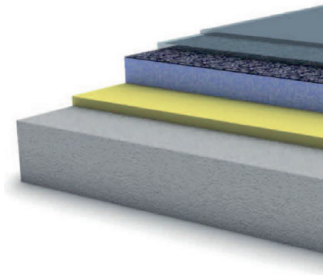
RINOL *GFR*

VERSATILE AND DURABLE EPOXY COATING SYSTEM

1. System description

RINOL GFR is a multi-coat epoxy system designed for dry or wet high traffic areas. It offers chemical resistance, durability and customisable slip resistance, making it ideal for safety critical environments and food facilities.

2. System composition



Transparent top coat (optional)
RINOL PU-TS686 or RINOL PU-TS688 or RINOL PU-S601

Sealer
RINOL EP-QC714

Intermediate layer and sand
RINOL EP-QC213 + RINOL QS20T

Primer / Regulating layer
RINOL EP-QC209

Substrate

3. Areas of application

The RINOL GFR system is specifically designed to be applied in various types of industrial environments, adapting to the needs of several sectors, including:

- Medium to heavy-duty use for industrial floors
- Wet processing areas
- Food and beverage, manufacturing and packaging areas
- Commercial kitchens
- Canteens
- Dining halls
- Exhibition halls

4. Properties

- Low odour during application
- Durable and long lasting
- Hygienic and impervious
- Meets EU food processing requirements
- Tailored anti-slip finish
- Jointless
- Good chemical resistance

5. Certifications

The individual products within RINOL GFR system are certified to meet high quality standards:

Synthetic resin screed material according to EN 13813:2002
Coating for surface protection of concrete according to EN 1504-2:2004
ISEGA compliance for use as a floor covering in food handling and processing facilities.

6. Technical data

The RINOL GFR 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/mm^2
4	Flexural strength (DIN EN 196 / ASTM C 190)	27 N/mm^2
5	Adhesive strength (DIN ISO 4624)	> 1,5 N/mm^2
6	Abrasion resistance (Taber CS10 wheel) (DIN 53754 / ASTM D 1044)	80mg / 1000 cycles
7	Shore D hardness (DIN 53505 / ASTM D 2240)	78
8	Slip resistance (DIN 51130)	R9 - R12
9	Colour stability (scale 1-8, best=8) (DIN EN ISO 877)	6

7. Chemical Resistance

The RINOL GFR 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

The RINOL GFR 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

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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 QC209 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 500 g/m^2 RINOL EP QC209 mixed with 250 g/m^2 RINOL QS10 and 250 g/m^2 RINOL QS20. When homogeneous, the mixture is poured onto the prepared surface and spread using a smooth metal spatula.

9.3.2 Dry quartz sand (RINOL QS-20) is scattered on the wet primer at a rate of approx 1000 g/m^2 to ensure good adhesion between the coats.

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. Intermediate layer

9.4.1 The RINOL EP QC213 intermediate layer should be applied when the primer is cured but not fully hardened. This will normally be after 12 - 15 hours.

9.4.2 Before applying the intermediate layer, remove excess silica sand and sand and vacuum the primer.

9.4.3 The intermediate layer of RINOL EP QC213 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 600 g/m^2 RINOL EP QC213 mixed with 500 g/m^2 RINOL QS10 and 500 g/m^2 RINOL QS20. When homogeneous, the mixture is poured onto the prepared surface and spread using a smooth metal spatula.

9.4.4 RINOL QS20T sand is spread on the wet intermediate layer at a rate of approx. 2500-3000 g/m^2.

9.4.5 RINOL EP QC213 must not be applied when the temperature falls or is expected to fall within 3 °C of the dew point.

9.5. Transparent Sealer

9.5.1 The clear sealer RINOL EP QC714 should be applied when the sealer has hardened but not completely cured. This will normally be after 12 - 15 hours.

9.5.2 All excess RINOL QS20T sand must be removed by vacuuming or thorough brushing. The surface must be sanded and then vacuumed before applying RINOL EP QC714.

9.5.3 The clear sealer RINOL EP QC714 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 QS20T surface and spread with a rubber trowel and lambswool roller. The material consumption should be approx. 360-400 g/m^2 per coat. A smoother surface can be achieved by applying additional coats of RINOL EP QC714.

9.5.4 RINOL EP QC714 must not be applied when the temperature falls or is expected to fall within 3 °C of the dew point.

9.6. Transparent topcoat (optional)

9.6.1 The topcoat RINOL PU-TS686 or RINOL PU-TS688 or RINOL PU-S601 should be applied when the primer is hardened but not completely cured. This will normally be after 12–15 hours.

9.6.2 The two components of the topcoat should be mixed using an electric mixer, taking care to avoid the inclusion of air. When homogeneous, pour the mixture onto the primed surface and apply with a 10-12mm hair roller. The material consumption is approximately 80 - 100 g/m^2. Two layers may be necessary to obtain a good color coverage.

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

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

10. Specification clauses for RINOL GFR

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 QC209, applied at a rate of 500 g/m^2 to ensure complete sealing of the substrate surface.

Dry quartz sand (RINOL QS-20) shall be broadcast into the wet primer at a rate of 1000 g/m^2.

The Intermediate layer shall be RINOL EP QC212, filled with dry quartz sand at a ratio of 500 g/m^2 RINOL QS10 and 500 g/m^2 RINOL QS20 to 600 g/m^2 resin and fully scattered with quartz sand RINOL QS20T.

As a clear sealer, RINOL EP QC714 is applied at a rate of approx. 360-400 g/m^2 per coat, using a rubber trowel and lambswool roller as appropriate.

As a transparent topcoat, RINOL PU-TS686 or RINOL PU-TS688 or RINOL PU-S601 is optionally applied at a rate of approx. 80–100 g/m^2 per coat, using a medium-pile roller as appropriate.

11. Maintenance

The RINOL GFR system is easy to maintain and clean. To ensure the longevity and performance of the system, it is essential to follow the maintenance instructions provided. This includes regular cleaning with suitable products to remove dirt and residue, periodic inspection of the floor for signs of wear and repair or replacement of damaged areas as necessary. With proper maintenance, the RINOL GFR 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

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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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