



## The powerful steel protection system

In accelerated wear conditions, properly primed, undercoated and top coated single pack paints last 120 to 150 hours, 2 pack epoxy coatings show significant general corrosion at around 300 - 400 hours.

**Under similar conditions, steel treated with Fertan and Keelblack lasts 800 hours.**

That's a real-time equivalent of around 25 years compared with 2-pack epoxy life of 10-15 years

### KEELBLACK AND FERTAN ACCELERATED WEAR TEST

Test plate1



Test plate 2



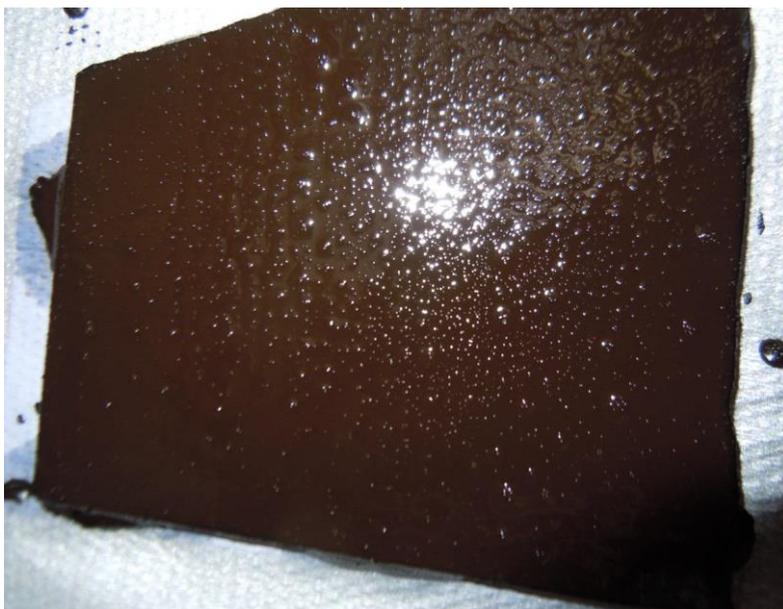
### Test Plate 3



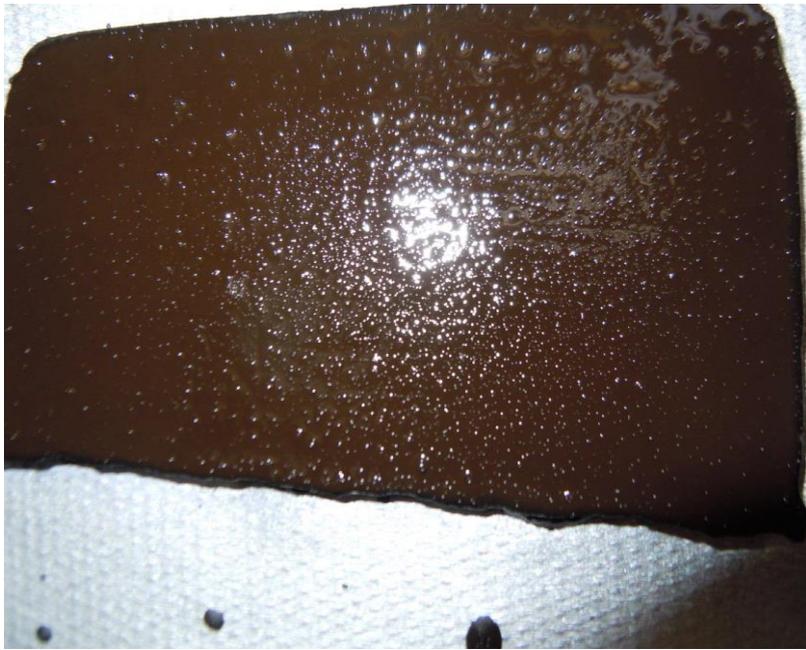
These are all prior to start of test. All three arrived for test as taken from the scrap bin, so grease, dirt, atmospheric pollution and, most importantly mill scale

Plate 3 was sandblasted and then all plates were cleaned with silicone remover. Plates 1 and 3 were treated with Fertan and allowed 24 hours reaction time after which they were cleaned with water and a soft sponge.

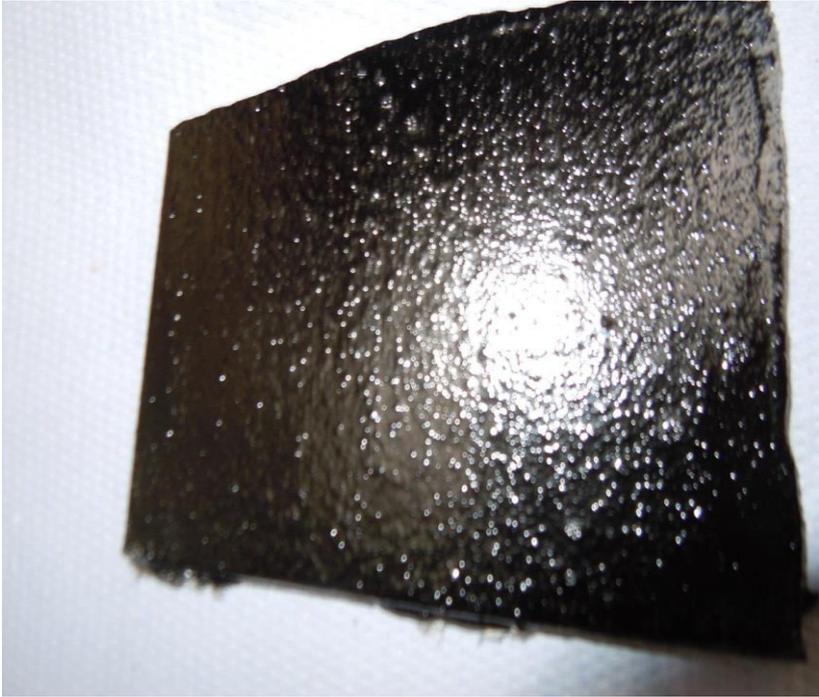
A day later plate 1 was treated with keel black, shown wet below. The Keelblack was applied in 2 thin layers using a sponge.



As was plate 3



The Keelblack on plate 1 dried



And so did the Keelblack on P3



In the meantime sheet 2 was treated with Fertan Rust Converter and a single coat of MM30



After this the samples went to the laboratory for testing using our standard salt fog regime.

Run by the local university the test is a modified version of ASTM G85/A3. The samples are placed within an enclosed cabinet and permanently held at 49°C (+/- 2°). For 30 minutes the samples are sprayed with synthetic sea water and then allowed to rest for 90 minutes in a 98% humidity atmosphere. Unlike standard sea water we alter ours to a pH of 3.0 by adding acetic acid to the water. The samples sit at a 45 degree angle.

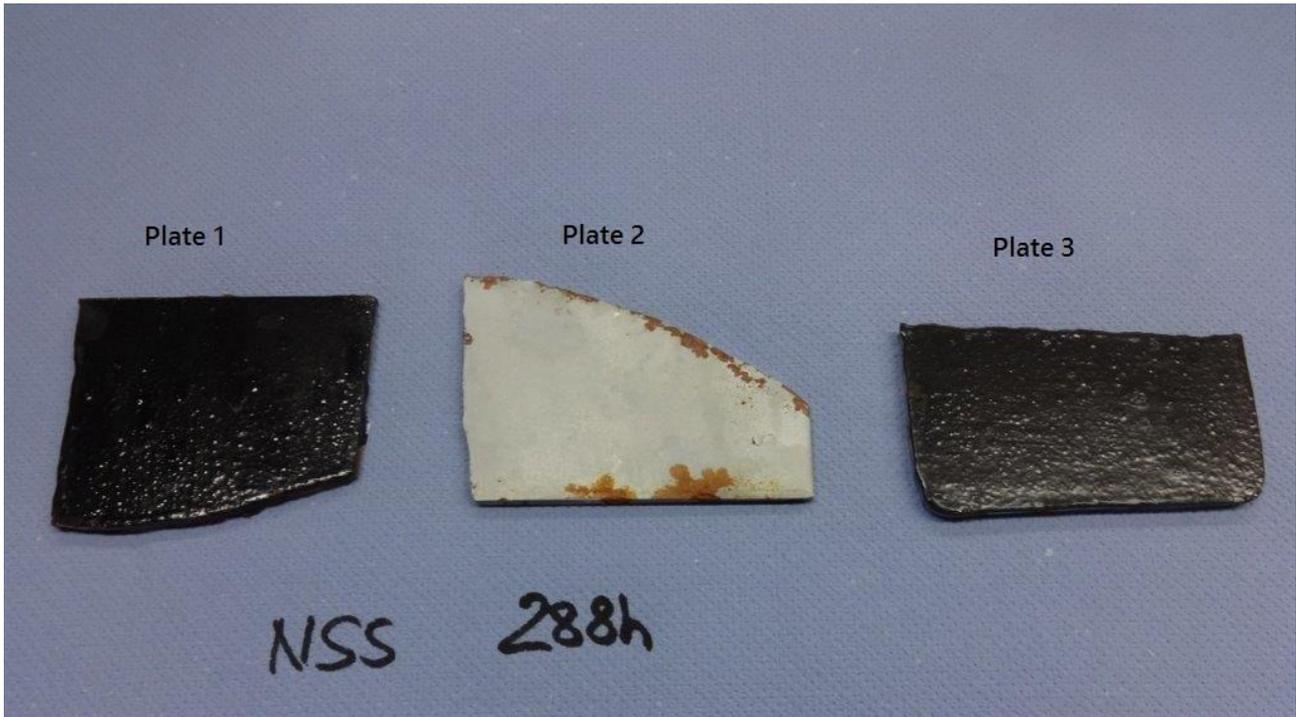
This is a great environment for promoting rust. How quickly does it destroy steel?

Clean steel is bright orange minutes after the spray stops for the first time. Properly primed, undercoated and top-coated, single pack paints last 120 to 150 hours, 2 pack epoxy coatings show significant general corrosion at around 300 - 400 hour.

General corrosion appears in the main body of a flat surface which shows that the coating has, sometime previously, become porous and allowed moisture and salts to reach the underlying steel.

The Keelblack samples were perfect at close to 300 hours and only started to deteriorate at beyond 800 hours showing signs of minor corrosion at 888 hours.

At 288 hours the results looked like this. Points to note are:



On plate 2 the coating would not normally be damaged until around the 550 – 600 hour mark but because the steel is rough from cutting and grinding it has created thin areas in the coating that have failed, allowing corrosion. Test plates 1 and 3 are unmarked.

At 400 hours the two treated plates looked like this:

Test Plate 1 – no noticeable indication of corrosion or deterioration in the protective Keelblack coating. Nil rust spotting



And Test plate 3 like this  
Nil corrosion or rust spotting. NB 2-pack epoxy tends to fail at this point around 400 hours.



The test was halted at **888 hours** when the surface started to show signs of breaking down. .



Test plate 1 - The general surface is intact but some points have failed



Test plate 2 - Here failure from the edges has caused most of the MM30 to fail, as expected. The ensuing corrosion covers most of the sample.



Test plate 3 - Perhaps the most interesting. It is very slightly better than sample 1. It indicates that there has been a little benefit from shot blasting. As with 1 the corrosion from the edge is unimportant, showing only the importance of profiling steel edges correctly.

MM30 failed because it goes bonker (tech. Term.) in a salt environment.

**Fertan + Keelblack made it to nearly twice what a primer / undercoat / 2 pack coating would have achieved @ 350 – 400 hours.**