



The Introduction of China National Standards (GB) on Marine Coatings

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1. FOREWORD

- 23 National Standards on Marine coatings and their test methods had been published during 1980'~1990'
- These standards conformed the China ship building and coating industry both at that time.
- These standards are being revised since 2002.



Marine coatings(1)

No.	Name	status
GB/T 5369-85	Drinking Water tank	revised
GB/T 6745-86	Topside paint	revising
GB/T 6746-86	Oil tank coating	revising
GB/T 6747-86	Shop primer	revising
GB/T 6748-86	Anticorrosive marine paint	revising



Marine coatings(2)

No.	Name	status
GB/T 6822-86	Antifouling paint	Revised and combine with GB/T13351
GB/T 6823-86	Ballast tank paint	revising
GB/T 9260-88	Boottopping paint	revising
GB/T 9661-88	Deck paint	revising
GB/T 13351-92	Anticorrosive paint for ship bottom	Revised and combine with GB/T 6822



Marine coatings(3)

No.	Name	status
GB/T 9262-88	Hold paint	revising
GB/T 14616	Engine-room bottom coating	
GB/T 7788-2007	Anode shield coating of ship and marine engineering	published



Test methods of ship paint(1)

No.	Name	status
GB/T 5370-85	Antifouling panels in shallow submergence	Revised in 2006 and publishing
GB/T 6824-86	Leaching rate of copper ion for antifouling paint	Revised in 2006 and publishing
GB/T 6825-86	Leaching rate of organotin for antifouling paint	Revised in 2006 and publishing
GB/T 7789-97	Dynamic test for antifouling paint	Revised in 2006 and publishing
GB/T 7790-96	Cathodic disbonding for anticorrosive paint	revising



Test methods of ship paint(2)

No.	Name	status
GB/T 7791-86	Performance of reduces frictional resistance of self-polishing antifouling paint	
GB/T 9623-88	Slip resistance of antislip deck paint	
GB/T 10834-89	Resistance to salt water and hot salt water for ship coatings	revising
GB/T 14528-93	Repair ability for ship coatings	
GB/T 16168-96	Accelerated test method for atmospheric surface coating for offshore structures	



2. Tank Coating Coatings Standards

- **Performance standard for protective coating (PSPC) for ballast tank resolution MSC.215(82) have been adopted on 8 December 2006.**
- **ballast tank coatings (GB/T 6823) is making the first revisal issue now.**
- **Compare with PSPC and GB/T 6823**



Performance compare with GB/T 6823 and PSPC(1)

Test item	GB/T 6823-88	PSPC
Target life	none	15 years
Coating type	none	Epoxy base system and alternative
gravity	none	Required
Adhesion	≤ 3.0 MPa	> 3.0 MPa
Impact resistance	3J	none
flexibility	none	2% elongation in 150mm mandrel



Performance compare with GB/T 6823 and PSPC(2)

Test item	GB/T 6823-88	PSPC
Salt spray resistance	600 hours	180 days
Salt water immersion	21 days in 25°C	180 days in 35°C
Hot salt water immersion	2 hours in 80°C	none
condensation	none	180 days in chamber
Cathodic protection	none	Zn anode in 180 days



New version of GB/T 6823

- The requirements for protective coating systems for ballast tank of **all ships**,
- The ships above 500MT will confirm with PSPC.
- The main technical requirements considering coatings , such as adhesion etc. mechanical properties ,and resistance to salt water.
- Coating type: not limited epoxy systems.
- Will publish in two years.

Ship yards in China respond to PSPC

- **Main consideration :**
 - salt limit during secondary surface preparation, special in some north coast areas.
 - Reducing damage areas before and after erection.
 - Training qualified coating inspector.
 - Large difference for paint application between ship yards.



3. The standard of ship hull coating systems

- **New GB <Anticorrosive and Antifouling Paints System for Ship Hull> will publish soon.**
 - **Combine antifouling paints and anticorrosive paints**
 - **control organotin compound as antifoulant which conform to AFS 2001 of IMO,**
 - **forbid DDT as antifoulant also,**
 - **will greatly effect Chins marine coating industry**
 - **Newly antifouling paints developing.**



3. The standard of ship hull coating systems

- **Other standards for ship hull coatings are being revised now:**
 - **GB/T 6745 《General Specification of topside paint》**
 - **GB/T 6747 《General Specification of Shop Primer for ship Building》**
 - **GB/T 6748 《General Specification of Anticorrosive Marine Paint》**
 - **GB/T 9260 《General Specification for Boottopping Paint on Ships》**
 - **GB/T 9261 《General Specification for Deck Paint》**
- **They will improve coating properties for suiting the development of China shipbuilding industry.**



4. The standards for performance testing methods of ship coatings

- **Four coating test method standards had been revised in 2006,**
 - **GB/T 5370 《Method for testing antifouling Panels in Shallow Submergence》**
 - **GB/T 7789 《Dynamic Test Method for Performance of Marine Antifouling Coatings 》**
 - **GB/T 6824 《Determination for leaching rate on raft of cupper ion for antifouling paint on ship bottom》**
 - **GB/T 6825 《Determination for leaching rate on raft of organotin for antifouling paint on ship bottom》**
- **Other test method standards are been revising now ,**
- **Some marine coating application of Shipbuilding Industry Standards are been revising also.**



5. CONCLUSION

- **The revision and newly marine coating standards will be play important role in improving the quality level of China marine coating and ship manufacture.**
- **Great efforts to face the newly standards and regulations of IMO and IACS.**



Thank you!