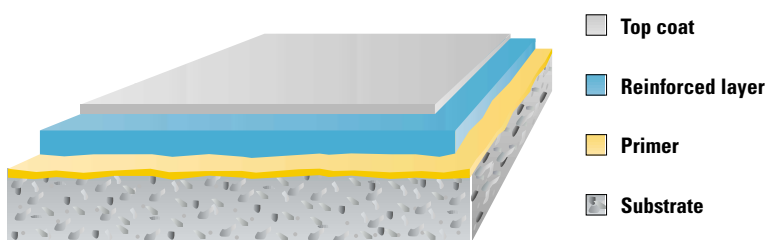


# RINOLLINING CR 543

## Chemical resistant FRP lining system



RINOLLINING CR 543 is a chemical resistant lining system for steel and concrete substrates based on glass fibre reinforced vinyl ester resin.

RINOLLINING CR 543 has excellent long-term resistance to most acids and alkalis and to many organic solvents.

### Uses

As a protective lining for carbon (mild) steel and concrete structures subject to continuous or semi-continuous exposure to corrosive chemicals.

#### Areas of application

- chemical plants
- oil refineries
- waste water treatment plants
- power stations
- steel works
- non-ferrous metal refineries
- food and beverage plants

#### Benefits

- resistant to most acids and alkalis
- resistant to gasoline, oils and most solvents
- withstands thermal and mechanical shocks
- resistant to cracking and crazing
- good heat resistance
- excellent adhesion and strength
- complies with Japanese Food Sanitation Act

#### Maximum service temperature

100°C

#### Colour range

RINOLLINING CR 543 is available in four colours, green, grey, ivory and dark grey.

### Chemical resistance

RINOLLINING CR 543 is resistant to:

• formic acid	98%
• hydrochloric acid	37%
• hydrofluoric acid	10%
• nitric acid	20%
• sulphuric acid	70%
• ammonium hydroxide	28%
• sodium hydroxide	50%
• butanol	100%
• fatty acid esters	100%

For full details see our **Chemical Resistance Guide** to RINOLLININGS.

### Physical properties

<b>Glass content</b>	<b>27%</b>
ASTM D 2584	
<b>Tensile strength</b>	<b>91 N/mm<sup>2</sup></b>
JIS K 6911	
<b>Flexural strength</b>	<b>130 N/mm<sup>2</sup></b>
JIS K 6911	
<b>Flexural modulus</b>	<b>4700 N/mm<sup>2</sup></b>
JIS K 6911	
<b>Barcol hardness</b>	<b>45</b>
ASTM D 2583	

# RINOLLINING CR 543

## System description

A glass fibre reinforced vinyl ester lining system consisting of a primer, one or two layers of chopped strand mat, a layer of surfacing veil and a top coat.

## Method statement

### 1. Substrates

- 1.1 Suitable substrates are concrete, polymer modified concrete and mild (carbon) steel.
- 1.2 Concrete substrates
  - 1.2.1 Concrete structures must incorporate a waterproof layer (DPM or similar).
  - 1.2.2 The surface should be steel trowelled to a flat and even finish.
  - 1.2.3 In the case of fair-faced concrete metal or plywood formers should be used.
  - 1.2.4 Concrete should be at least 28 days old and have a tensile (pull-off) strength of at least 1.5 N/mm<sup>2</sup> when measured according to a recognised national standard.
  - 1.2.5 The substrate shall be visibly dry with a moisture content not exceeding 4% when measured according to a recognised standard.
  - 1.2.6 The substrate must be clean and free from dust and loose particles. All traces of contaminants such as oils, fats, greases, paint residues, chemicals and laitance should be removed.
- 1.3 Steel substrates
  - 1.3.1 The surface must be degreased to remove all traces of oils, fats, greases and chemicals.

### 2. Preparation

- 2.1 Concrete substrates
  - 2.1.1 The preferred methods are vacuum shot blasting and sand or grit blasting. For small areas wire brushing is suitable. For horizontal areas scabbling can be used.
  - 2.1.2 All holes, honeycomb and undulations shall be made good using **RINOL putty**.
  - 2.1.3 All angled corners shall be radiused to 30 mm using **RINOL putty** or chamfered.
- 2.2 Steel substrates
  - 2.2.1 Steel should be shot blasted to white metal SA 2 1/2 standard.

### 3. Priming

- 3.1 The primer will normally be **RINOL CR Primer** catalysed with MEKP.
- 3.2 Steel substrates must be primed **immediately** after blasting.
- 3.3 The primer is mixed using an electric mixer and applied to the prepared substrate by brush or roller taking care to ensure complete even coverage. Material consumption will be 250-500 g/m<sup>2</sup> depending on substrate roughness.
- 3.4 **RINOL CR Primer** must not be applied if the temperature falls or is expected to fall to within 3°C of the dew point.

### 4. Application of the reinforced layer

- 4.1 The primer should be allowed to cure for not less than 4 hours but not more than 24 hours before application of the reinforced layers.
- 4.2 A coat of catalysed **RINOL CR 543 base** resin is applied to the primed surface using a roller. A layer of chopped strand mat (csm) is then laid into the resin taking care to avoid wrinkles and a further coat of catalysed **RINOL CR 543 base** resin applied. The resin impregnated csm is then thoroughly deaerated and allowed to cure for approximately 4 hours.
- 4.3 The second layer of csm is then applied as described in 4.2 above.
- 4.4 Immediately after the second csm is deaerated a layer of surfacing veil is laid onto the surface and a coat of catalysed **RINOL CR 543 base** resin applied using a roller taking care to ensure thorough impregnation. The reinforced layers are then allowed to cure for approximately 4 hours before application of the top coat.
- 4.5 **RINOL CR 543 base** must not be applied if the temperature falls or is expected to fall to within 3°C of the dew point.

### 5. Application of the top coat

- 5.1 The catalysed **RINOL CR 543 base** is mixed with pigment and wax and applied evenly to the reinforced layer using a roller.
- 5.2 Material consumption should be 250-350 g/m<sup>2</sup>.
- 5.3 The top coat should not be applied if the temperature falls or is expected to fall to within 3°C of the dew point.
- 5.4 **RINOLLINING CR 543** should be allowed to cure for a minimum of 72 hours before being put into service.

## Specification clauses

- 1) The lining system shall be **RINOLLINING CR 543** reinforced with 2 (1) layer(s) of chopped strand mat.
- 2) The colour shall be green (grey) (ivory) (dark grey).

## Notes

- 1) Chopped strand mat is normally used at a weight of 380 g/m<sup>2</sup>. For severe applications a heavier grade at 450 g/m<sup>2</sup> can be used.
- 2) Surfacing veil is normally made from „C“ glass or polyester fibre and is supplied at a weight of 30 g/m<sup>2</sup>. For specialised applications surfacing veil made from carbon fibre may be used.



## IMPORTANT

Whilst all reasonable care is taken in compiling technical data on the company's products, all recommendations or suggestions regarding the use of such products are made without guarantee since the conditions of use are beyond the control of the company. It is the customer's responsibility to satisfy himself that each product is fit for the purpose for which he intends to use it and that the actual conditions of use are suitable.