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## Corrosol UV Curing Vinylester GP Laminate Application Procedure over STOPAQ Systems

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## 1. MATERIAL DESCRIPTION

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Corrosol® VE GP Sheet laminate is a UV Curing Glass Reinforced Plastic product containing high grade Vinylester and Polyester resins, fillers and glass reinforcement. The laminate is one component and is supplied, ready for use, on standard rolls of 10m x 0.92m. It can also be cut to size by Anti Corrosion Technology (ACT) for ease of application.

Corrosol VE GP laminate, in its uncured state, is soft malleable and easy to use. The material can be cut into any shape or size using knives and scissors. The curing mechanism of the material is initiated by exposure to UV rays. Vigilant care should be taken to protect the material from UV radiation when preparing for application.

## 2. SCOPE

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The purpose of this document is to provide specific information & guidance on the application of Corrosol VE GP laminate onto pre-applied STOPAQ materials. This document shall be read in strict accordance with the Product Data Sheets of the Corrosol and STOPAQ products selected. For detailed application procedures of the initial STOPAQ systems, please refer to the 2021 STOPAQ Application Manual ([2021 Application Manual](#)) or contact an ACT technical representative.

## 3. APPLICATORS

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All applicators are to be trained and certified by Anti Corrosion Technology for the application of Corrosol VE GP laminate to STOPAQ systems.

Applicators shall have all certification confirmed against the STOPAQ Training register and record their individual STOPAQ Certification Number to all relevant documentation, ITR, ITP etc.

Should any variation from the prescribed approved procedure be required then the onsite supervisor, and the ACT representative should be consulted.

Any variations must be in accordance with the 2021 STOPAQ Application Manual and relevant Product Data Sheets. All variations must be recorded on all procedural documentation.

## 4. REQUIRED DOCUMENTATION

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- PROCEDURE - Corrosol UV Cured Vinylester Laminate - Application Procedure over STOPAQ Systems
- STOPAQ 2021 Application Manual Australia & New Zealand
- PDS-STOPAQ-Wrappingband-CZH
- SDS-STOPAQ-Wrappingband- CZH
- PDS-STOPAQ-Outerwrap- PVC
- SDS-STOPAQ-Outerwrap- PVC
- Corrosol VE GP-TDS
- Corrosol VE GP-MSDS
- Corrosol Primecoat-TDS
- Corrosol Primecoat-MSDS

## 5. STORAGE & TRANSPORT

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All Corrosol VE materials can be transported by Air, Land or Sea. Care should be taken when transporting Corrosol VE materials to or through warm climates. Corrosol VE materials should be stored in their original packaging, in a dry, enclosed area away from direct sunlight and in temperatures not exceeding 25°C.

Corrosol VE GP laminate are classed as non-hazardous, and should be stored in a horizontal position and should be rotated every 90 days.

Corrosol Primecoat is classed as Hazardous goods: IMCO Class 3, UN Number 1866, and should be stored upright in the original packaging.

Continued exposure to temperatures above 35°C will damage Corrosol VE GP laminate. Temperature controlled modes of transportation should be used in such cases. Refer to ACT representatives for additional information.

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## 6. SPECIALISED TOOLS AND EQUIPMENT

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### 6.1 Mechanical and Hand Tools

- Fabrication Table/Straight Edge,
- Measuring Tape/Stanley Knife/Scissors/Divider,
- Spatula/Brush,
- UV Transparent Clear Tape/Dispenser,
- Back Plastic/Cloth,
- Scotchbrite/Rags,
- Wire Brush/Rotating Mechanical Equipment, and
- Hand or Pneumatic Caulking Gun

### 6.2 Electrical

- Junction Boxes and Electrical Leads,
- Working Lights/UV Lights, and
- Ventilation Equipment

### 6.3 Chemical

- Isopropyl Alcohol/IPA/Isopropanol

### 6.4 Work Area

- Work area to be covered during application of Corrosol VE GP laminate to protect against UV radiation and direct Sun exposure.
- Use an indoor, covered work area for pre-cutting of UV curing rolls, away from any possible UV exposure.
- Ensure work area is uncluttered and free from any trip hazards.

## 7. HEALTH & SAFETY

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### 7.1 STOPAQ Systems

STOPAQ products are generally considered non-toxic. PPE should still be worn as a precaution.

STOPAQ Safety Data Sheets must be available onsite at all times, detailing measures to be taken in case of an emergency and the safe disposal of unused materials.

### 7.2 Corrosol VE Systems

Corrosol VE products contain Styrene. The acceptable emission levels of styrene is 25ppm. The emission levels of Corrosol VE products lie around 4ppm, this level of exposure is not considered hazardous, however it may be irritating to the skin. Contractors are required to wear gloves and suitable PPE when using Corrosol VE materials.

Adequate ventilation should be in place when using Corrosol VE products in confined spaces.

Corrosol VE Safety Data Sheets must be available onsite at all times, detailing measures to be taken in case of an emergency and the safe disposal of unused materials.

## 8. INSPECTION

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### 8.1 Pre Application Inspection

Ensure the substrate has been prepared in accordance with ISO standard 8504-3 to a level of ST3/ST3/WJ4.

Complete the STOPAQ PQT (Pre-Qualification Test) clean test to verify substrate cleanliness.

Ensure all environmental conditions meet the minimum mandatory requirements to commence STOPAQ and CORROSOL applications.



## 8.2 Post Application Inspection

### 8.2.1 STOPAQ SYSTEMS:

An ACT certified (trained) QC Inspector or Supervisor must complete a CVI (Close Visual Inspection) of all STOPAQ Coating systems to ensure:

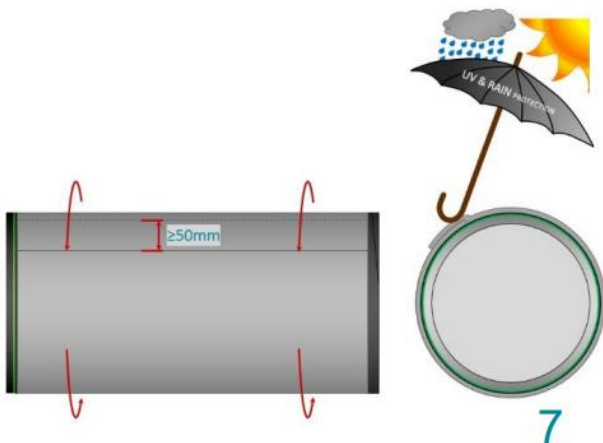
- >50mm overlap onto sound substrate coating.
- >30mm overlap either side of any field weld.
- 3-5mm of STOPAQ exposed after application of PVC.
- 10% of the roll width overlap onto itself.

### 8.2.2 CORROSOL SYSTEMS:

Close visual inspection of the surface of the Corrosol materials is to be conducted by An ACT certified (trained) QC Inspector or Supervisor, checking application conducted as per Chapter 16, ACT's Application Manual ([2021 Application Manual](#)), including:

- 50mm overlaps are correctly applied and are staggered as detailed below.
- Proper application and full curing of the complete Corrosol VE GP laminate system.
- QC documentation, observations and notes have been recorded.

**The QC inspector and or the supervisor's close visual inspection to be recorded on the daily application checklist and the Inspection Test Plan for the job.**





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## 9. ENVIRONMENTAL CONDITIONS

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Weather conditions shall be checked and confirmed against the mandatory requirements of STOPAQ and Corrosol (Refer to the material PDS). This information shall be recorded on the Daily Application Report (DAR) or Inspection Test Record (ITR) after each break in activities or when a change of atmospheric conditions has been experienced.

### 9.1 STOPAQ

The substrate must be dry, clean and protected against negative weather influences.

Ambient temperatures should, preferably, be between +20 °C and +40 °C [+68 °F to +104 °F] for ease of application. Humidity must be below 85% RH and the substrate temperature at least 3 °C [6 °F] above dew point.

### 9.2 Corrosol

The application area should be dry with the ambient temperature ideally at 5°C or above, and the STOPAQ surface temperature must be 3°C or above the dew point.

Corrosol materials cannot be applied in wet conditions as the curing mechanism is affected by moisture.

In dry conditions, Corrosol can be applied at up to 50°C and down to -15C, however, any applications in extreme of conditions should be discussed with an ACT representative first.

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## 10. SURFACE PREPARATION OF THE STOPAQ SYSTEM

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*The scope of this procedure covers the application of Corrosol VE GP laminate over the top of pre applied STOPAQ systems. For detailed surface preparation of surfaces and application procedures of initial STOPAQ systems, please refer to the STOPAQ Application Manual - Australia & New Zealand ([2021 Application Manual](#)).*

Correct surface preparation is critical to a successful application of Corrosol products over STOPAQ systems.

The surface of the STOPAQ system should be clean, dry and free from any grease or contaminants before the application of the Corrosol VE GP laminate.

Corrosol VE GP laminate can be applied directly onto the STOPAQ CZ and EZ Wrapping band systems. This also includes the STOPAQ PVC outer wrap protection system.

In some specialised applications, Corrosol Primecoat may be applied before the application of the Corrosol VE GP laminate. In these cases, it is recommended that the PVC Outerwrap be slightly abraded with emery paper or wire brush to provide a key before application of the Corrosol Primecoat.

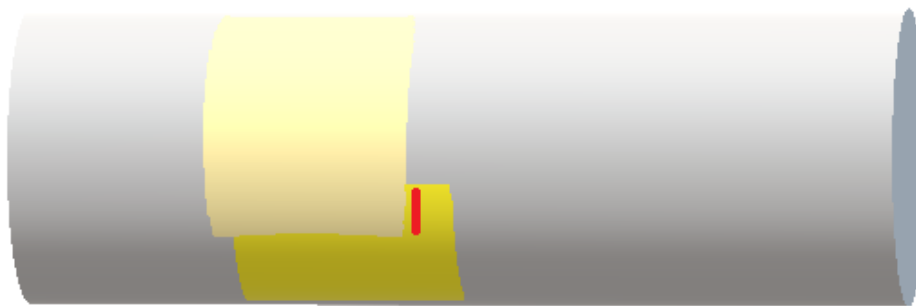
## 11. APPLICATION OF THE CORROSOL VE GP LAMINATE

### 11.1 Pre application of the UV laminate

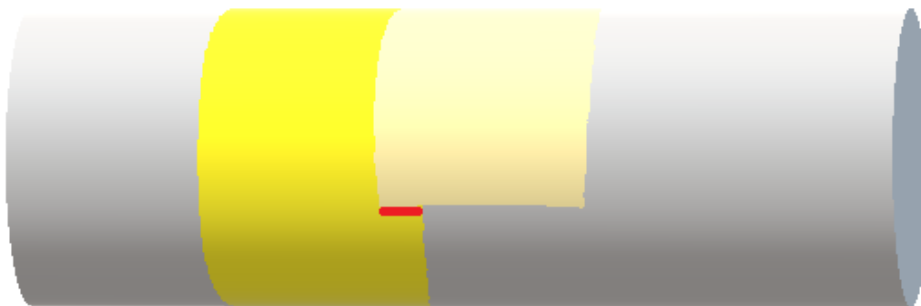
The surface of the STOPAQ system must be clean, dry and free from any grease or contaminants before the application of the Corrosol VE GP laminate.

Any cured or hardened sections of laminate on the outer edges should be trimmed with scissors before application.

Corrosol VE GP laminate requires a 50mm circumferential overlap onto itself and a 50mm side by side overlap.



50mm Circumferential overlap



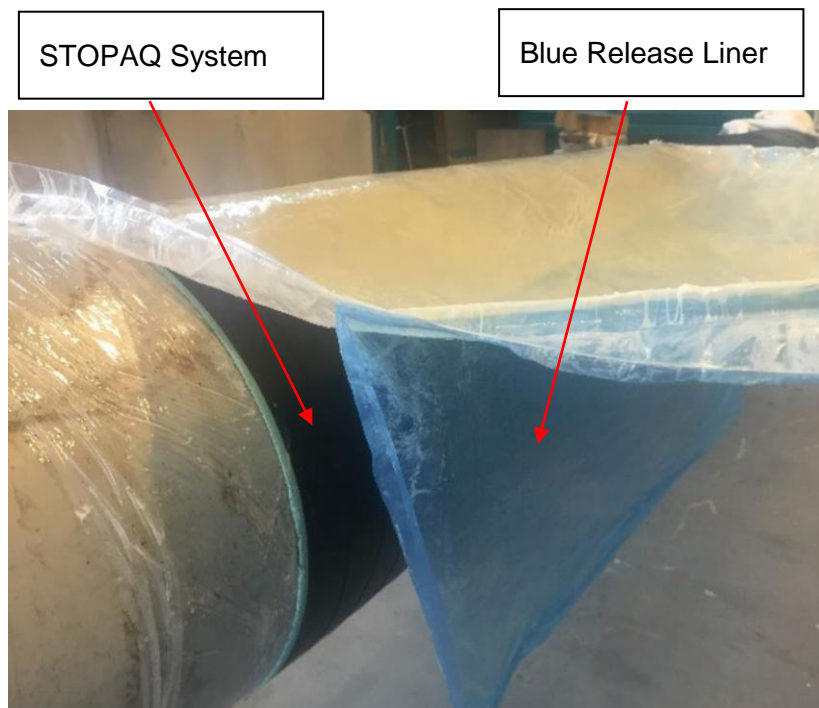
50mm Side by side overlap

Prepare the first laminate strip by ensuring it has sufficient length to cover the circumference of the pipe plus an additional 50mm to accommodate for the required overlap. Excess laminate may be trimmed.

## 11.2 Application of the laminate

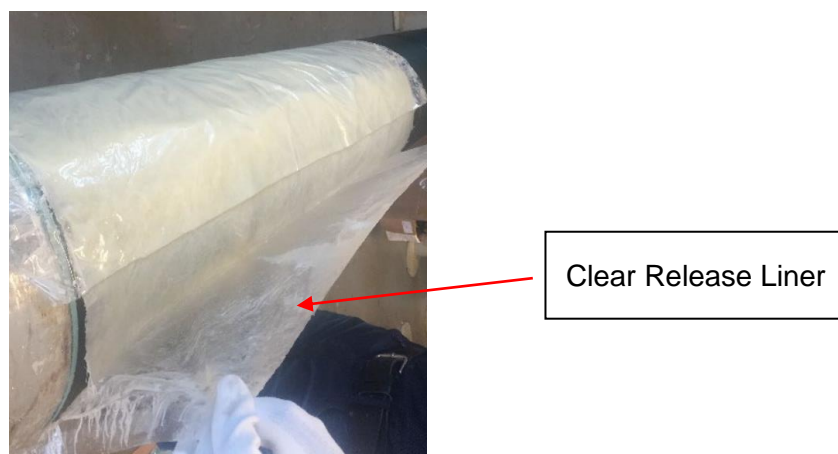
### 11.2.1 Initial application

Begin application of the first laminate strip by removing the blue release liner and applying under body tension onto the STOPAQ substrate. Do not remove the clear release liner just yet. Position the start of the wrap at a point where the water shed will be maintained. Keep the 50mm circumferential overlap in mind when doing this.



### 11.2.2 Overlap areas

Remove around 100mm of the clear release liner from the circumferential overlap area to allow for the 50mm overlap. Replace this clear release liner over the overlap area once the overlap is complete. (This process is to be repeated for the 50mm side by side overlap).



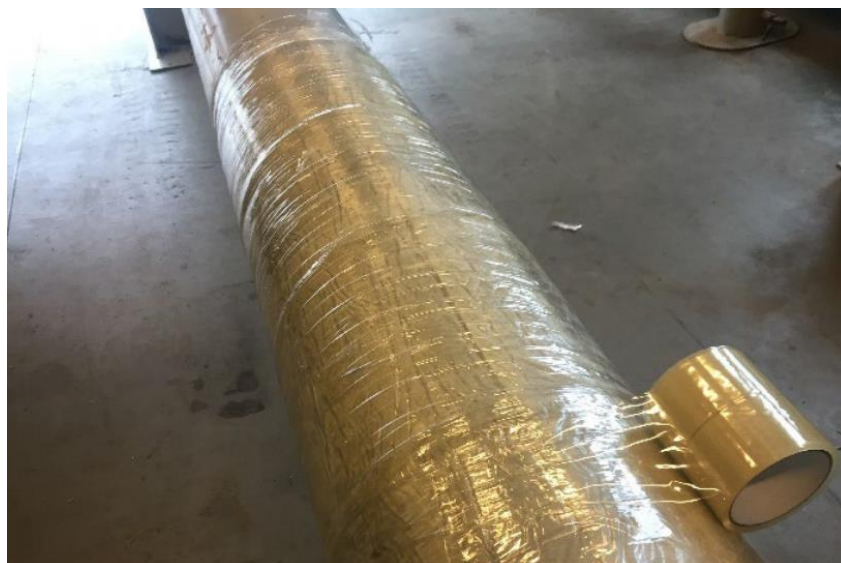
### 11.2.3 Continued staggered application.

Continue applying additional laminate sheets, staggering the circumferential overlap points while maintaining the water shed. Also maintain a minimum 50mm side by side overlap remembering to remove 100mm of the clear release liner before the side by side overlap.



### 11.2.4 Application of UV transparent tape

Once a section has been successfully wrapped in the UV laminate, apply UV transparent tape with tension. This tape will keep the shape of the laminate until it is UV cured.



## 12. UV CURING OF THE CORROSOL VE GP LAMINATE

Corrosol VE GP laminates are UV Curing with the best results achieved in the wavelength of 360 – 420nm. Natural daylight contains enough UV light at this wavelength to cure the material in a relatively short period of time. Low temperatures will slow down the curing process but will not eliminate it even in minus temperatures. It should be noted that once Corrosol VE material has been exposed to UV light the curing mechanism is initiated and is irreversible.

In situations where natural daylight is unavailable, UV Lamps can be used to cure the material. Many types of UV lighting are available however ACT recommends the use of lights / lamps having a minimum of 300watts. Refer to section (15. UV lights) for additional information.

A simple on site test to check that Corrosol VE products have achieved full cure is to scratch the surface of the Corrosol VE product with a sharp object. If it chalks then full cure has been achieved.

**IT IS GOOD PRACTICE TO USE A TEST PLATE OR SAMPLE OF MATERIAL IN THE AREA OF APPLICATION IN ORDER TO TEST FOR FULL CURE.**

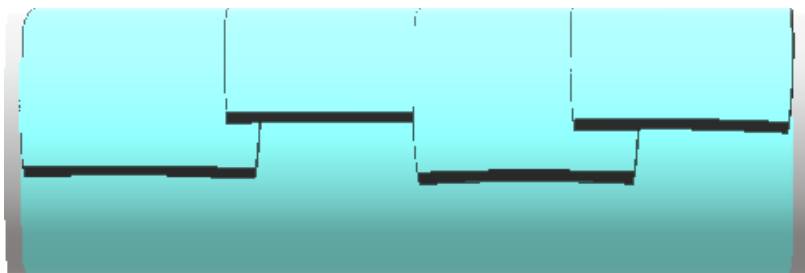
A Barcol hardness tester can also be used to check Corrosol VE GP laminate for full cure. Typically, fully cured Corrosol VE GP laminate should have a Barcol Hardness of more than 60.

## 13. APPLICATION OF A TOPCOAT

Application of a liquid coating system to the cured Corrosol VE GP laminate is optional and totally dependent on the environment that the Corrosol VE GP laminate will be exposed to. Further information can be obtained from an ACT representative.

Before application of a topcoat, all UV transparent tape and clear release liner should be removed from the laminate.

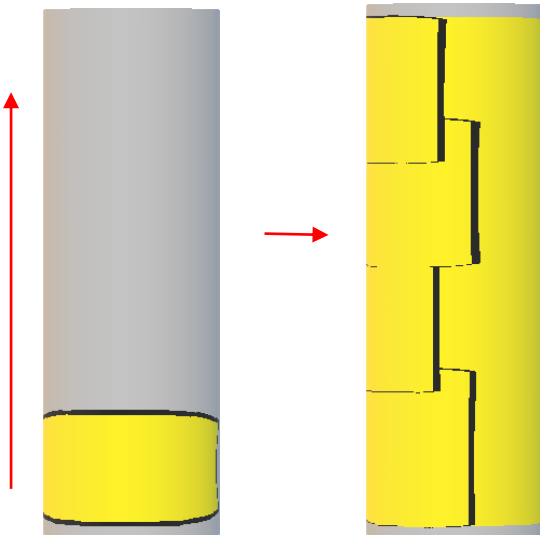
When applying the topcoat, follow all topcoat product data sheets and MSDS's



Should a topcoat not be required on the Corrosol VE GP laminate, it is recommended that Corrosol Primecoat be used for touching up of joints and seam areas.

## 14. VERTICAL PIPE APPLICATION

The vertical pipe application procedure remains the same as the horizontal procedure, with the one exception being that the application must start from the bottom and continue upwards to the top. This is required to maintain the water shed.



## 15. UV LIGHTS

Corrosol VE GP laminates cure in the UV light band width of 320 – 400 nm. This range of light is known as UVA and is very much present in normal daylight.

Should normal daylight not be available, the Corrosol VE GP laminate can be cured using UV Lights. There are many types of UV lights available on the market, however, ACT recommends the use of UV Lights with an output of between 300 and 400 Watts. The stronger the type of light used, the quicker the cure of the Corrosol VE materials. Normally materials will cure in approx. 20 minutes using the correct UV Light.

Care and attention should be taken when using UV Lights particularly in confined areas. When in proximity to the lights, one should wear the correct protective glasses and suitable skin protection such as sun block.

Before using any type of UV light, the contractor is strongly advised to read the technical data sheets and MSDS's of the UV Lights being used.