

METAL BUILDING

CLIMASEAL

*The superior
corrosion-resistant
finish from Buildex*

THE PRODUCT

- Climaseal is a proprietary finish developed for use exclusively on Buildex fasteners. Climaseal is a polymer coating applied over the entire surface of the fastener creating a finish which greatly reduces corrosion. This superior finish protects the fastener from the various atmospheric conditions and pollution which can cause corrosion.
- The Climaseal finish gives the fastener an attractive metallic grey appearance. The coating provides lubrication to lessen friction during tapping and is able to absorb the impact of driving, with a minimum displacement of the finish from the fastener.
- Used in conjunction with the Buildex range of Tonex separate colour matched caps or the integral Panel Match Xtra fastener system, external corrosion resistance is greatly enhanced.
- Climaseal is available on a wide range of Teks self-drilling fasteners.

Note: Although Climaseal is capable of absorbing the normal impact of driving with a power screwdriver, it is important that correct clutch setting is carried out by nose piece adjustment as recommended by Buildex technical literature. Overdriving and "hammering" of the head can damage the finish and lower its protective performance. Whilst Climaseal improves corrosion resistance compared with plating finishes, it is essential for best results to use Buildex Tonex caps to protect the screw heads after installation.

BENEFITS

- Greater long term corrosion protection compared to all standard finishes.
- Ideal protection for corrosive environments.
- Compatible with painted and metal coated surfaces.
- Complete fastener surface is coated creating a barrier to oxidation.
- No detrimental effects on washer quality.
- Exceeds all published industry standards, including FM4470 specification.

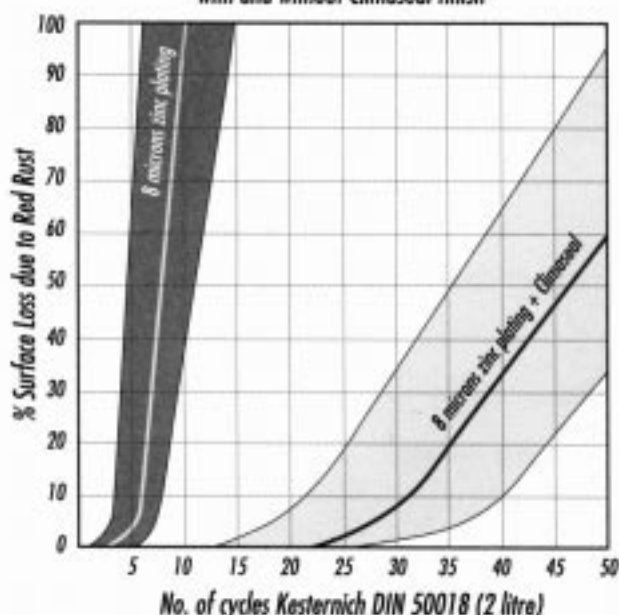
THE PROBLEM

- The corrosion of metals is a subject of great complexity because of the many variables associated with this phenomenon. Careful consideration must be given to atmospheric conditions. Our atmosphere comprises 78% nitrogen, 21% oxygen with fractional percentages of carbon dioxide and argon, together with many small solid particles and liquid droplets which may incorporate pollutants and increase the risk of corrosion. Relative humidity, temperature and winds are also factors which need to be considered.
- Atmospheric corrosion results when nitrogen, oxygen and to a lesser extent carbon dioxide react with pollutants and water to form corrosive acids. Nitrogen is an inert gas, but it is a frequent reactant in most combustion processes. When combustion temperatures are high, as in car engines or burning coal or oil, nitrogen may combine with oxygen to form oxides such as nitric oxide and nitrogen dioxide which in turn become corrosive acids when combined with water. Similarly, oxygen can combine with sulphur emissions of combustion to produce sulphur oxides which react in the same way to form acids when absorbed by water. The corrosive nature of these elements can seriously affect the life expectancy and mechanical performance of fasteners used in roofing and cladding applications.

KESTERNICH - THE TEST

- The Kesternich test to DIN Standard 50018 (2 litre) demonstrates the reaction of protective coatings to a specific controlled atmosphere in combination with oxygen cell attack in an accelerated and repeatable time cycle. Screws to be tested are driven into metal plates to simulate actual applications and are placed within the Kesternich test cabinet.
- The Kesternich cabinet is a closed chamber in which sulphur dioxide (SO_2) and de-ionised water (H_2O) are combined, heated to a temperature of $40^\circ C$ and the resultant condensation, which is acidic, forms a corrosive film on the test specimens. One test cycle is a 24 hour period: during the first 8 hours the cabinet door is closed, for the remaining 16 hours the cabinet door is open, allowing the samples to be exposed to air at ambient temperature. The samples are then removed, washed gently and the surface deterioration assessed and recorded. The test does not offer exact correlation between test time and real time but is an accelerated simulation of an industrial atmosphere containing sulphur dioxide, oxygen and water.

Kesternich test results comparing zinc plating with and without Climaseal finish



The graph shows the results of a wide range of tests and clearly indicates the superior performance of Climaseal coated parts against normal zinc plating. The 15-15 point indicates the internationally accepted standard of a maximum of 15% surface rust after a minimum of 15 test cycles. In all cases tested, the Climaseal coating out-performs these criteria.

