



JS500 PLATING SYSTEM

THE ULTIMATE ANTI-CORROSION PROTECTION SYSTEMS

HEXAVALENT CHROMIUM FREE



All Leland fasteners are plated with an outstanding corrosion resistant finish, providing effective, economical corrosion protection without adversely affecting dimensions.

- Parts coated to this specification shall be capable of withstanding salt spray testing per ASTM B117 for the minimum hours shown in the tables. Items for test must be air cured for 24 hours prior to salt spray testing.
- Salt spray requirements to apply to significant surfaces only.
- Acceptable resistance is defined as no corrosion products on significant surfaces after exposure to neutral salt spray. Black or gray staining or spotting does not constitute a failure.
- Red rust failure is defined as the first sign of red rust on any significant surfaces.
- Due to the extended testing times associated with these finishes it is normal practice that work be accepted on the basis of zinc thickness.
- JS500 is compatible with aluminum creating no galvanic reaction.
- FDA approved.

HYDROGEN DE-EMBRITTELEMENT

- This should be carried out immediately after plating and prior to chromating.
- Stress relieving to be carried out at 400°F for four hours on .0003 inch plating and 8 hours for .0005 inch plating. These are minimum requirements.

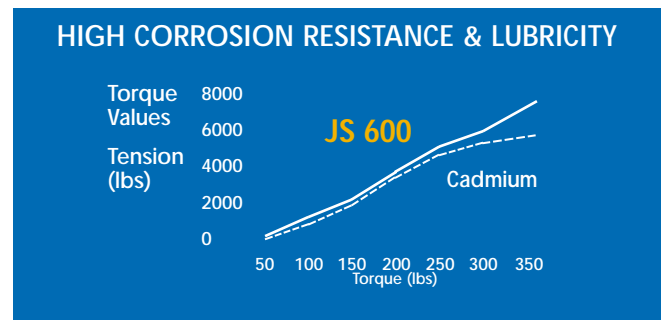
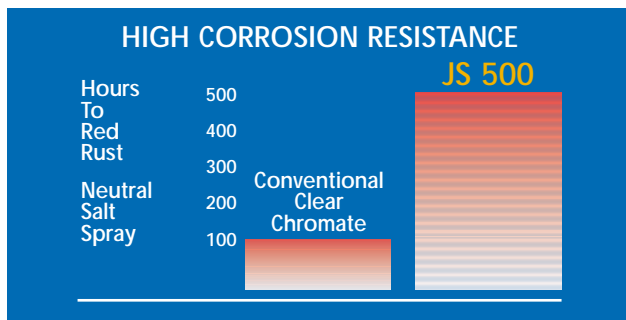
With .0003" Minimum plating this finish will give well in excess of 500 Hours Salt Spray life with no Red Rust and will also give a minimum of 5 cycles in Kesternich (1 litre SO₂ per cycle) testing.

| RELATIVE EFFECTIVENESS OF CORROSION RESISTANT COATINGS | | | | |
|--|------------|--|------------------------------|--|
| FINISH | SUBSTRATE | APPLICATION | SALT SPRAY HOURS TO RED RUST | KESTERNICH (1 LITRE SO ₂ PER CYCLE) TO RED RUST |
| POWDER COATING | JS500 | SCREWS, HEX WASHER HEADS, RECESS HEADS, BOLTS, BIN BOLTS | 3000 | 50+ CYCLES 2 LITRE SO ₂ PER CYCLE |
| DT2000 | JS500 | SCREWS, HEX WASHER HEADS, RECESS HEADS, BOLTS, BIN BOLTS | 2000 | 35 |
| DT1700 | JS500 | SCREWS, HEX WASHER HEADS, BOLTS | 1700 | 18 |
| DT1500 | JS500 | SCREWS, HEX WASHER HEADS, BOLTS, NUTS, BIN BOLTS\ | 1500 | 13 |
| DT1500 | JS500 | BOLTS AND SCREWS WITH RECESS HEADS, BIN BOLTS AND NUTS, MACHINE SCREWS <small>TO ACCOMMODATE THREAD ENGAGEMENT A THINNER COATING OF DT1500 IS USED ON BOLTS</small> | 1500 | 8 |
| JS500 | .0003 ZINC | BOLTS, NUTS , SCREWS | 500 | 5 |
| ZINC DICHROMATE (.0002 / .0005) | ---- | ---- | 108 (.0002) | N.A. |

OTHER COATINGS AVAILABLE FROM LELAND

Phosphate & Oil, Hot Dip Galvanizing, Black Zinc, Zinc & Yellow Dichromate

All test results are based on laboratory tests. Specific job site conditions should be taken into consideration when specifying the proper fastener. Because applications vary, we assume no liability for use of this information.



- 96 hours to first white corrosion (N.S.S.)
- Economical
- No adverse dimensional effects
- Withstands 5 cycles in Kesternich (1 litre SO₂ per cycle)
- Improved torque/tension values
- Cost effective cadmium replacement
- UV tracer for easy coating inspection
- Processed silver or black

The most frequently asked questions about JS.

What is JS500 ? JS500 is .0003" minimum thickness of electrolytic zinc, which is yellow dichromated, and then leached back to white in the JS Solution.

How does it work ? The .0003" minimum of electrolytic zinc provides a homogeneous, solid, covering of sacrificial zinc that is sufficiently thick as to cover the minor blemishes in steel brought on by working, that form corrosion sites. The zinc acts as a protection for steel by reacting with the atmosphere in the preference to the exposed steel. The better the zinc deposit and the more zinc present the better the protection. The yellow dichromate provides a barrier protection to prevent the atmosphere from reacting with the zinc to give the familiar white corrosion products, and therefore prolong the life of the zinc. The JS film works in several ways to further increase this protection tenfold. The JS enters the passivate gel and replaces the trivalent chromium. It also forms a further protective layer on top of the gel, which is flexible and not easily wetted. The effect is that humidity runs off the surface so preventing the formation of an electrolytic corrosive cell. The outer JS layer also prevents the chromate gel from mechanical damage. The gel layer adds further protection and in the event of mechanical damage penetrating the gel it frees up the self healing JS to react with the zinc surface and prevent further corrosion, and of course the zinc gives it normal sacrificial protection, aided by limited free surface.

What protection does this give ? JS will give a minimum of 500 hours to red rust on significant surfaces, and 96 hours to white rust in the standard salt spray test. JS will also give a minimum of 5 cycles in the Kesternich test.

How does this relate to service ? There is no direct correlation between corrosion tests and real life.

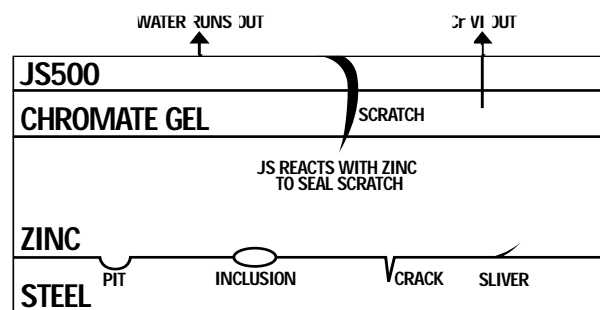
How do I know it will meet my corrosion protection needs ? There is no such thing as a corrosion protection agent that meets all of the conflicting demands of the customer. Toxicity,

dimensional changes, availability, compatibility, and economics all play their part. What we can say that JS has been in the field and operating satisfactorily in the automotive, construction and agricultural and appliance industries for over ten years. The JS is non toxic, does not significantly change dimensions, is economical to apply, and is compatible with most other finishes and metals.

What drawbacks does JS have ? It can only be painted if specially pretreated and care has to be taken to allow for the inherent characteristics of electrolytic zinc, such as low current density areas.

How easily available is the process ? The process is licensed by McDermid Incorporated to 20 metal finishers in the USA and two metal finishers in Ontario. The process is also available in Europe.

What advantages does JS have ? It is non toxic, withstands bending, does not significantly affect dimensions, readily available, economical in application, provides adequate corrosion protection, pleasing in appearance, does not accumulate in recesses, resists abrasion and does not conduct electricity.



JS500 is now Hexavalent Chromium Free.

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