

BLACK ARMOUR™
ADVANCED CORROSION PROTECTION



TM

THE ULTIMATE METAL TREATMENT DEFENSE
AGAINST RUST AND CORROSION

PROTECTION FROM THE DESTRUCT

CORROSION COSTS THE TRANSPORTATION INDUSTRY MILLIONS OF DOLLARS EACH YEAR.

The destructive effects of corrosion and rust from harsh anti-icing agents and moisture has become one of the most identified cost concerns to fleet operations in North America today. The cost of maintenance and part replacement due to corrosion is a significant issue for today's fleet. As a result, the industry is demanding new cost effective corrosion solutions.




ECO-FRIENDLY

SHIELD YOUR FLEET WITH BLACK ARMOUR™

REMARKABLE PROTECTION, WITHOUT ALL THE WEIGHT AND COST OF GALVANIZATION.

The solution — SAF-HOLLAND's BLACK ARMOUR™! This environmentally friendly metal treatment is proven, through laboratory testing, and over 10 years of real world abuse in harsh Canadian applications – delivering the very best defense against rust creep. What's more impressive is that BLACK ARMOUR™ not only offers similar coverage to hot-dip galvanization, it also weighs up to 9% less for optimal efficiency and savings.

A UNIQUE CHEMICAL TREATMENT – NOT JUST ANOTHER PAINT OR COATING

BLACK ARMOUR™ is not just a paint – it is a treatment that grafts with metal to form a protective skin that will not shrink or peel and is impervious to moisture and today's harsh, anti-icing agents. Unlike paints and coatings, BLACK ARMOUR™ has the ability to flex with the surface it has chemically grafted to. If struck, dented or damaged, BLACK ARMOUR™ remains intact and continues to protect the coated area around the exposed metal.



DIVIVE EFFECTS OF CORROSION

A PROVEN ADVANCEMENT IN THE FIGHT AGAINST CORROSIVE ELEMENTS.

MINIMIZES RUST CREEP

BLACK ARMOUR™ metal treatment inhibits rust creep that can destroy equipment. Gravel and road debris can cut through painted surfaces and coatings, right down to the metal which offers an entry point for rust to take hold. Rust creep, that occurs under normal paint and coatings, will quietly devour metal. BLACK ARMOUR™ metal treatment inhibits and minimizes rust creep at the point of attack, limiting the spread of rust to protect equipment and components from further damage.



CORROSION LIMITED TO EXPOSED METAL AREA

BLACK ARMOUR™ stops rust at the point of entry when gouges, scrapes, and chips reach down and expose the metal.



EXPOSED METAL AREA PROVIDES AN ENTRY POINT FOR RUST CREEP

Traditional paints and coatings do not prevent rust from spreading (or creeping) under the paint or coating at the point of entry.

WHY IS BLACK ARMOUR™ METAL TREATMENT SO EFFECTIVE IN ELIMINATING NEARLY 100% OF RUST CREEP?

Because of the unique chemical composition of BLACK ARMOUR™ metal treatment, it doesn't simply coat metal, it literally grafts to it. In fact, so superior are its bonding capabilities, should chipping occur, BLACK ARMOUR™ metal treatment will limit the penetration to the exposed area.

BLACK ARMOUR™ – PROVES ITSELF

BLACK ARMOUR™

ALKYD (INDUSTRY STANDARD)

NEW and UNTESTED

Cross-member of slider subframe cut into four separate sections



Treatment over a clean cross-member

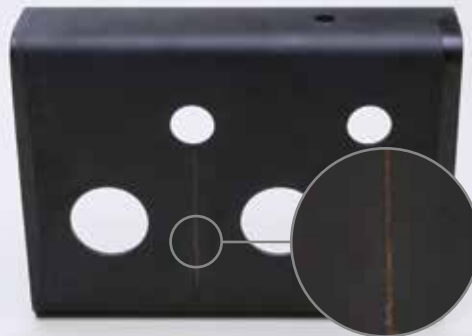


Coated over a clean cross-member with a 3 stage iron phosphate

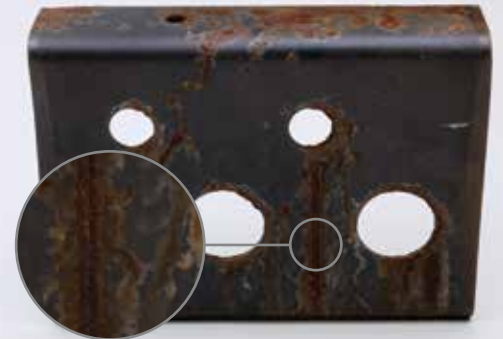
SAE J2334

CYCLIC CORROSION TEST

Test samples were exposed to 80 Cycles which equates to approximately 10 years of operation in a Northern climate



Minimal rust at scribe



Significant rusting and blistering

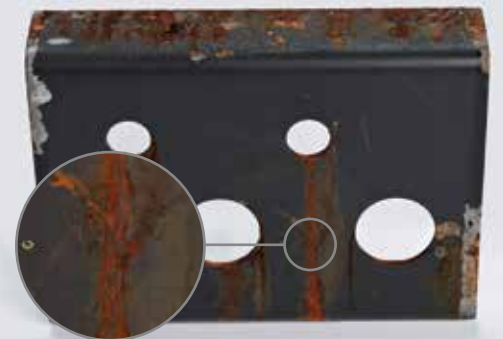
ASTM B117

SALT FOG TEST

Samples were exposed for 750 continuous hours in a controlled test chamber



Minimal rust at scribe



Significant rusting and blistering as well as delamination of primer

F SUPERIOR TO THE COMPETITION

E-COAT

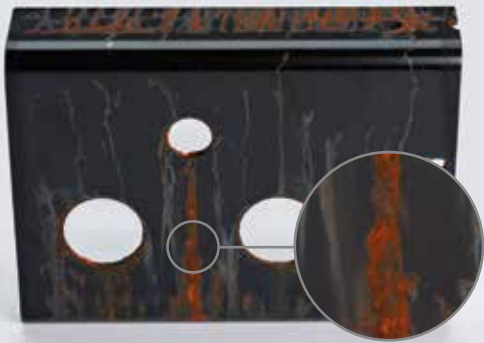
(CATHODIC EPOXY ELECTROCOAT)



Coated over a clean cross-member with a 7 stage iron phosphate



Significant rusting and blistering



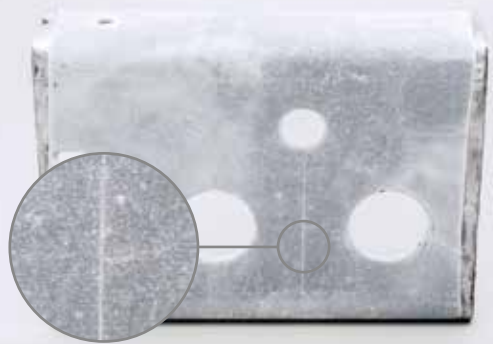
Significant rusting and blistering

GALVANIZED

(HOT DIPPED GALVANIZED)



Treatment over a clean cross-member



Significant white rusting - no red rusting



Significant white rusting across entire part as well as many spots of surface red rusting

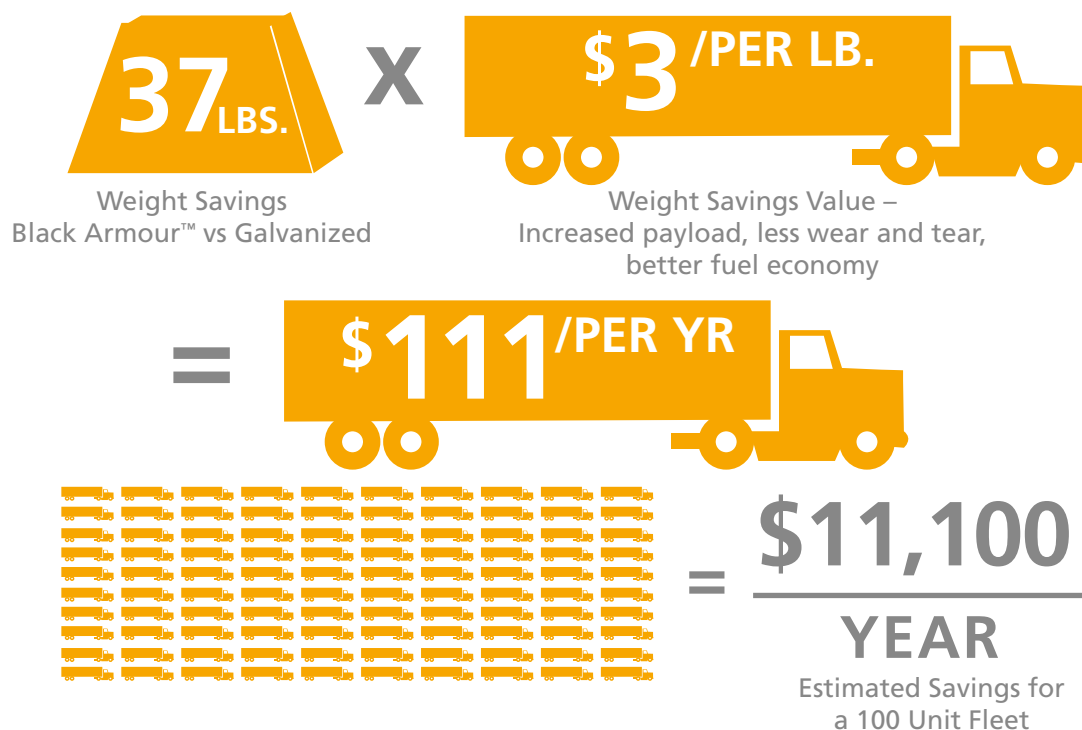
Laboratory testing proves that BLACK ARMOUR™ metal treatment meets or exceeds the protective capabilities of the most widely used coatings on the market. It also delivers improved rust creep protection, as well as greater weight savings and sustainability over competitive treatments and paints.

PROTECT YOUR FLEET AND YOUR BOTTOM LINE

BLACK ARMOUR™ COSTS SIGNIFICANTLY LESS THAN HOT-DIP GALVANIZATION AND DELIVERS GREATER SAVINGS DOWN THE ROAD.

ONGOING SAVINGS

Because BLACK ARMOUR™ metal treatment weighs considerably less than hot-dip galvanization, your fleet will see increased payload benefits. For instance, a fleet of 100 trailers with BLACK ARMOUR™ treated suspension systems will see the following return on investment:



BREAKDOWN OF THE BENEFITS

- BLACK ARMOUR™ suspension treatment = 37 lbs. lighter than hot-dip galvanization
- 37 lbs. greater efficiency per trailer at \$3 per lb. = \$111 per trailer, per year
- \$111 x 100 trailers = \$11,100 weight saving value, per year

HOW CAN I LEARN MORE ABOUT THIS TECHNOLOGY?

See BLACK ARMOUR™ in action at www.blackarmourprotection.com.



CAPABILITY MEETS VERSATILITY

CUSTOM PAINTS AND TOPCOATS

For fleets that want to add their own paint or topcoat, BLACK ARMOUR™ metal treatment provides the perfect foundation. It can act as either a topcoat, or as a primer for nearly all commercially available topcoats, with no sanding or additional prep work necessary.



BLACK ARMOUR™ is a waterborne, zinc-free coating with 72% fewer solvents than traditional coatings and fewer VOC's.



THE VALUE-ADDED PROTECTION OF BLACK ARMOUR™ IS NOW STANDARD.

BLACK ARMOUR™ is now the standard metal treatment on all SAF CBX Trailer Air Suspension Systems, HOLLAND UltraLite Mechanical Trailer Suspensions, and HOLLAND Landing Gear.





Engineering Your Road to Success

SAF-HOLLAND is a leading supplier of highly efficient components, systems and service programs in the global commercial vehicle industry. Our three core product brands are recognized for delivering innovative solutions that optimize fleet operations in every corner of the world.



**TRAILER AXLES AND
SUSPENSION SYSTEMS**



**COUPLING AND LIFTING
TECHNOLOGIES**



**SUSPENSIONS FOR
TRUCKS AND BUSES**

With our team of over 3,000 employees and a worldwide network of over 9,000 service partners, we serve our fleet customers with know-how and passion, and always focused on one target: **Engineering your road to success.** Anywhere in the world. Under any conditions. 365 days a year.

HIGHLY EFFICIENT COMPONENTS AND SYSTEMS FOR TRUCKS AND TRAILERS



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