DAUBERT CROMWELL
The Leading Name in Corrosion Prevention®

Product Information

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Ferro-Film® X-O Wrap

(Corrosion Inhibiting, Heavy Duty, Heat Shrinkable Film with Ultraviolet Stabilizer)

Product Description

A 10 mil polyethylene film treated with a proprietary blend of Daubert Cromwell VCI (volatile corrosion inhibitors). The film is heat shrinkable and UVI (ultraviolet light) stabilized and suitable for outdoor applications. Good for ferrous metal applications.

How VCI Works

When metals are wrapped or packaged in this VCI film, the VCI chemicals sublime into the packaging environment, forming a protective molecular layer on the surface of the metal. The protective layer serves as a barrier, preventing moisture, salt, dirt, oxygen, and other corrosion causing materials from depositing directly on the metal and causing rust and corrosion. Removal is not required as the VCI will safely dissipate once the part is unwrapped.

Ferro-Film X-O Wrap protects ferrous metals. For non-ferrous (copper, brass etc.) and multi-metal applications, ask for Premium Metal-Guard® X-O Wrap.

VCI, UV stable shrink film

Shrink wrap film provides a protective shell for storage or transportation. Because it is heat shrinkable, the film conforms to shape of the metal part. It can also be used without shrinking to wrap large, bulky and unconventional shapes.

The "UVI stabilization" feature provides extended life to the film, especially when the parts need to be stored outdoors.



Other Daubert Cromwell VCI products may be added to the packaging design to increase the level of corrosion protection (Daubrite® emitters, VCI papers, VCI foam, etc.) Please refer to Technical Series "How VCIs Work" and "Packaging Design Criteria" for more details, or see www.daubertcromwell.com

Applications

Ferro-Film X-O Wrap replaces less functional non-VCI shrink wraps and tarps. It can be a more effective alternative in applications where Mil-PRF-131 films are used. The thick, flexible barrier film protects metal against moisture, dust, and dirt while the VCI in the film proactively prevents corrosion.
(Note: for greater barrier protection, consider HD100 VCI foil barrier material.)

Physical Properties

Property	Value	Units	ASTM method
Thickness	10.0	Mils	Daubert Cromwell Test
Opacity	>65	%	D-1003
60 Degree Gloss	120	Gloss Units	D-2457
45 Degree Gloss	85	Gloss Units	D-2457
Coefficient of Friction: Inside Film to Film	0.2-0.4	NA	D-1894
Tensile at Break (MD/TD)	5,200/5,000	psi	D-882
Elongation at Break (MD/TD)	500/600	%	D-882
1% Secant (MD/TD)	32,500/34,500	psi	D-882
Elmendorf Tear (MD/TD)	200/6500	grams	D-1922
Dart Drop (f-50)	>854	grams-force	D-1709

Free Shrink @ 140C (MD/TD)	75/5	%	
Free Shrink @ 150C (MD/TD)	75/10	%	

Inhibitor and UVI Protection

6 months of outdoor exposure, in warm or cold environments with periodic moisture, or 12 months minimum of dry indoor exposure.

Metal Protection

Metal	**Corrosion Protection**
Low Carbon Steel	Provides full protection in vapor and contact phases.
Stainless Steel, All Grades	Provides full protection in vapor and contact phases.
Aluminum	Testing required.
Zinc or Galvanized Zinc	Testing required.
Cast Iron	Provides full protection in vapor and contact phases.
Copper	Testing required.
Silver	Testing required.
Category A**	Testing required.
Category B***	Not recommended.

** Category A metals include zinc, cadmium, nickel, cadmium plated steel, and nickel plated steel.
*** Category B metals include lead, antimony, babbitt alloys, solder, magnesium or magnesium alloys.

"Testing Required" indicates product will usually protect this metal type, however, for best results Daubert Cromwell recommends testing prior to use.

Shelf Life

36 Months, from date of shipping. This shelf life statement is only valid for product stored in the original shipping container used by Daubert Cromwell and not in high humidity and not at high temperatures. Storage outside these conditions voids this statement.

10/08 SMD

The data, statements and recommendations in this product information sheet are based on testing, research and other development work, which has been carefully conducted by us, and we believe such data, statements and recommendations will serve as reliable guidelines. Physical properties shown above represent typical values and are not intended for use in writing specifications. However, this product is subject to numerous uses under varying conditions over which we have no control, and accordingly, we do NOT warrant that this product is suitable for any particular use. Users are advised to test the product in advance to make certain it is suitable for their particular production conditions and use.

WARRANTY – All products manufactured by us are warranted to be first class material and free from defects in material and workmanship.
Liability under this warranty is limited to the net purchase price of any such products proven defective or, at our option, to the repair or replacement of said products upon their return to us transportation prepaid. All claims on defective products must be made in writing within 30 days after the receipt of such products in your plant and prior to further processing or combining with other material and products.

WE MAKE NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE SUITABILITY OF ANY OF OUR PRODUCTS FOR ANY PARTICULAR USE, AND WE SHALL NOT BE SUBJECT TO LIABILITY FROM ANY DAMAGES RESULTING FROM THEIR USE IN OPERATIONS NOT UNDER OUR DIRECT CONTROL.

THIS WARRANTY IS EXCLUSIVE OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND NO REPRESENTATIVE OF OURS OR ANY OTHER PERSON IS AUTHORIZED TO ASSUME FOR US ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF OUR PRODUCTS.