



Darnitskyi Bridge, Kyiv, 2012  
One of the largest bridge construction  
projects in Europe in the last 20 years



## 2-Coat Protective Coating System

MCU-Coatings is the only 2-coat, 225  $\mu\text{m}$  DFT protective coating system in the world that has achieved “+25 years to first maintenance in a C5 VH environment”, in independent tests, after being applied to weathered steel plates with a St 3 surface preparation.

# The 2-Coat System

## Substrate:

- ✓ Steel

## Surface Preparation:

- ✓ Wet or dry abrasive blast to create a surface profile 25µm – 50µm
- ✓ St 3 power tool cleaning
- ✓ MCU-Ecocleaner Gel – removes corrosion from rusted surfaces and exposes the original blast profile
- ✓ High pressure water wash when overcoating sound coatings

## 2-Coats: (between 225 µm and 260 µm)

- ✓ Primer –150-170 µm (DFT) MCU-Zinc / MCU-Miozinc
- ✓ Topcoat –75-90 µm (DFT) MCU-Miotopcoat

### COT (Independent Laboratory) Testing - Dec 2019:

MCU-ZINC / MCU-MIOTOPCOAT	
DFT:	150 - 170 µm + 75 - 90 µm
Substrate:	Rusted steel / St 3 (power tool preparation)
Approval:	ISO 12944-6, C5 VH (+25 year durability rating)
Approval:	Shell DEP 30.48.00.31, F.1.3 and F.1.2.a
Approval:	NORSOK M-501 System

The primer is applied in a single coat, thereby laying down up to 60% more zinc, and providing substantially more cathodic protection than traditional coating systems.

## About The System

Features	Benefits
Single component	No induction times, no pot-life limitations
Can be applied in -20°C to 50°C ambient (75°C surface) temperatures	Minimal weather disruptions
Can be applied in 6% – 99% relative humidity	Minimal weather disruptions
Surface tolerant	Can be applied to surfaces with a profile >25µm and on multiple substrates
Universal primers	Excellent overcoating characteristics as the primer adheres tenaciously to a wide variety of sound old coatings
High-film primers	Applies up to 60% more zinc (cathodic protection) than traditional coating systems
Non-porous	Excellent longevity and does not release zinc salts
Touch dry in minutes	Practical, particularly when conducting essential maintenance
Water tolerant	Is not affected by moisture (and can be immersed) 30 minutes after the coating has been applied
Short recoat intervals	With MCU-Quickcure subsequent coats can be applied after 45 minutes
Exceptional long-term adhesion	Not susceptible to under-creep corrosion
High elasticity	Does not embrittle over time, and is not prone to cracking, flaking, or peeling
Excellent wetting out characteristics	Use of ultra-fine additives ensures the solids stay in suspension and the primers are able to penetrate surface irregularities / pitting
Excellent weathering characteristics	The use of lamellar additives creates an impermeable barrier
Good colour retention	Long term performance attributable to use of high-quality architectural pigments
Good chemical resistance	High quality urethane polymer ensures the coatings withstand PH 3 – PH 10 chemical concentrations
Excellent UV resistance	High quality, stable, 100% pure urethane resin fully cures and is therefore non-reactive. MCU-Miotopcoat includes lamellar flaked additives to ensure long term protection
Excellent durability	Hard-wearing, and even sheer resistant after 24 hours

## Asset Owner Benefits

- ✓ Lower cost of ownership over the asset life-cycle due to the longevity of the coating system
- ✓ On abrasive blasted steel the service life of the coating in C5 environments is usually doubled
- ✓ On St 3 mechanically prepared surfaces, in C5 environments the expected service life of the coating is 5 – 10 times longer than other traditional coating systems (*AS/NZ 2312.1: 2014 suggests coatings applied after an St 3 surface preparation will last between 2 – 5 years. MCU-Coatings has achieved + 25 years to first maintenance*)
- ✓ Shorter project times (*2-coat versus 3-coat, single pack, shorter recoat intervals, no salt leaching – less cleaning, minimal weather disruptions, no induction times etc*)
- ✓ More reliable scheduling and more timely project completions
- ✓ Significant reduction in ongoing maintenance
- ✓ MCU-Coatings hold their colour and are not prone to UV chalking
- ✓ Less business disruption
- ✓ Surface / weather tolerance and ease of use means a lower application risk

## Applicator Benefits

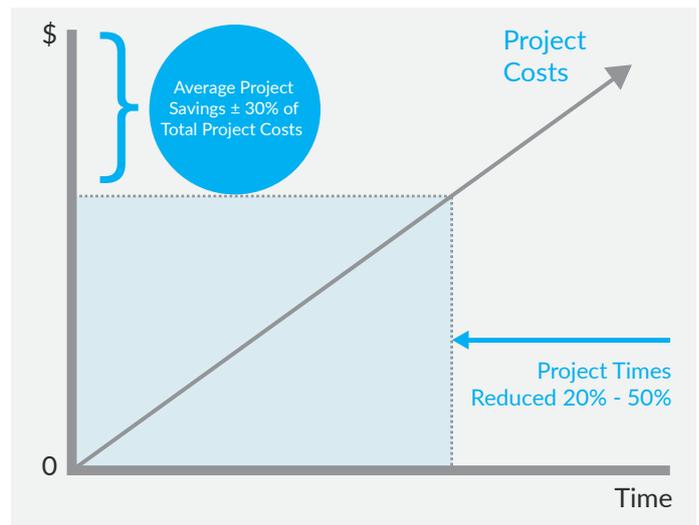
- ✓ Application times reduced by 20% - 50%
- ✓ Able to apply product outdoors all year round
- ✓ Able to increase project margins and reduce contingency provisions
- ✓ Faster drying times (down to 45 minutes), saves time and is more weather tolerant
- ✓ Fewer weather disruptions
- ✓ Ability to apply in -20°C to 50°C ambient temperatures
- ✓ Ability to apply in 6% - 99% relative humidity
- ✓ Single component reduces induction times and overcomes pot-life and mixing issues
- ✓ Not affected by moisture 30 minutes after application
- ✓ Our universal zinc primers adhere to most sound coatings
- ✓ Excellent adhesion characteristics
- ✓ Able to apply primer coat up to 300 µm (WFT) in a single application
- ✓ Open recoat intervals - indefinite with MCU-Coatings zinc primers
- ✓ Lower application risk

# Application Value Proposition

## Costs\*

- ✓ Traffic control 10 - 17%
- ✓ Platforms / containment 20 - 30%
- ✓ Painters 15 - 20%
- ✓ Surface preparation 30 - 35%
- ✓ Material costs 3 - 15%

(\* Oregon Dept of Transport estimates)



If a project costs \$250 per m<sup>2</sup> to apply a protective coating, the average project savings amount to \$75 per m<sup>2</sup>, far in excess of the MCU-Coating material costs

Our international experience over the last 20 years has proven that average application times are reduced by 20% - 50% because of: fewer coats, surface preparation, reduced weather delays, shorter recoat intervals, open recoat intervals and savings attributable to using a single component system that has no pot-life issues, and no induction times

When you then add on the administration cost savings, extended recoat intervals and reduced ongoing maintenance the MCU-Coatings' value proposition is undeniable

## Contact Us

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## The Dream

Bill Brinton had a dream that he could make a protective coating that would last more than 50 years in a C5 environment. He spent years researching and analysing the reasons why protective coatings were failing before developing his own unique, moisture cured urethane formulations.

When you take a closer look at the myriad of technical challenges associated with designing a protective coating it is only then that you see the totality of Bill's innovative solutions, and start to understand why he chose to use moisture cured urethanes for his resin backbone, and the simple elegance of his innovations.

In 1986, soon after he commercialised his protective coatings business Bill secured a trial, conducted by the U.S. Highways, Oregon Dept of Transportation, alongside 10 other 'best of breed' traditional coating systems, that was carried out on the Astoria Megler bridge. His moisture cured urethane was the only coating that displayed less than 0.01% corrosion after 6 months and within 6 years his coating system was being used on 60% of bridge maintenance projects in the U.S.

Bill spent 15 years manufacturing and commercialising his technology before selling his business outside of the U.S. to MCU-Coatings. Interestingly, he then went back into the laboratory and was involved in MCU-Coatings ongoing research and development for the next 20 years, to refine and improve his formulations. His work with MCU-Coatings' chemists resulted in the development of a new base resin and use of even better quality and more refined technologies.

In 2019 these improvements culminated in an independent test of MCU-Coatings 2-coat, 225 - 260  $\mu\text{m}$  coating (150 - 170  $\mu\text{m}$  MCU-Zinc and 75 - 90  $\mu\text{m}$  MCU-Miotopcoat), which achieved "+25 years to first maintenance in a C5 VH environment" after being applied to weathered steel plates that had a St 3 surface preparation. This was a huge step forward when you consider that traditional coatings, with the same surface preparation, are only expected to last 2-5 years.

Interestingly, MCU-Coatings zinc-based primers have now survived over 10,000 hours of salt spray testing. When you consider that the test requirement is only 4,200 hours to achieve ' +25 years to first maintenance in a C5 VH environment', there is no reason to believe why the new generation of MCU Coatings will not last 40, or even 50 years!