

FAQ

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Performance

1. How is MCU-Coatings paints different from other moisture-cure coatings?

Moisture-cure coatings are well known and generic versions have been made, on a limited basis, for over thirty years, essentially unchanged and based upon the same few resins commercially available. Due to the characteristic problems inherent in these formulations and the complex production requirements, their use remained limited.

The resins, stabilizing methods, additives, and synergistic pigment combinations are uniquely to MCU-Coatings and are proprietary. It is our successful 25 year track record and improved performance level that has brought on the popularity of moisture-cure coatings and spawned the need for public and private agency, generic second-source off-sets. It is this requirement for multiple sources that has forced many specifiers to approve and manufacturers to propose untested, newly-designed off-sets with carbon copy data sheets and no track records. These products are based upon the same technology and resins that have been offered before and usually exhibit some or all of the inherent problems: poor can stability, erratic intercoat adhesion, limited corrosion resistance or durability, bubbling in heavy film, poor application properties and lack of field performance data or product understanding.

MCU-Coatings' products are simply more refined, the result of more than 25 years of research with the benefit of over 100 million in sales on billions of euros worth of projects. The MCU-Coatings products is perhaps the most tested product in the field of our industry, having protected over one billion m² worldwide.

2. Will the MCU-Coatings system outperform industry standards like in-organic zinc, epoxy, polyurethane systems?

MCU-Coatings are sold worldwide on thousands of major projects. Before using or specifying, every governmental or corporate agency, state or federal materials lab, engineering firm, or coating consultant required conclusive laboratory and field tests documenting the advantages. MCU-Coatings products has been tested in the history of this industry. Even with conclusive lab tests and overwhelming field use, it was still difficult to penetrate certain markets because of a natural bias against new products from a non-traditional supplier, especially with such dramatic performance claims. Every laboratory test and field evaluation shows our MCU-coating systems superior to the best industry standards worldwide. This includes systems with the best organic or inorganic zinc or epoxy mastic primers and epoxy or polyurethane topcoats. Combining these performance advantages with the obvious application advantages have made MCU-Coatings paints extremely popular and cost effective with infrastructure owners and concerned contractors.

3. How does the MCU-Coatings systems compare with older systems like red lead, vinyl and chlorinated rubber?

MCU-Coatings has combined, for the first time, surface tolerance and ease of application with a true high performance coating. This is our strength.

Tests consistently show MCU-Coatings' systems to be more surface tolerant and better performing than red lead primer systems, with easier application and faster immersion times than vinyl's with better overcoating performance than alkyds. Our high solids MCU-Coatings meet every VOC and environmental requirement and not only replace these older standards, but actually make them less desirable even if they could be used.

Our 25 years successful record of replacing vinyl's on major hydro, marine, and specialty projects is well known, and our overcoating track record on over three thousand bridges, hundreds of major hydro, marine, wastewater, offshore, petrochemical, and military projects proves their advantages and appropriateness for replacing alkyd and chlorinated rubber coatings for maintenance painting.

4. How did MCU-Coatings perform in salt spray testing?

MCU-Miozinc resists 5000 hours neutral salt spray testing as a stand alone system without undercutting.

5. Why does the MCU-Coatings system outperform everything else on lead overcoating?

In simplest terms, MCU-Coatings systems have all of the properties that an overcoating system needs to perform well, which include flexibility, breathability, better adhesion characteristics, and synergy with the system being overcoated without causing embrittlement or delamination. Additionally, the application advantages make coating under field conditions easier and quicker, which is opposite of traditional plural-component technology. MCU-Coatings developed and formulated systems specifically for overcoating. This is why they work. Other suppliers recommend products are already in their standard product line.

6. Why do the MCU-Coatings paints not peel off old coatings like epoxies do?

Epoxies are brittle, and upon curing in certain conditions like very cold environments or with heavy films, tend to pop off the old coatings within one to three years. MCU-Coatings paints have dramatically better flexibility to conform to different adhesion and cohesion coefficients. The coatings are specifically formulated with precise additives and with the synergistic use of micaceous iron oxide in every coat. Our track record on over 3000 bridges, with all manner of application, in climates ranging from Alaska and Canada to Hawaii and Southeast Asia, proves our claims beyond a doubt.

7. Why should I specify MIO in the topcoat?

What are the advantages?

MIO has well-documented attributes that contribute to the overall performance of protective coatings and has been demonstrated to improve coatings longevity by a factor of 7-8 times. Basic advantages include: (1) barrier properties; (2) UV shielding properties; (3) film reinforcement properties; (4) better abrasion resistance; (5) film-building properties over edges and sharp corners; (6) better intercoat adhesion; and (7) infinite recoatability.

8. Why does MCU-Miozinc outperform inorganic zincs?

MCU-Miozinc has more zinc by weight in kg per square meter than inorganic zincs. More importantly, MCU-Miozinc is pore free and dense. All inorganic zincs are porous, much like Swiss cheese. This always gives a film with misleading magnetic dry film gauge readings. At the same dry film readings, inorganic zincs provide less zinc, which depletes faster and does not perform as well when overcoated. This porous nature also requires a tie coat or intermediate coat to fill in the voids.

9. How does MCU-Miozinc perform compared to MCU-zinc primers?

Field performance has proven that the performance of MCU-Miozinc is almost equal to the performance of the best moisture cure zinc primers with a higher zinc content. MCU-Miozinc is cheaper and has a higher surface tolerance.

10. Will MCU-Miozinc adhere to old coatings like old red leads, vinyl's, chlorinated rubber and epoxy?

Yes, this is why MCU-Miozinc is so popular and our overcoat systems so successful. MCU-Miozinc is more surface tolerant than epoxy mastics, and of course, they have better corrosion resistance.

With MCU-Miozinc you are able to spot prime old coatings when doing an overcoat. Some contractors even use MCU-Miozinc as a complete overcoat primer, coating both bare steel, which has been spot cleaned and the entire old coating. This is common, and it allows a simple two coat overcoat system.

performance

11. What is so special about MCU-Miotopcoat?

Our aliphatic resin used in MCU-Miotopcoat is of automotive quality with regard to gloss and color retention; however, when we pigment it with micaceous iron oxide it makes it the most durable topcoat in our industry.

The MIO reinforces the film, preventing cracking, crazing and blistering. It also shields the resin as surface erosion occurs and make the topcoat extremely durable in high sun exposures. QUV tests show amazing color stability. The MIO prevents the usual decay process that occurs with acrylic polyurethane's and most importantly, the MCU-miotopcoat is a perfect surface to repaint years later. It will not require removal.

12. What are the advantages of MCU-Miomastic?

The practical advantage of the system is that our coatings can be applied in the tanks without expensive dehumidification equipment. and the coatings can be exposed to immersion or condensate within minutes. But the real advantage is that with MCU-Miozinc primer under the MCU-Miomastic there will be far better corrosion resistance than any other system.

This is the only system in the world which has the advantage of a zinc primer, and that zinc primer is more surface tolerant than any epoxy.

13. Is MCU-Miozinc recommended for immersion?

Yes, but always with a topcoat. MCU-Miozinc is approved under MCU-Miomastic for potable water, and both are recommended for fresh, salt water, and sewage treatment exposures with a proper topcoat.

14. Why do MCU-Coatings' systems last longer than epoxies on food processing equipment, paper machines and other machinery exposed to moisture?

When you compare the impedance or capacitance of coatings you will see a high difference between MCU-Coatings' paints and epoxies. In fact it is usually 100 times greater. This conductivity or lack of conductivity when comparing wet versus dry films is one explanation given by many European and Asian experts.

The fact is that these coats simply last a lot longer, and can be applied successfully in damp conditions.

15. What makes MCU-Coatings system so much better than epoxy systems?

Besides the basic chemical differences of the resins themselves which make them more durable, there is the obvious fact that MCU-Coatings always recommends priming any steel surface with a zinc primer. No corrosion or coatings expert can argue that an epoxy mastic primer can equal the performance of a zinc primer. MCU-Coatings has made zinc primers easier to use and more surface tolerant than any epoxy.

16. If this technology is so great why doesn't everyone make it?

Many have tried, and now that we have made it work, other manufacturers are in a panic trying to compete. Moisture-cure technology is very complex, but the biggest obstacle is the manufacturing techniques.

17. Why is MCU-Coatings paints so much better than coal tar epoxy or modified epoxy on pilings, locks, gates, penstocks and marine exposures?

Simply put, MCU-Coatings last longer. No other coating in the world can offer 20,000 hours on ASTM salt spray testing and MCU-Coatings' paints can be applied in the high humidity and damp conditions that completely hamper the applications of epoxies. MCU-Coatings are more surface tolerant, weather better, are more resistant to impact, more resistant to undercutting and are very flexible and the best coatings available for resistance to embrittlement.

Moisture-cure urethanes, or more correctly *polyureas*, retain flexibility better than any polyurethane or epoxy.

18. Does MCU-Miomastic perform well in UV exposure?

Yes. There will be some initial chalking; however, the 1.3 to 2.2 kg (3-5 pounds) of micaceous iron oxide in the film will prevent further degradation. This is why it is extremely important to be cautious of look-alike off-sets. Only MCU-Coatings uses that high level of MIO. MCU-Miomastic will not become brittle like an epoxy when exposed to UV light, and is recommended for this exposure.

19. Why is MCU-Miomastic better than coal tar epoxy?

Please look up our MCU-Miomastic data sheet and the "Critical Comparison" accompanying it. MCU-Miomastic is superior to epoxy tar in every performance and application property.

20. Why should I use MCU-Topcoat instead of regular marine enamel or my epoxy topcoats?

MCU-Topcoat is an aliphatic urethane. The gloss and color resistance will be far better and the impact abrasion resistance and chemical resistance are far better. MCU-Coatings has made using aliphatic topcoats practical. Ours have no humidity, dewpoint, or temperature application restrictions.

21. What are the advantages of the MCU-Coatings in cargo holds?

Many. You cannot find a better coating. The MCU-Coatings are more flexible, but more abrasion resistant. They are far more impact resistant than any epoxy and longer lasting. They do not become brittle or crack with ship flexing. Most importantly you can use MCU-Miozinc as a spot or full primer. It is more surface tolerant than an epoxy and the corrosion resistance is better. Every performance and application property is superior to the best epoxy systems and the MCU-Coatings paints cure much quicker.

22. Why should I use MCU-Coatings on floors instead of epoxy?

The most common use of moisture cure coatings in the world is on concrete and wooden floors. The advantages are better color and gloss retention, better abrasion resistance and better adhesion. Moisture cure coatings provide the most consistent performance on concrete due to their ability to tolerate moisture during application.

23. Why should I consider MCU-Coatings on large projects?

Large projects like stadiums, chemical plants and bridges cannot be painted in one season and weather conditions cannot be controlled year round. With MCU-Coatings you can paint year round without weather related delays. You will also avoid litigations which can occur on large projects which are always delayed by painting. And finally large projects should not be painted with cheap paint. With MCU-Coatings you can use the best, but get lower bids because there will be significant application savings. The overall bid will be lower even though the paint may cost more.

Preparation

24. Why are the MCU-Coatings so good with hydro blasting?

MCU-Coatings' Moisture-Cure technology creates coatings that are more tolerant of moisture than any other coating system. In most cases, the surface can be dried with a towel or a blower immediately before application. Other coatings cannot be applied to moist or damp steel and do not perform well over rust bloom. MCU-Coatings allows application with little or no DH equipment in tanks.

25. Can I use hand or power tool cleaning with MCU-Miozinc?

MCU-Miozinc is far more surface tolerant than inorganic zincs. MCU-Miozinc will adhere to old coatings and surfaces with little or no surface profile. MCU-Miozinc can be applied over a surface that meets the SSPC-SP3 (ISO St 3) power tool cleaning specification and even (ISO St 2) SP2 hand -tool surfaces. MCU-Coatings also manufactures MCU-Aluprime, the most surface tolerant, high performance primer available today.

26. Do I need a profile on the steel?

Yes. While MCU-Coatings' technology creates excellent adhesion, proper surface preparation is always recommended to ensure premium coating performance. A 25 to 50µm (1.0 to 2.0 mil) angular profile is good. However, MCU-Miozinc and MCU-Aluprime have demonstrated impressive adhesion over mill scale or smooth surfaces, where only solvent wiping was allowed. Our coatings, including MCU-Aluprime, MCU-Mastic, MCU-Miozinc and MCU-Miotopcoat are used direct to new galvanized surfaces without a profile. An acid etch or sweep blast is desirable, but good results have been attained with only a solvent wipe.

27. Can I paint wet steel?

In extreme cases it is possible and done often, however we prefer a normal, dry surface. MCU-Coatings are very tolerant of surface moisture, but typically there should be no visible moisture on the substrate. Typically, a towel dry is all that is necessary. When using mcu-QuickCure, the coating becomes less tolerant of surface moisture.

28. How fast do these coatings cure with MCU-QuickCure?

With MCU-QuickCure, recoat or overcoat times can be cut to as short as 20-30 minutes. A three-coat system can be applied in as little as one hour. Even in very cold temperatures, cure times can be as little as one hour. There is no loss of performance using MCU-QuickCure. This can revolutionize our industry.

29. Are there any recoat windows?

Most MCU-Coatings have no outer recoat windows, including MCU-Miomastic, MCU-Topcoat and MCU-miotopcoat. These coatings and many others can be overcoated without abrading the surface for the life of the coating.

30. Can I paint over galvanized surfaces?

Yes. MCU-Coatings extends the lifetime of a galvanized system more than twofold. The galvanized surface should be solvent wiped and likely needs to be abraded.

Additionally, the zinc primers of MCU-Coatings qualify as a cold-galvanizing product to repair hot-dipped galvanized structures that have been damaged during installation. New galvanized surfaces can be overcoated with one coat of MCU-Miotopcoat or MCU-Alutopcoat direct to the metal.

31. Is the humidity ever too low?

No. MCU-Coatings will cure normally in relative humidity as low as 6%, although cure times will extend slightly in humidity below 30% in low temperature applications. In humidity lower than 6% or at temperatures below 0°C, the addition of mcu-QuickCure will ensure a rapid and proper cure.

32. Can MCU-Miomastic go over old coal tar epoxy?

Yes, MCU-Miomastic will adhere to old coal tar epoxy and even new applications can be overcoated without poor adhesion. In overcoat situations it is not necessary to remove sound coal tar epoxy that has good adhesion with no corrosion.

33. How do I know I am getting a real offset for MCU-Coatings if I allow other products on an "or equal" specification?

You cannot, but you can use our generic performance specifications which clearly define the requirements. Follow our specification, but also use these tips:

1. Do not judge an offset by the data sheet. Unfortunately our data sheets and much of our literature is not protected by copyrights. Every other supplier has essentially copied our data sheet. You will see the similarity. In the case of one supplier, we actually wrote their data sheets when we private-labeled for them. They are not obligated to make the same product themselves.
2. Always demand independent lab proof of the MIO content. No other supplier has yet put the MIO content on their data sheets. There is no benefit of MIO unless there is at least 1,3 kg per liter. Most offsets have none at all or only 0,4 kg.
3. Be cautious of claims about MIO quality. Most MIO is similar. Some suppliers make outrageous claims of MIO performance. Remember, MCU-Coatings is the world's largest user and our quality is never compromised.
4. Always included a sentence in your specification that alternate products must be approved 5-7 days prior to bid date and do not make an exception.
5. Always require two years field references with the exact system that is proposed.
6. Do not accept a substitute zinc primer that has less zinc than MCU-Coatings zinc primers.

34. What colors are available in MCU-Miotopcoat?

Most darker colors are available, white, off white, safety colors and very clean colors are not possible. The MIO is a gray black color. When used at 1,3 kg per liter or more in the topcoat it mutes or grays off the color.

35. How do I choose between MCU-Miotopcoat and MCU-Topcoat? Which topcoat should be used in which situation?

MCU-Miotopcoat is low gloss and can show a tripping effect on a large flat surface like a tank. It is best to use MCU-Miotopcoat on structural steel, like bridges, and use MCU-Topcoat on tanks and ship hull surfaces. Also MCU-Miotopcoat cannot be made in white, off-white, or safety colors due to the muting effect of the MIO.

36. Can I apply these coatings in the splash zone?

Yes. The ability to tolerate salt and take quick immersion within hours is the most famous feature of our coatings.

37. Where should I use MCU-QuickCure?

Anywhere that a rapid cure is desired. With MCU-QuickCure, a three coat system can be applied in 1-2 hours. The only caution with MCU-QuickCure is to avoid going over damp surfaces. MCU-QuickCure makes the cure so fast that it hampers the coating's ability to adhere to a wet surface. You can however, use MCU-QuickCure in 99% relative humidity if the surface is dry.

38. Does MCU-QuickCure degrade or change the performance of the coatings?

No. In repeated tests mcu-QuickCure has proven that it improves the performance. The noted improvements are: less CO₂ evolution less bubbling in heavy films, better chemical resistance and better adhesion.

Preparation

39. Can I repair MCU-Miomastic without the special surface preparation that is required for epoxies?

Yes, MCU-Miomastic is indefinitely recoatable and can be used to repair or overcoat coal tar epoxy.

40. I am painting my structures white. What intermediate can I use?

Use mcu-miomastic light grey or mcu-miomastic white. These are always our recommendation for systems using white topcoats.

41. Will MCU-Miomastic perform as well as MCU-Mastic?

Yes, both will give the same results. The MIO in MCU-Mastic has its main advantage for covering sharp edges and threads. When painting flat surfaces or if a stripe coat is used on edges both will perform equally.

42. Can I use MCU-Coatings in my cargo holds?

Yes, All of the MCU-Coatings systems including MCU-Aluprime, MCU-Alutopcoat, MCU-Miozinc, MCU-Topcoat and others are approved for incidental and full food contact and MCU-Miozinc and MCU-Miomastic are approved for potable water.

Safety

43. Why are MCU-Coatings lower in isocyanate monomer than two-component polyurethane's.

MCU-Coatings' isocyanates are reacted during the manufacturing phase, leaving no measurable traces of isocyanate monomers in the aliphatic topcoats, and only slight traces in the aromatic primers and intermediate coats. Laboratory test shows that there are no detectable isocyanates in spray application of MCU-Coatings!

Topcoats of MCU-Coatings, like MCU-Topcoat and MCU-miotopcoat are based on a proprietary resin blend that yields extremely low or immeasurable aliphatic isocyanate monomer. Any traces of isocyanate monomer found in the resins are reacted during the manufacture. Additionally, MCU-Coatings employs a different isocyanate blend than typical two-part polyurethane's. It is much less volatile than HDI isocyanate, which is used in nearly all two-part products and, as stated above, we generally have no measurable residual monomer left in the finished coatings. Our other coatings, based on TDI and MDI, have very low levels of monomer. Our MCU-Miomastic has no measurable monomer. All of MCU-Coatings paints can be used in brush and roller operations with no possible measurable isocyanate monomer able to reach the airborne phase.

44. Is there any hazard of isocyanate if I use your product?

First of all, if our products are applied by brush and roller it is impossible to have any isocyanate in the airborne phase. There is no hazard of isocyanate from the applied film. It cannot emit any hazardous substance other than solvent. Precautions must be taken for organic solvent. This can be done with air movement equipment. There is no residual odor after the solvent has evaporated. This can take 4-8 hours.

45. Are MCU-Coatings safe for skin contact?

Yes, once cured all MCU-Coatings products are approved for incidental and full food contact. These are chemical resistant coatings. Polyurethane's are inert once cured. In wet or uncured state, the molecular structure of MCU-Coatings is too small to pass through the skin. As with any solvent based material, precaution should be taken to avoid exceeding TLV. MCU-Coatings paints will not wash off, and so gloves are always recommended. Please refer to material safety data sheets on each product for specific requirements.

46. Is there any concern about zinc in your MCU-Miozinc similar to the concern for lead?

No, Zinc is an essential element that every human need to be healthy. There are no restrictions against zinc coatings and in fact MCU-Miozinc and other zinc primers are now approved for potable water. The only concern for zinc is against breathing large quantities of spray dust during painting and breathing excessive fumes when welding zinc primers. These concerns, of course, are eliminated with the use of a proper respirator.

47. Are the MCU-Coatings safe to use around sensitive fisheries?

MCU-Miozinc is the only zinc primers to ever pass the Canadian fish kill testing. The unique physical properties of the MCU-Coatings products make them safe for use in these areas in the event of spill or other exposures to land or water.

The MCU-Coatings have been used to coat ponds for penguins, killer whales and general marine life in theme parks.