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## **IICL Performs Global Study on Coating Systems Applied on the Frames of Refrigerated Containers.**

The Ocean transportation system has utilized refrigerated containers for over 50 years to provide protection of perishable and temperature sensitive cargoes such as meat, vegetables, fruit, beverages, medicines and chemicals.

“Top performance, reliability and condition of the refrigerated container have always been hallmarks of refrigerated container services.” said Steven Blust, President of the Institute of International Containers (IICL). “It is believed that the ability to offer containers that remain in good physical condition with extended timeframes before maintenance is beneficial to most cargo interests.” Refrigerated containers (Reefers) are exposed to several different environments throughout their operational life. Reefer units are frequently held to high aesthetic requirements due to the nature of the cargoes (fruits, vegetables, seafood, meat, etc.) being transported, thus the coating system chosen plays a critical role in the associated maintenance costs and useful operational life of the equipment for cargo transport.

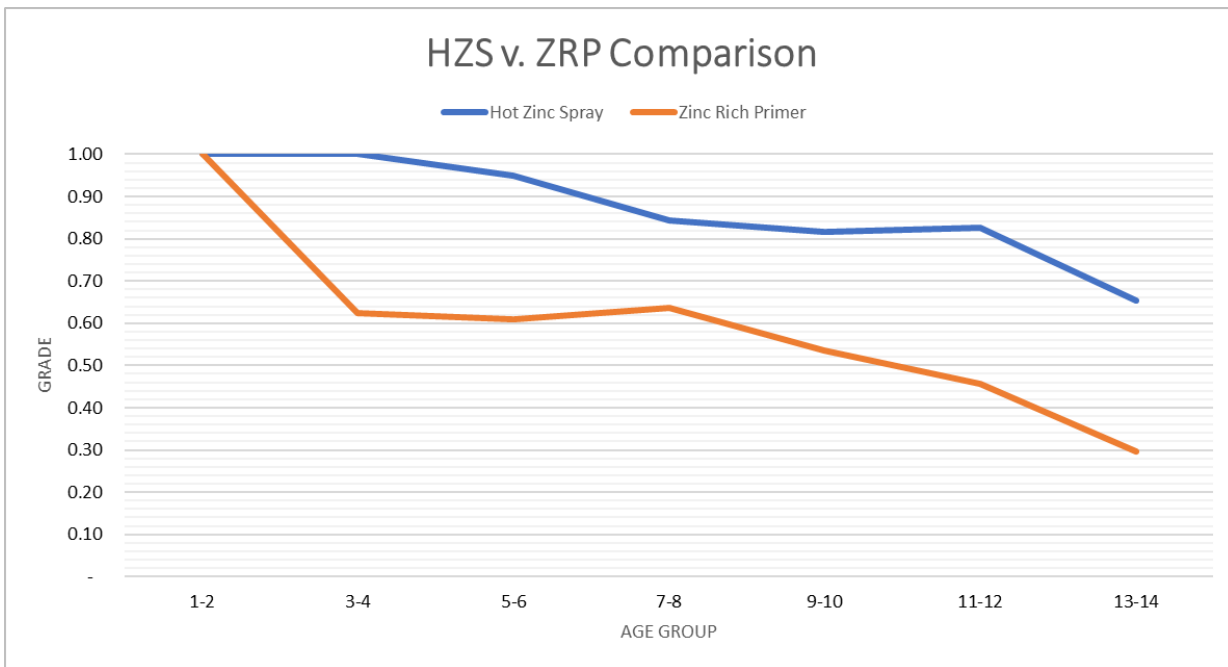
In order to evaluate and compare the performance of frames coated with zinc rich primer and the ones coated with hot zinc spray, the IICL carried out inspections of approximately 500 refrigerated containers in several major ports in Asia, Europe and the Americas.

The study was carried out by a technical team of IICL members and selected local independent inspectors. Refrigerated containers in large reefer ports such as Qingdao, Shanghai, Dalian, Tianjin, Rotterdam, Antwerp, Puerto Limon, Miami, Los Angeles, and others were photographed and inspected. Using an inspection form designed to capture data points of relevant information being sought for analysis, the IICL gathered valuable data to support our members’ choices and decisions going forward.

IICL Director of Technical Services, Luiz Gonçalves stated “The study, no doubt, reconfirmed what our experience and previous analysis were telling us that the frame of refrigerated units treated with hot zinc spray had an overall significantly better performance than the ones using zinc rich primer. The performance differential is highlighted on the basis of unit age and unit operating areas such as the Caribbean where exposure to sea water is frequent”.



The chart below shows one of the findings from the IICL study - Grade index.



Luiz Gonçalves added that recently some manufacturers had indicated a possible shift to discontinue the hot zinc spray treatment of reefer frames for safety and environmental reasons. The fact is that the application of hot zinc spray can be fully automated and air filters used to meet environmental and safety requirements. It is a matter of manufacturers making the investment as others did to deliver the best possible solution to the market. As an example, Metallisation Ltd. posted an interesting video at <https://youtu.be/1HMzxxvIKhF8> showing an automated process of hot zinc spraying. Using zinc rich primer and having to repair and refurbish corroded reefer frames during the operating life of assets can be more detrimental to the environment than proper manufacturing practice done once, correctly, in a controlled factory environment. Frame repairs and refurbishing due to premature corrosion are significant expenses to owners and may lead to premature retirement of the asset by owners. The global availability of proper refurbishing facilities is limited, and reefers may have to be repositioned to these locations for service, further adding operating costs to owners.

The data collected during the IICL study unequivocally shows the benefits of using hot zinc spray over zinc rich primer. It is up to the buyers to make their choice knowing what to expect “down the road”.

The IICL is active in educational, technological, safety, environmental, governmental, regulatory, and security issues. Complementing its widely accepted industry standards and best practices, the IICL offers its inspector certification examinations in more than 5,000 locations around the world, supported by publications, tools and courses.

Organized in 1971, the IICL is a trade association, representing lessors of maritime containers and intermodal chassis. Its member companies, Beacon, CAI, Direct ChassisLink, FlexiVan, SeaCube, Textainer, TOUAX, TRAC Intermodal, and Triton International Limited, own or manage a significant portion of the global leased container and U.S. chassis fleets.

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