EonCoat Surface Preparation and Application Guide

THIS DOCUMENT IS FOR INFORMATION PURPOSES ONLY. EONCOAT PRODUCTS MUST BE APPLIED BY AN EONCOAT TRAINED AND ENDORSED APPLICATOR. PLEASE CONTACT US TO ENQUIRE REGARDING TRAINING.

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1. INTRODUCTION

The purpose of this guide is to give a baseline overview to contractors, applicators, and clients with the essential information for correct application and scheduling of EonCoat. All applications must be undertaken by individuals who have passed the EonCoat training and VOC process, prior to starting work. EonCoat is not a protective paint therefore it is important to understand it requires different application practices, spray equipment and QC tests. Please read this guide carefully. Switching to EonCoat from epoxy systems can be straightforward, and an EonCoat representative can help with this process. If you have any questions, do not hesitate to contact your representative.

Also, please reference the project specifications and compare them to this guideline and the EonCoat Technical Data Sheet.

Overview

Following this guide carefully will display how easy EonCoat can be to apply. You will get outstanding long-term results if you recognize that this is a cementitious product designed to chemically alloy carbon steel surfaces with a bond that cannot be removed without penetrating the steel. It is not a cosmetic coating and not suitable for all structures. The schedule time for application is typically considerably quicker than a 3-coat system. QA/QC inspectors must know that this technology is healthier and superior to standard epoxy barrier coatings and a visual pictorial acceptance standard should be documented and understood as part of the pre job planning and certainly prior to application. Education is the key to stakeholder alignment. If you have any questions, do not hesitate to contact your EonCoat representative.

Fundamentals:

1. If you chemically bond a sufficiently soluble phosphate to steel, the metal cannot corrode for as long as the phosphate is there.
2. If you apply an acid phosphate to steel, it will chemically bond with that metal unless there is something between the acid and the metal (e.g., oil/Grease, dust, standing water, old paint, dry fall material, residue).
3. During spray application consideration should be given to protect blasted steel from dry over spray. Temporary masking, how they spray is applied, reducing air pressure all help.
4. Phosphate testing & verification of the process is critical to demonstrate the product is applied correctly.

Once these fundamentals are clearly understood, the techniques to get remarkable results become obvious – spray the coating on a clean carbon steel substrate that is either dry or damp but not covered in standing water. The easiest way to do this is to pressure wash each area just before spraying the coating – then let the water begin to evaporate. On a horizontal surface it may be necessary to vacuum the surface or blow the area off with clean, dry compressed air.

Keep in mind that this material is cementitious by nature. Treat it like any other cement – do not over water it but keep it damp until it cures, (about 15 minutes) in the event of high humidity or high wind conditions.

EonCoat vs Typical Epoxy Barrier Coating

Criteria/ Requirements	EonCoat	Typical Epoxy Barrier Coating	Notes
Coating Characteristics			
Zero VOC's	✓	×	
Zero HAP's	✓	×	
Water based, general waste disposal	✓	×	
Safe In confined spaces	✓	×	
Self-Healing Properties	✓	×	
Subject to osmotic blistering	×	✓	
Particulate respiratory protection only	✓	×	
Fast return to service	✓	×	
Personnel Chemical Sensitisation	×	✓	Epoxy Sensitisation
Limited 30-Year Warranty on application	✓	×	
Substrate Surface Preparation			
Free From Oil and Grease	✓	✓	
Free from Old Coatings	✓	×	
Free from Burs, slivers, weld splatter etc.	✓	✓	
Radius Edges/ Corners	✓	✓	
Abrasive blast profile	✓	✓	
Blasted Surface free from contamination	✓	✓	
Leave Blasted substrate for weeks	✓	×	Typically, 4 Hrs for Barrier Coating
Application			
Application on damp substrate	✓	×	
Application on Light to Moderate flash rust	✓	×	
Single Coat application	✓	×	
Cured in under 15 minutes	✓	×	
QA/QC			
Substrate Cleanliness	✓	✓	
Blast Profile measurement	✓	✓	
DFT measurement	✓	✓	
Dew Point affected	×	✓	
Apply up to 96%RH	✓	×	
Chloride levels (Surface)	×	✓	Not relevant to EonCoat
Damp Substrate Application	✓	×	
Post application time for testing (15 minutes)	✓	×	
NACE Inspection requirement	×	✓	EonCoat Certified Inspector

EonCoat Application Methods

EonCoat can be applied using two different application methods depending on the level of corrosion of carbon steel assets which require corrosion management. The 'Long-term Prevention' method will provide longer corrosion protection and is designed for a minimum of 30-years Limited Product Warranty on application. Please refer to Section 1 of this Guide for the surface preparation and application procedures relating to the Long-term Prevention application method.

The 'Preservation' application method will arrest corrosion quickly, with less surface preparation and QC requirements and offers conservatively +10 years of corrosion protection. Please refer to Section 2 of this Guide for the surface preparation and application procedures relating to the Preservation application method.

2. PRODUCT AND PACKAGING

2.1. EONCOAT TECHNOLOGY

All EonCoat Products are applied at a 1:1 mix ratio and are 96% solids inorganic coatings. When applied, EonCoat forms a layer of **magnesium iron phosphate** that is permanently chemically bonded with the ferrous ions in steel. It also forms a protective outer layer of flexible ceramic.

Because the ceramic becomes very dense when it forms, the wet film thickness will be greater than the dry mil thickness even though the material is 96% solids.

2.2. EONCOAT PRODUCTS

EonCoat Corrosion Protection Coating: Our original formula, which is great for atmospheric applications. Good for up to 48°C (120°F)

EonCoat Corrosion Protection Plus Coating: All the advantages of ECP with better impact & abrasion resistance. Temperature rating increased to 450°C (842°F).

EonCoat CUI (Corrosion Under Insulation) Coating: This product is perfect for corrosion under insulation. This is rated at 450°C (842°F).

EonCoat Weldable Coating: This product is phenomenal for corrosion protection **both** before and after welding. To date, the most popular use for our weldable coating is the soil facing side of tank floors or steel that requires welding – the possibilities are extensive. This is rated at 650°C (1200°F).

2.3. EONCOAT PACKAGING

EonCoat is available in two (2) separate packaging methods depending on the application method. If you will be using High Pressure Plural Pump with Stainless Steel Lowers, your EonCoat will be packaged in 2, 19L (5-gallon buckets), as pictured below. There will be a total of 34L(9 gallons per kit) 17L (4.5 gallons) of part A & 17L (4.5 gallons) of part B.

If your application method is the Dual Component Cartridge Spray Gun. Then, your EonCoat would come in 600mL Dual Cartridges with 2 static mixers each. (300mL of part A & 300mL of part B). Pictured Below.

2.4. EONCOAT THEORETICAL COVERAGE RATES

Product	Dry film thickness Mils - (Microns)	Wet film thickness Mils- (Microns)	Sq. Ft./ Gal (m^2/ L)
EonCoat Corrosion Protection	20.0 (500)	25.0 (635)	70 (1.7)
EonCoat Corrosion Protection Plus	20.0 (500)	25.0 (635)	70 (1.7)
EonCoat CUI	20.0 (500)	25.0 (635)	70 (1.7)
EonCoat Weldable	40.0 (1000)	45.0 (1135)	35 (0.85)

NOTE: Recommended dry film thickness (DFT) may vary based on substrate condition and system design. Please contact EonCoat for application specific recommendations. Allow for overspray and surface irregularities. Film thickness is rounded to the nearest .5 mils (1 mil = 25.4 microns) and can be achieved in one or multiple passes; however, **it is crucial that the entire 20 mils (500um) be achieved while the material is still wet.** An application below minimum recommended thickness may adversely affect coating performance from both a phosphating depth as well as mechanical protection

2.5. EONCOAT STORAGE AND TEMPERATURE

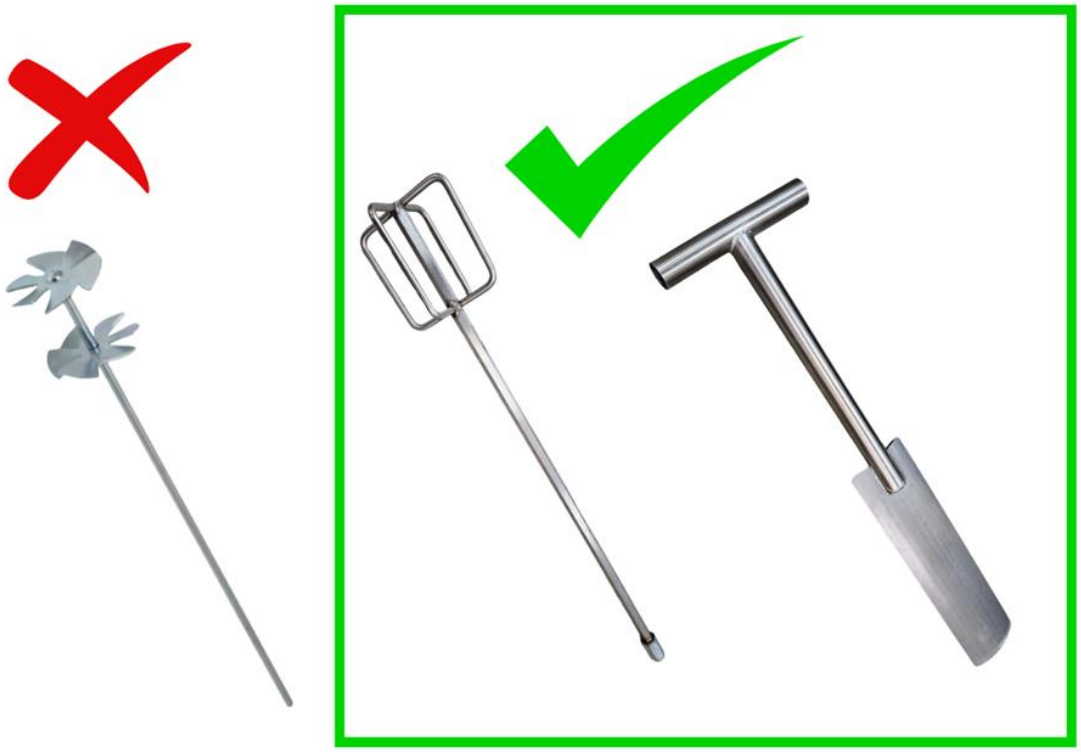
Do not store EonCoat in direct sunlight for a prolonged period of time. The minimum storage temperature is 40ºF (5ºC) and a maximum of 110ºF (43ºC). EonCoat, when stored properly, maintains a shelf life of at least one (1) year if unopened. When opened, containers can be used more than once when lids are tightly sealed after each use. Containers should be used within one month after opening. Temperature will affect the spray-ability of the product. Cooler temperatures increase viscosity, conversely, warm temperatures will decrease viscosity.

Therefore, it is operationally critical that you place the product pails indoors at a minimum of 65ºF (18ºC) for 24 hours prior to application to allow them to gradually come to room temperature as a means of making the material easier to pour/mix. It also takes 4 times longer to heat EonCoat up as it does epoxy.

3. MIXING

3.1. MIXING EONCOAT KITS (APPLIES TO HIGH-PRESSURE PLURAL PUMP)

Mix the entire contents of Part A and Part B separately. Do not mix Part A with Part B. Mix using a rounded-edge stainless steel stirrers (see image below) for each component. During the mixing process, scrape the sides and bottom of the container to ensure that both parts are agitated sufficiently. Primarily for Part A, the use of the EonCoat Stainless Steel paddle will greatly reduce the part A mix time. Agglomerations in the material, whether globs of either Part A, or globs of Part B, will create small dimples in the wet coating because the mass of the agglomeration acts like a rock hitting a puddle of water – you get a splash mark.



A drill-operated stirrer must not have sharp edges because these will scrape plastic shards off the bucket which will end up in the coating.

A bucket mixer can be used to mix product. A bucket mixer with a dispersion blade is ideal for Part A mixing if the mixer is mounted so that it cannot touch the sides of the plastic pails.

Add **Part A** to the Part A hopper and **Part B** to Part B hopper located either side of the plural pump. Never cross contaminate both parts as the curing reaction will begin to take place.

Further mixing will be achieved with a static mixer as detailed in the next section. Watch a video here or scan the QR Code with a smartphone to see how to mix & set up EonCoat in a High-Pressure Plural Pump with Stainless Steel Lowers.

SECTION 1

LONG-TERM PREVENTION APPLICATION METHOD

4. INTRODUCTION

The Long-term Prevention application method will provide longer corrosion protection and is eligible for a 30-year Limited Product Warranty upon application. It may be suitable where:

- Longer term corrosion protection is required for an asset
- A new asset
- Product Warranty is a requirement

LONG-TERM PREVENTION PROCESS

- Abrasive blast of surface to NACE 3/ SSPC-SP6/ SA 2
- Pressure washing blasted surface (Flash rust is acceptable is light to moderate)
- Blowing surface dry. Spray application should occur within 48 hours of drying
- EonCoat is applied to DFT 20mils/ 500 microns minimum
- Waiting time of 15 minutes, then undertake inspection. If required, a topcoat can be applied for cosmetic purposes. Consultation with EonCoat as to which topcoats should be used is advisable.

5. SURFACE PREPARATION

Whilst none of the NACE Standards precisely match the optimal surface preparation for EonCoat, the closest spec, and slightly better than required, is NACE 3/SSPC 6. EonCoat is not a barrier coating, but rather a surface treatment comparable in certain respects to phosphating. To alloy the metal surface, it is not necessary for all iron oxide (Flash Rust) to be removed, but it is **essential to remove all other surface contamination**. This means removal of **old paint, oil, grease, dirt, dust (including the dust from EonCoat's own dry fall/ overspray)**, and any other contamination. EonCoat must physically touch the metal substrate in order to alloy it. If you spray over a contaminated surface, the ceramic will not bond to the metal below and phosphating will not take place. Compressors can have oil leaks so it's critical to check that air quality is not compromised. This is common practice even when applying barrier coating.

Even new steel sometimes has light preservation oils, waxes or non-soluble cutting fluids. They can be hard to identify on visual inspection, especially for floor plate which is generally stacked one on top of the other. As most barrier coatings traditionally used for the underside of floor plates are epoxies which are more tolerant initially to light oil contamination, the oils will eventually cause premature coating failure. They will often pass low level quality control inspections. It is absolutely vital that an inorganic water-based coating such as EonCoat has no visible or non-visible contamination. The photograph below shows an example of EonCoat Weldable that was mistakenly coated over plate that had an oily / waxy substance on it. The initial degreasing of this plate did not sufficiently remove the unknown contaminant without more involved cleaning

processes such as high-pressure hot wash and strong degreasing undertaken multiple times.

5.1. PRIOR TO BLASTING

All surfaces shall be cleaned and **free from all old paint, grease, dirt, oils, dust, or residue** that will adversely affect the adhesion of EonCoat to the steel. All loose scale, large deposits, oil, grease, cutting oils, dirt, and other contaminants shall be removed prior to abrasive blasting by washing with detergent (TSP IS IDEAL) and clean water or steam cleaning, followed by thorough rinsing with clean water. You can see our Surface Preparation Page or download our Surface Preparation Checklist.

5.2. SURFACE IRREGULARITIES

Fins, slivers, burred or sharp edges, weld spatter and slag shall be removed prior to surface preparation. Minimum 2mm radius required on edges.

5.3. COATING PREVIOUSLY PAINTED SURFACES

Previously painted surfaces required100% removal of existing paint prior to coating in order for EonCoat to form the molecular bond with the steel. Note: inorganic zincs can appear a similar colour to the parent steel and after blasting it can be difficult, visually, to ascertain that the coating is 100% removed. It is therefore essential that after high pressure washing to clean the abrasive from the surface you monitor the steel surface to ensure you have a 100% reactivity on the surface (light surface corrosion). Where you see areas that are not corroding there is a strong possibility that those areas have inorganic zinc or old paint embedded in the profile.

5.4. PREPARATION OF STEEL - ABRASIVE BLAST CLEANING

All steel surfaces to be coated may be abrasive blast cleaned to an SSPC-SP 6 / NACE 3, commercial blast cleaning or better to an anchor profile of at least 75um – 150um., for EonCoat Weldable a higher profile of at least 100um is advantageous. Using clean, un-recycled blast media in the range of at least 30/60 grade, but preferably 20/40 is essential. Blast profile is suggested to be measured using Testex-Replica profile tape, or equivalent, prior to the application of the coating. Once all foreign materials and mill scale are removed, the surface can be allowed to degrade (flash rust). The critical issue is that only metal or iron oxide (FeO) remains on the surface during coating in a low to medium concentration. There are examples of surface preparations at the end of this section that are acceptable as well as examples of those that are not. If a dense concentration of flash rust is evident on a clean cloth when the substrate is wiped, then the substrate should be pressure washed to remove all loose FeO.

Abrasive blasting will produce both a cleaning and finishing action. The finishing effect may vary by controlling such factors as hardness of the abrasive, abrasive particle size, velocity of abrasive stream, angle of abrasive nozzle, distance from the work, method of application and workflow.

It is estimated that the surface area of metal increases as much as ten times because of the abrasive impact action resulting in peaks and valleys

If the steel contains old, corroded surfaces, then a check will need to be made for deep pitted corrosion. If deep pitted corrosion does exist, this needs to be washed with a minimum of 3000 psi

5.5. PRESSURE

A blast unit is normally operated ideally around 100 PSI at the nozzle. SSPC gives typical blast cleaning rates based on nozzle size and pressures.

5.6. ABRASIVE BLASTING NOZZLE ANGLE

Abrasive blasting is supposed to be a scrubbing action, not a peening process. Therefore, the Blast Nozzle should always be aimed at a 60° to 45° angle to the surface being cleaned. When the gun is aimed at 90°, peening occurs and, due to the abrasive particles colliding with the

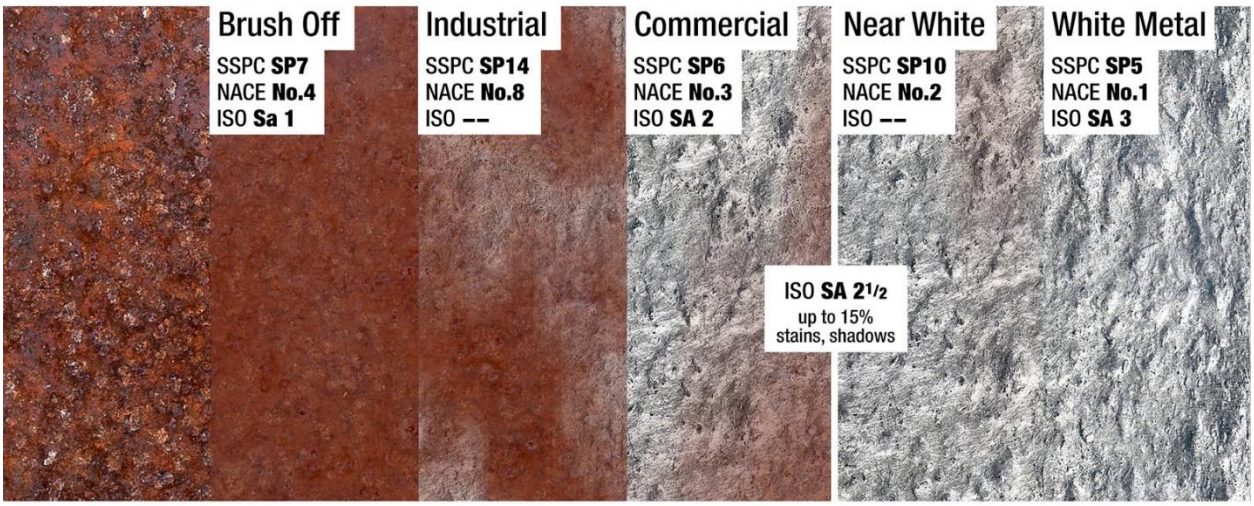
abrasive bouncing off the surface, an exceedingly high rate of media wear occurs. **A peened surface is not reactive and thus not suitable for applying EonCoat.**

Abrasive Blast Nozzles

Nozzles are available in many wear liner materials. Selecting the correct nozzle in terms of longevity as well as size in order to maintain a nozzle pressure of 100Psi is critical. Failure to maintain this pressure will result in a poor surface profile as well as poor productivity. For every 1psi below 100Psi at the blast nozzle, you will lose 1.5% in production.

5.7. MEDIA

Acceptable abrasives include, aluminum oxide, garnet, and steel grit.



Loose Material	None	None	None	None	None
Tight Material	100%	up to 10%	None	None	None
Stains, Shadows	100%	100%	up to 33%	up to 5%	None

NOTE: See the Appendix at the end of this application guide for larger samples of photos that can be used to match to the surface you are preparing.

Clean, dry compressed air at the correct pressure and volume specific to the nozzle size is essential in all abrasive blast cleaning operations. The requirement for EonCoat is no different. The compressed air used for blasting should be free from water and oils. Adequate moisture/oil separators should be used to ensure elimination of all contaminants. Cleanliness of the air can be checked by operating the line without abrasive media through a white cloth in accordance with ASTM D4285, Standard Test Method for Indicating Oil or Water in Compressed Air, which describes if any oil or water is found on the cloth, the separators should be cleaned until subsequent 20 second tests prove satisfactory.

Other Surface Cleanliness Factors

Prior to blasting and/or blowing off the work surface

Why compressed air quality is critical

One of the key aims of blast cleaning is to remove surface contaminants, corrosion, old paint etc. to ensure a good performance of the coating system.

The compressed air must be clean, otherwise the blasting will introduce fresh contaminants as fast as the old contaminants are removed!

Contaminants to check in the compressed air

- dirt.
- oil (mist or droplets).
- moisture (mist or droplets).

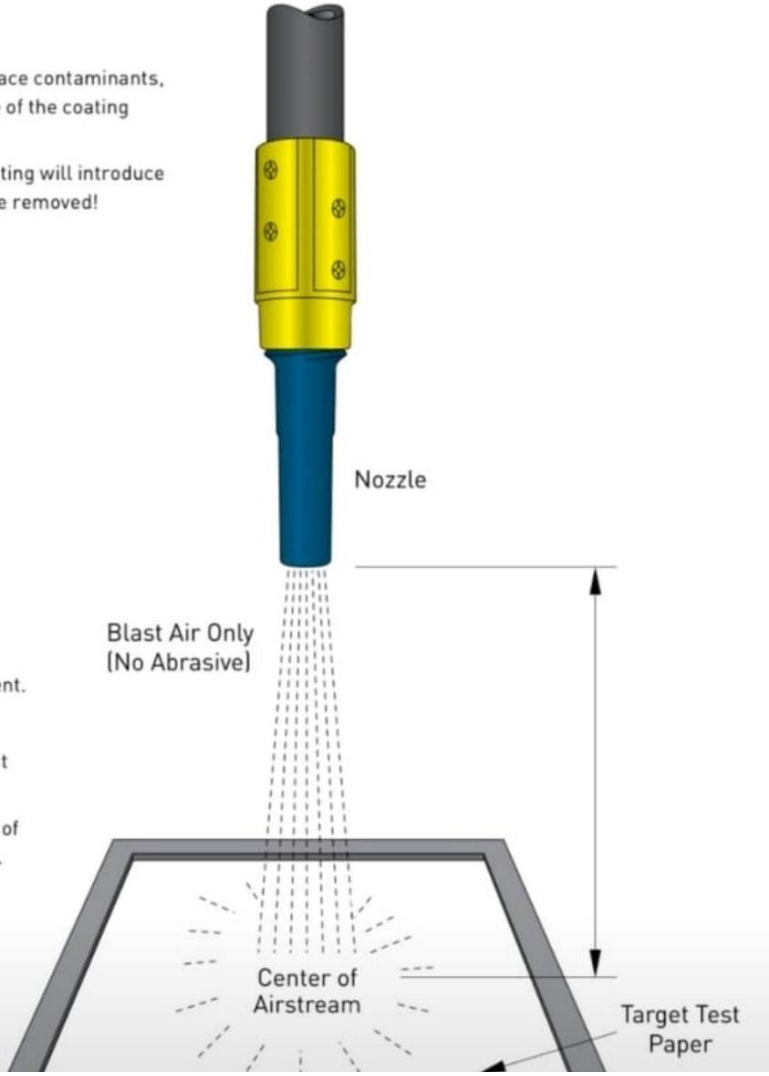
Each and all of these can cause coating failure!

Recommended check intervals

- Test before commencing blasting.
- Every 4 hours when blasting continuously.

Blotter Paper Method to check air quality

1. Start the compressor and set up the blast equipment.
2. Secure the test paper apparatus.
3. When the compressor is warmed up, start the blast equipment with NO abrasive in the airstream.
4. Position the nozzle so the test paper is in the center of the airstream and within 24" (600 mm) of the nozzle.
5. Sustain the test for 2 minutes continuously.
6. After 2 minutes, stop the test and immediately check the test paper for any sign, feel or smell of oil, moisture or other contaminants.



EonCoat can be applied over near white or white metal finishes (Sa2/ Sa2.5) or over light to Moderate flash rusted steel. Please note all blasted surfaces shall be washed to clean out spent abrasive and dust. The cost of blasting steel to white metal – and holding the blast - is far more expensive than performing a basic commercial blast and allowing flash rust (Ferrous Oxide) to form. There is no reason to blast steel to a white metal finish before applying EonCoat (consult your EonCoat representative for your specific site conditions) At the time of coating, the degree of flash rust should be light(L) to moderate (M), as listed in SSPC WJ standards for a maximum degree of flash rust. Painting over any contaminants (Oils, Grease, Old Coatings etc.) is not acceptable and will adversely affect the formation of the Magnesium Iron Phosphate layer. **Care should be taken by individuals to avoid hand or clothing contamination on freshly blasted surfaces.**

Remove all blasting residue from the structure/vessel by means of vacuum cleaning plus, as appropriate, shovels, brooms, clean compressed air, or other dry extraction methods. Pressure washing should be utilized provide the surface is air dried without standing water. Cloths should be avoided for cleaning due to lint contamination.

5.8. PREPARATION OF STEEL – USING WATER JETTING

The steel surfaces to be coated shall be water jetted utilizing Ultra-High Pressure Water Jetting in accordance with SSPC-SP WJ-2 L/NACE WJ-2/L, “Clean to Bare Substrate”. Water used should be comparable to potable water and free of oil, acid, alkali, or any other detrimental matter. All coating application surfaces should be contaminant free. After water jetting, the steel surface should be cleaned with an environmentally friendly detergent or degreaser and then a final water wash to remove any remnant degreaser.

At the time of the coating, the degree of flash rust should be moderate (M), as listed in SSPC WJ standards above for maximum degree of flash rust. Painting over contaminants or mill scale is not acceptable. Care should be taken by individuals to avoid hand or clothing contamination on freshly blasted surfaces.

6. PICTORIAL STANDARD FOR SURFACE PREPARATION

The following are photos of various levels of surface preparation. Use these as a guide to what is, and is not, acceptable.

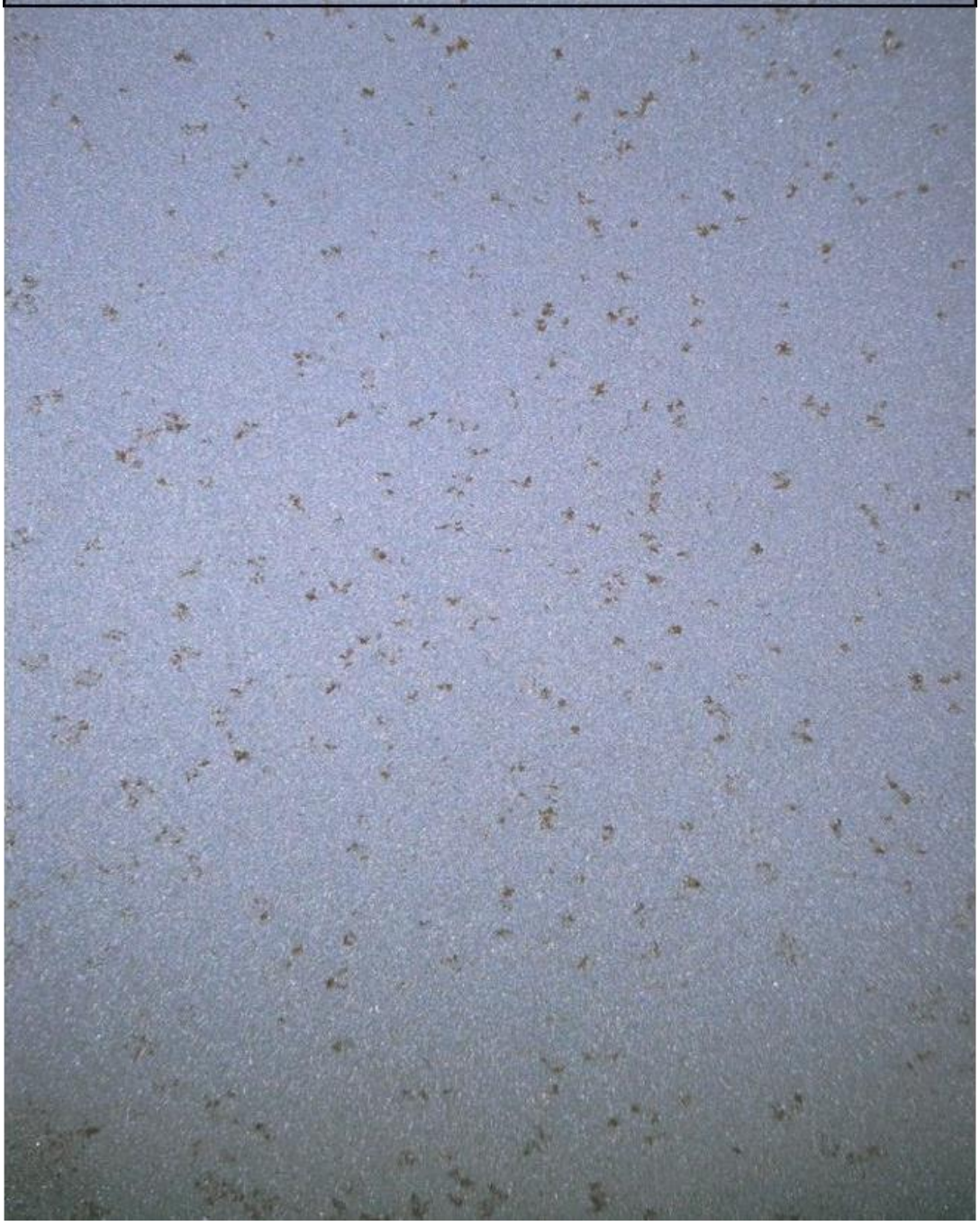
EONCOAT™

EONCOAT™

EONCOAT™

ACCEPTABLE

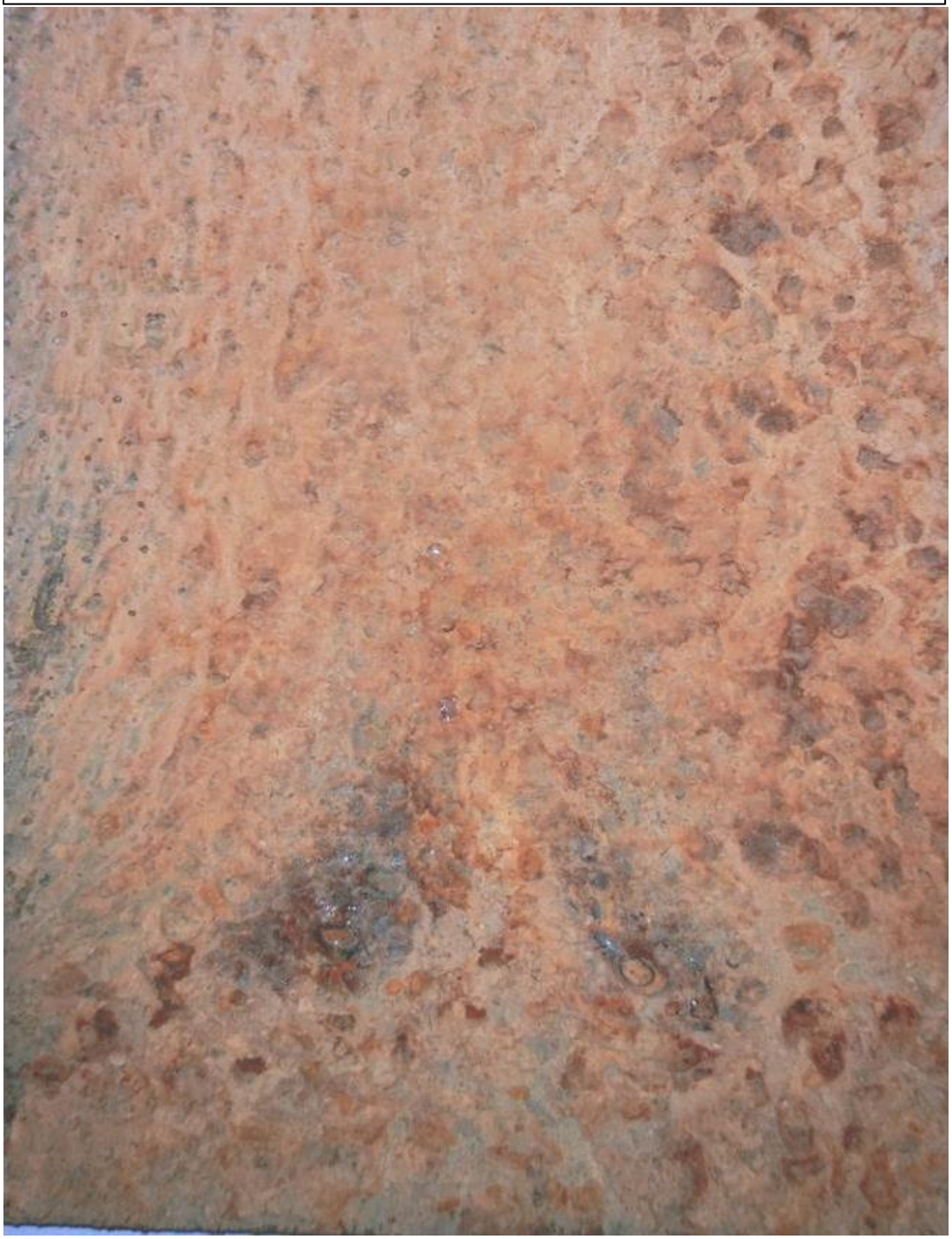
This surface has small amounts of rust on an otherwise well prepared surface. EonCoat will convert the small rust spots to iron phosphate



EONCOAT™

NOT ACCEPTABLE
This surface has a shop primer applied

ACCEPTABLE IF LOOSE MATERIAL IS REMOVED



ACCEPTABLE

EONCOAT™

NOT ACCEPTABLE
This surface is covered in mill scale. This is a very unreactive form of oxidation – Fe304. No coating should be applied on mill scale.

7. APPLICATION

The primary concept to understand is that you must apply EonCoat on a clean carbon steel surface free from any contaminants which may form a barrier between the EonCoat and carbon steel substrate. To achieve this, each area shall be pressure washed before spraying to remove any loose contamination. Pressure washing will remove loose iron oxide as well as overspray from previous passes of EonCoat. If after pressure washing, there are areas that do not flash rust, this is an indication that there is still contamination present.

The important thing is for the coating to stay damp until it cures, like all types of cement. You can manage to apply on warmer substrates and in warmer weather, and in higher winds than are specified in this document, if you wisely use water to keep the surface cool as well as mist water on the ceramic to keep it damp until it is fully cured (15 Minutes). This is referenced and discussed in detail in sections 12 and 13.

7.1. SURFACE TEMPERATURE

Surface temperature should be at least 50°F (10°C) and a maximum of 110°F (43°C). There are no dew point restrictions. Special application techniques can be used when spraying in extreme temperatures, referenced in section 12 and 13.

7.2. STRIPE COATING

EonCoat does not typically require stripe coating. In the industry, stripe coats are additional coats of paint that are applied locally to welds, fasteners, and external corners. Their function is to build a satisfactory coating thickness at edges and corners where paint tends to contract through surface tension and thin upon drying. If you need to achieve the required micron thickness in more complex geometric areas, you can stripe EonCoat where required. The area may be flooded with material from the spray gun, and then brushed into place using a dampened (not wet) radiator brush. Rinse brush immediately after striping.

SECTION 2

PRESERVATION APPLICATION METHOD

8. INTRODUCTION

The Preservation application method requires less surface preparation and has less QC requirements than the Long-term Prevention application method. It may be suitable where:

- An asset has a short – mid-term life span
- There is a need to arrest corrosion rapidly
- Time/scheduling constrain prevent full preservation
- Scale and cost of problem prevent full long-term prevention application method
- Abrasive blast cleaning is not possible in specific plant environments

The Long-term Prevention application method can be undertaken in future if the Preservation method is initially performed.

It is important to note that the Limited Product Warranty is not applicable to the Preservation application method.

PRESERVATION PROCESS

- Identify areas requiring short term corrosion prevention
- Remove all loose or flaking corrosion. Ensure 75µ surface profile
- Pressure water wash and degrease if oils or greases are present
- Spray EonCoat to recommended thickness (to be advised)
- Monitor steel surface for passivation

9. SURFACE PREPARATION

Remove all loose or flaking corrosion and ensure a 75 µm profile.

It is **essential to remove all other surface contamination**. This means removal of **old paint, oil, grease, dirt, dust (including the dust from EonCoat's own dry fall/ overspray)**, and any other contamination. All requirements for passivation of the substrate remain the same as per the Long-Term preservation method apart from the abrasive blasted substrate.

9.1. PRIOR TO APPLICATION

All surfaces shall be cleaned and free from all old paint, grease, dirt, oils, dust, or residue that will adversely affect the adhesion of EonCoat to the steel. All loose scale, large deposits, oil, grease, cutting oils, dirt, and other contaminants shall be removed prior to coating by washing with detergent (TSP IS IDEAL) and clean water or steam cleaning, followed by thorough rinsing with clean water. if required for the short-term preservation of assets.

9.2. SURFACE IRREGULARITIES

Fins, slivers, burred or sharp edges, weld spatter and slag shall be removed prior to surface preparation. Minimum 2mm radius required on edges. The focus on the short-term preservation method is to remove as mush rust scale or flaking as possible to allow the EonCoat to phosphate the tightly adhered corrosion, free from contaminants.

9.3. COATING PREVIOUSLY PAINTED SURFACES

If the Short-term preservation method dictates that the old coatings be removed, this may be achieved either by abrasive blast cleaning or UHP water blasting depending on the environment and operational circumstances.

9.4. PRESSURE

The short-term preservation method may require spot blasting in some instances or high-pressure water washing to remove loose corrosion. A minimum of 3000-5000Psi should be used, and UHP 40K Psi to remove old coatings should abrasive blast cleaning not being an option.

9.5. PREPARATION OF STEEL – USING WATER JETTING

The steel surfaces to be coated shall be water jetted utilizing Ultra-High Pressure Water Jetting in accordance with SSPC-SP WJ-2 L/NACE WJ-2/L, “Clean to Bare Substrate”. Water used should be comparable to potable water and free of oil, acid, alkali, or any other detrimental matter. All coating application surfaces should be contaminant free. After water jetting, the steel surface should be cleaned with an environmentally friendly detergent or degreaser should contamination be present, and then a final water wash to remove any remnant degreaser.

10. APPLICATION

All application criteria for the Preservation method should be observed as per the Long-Term Prevention method. Please refer to Long-Term Prevention process application methodology in Section 1 above.

11. EQUIPMENT

In this section we will discuss the different types of plural application equipment for the successful application of EonCoat.

This is broken down into three primary application systems, namely;

Pneumatic Cartridge gun

High Pressure Plural Application system (Ecoatech EC6500 or similar approved)

Low Pressure Plural Application system (Ecoatech ECM2K or similar approved)

11.1. PLURAL SPRAY EQUIPMENT

Applying EonCoat

When using any EonCoat spray system, ideally you will build the full wet film thickness in one or two slow passes. You may need to build thickness in some areas with multiple passes if the temperature is low and the material is not curing fast enough. It is imperative that the material is sprayed wet on wet and not allowed any time to dry between passes. Maintain a wet edge of complete material build. Overspray is guaranteed to cause failure of EonCoat, and must be carefully planned when undertaking geometrically challenging structures. The light, dry overspray is insufficient to provide the phosphate layer but will provide a barrier to the next application of EonCoat and therefore adversely affect the phosphating action. It is essential for the applicator to understand how to undertake the task to minimize/ eliminate overspray and that under no circumstances should it be overcoated without removal by pressure washing.

Note: experienced spray painters will never have encountered this problem and therefore this needs to be a focal point in the application training. Masking some areas will help reduce the dry overspray risks.

11.2. PNEUMATIC DUAL COMPONENT CARTRIDGE SYSTEM

Applying EonCoat with a Pneumatic Dual Component Cartridge System

The dual-component cartridge spray gun is a compact cartridge spray system that utilizes a dual plunger actuator and a static mixing tip at low pressure to apply EonCoat to a substrate. The dual- component cartridge spray gun can be used as a stand-alone spray system or in conjunction with a high-pressure spray system. The dual-component cartridge spray gun can be used for repair or in hard-to-reach areas of a structure or substrate to build optimum wet film thickness prior to spraying the structure or substrate with a high-pressure spray system which may not be able to reach these areas.

Setting up a cartridge system is much easier than the plural pump. Watch a video here on how this is done. Click on the link or scan the QR code with a smartphone.

11.3. HIGH PRESSURE PLURAL PUMP EQUIPMENT

General Notes on Airless Application Specific tip sizes will depend on the nature of each application. Select a spray tip that is within the capacity of the high-pressure plural pump. The larger the spray tip, the greater the pressure drop. Long hose length and cold material will decrease material delivery volume and fluid pressure at the spray tip. If the pattern has fingers or pulsates, change the spray tips to reduce the size of the spray orifice. This will decrease the material volume and increase pressure.

The high-pressure plural pump must have a minimum of 1500-2000 psi output pressure rating and adequate delivery volume to support the spray tip orifice litres per minute rating (LPM). The initial pressure should be set to where the lowest fluid pressure will provide a uniform spray pattern without tails. If greater material coverage is desired, use a larger tip size. Part A is an acidic product and care should be taken when selecting components for use with Part A side of the spray equipment. Stainless Steel 304/316 is recommended for any part that meets Part A component. Do not use equipment coated with lead, zinc, or other reactive material in the supply path for part A.

Temperature has a direct effect on viscosity of the product and therefore the spray tips may need to change accordingly. The application environment will also be a factor when choosing these components to spray with. Please contact your EonCoat representative for more information.

The recommended film thickness should be achieved in a single coat through multiple passes. Multiple passes can be sprayed while the coating is still wet or tacky. Once the coating has “dried-to-touch”, the coating must be allowed to set-up before additional materials can be applied.

NOTE: *Every attempt should be made to achieve the recommended thickness while the initial spray is still wet. Overcoating dry EonCoat will not have the desired phosphating effect.*

11.4. PLURAL SPRAY EQUIPMENT

An EonCoat endorsed high or low-pressure plural component spray pump with stainless steel lowers must be used to apply EonCoat. Refer to the chart below for spray pump and equipment recommendations:

Pump Size High- and Low-Pressure Units	30:1 (min for H/P, 7:1 (Air Assisted Airless and Low Pressure)
Spray Gun	Dependent on the application scenario we may opt for STD airless spray, Air assisted Airless or low-pressure air spray. Common guns used; Graco XHF Airless Gun Graco G50 Air assisted Airless Gun Ecoatech Micromix handheld Low-Pressure gun Conventional Air Spray gun, Star, DeVillbis etc.
Tip Orifice *	Typical tip ranges, dependent on section being sprayed and area size would be, .19 thou to .31 thou Corrosion Protection PLUS & Weldable Coating .23 - .35 thou
Atomization Pressure	Pressures tend to range between 1600Psi for Airless spray, 400-600Psi for Air Assisted Airless Spray and 80-100Psi for Air Spray
Material Hose ID	The larger Plural unit uses 15m x ½: Supply hoses for Part A and B, and the Low-pressure plural will run either 3/8” x 15m or ¼” x 15m for parts A and B
Whip Hose ID	Wherever the Ecoatech Micromix manifold is used with an external spray gun, a 3/16” x 1m whip hose should be used in order to decrease the residence time of mixed material before exiting the handpiece.

11.5. APPLICATION TECHNIQUES

Hold the spray gun perpendicular to the substrate. The distance from the substrate is determined by the pressure and tip size. Set up the gun so that the “bounce” of the material is kept to a minimum. We want all the material to adhere to the substrate to force it into the surface profile but not bounce off. While triggering, move slowly to produce the desired coating wet film thickness without thin spots or “holidays”.

The spray technique should include an overlapping technique where each spray pass is overlapped 20-30% for uniform coverage. **Never flick the wrist at the end of a pass.** The coating is dry fall in 3m, even less on hot days. Flicking the wrist at the end of a pass will create dry fall on uncoated steel. This dry fall then becomes surface contamination that will negatively impact the coating reaching the metal substrate. All dry fall is to be removed prior to application. This may be achieved through a HP water wash at 3000Psi.

NOTE: ***Before spraying directly on to the prepared substrate ensure that all residual water left in the whip hose and/or static mixer is evacuated using a brief trigger pull until only EonCoat product appears.***

Pump operation and monitoring.

During pump operation it is extremely important that there is a technical assistant in charge of monitoring both material levels in the A and B hoppers (The most important ratio indicator) as well as the overall equipment. Particular attention to both A and B fluid pressure gauges to ensure that they are balanced is important. Any deviation above 200 PSI (High Pressure Plural) should be deemed as cautionary. The technical assistant should notify the applicator to cease spraying in order to identify the cause of the imbalance (refer to pump troubleshooting image in section 19.1.

Please note that only filling each hopper with full kits at a time will allow proper monitoring of hopper levels. Do not pour in partial kits.

Watch a video of how EonCoat Spray Patterns should be and how to measure the thickness while wet. Click on the link here to watch or scan the QR code with a smartphone.

11.6. PUMP MAINTENANCE

At the end of each day, all remaining material may be recirculated back into the original supply buckets with great care not to cross contaminate. The pump should be thoroughly flushed with water, and material outlet filters (If fitted) removed and cleaned. The hoses should be thoroughly flushed with water until clean water passes through.

Once a week, displacement pump piston rods and wet cups should be inspected for both

premature wear or wet cup packing tension. All wet cups need to be periodically tensioned and throat seal lubricant topped up should the level be too low. There is no need to fill the wet cups all the way to the top. Make sure there is just enough to surround the piston rod, about 5mm deep. All relevant information on maintenance procedures may be found in the displacement pump manual.

Recirculation safety valves will need to be inspected every 2-3 weeks for internal wear. Should any bypass through the recirculation hoses become evident, these safety valves will need to be replaced. Monitoring the two outbound pressure gauges will offer a clear indication as to whether or not this is happening. Material can be left in the hoses and pump (without pressure) if the job has stopped for less than 8 hours. In this case, pressure must be released from the pump, gun, and hoses.

A detailed training course on the correct setup, operation and shutdown procedure will form part of the applicator certification and training.

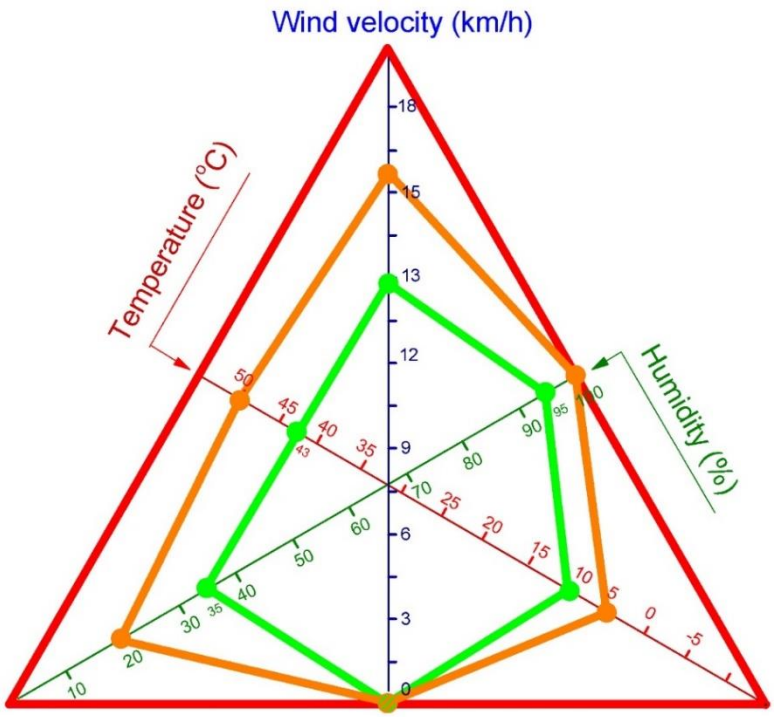
11.7. GUN AND MICROMIX MANIFOLD MAINTENANCE

At the end of each spray application, you must clean all the coating out of your spray gun and MicroMix manifold or it will poorly spray the following day. Please refer to the equipment specific manuals for the correct cleaning and maintenance procedures.

12. RECOMMENDED CONDITIONS

Should the recommended conditions, below, not be achievable, these would be considered a unique application condition. Please refer to 7.1 as well as consulting your EonCoat representative.

Please refer to the following chart as temperature ranges can be affected by weather conditions, including humidity.



Using the chart above:

Apply EonCoat if conditions (wind velocity, substrate temperature and humidity) fall inside the green line of the parameters.

Contact EonCoat for advice on how to proceed if conditions fall between the green line and orange line.

Do not apply EonCoat if conditions fall outside of the orange line (between the orange and red line, or above the red line). Speak with an EonCoat representative.

13. UNIQUE APPLICATION CONDITIONS

13.1. WHAT IS A UNIQUE APPLICATION CONDITION?

EonCoat is a water-based, rapid cure ceramic coating system. It has many application advantages but also needs special consideration when being applied in conditions near or beyond the recommended limits. Spraying EonCoat outside of ideal conditions is manageable by understanding the environment in which it is to be sprayed. Keeping moisture in the coating during its curing process is an essential part of maintaining EonCoat' s physical properties, specifically during the formation of the ceramic. This is typical of all cementitious materials and keeping the

substrate moist is handled in the same way as with concrete or inorganic zinc – mist the surface with water if it is curing so fast that you see shrinkage cracks. The ceramic only needs a few minutes to cure, but it must be damp during that time period.

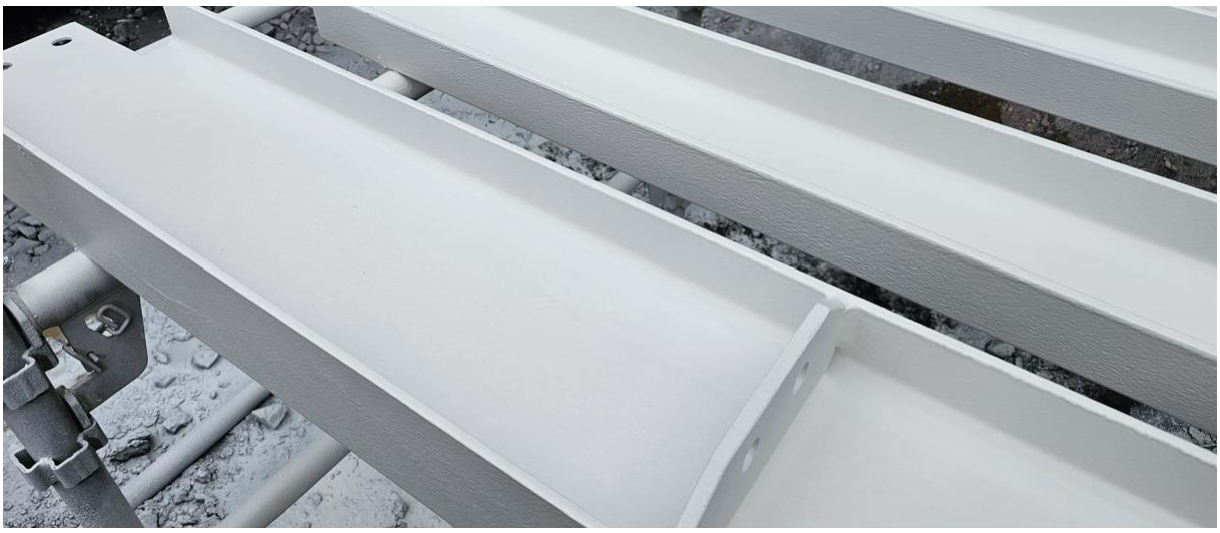
The combined RH, substrate temperature, and wind velocity must allow for a rate of evaporation in the acceptable range. If ambient or substrate temperature falls outside of given ranges during application, there are application techniques that *may* make it possible to apply EonCoat. For example, the proper misting of the ceramic to keep it damp allows a much wider application window.

13.2. HIGH TEMPERATURES (SURFACE TEMPERATURES ABOVE 43°C (110°F)

Spraying in hot temperatures causes EonCoat to “flash” water too quickly thereby not allowing adequate time for the ceramic to form. This causes poor ceramic formation and makes the coating brittle. This can also cause hairline cracks to form in the ceramic.

To reduce the amount of water from flashing out too quickly, you may use the following techniques:

- Adjust your spray tip to larger orifices. A larger tip size means larger droplet sizes during atomization, and this will help reduce water loss during spray.
- Use lower pump pressures. The lower pump pressures will also increase droplet sizes during atomization at the spray tip. You should only use the amount of pressure needed to eliminate tails in your spray pattern.
- Apply a mist coat of clean water onto the substrate prior to the application of EonCoat. Evaporation of water will cool the surface to be coated. DO NOT ALLOW STANDING WATER ON THE SUBSTRATE WHILE APPLYING EONCOAT.
- Apply a mist coat of clean water immediately after the application of EonCoat. Water applied over EonCoat will keep the necessary amount of water in the ceramic while it is curing. Any excess water will evaporate after the initial cure is complete.



13.3. LOW TEMPERATURES (SURFACE TEMPERATURES BELOW 4°C (40°F)

Spraying a waterborne system in these temperatures keeps the water in the ceramic cold and delays the formation of the ceramic. Delaying the formation can cause runs or sags when the coating is applied, especially in humid environments.

When spraying in colder conditions, use the following techniques:

- Do not mist the coating. Do not wet the substrate before coating. Do not spray on a damp surface.
- Use EonCoat – winter formula product.

13.4. WIND (ABOVE 16Km/h (10 M/h)

Spraying in windy conditions will remove moisture from the coating prematurely. Premature moisture loss may form shrinkage cracks in the coating.

Use the following techniques when spraying in windy conditions:

- Adjust your spray tip to larger orifices. A larger tip size means larger droplet sizes during atomization, and this will help reduce water loss during spray.
- Use lower pump pressures. Lower pump pressures will also increase droplet sizes during atomization at the spray tip. You should only use the amount of pressure needed to eliminate tails in your spray pattern.
- Apply a mist coat of clean water onto the substrate prior to the application of EonCoat. Evaporation of water will cool the surface to be coated. DO NOT ALLOW STANDING WATER ON THE SUBSTRATE WHILE APPLYING EONCOAT.
- Apply a mist coat of clean water immediately after the application of EonCoat. Water applied over EonCoat will keep the necessary amount of water in the ceramic while it is

curing. Any excess water will evaporate after the initial cure is complete.

13.5. LOW HUMIDITY (BELOW 20%)

Spraying in low humidity conditions will remove moisture from the coating prematurely. Premature moisture loss will cause the ceramic to become brittle and could also form wrinkles in the coating.

Use the following techniques when spraying in low humidity conditions:

- Adjust your spray tip to larger orifices. Larger tip sizes mean larger droplet sizes during atomization, and this will help reduce water loss during spray.
- Use lower pump pressures. Using lower pump pressures will also increase droplet sizes during atomization at the spray tip. Use only the amount of pressure needed to eliminate tails in your spray pattern.
- Apply a mist coat of clean water onto the substrate prior to the application of EonCoat. Evaporation of water will cool the surface to be coated. DO NOT ALLOW STANDING WATER ON THE SUBSTRATE WHILE APPLYING EONCOAT.
- Apply a mist coat of clean water immediately after the application of EonCoat. Water applied over EonCoat will keep the necessary amount of water in the ceramic while it is curing. Any excess water will evaporate after the initial cure is complete.

14. SITE CONTAMINATION

The photographs below are an example of maintenance coating in the mining sector where the site conditions were known to have a high chloride level but not acidic conditions. What eventuated was the mine has an extensive sulphur burning process which when vented creates a micro acid rain environment. As you can see from the photographs the surface was abrasive blasted to Class 2 at 5pm in the evening and at the next start of shift 7am the next morning the surface was covered in a non-soluble substance. This surface was extremely difficult to clean and even when initially cleaned still caused disbondment of EonCoat as the carbon steel had a non-visible substance blocking the phosphating action. Once EonCoat technical support was contacted an immediate stop for quality was implemented and this is the appropriate action to take in such an instance.

EONCOAT™

EONCOAT™


Pipe Rack3
3.55E
Various
Pipe Rack3
Pipe Rack3
3.58E
Pipe Rack
3.55W

15. CURING

15.1. KEEP IT DAMP

The recommended thickness of EonCoat can be applied in multiple passes but it should be applied in one application. EonCoat Version 5 dries to the touch in about 5 minutes and is hard dry in about 15 minutes in 70F (21°C) conditions.

Keep the ceramic damp for about 15 minutes while the cement fully cures. Misting with a pressure washer is a handy method of keeping the ceramic damp when spraying in unusually hot or dry conditions.

NOTE: Cure time is dependent on temperature and humidity. Rule of thumb is that for every 10°C increase in ambient temperature, the mixed pot life will halve.

16. INSPECTION

16.1. WET FILM THICKNESS (WFT)

Due to the nature of the quick curing properties and multiple pass application of spraying EonCoat, a wet film thickness measurement must be taken immediately after application in order to achieve the most accurate reading.

16.2. PHOSPHATE TEST

The phosphating process into the carbon steel is the fundamental mechanism for EonCoat technology. The integration of iron magnesium phosphate must be given every opportunity to be uniformly applied. Monitoring and validation cannot be underestimated. There are multiple situations where phosphating can be interrupted or diluted so testing and recording is an essential

part of the application.

A phosphate test should be completed at every 30 sqm interval when coating which involves:

- Select an area of approximately 50mm x 50mm of the coated surface, 5-10 minutes post application
- Using a paint scraper, remove the ceramic layer down to bare substrate in the selected area
- Using a solution consisting of 50% water/50% vinegar mixture in a spray bottle, spray the exposed substrate liberally
- Leave for 5-10 minutes
- Inspect the area. Should the phosphating be successful, no oxidation/flash rusting would have taken place. If surface/flash rusting is evident, phosphating has been unsuccessful.
- If unsuccessful, select another area and repeat the test.
- If additional testing is unsuccessful, the contractor should hold and undertake an assessment of what has caused the required chemical reaction not to occur.

On the left side is a good phosphate colour. On the right side is corrosion this has not phosphated which indicates something is wrong and must be resolved before progressing.

16.3. DRY FILM THICKNESS (DFT)

After the coating cures, the dry film thickness of the coating can be measured by conventional dry film thickness gauges in accordance with SSPC-PA2, procedure for Determining Conformance to Dry Coating Thickness Requirements.

16.4. FINAL INSPECTION

After EonCoat has been applied and cured, it forms a permanent molecular bond with the ferrous ions in the steel. This bond forms an alloy layer on the steel which protects the steel from future corrosion. Pressure washing at a minimum 3000 PSI to clean and prepare the surface for its topcoat also provides a method of verifying that a good bond to the substrate has been obtained.

If the ceramic has failed to bond with the substrate, the velocity from a pressure washer will cause the ceramic to disbond. Use a rotary head with an aggressive nozzle. Do not place the nozzle closer than 100mm from the surface.

16.5. CERAMIC DISBONDMENT

If the ceramic is not well bonded to the substrate, it can crack and disbond. There are three things that can cause the ceramic to have a poor bond. The most common cause is spraying over a contaminated surface. A contaminant will prevent the material from physically touching the metal, and without physical contact, no bond can occur (this includes spraying over a surface that contains overspray of EonCoat). The overspray needs to be removed prior to coating. The ceramic may form but not be attached to metal. This condition shows up very soon after applying. Cracking in this area is also common. If this occurs the loose ceramic is scraped off and the surrounding area is removed until only tightly bonded ceramic remains. The area can then be repaired with new material using any of the application methods. The edges will easily bond to the existing ceramic because EonCoat chemically bonds to itself.

A second situation that can cause a poor bond is when the acid Side A and alkaline Side B are allowed to begin reacting with each other prior to reaching the substrate. **Too much residence time in the whip hose can cause this**. When spraying constantly the mixed material only stays in the whip for 2 seconds. However, if the applicator stops momentarily the material will begin reacting. We recommend that if spraying stops for more than **5 seconds** that the applicator discharges 100 ml (about 3.38 oz) in the whip hose into a waste bucket before continuing with application. If disbondment is found under these circumstances the loose material should be removed and repaired as discussed above. If a poor passive layer is discovered, the ceramic should be removed, and the application repeated.

A third cause of cracks in the ceramic, as well as disbondment, is the spraying off ratio. Particularly spraying too much Part A will result in large cracks forming in the ceramic shortly after application. Watch your pump pressures and monitor tank levels to be sure you stay on ratio.

16.6. PINPOINT BROWN STAINS

If the coating does not physically touch metal, it cannot alloy it. Occasionally there will be blast media that gets imbedded in the profile, or just small bits of contamination, that cause a small point to be unprotected by a passive layer. This point may bleed rust and cause a stain. In a brief time, the phosphate that leaches from the ceramic will permanently repair this spot by forming iron phosphate. This is the natural healing mechanism which makes the technology so effective.

17. REPAIR

The pressure washer test (refer to the post application observations in the inspection section above) shows EonCoat to EonCoat disbondment if present. Topcoat can also peel off showing EonCoat to EonCoat disbondment as well.

All areas needing repair shall be masked and repaired by abrading the edge of the coating surface with grit disk paper or other hand tooling method and feathered into the existing coating not needing repair to provide a consistent, uniform finish.

For large repairs (more than 2 sq. ft.) ➔ Wet the EonCoat – Apply additional EonCoat while the surface is damp using a EonCoat endorsed application system.

For small repairs (less than 2 sq. ft.) ➔ Wet the EonCoat – Apply additional EonCoat while surface is damp using a dual component cartridge spray system (Part A & Part B) along with a static mixing tip.

For small repairs (less than 5 sq. inches) ➔ Hand mixing and applying EonCoat will work with very small quantities. Mix equal parts A and B in a small bucket with a brush and immediately apply in the location of repair.

The same repair procedure shall be utilized if re-applying with a plural component spray system such as the EC6500 or ECM2K.

NOTE: If hand tool or power tool cleaning leaves a polished smooth surface, EonCoat will not bond to such a surface because the surface will inhibit the chemical reaction between EonCoat and steel. We recommend a spot blast or the use of a mechanical tools such as the Bristle Blaster to create a simulated blast profile. If this is not practically possible, the steel may require chemical treatment. This chemical treatment can be provided by pouring a salt-peroxide mixture onto the surface (steel). Once flash rust bloom is observed then the steel can be coated with EonCoat.

Coating disbondment or delamination from Steel Surface

The following process should be followed if the Eoncoat layer disbonds or de-laminates from the carbon steel surface.

- Completely remove the effected coating
- High pressure water wash and degrease
- Abrasive blast or UHP water jet the surface to ensure a clean substrate in-accordance with blasting or jetting requirements outlined earlier in this document.
- Complete a final water wash and blow down the surface with clean dry air
- Re-apply the coating in accordance with this guide
- Complete a passivation test to check that the surface is fully passivated.

Minor Repairs

Where minor damage has removed the coating or minor rust bleed events occur then the following process can be undertaken.

- Scrape back the affected area with a paint scraper
- Clean the surface of the affected area back to the metal substrate
- Use a cartridge gun to repair EonCoat to the affected area

Major Repairs

In the event of complete disbondment and or delamination of the coating due to, but not restricted to,

- Contaminated Substrate
- Incorrect Mix ratio
- Application outside prescribed climatic and substrate conditions (Temp)

1. Immediately contact your EonCoat representative for assistance.
2. Clearly identify areas affected using water washing 3000Psi or more to remove any loose/

disbonded coating.

3. Identify the cause of disbondment in the instance of previous surface contamination prior to the initial coating. Degreasing may be required if oils/ greases were present.
4. Abrasive blast clean the identified areas back to an Sa2/ SA2.5 with the prescribed blast profile of 75um or more.
5. Post abrasive blasting, water wash both the abrasive blasted substrate to promote the formation of a light ferrous oxide layer (flash rust), as well as the surrounding, well adhered coating to promote good transition adhesion. Should a light uniform ferrous oxide layer form, this will be a clear indication that the substrate is contaminant free.
6. Re-apply Eoncoat to the correct thickness in adherence to original project scope and conditions.

18. HEALTH AND SAFETY

EonCoat is used in heavy industry (mining, offshore, infrastructure, defense, underground). It is becoming more common for EonCoat to be used in confined spaces as this eliminates the flammable content of most coatings systems. All of these industries have their inherent risk profiles and although EonCoat is a safety improvement, it is imperative that safety standards and awareness are not reduced, for example, EonCoat is cementitious and therefore heavier than epoxy and manual handling of the kits, each weighing approximately 17kgs, needs to be considered. EonCoat eliminates the high risk of epoxy sensitization but even with non-toxic spray applications a P2 mask, eye protection and gloves as a minimum shall be worn and application undertaken by qualified Eoncoat accredited applicators only. It is worth noting that the personnel assisting the EonCoat painters in the mixing (part A&B) also need to understand that this can be a physically demanding activity and pre-planning to ensure that the activity is not overly strenuous is highly recommended.

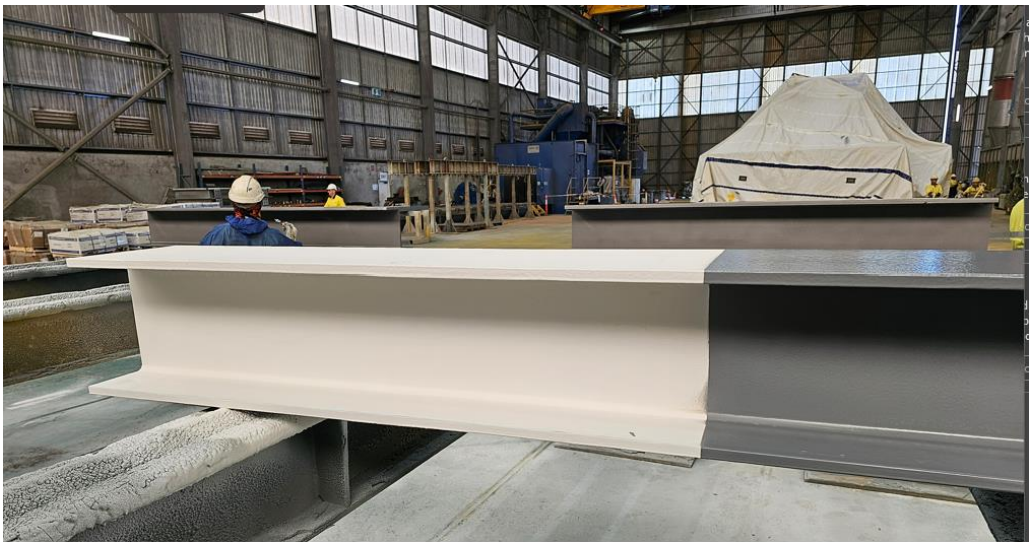
Please refer to the material safety data sheets (for Part A and Part B) for more health and safety information prior to using EonCoat or contact your EonCoat representative. For our most up to date SDS & Tech Data Sheet please use the following links

EonCoat Specification Sheets (Metric) or scan the QR code with your smartphone.

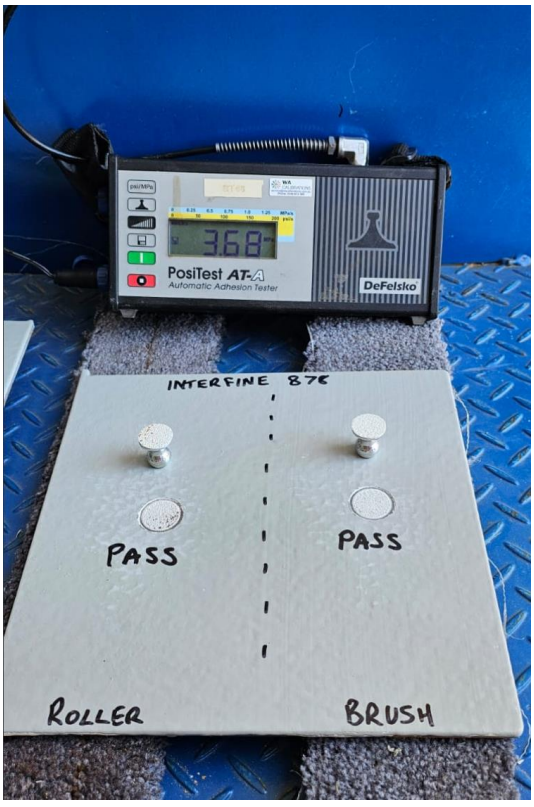
EonCoat Specification Sheets (Imperial) or scan the QR code with your smartphone.

18.1. TOPCOATS AND SEALERS

EonCoat is a cementitious coating. Like all cementitious materials, it is porous, and therefore, will get dirty and stain easily if not sealed. A topcoat can be chosen for the desired appearance. For customers desiring to keep with the inorganic nature of EonCoat a Poly siloxane sealer is ideal.




PosiTest AT-A
DeFelsko
INTERCURE 99
PASS
PASS
SPRAY
INTERCURE 99
PASS
PASS
BRUSH
ROLLER


PosiTest AT-A
Automatic Adhesion Tester
DeFelsko
INTERFINE 878
PASS
PASS
ROLLER
BRUSH

Application

When applying any topcoat to EonCoat the temperature should be falling. This is because all porous materials outgas, meaning they expel air and moisture from the pores when heating. If you apply a topcoat or sealer while air is escaping from the ceramic, you will get bubbles in the coating and a poor bond with the coating. Work with the natural flow of air and moisture to let it draw coating material into the pores to get a strong bond.

19. TROUBLESHOOTING

Please Refer to the following table for equipment Instruction and Parts manuals as well as troubleshooting steps. These manuals can be provided upon request. Please reach out to your EonCoat representative.

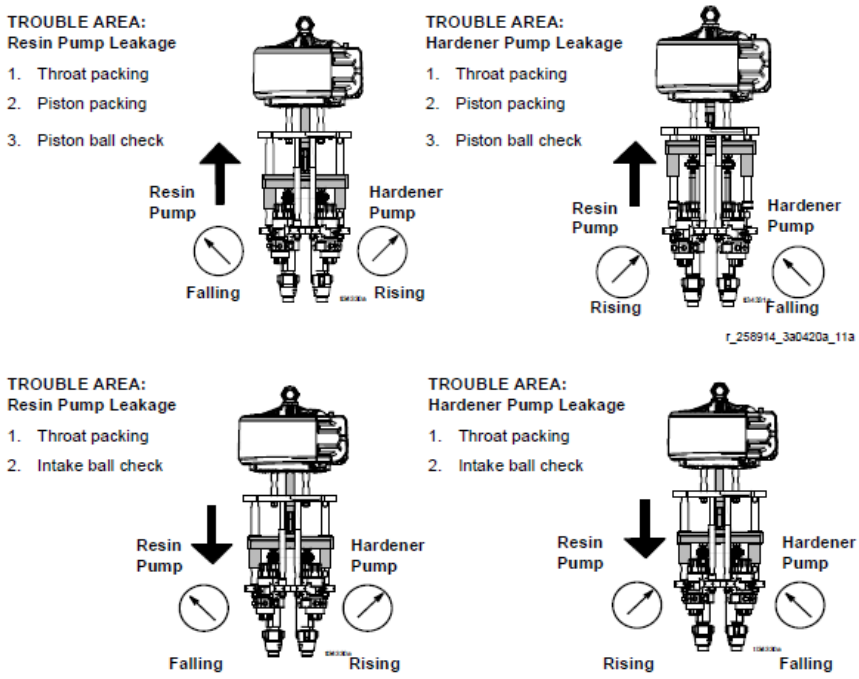
Equipment Type	Manual No.	Troubleshooting Page Number
Graco G50 Gun	3A8099EN-B	25-29
Graco XHF Airless Gun	3A2799EN	11-18
Ecoatech MicroMix Manifold	EONMMV1	TBC
Graco XP Plural Proportioner	3A0420EON	44-46
Graco Dura-Flo S/S Pumps	311827EON	N/A

19.1. SPRAY PUMP PRESSURE GAUGE READINGS

The chart on the following page uses the manifold gauges to determine pump malfunctions. Faulty manifold check valves can mask pump cylinder problems. Always keep these valves operating properly. Observe the gauge readings during the stroke direction indicated by the bold arrow, and immediately after closing the manifold.

Pump Troubleshooting

This chart uses proportioning fluid gauges to determine pump malfunctions. Observe the gauge readings during the stroke direction indicated by the bold arrow, and immediately after closing the gun or mix manifold. Refer to other manuals to troubleshoot individual components.



16. LIMITED PRODUCT WARRANY

EonCoat® products carry a limited 30-year limited product warranty (subject to application by EonCoat® endorsed applicators, in accordance specifications and maintenance regimes) which is supplied by the manufacturer, EonCoat®, LLC.

You must apply to EonCoat, LLC to receive the Limited Product Warranty. The Limited Product Warranty is only applicable to the Long-term Prevention application method for EonCoat, and cannot be applied for when the short term preservation application method is used (although it can be applied for at a later date if you choose to apply the Long-term Prevention method to an asset in future after using the Preservation method.

Stage 1 - Pre-approval

The following must be submitted during the pre-approval process:

1. Written application to EonCoat to ensure suitability of EonCoat for your application .

2. The application requires you to include your ITP for approval to EonCoat. You also agree to provide your quality control documents to EonCoat upon request (note: EonCoat will furnish the asset owner/contractor with a standard set of quality control template documents which set out information required for the Warranty Application Submission (which is required during the second stage of the application process). Whilst there is no requirement for these specific documents to be used by the asset owner or contractor, it is the asset owner's responsibility to ensure it maintains the proper records if they wish to apply for the Limited Product Warranty.

3. You must provide details of certified applicators appointed who agree to undertake application in accordance with specific requirements.

Your EonCoat Australia representative will assist you in the process. Approval will be received in writing.

Stage 2 – Warranty Application Submission

Post completion of the coating job, complete an online Warranty Application Submission.

To complete the second stage of the Limited Product Warranty application, the asset owner/contractor will be asked to provide the following information in the online form:

- Asset information;
- Approved contractor names;
- Coating dates;
- EonCoat product and batch number information;
- Completed approved ITP;
- Company contact details.

The Warranty Application Submission can be found here - EonCoat warranty application submission. Subject to approval, a digital warranty certificate will be issued by EonCoat to the asset owner by email.

View the Limited Product Warranty wording here.

View our FAQ's document regarding the Limited Product Warranty here.