS20 and mix again until homogeneous. This mixture is then poured onto the conductive layer and spread with a smooth metal spatula.

9.5.2 RINOL QCR AST colored sand of the selected colour(s) is spread on the wet levelling layer at a rate of approx. 2000-2500 g/m^2.

9.5.3 RINOL EP-C528AS must not be applied when the temperature falls or is expected to fall within 3 °C of the dew point.

9.6. Transparent Sealer

9.6.1 The clear sealer RINOL EP-T718 should be applied when the previous layer has hardened but not completely cured. This will normally be after 12 - 15 hours.

9.6.2 All excess RINOL QCR AST sand must be removed by vacuuming or thorough brushing before applying RINOL EP-T718.

9.6.3 The clear sealer RINOL EP-T718 is mixed using an electric mixer, taking care to avoid the inclusion of air. When the mixture is homogeneous, it is poured onto the RINOL QCR AST sand surface and spread with a rubber trowel and lambswool roller. The material consumption should be approx. 360 to 500 g/m^2, depending on the anti-slip properties required.

9.6.4 RINOL EP-T718 must not be applied when the temperature falls or is expected to fall within 3 °C of the dew point.

9.6.5 At 20 °C RINOL QCR AST LE can be walked on after 18 to 24 hours, reaches full mechanical resistance after 7 days and full chemical resistance after 28 days.

9.7. Application of the sealer (Optional)

9.7.1 The sealer RINOL PU-TS688 should be applied when the topcoat is hardened but not completely cured. This will normally be after 12 - 15 hours.

9.7.2 The two components of the sealer should be mixed using an electric mixer, taking care to avoid the inclusion of air. When homogeneous, pour the mixture onto the Self levelling surface and apply with a 10-12mm hair roller. The material consumption is approximately 80 - 100 g/m^2 (never exceed the recommended quantity).

9.7.3 The sealer must not be applied when the temperature falls or is expected to fall within 3 °C of the dew point.

9.7.4 At 20 °C RINOL QCR AST LE can be walked on after 18 - 24 hours and is fully cured after 7 days and full chemical resistant after 28 days.

10. Specification clauses for RINOL QCR AST LE

All products must be applied and cured at temperatures between 15 and 25°C and relative humidity <80%.

The primer / regulating layer shall be RINOL EP-P218, applied at a rate of 500 g/m^2 to ensure complete sealing of the substrate surface. Don't scatter sand over the primer / regulating layer.

Prior to application of the conductive layer, copper strips are fixed to the primer / regulating layer.

The conductive layer shall be RINOL EP-E480, applied at a rate of 90 - 100 g/m^2.

The Intermediate layer shall be RINOL EP-C528AS filled with dry quartz sand at a ratio of 200g/m^2 RINOL QS20 to 800g/m^2 resin and fully scattered with quartz sand RINOL QCR AST.

As a clear sealer, RINOL EP-T718 is applied at a rate of approx. 360-500 g/m^2, using a rubber trowel and lambswool roller as appropriate.

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As a transparent sealer, RINOL PU-TS686 or RINOL PU-TS688 is applied at a rate of approx. 80-100 g/m² per coat (never exceed the recommended quantity), using a 10-12mm hair roller as appropriate.

11. Maintenance

The RINOL QCR AST LE system is easy to maintain and clean. To ensure the system's longevity and performance, it is essential to follow the provided maintenance instructions. This may include regular cleaning with suitable products to remove dirt and residues, periodic inspection of the floor for signs of wear, and repair or replacement of damaged areas if necessary. With proper maintenance, the RINOL QCR AST LE system can provide many years of reliable service.

12. Safety

Safety is a priority at RCR Flooring Products Italia S.r.l. We provide information on safety and precautions during the application of the RINOL systems. This may include the use of personal protective equipment during application, adequate ventilation, prevention of exposure to chemicals, and proper disposal of product waste. It is important to follow all safety guidelines to ensure a safe working environment and maintain the integrity of the systems.

13. Health and Safety Measures

Consult the latest valid Material Safety Data Sheet (MSDS) for the products that are part of the system and the Chemical Industry Guidelines on the Handling of Coating Materials (M004/M023) for information on the handling of the products. Wear suitable protective clothing such as gloves and goggles during application.

Skin contact with liquid resins can cause health damage and allergies. Once cured properly, the product is not hazardous.

14. Customer Service

At RCR Flooring Products Italia S.r.l., we pride ourselves on providing exceptional customer service. Our team of experts are on hand to answer your questions, provide technical advice and help you choose the RINOL systems that best suit your needs. We also provide application information to ensure that our systems are installed correctly and deliver optimum performance.

15. Legal notice

The technical data for the Company's products and systems have been compiled with due care. However, any recommendations or suggestions made with regard to the use of these products are made without guarantee as the conditions under which they are used are beyond the control of the Company. It is the responsibility of the customer to determine whether the products are suitable for the particular application and whether the conditions of use are appropriate for the particular product. No liability can therefore be derived from the product data sheet.

Please note that only the latest version of the data sheet is valid and replaces all previous versions. The technical data given are approximate values determined by us and do not constitute a guarantee of properties. Misprints, errors, translation errors and changes reserved. Please note that the information in the system datasheets may differ in different languages/ countries. For further information please visit our website at www.rinol.com.

The technical data sheet does not exempt the user from carrying out his own application tests, if necessary, within the limits of his capabilities. Please refer to the RINOL Technical Guide for information on coating options and more detailed information on the installation of RINOL products.

16. CE Marking

The individual products that make up the system are certified according to DIN EN 13813 "Screed materials and floor screeds - Screed materials - Properties and requirements" (January 2003) and EN 1504-2. These standards specify the requirements for screed mortars used in internal floor constructions. Resin coatings and sealants are also covered by these standards. Products complying with the mentioned standards must have the CE mark.

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