

Corrosion Prevention : A Personal View Point

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It is high time that this matter receives serious attention. In my opinion, many of the problems associated with the early ~ mid 80's built ships are related to increased high tensile steel usage with inadequate paint thickness and stripe coatings. Seawater does not recognize High Tensile Steel (HTS) or Mild Steel (MS) and will attack with about the same vigour if given a chance. Logically when the scantlings were reduced because of a transition or increased use of the HTS, the shipyards and owners should have ensured that coatings were given due attention in terms of dry film thickness, quality of coatings and also their application (including painting of critical areas such as scallops, holes, underside of the longitudinals, weld lines, free edges etc). Unfortunately this did not happen.

I see following issues as important with regards to corrosion prevention:

1. As we recognize in the New Building Supervision circles - Painting once done well is "The Painting" done. Any repair to the painted areas later (maintenance of coating restoration - especially in the ballast tanks) can never achieve same standards of performance. Thus, the standards of surface preparation, removal of sharp edges, weld spatters, other contaminants such as moisture and dust, keeping ambient conditions such as humidity and steel temperature suitable for painting assume importance in day to day supervision. While these are routine and good practice issues, IACS must look at standardizing the minimum surface preparation requirements and include

the inspection prior application of first coat in their scope of inspection if "Corrosion Prevention" in to be taken seriously by the Industry.

2. At least 2 Stripe Coats should be made mandatory on all free edges, scallops, air/drain holes, weld lines, undersides of longitudinals and tripping brackets etc. Alternatively minimum coating thickness must be specified on such critical areas and checked for application.

Flat areas normally do not give much problem provided good surface preparation is carried out and holiday free good quality/standard paint of about 200~250 micron dry film thickness is applied at the time of new building. The corrosion generally starts at the free edges and then progresses between metal and the coating.

3. No reduction in scantlings, in the name of "CC*" notation, should be allowed just because epoxy coating has been applied. In such cases, new building vessels have been delivered with physical diminution up to 8~10% since the class calculates the diminution based on "design thickness" and not on "as built thickness".

CC* – Corrosion Control

4. Paint coating should be of such quality that minimizes pitting corrosion occurrence under the coating. The flexibility of the coating is another important issue to avoid cracking as the hull structure flexes under dynamic stresses.

5. Areas such as "top side ballast tanks" and "Forepeak and Afterpeak

tanks" where the air/water interface is unavoidable, should be provided with increased and better coating and treated differently.

6. Some shipyards provide Sacrificial Anodes for 24 months in their standard specification and would resist changing it to 36 months! IACS may look at ICCP as a standard solution.

7. Corrosion prevention in Seawater pipes is another area where solutions such as MGPS may be made mandatory.

I strongly recommend that the efforts (Joint Tanker Project and the Joint Bulker Project) being made by the IACS to formulate and apply uniform and possibly higher standards of Bulker & Tanker Structural designs must be supplemented with acceptance, formulation and application of adequate painting standards. Otherwise, we will lack a holistic approach to deal with safety Issue. I do understand that there are practical difficulties in this area, but we must find ways to address at least the critical area and make a beginning.

IME (I) gets ISBN Registration

The Institute of Marine Engineers India) has obtained ISBN Registration No from International ISBN Publication Agency. The first book published by the Institute with ISBN No is "Auditing the ISM Code" authored by Mr. Ajoy Chatterjee. ■

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