Content of presentation...

- Why PSPC ???
- Time line of PSPC
- Lloyds Registers involvement in PSPC, Globally and in China
- GAP-Analysis in China, Europe
- General findings in Chinese GAP-analysis
- Lloyds Register and NACE training in Shanghai for Chinese Shipyards (Approx. 140 ship-yard QC to be qualified to NACE level II)
- Surveyors training for qualifying course (5 days)
- Specially designed Training for Ship-owners / Ship-yard on PSPC (2 days not qualifying)
- Ship-right notation for PSPC complying Lloyds Register vessels

WHY PSPC??
**IMO Performance Standard for Protective Coatings**

Basic Concepts IMO PSPC WBT – Dates of coming into force

- **Draft PSPC (DE49)**
- **Adoption of PSPC**: 6th Dec.
- **If no contract, then keel laying**: 1st Jan.
- **Contract signing**: 1st July
- **Delivery**: 1st July
- **PSPC mandatory for IACS CSR ships**: 2006.1.1
- **PSPC mandatory for all SOLAS ships Above 500 GT**: 2008.1.1

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**Activity in EMEA**

- **Presentations for Ship-owners / shipyards**
- **GAP-analysis**
  - More than 34 GAP-analysis carried out in 10 countries
Activity in EMEA

General comments from EMEA GAP’s:

- Only little or no QC department
- No records or only very little
- Work procedure not structured
- In many, especially “old” east European shipyards, need extreme investment, to comply with PSPC

PSPC seminars to industry in China

- Seminars delivered in January 2007 & 2008, in 12 sessions around China’s main ship building locations.
- Attended by owner’s, manager’s, designers, builders and paint manufacturer’s.
- Attended by over 300 delegates from yard president’s to paint applicators
- Objectives:
  - To raise profile of PSPC and it’s challenges
  - To start open discussion with Chinese industry
  - To gather feedback on areas of support needed

Introduction: Gap analysis from Lloyd’s Register and International Paint

- Provides assistance to ship yards on practical guidance on preparations for the IMO PSPC.
- Provides guidance and assistance on practical aspects of coating application and the equipment and infrastructure required.
- Provides guidance on interpretation of the standard and procedure and document preparation and implementation.
- Till date more than 45 GAP-analysis carried out in China
Findings of Gap Analysis – technical aspects

Primary surface preparation and shop primer application

- Oil contamination are in some shipyards a big problem
- Dust problems

Uneven primer application increases level of re-blasting during secondary surface preparation
Findings of Gap Analysis – technical aspects

Primary surface preparation and shop primer application

- Recommendations:
  - Introduce plate cleaning
  - QC procedure to be in place
  - Adjust abrasive size and mix abrasives to achieve better profile
  - Abrasive quality checks
  - Adjust line speed to ensure full coverage
  - Upgrade facilities to reduce dust level

Findings of Gap Analysis – technical aspects

Secondary surface preparation – oil contamination

- Re-view, 2 years with PSPC, preparation & meeting the challenge

Findings of Gap Analysis – technical aspects


- Re-view, 2 years with PSPC, preparation & meeting the challenge
Findings of Gap Analysis – technical aspects

Secondary surface preparation – Housekeeping

- QC procedure to be in place
- Better housekeeping
- More attention to details on edge preparation
- Carry out as much fairing/outfitting welding work as possible prior to blasting

Findings of Gap Analysis – technical aspects

Secondary surface preparation

Hull stage – coating damages due to fairing and welding work
Re-view, 2 years with PSPC, preparation & meeting the challenge

Findings of Gap Analysis – technical aspects

- Poor cooperation between production departments

Findings of Gap Analysis – technical aspects

- Hull stage – extensive coating damages
Findings of Gap Analysis – technical aspects

Hull stage

- Recommendations
  - Cooperation from other departments to minimise coating damages
  - QC procedure to be in place
  - Better housekeeping
  - Better design/production management – reduce width of erection seam.

Findings of Gap Analysis – technical aspects

PSPC worries for some Chinese Shipyard in general

- QC related items;
  - To produce a CTF (Coating Technical File) and follow up on it
  - Produce the forms (Daily log, Primary surface prep, Secondary surface prep, Paint application, Non-Conformance Report NCR, etc.)
  - Qualify inspectors
  - Training applicators (to avoid rejections)
  - Making procedures for surface treatment, inspections etc.

The not so good:
Findings of Gap Analysis – technical aspects

PSPC worries for Chinese / European Shipyard in general (unquoted)

- Production wise:
  - Might reduce production
  - Might have to develop new procedures for outfitting and ship building departments (to avoid damaged)
  - 2% limit for mechanical damaged (Power tool or grit-blast)
  - Have to carry out surface treatment according to PSPC (Ship-owners and paint-manufactures to be "active" paint inspectors)

- Shipyard comments in general, and the facts:
  - Secondary surface preparation, now we have to grit-blast to Sa2½ on damaged and corroded areas and either hard or light sweep blast of intact ship primer
  - Yes, but what are they doing now? As above in most cases
  - We have to apply two full coats and two stripe-coats to be applied at min. DFT 320µ, Extra cost for the shipyard...
  - Yes, but in most cases today, they apply for example 2 * 125µ and one or two stripe-coats, and in many / most cases with a average DFT of approx. 450 – 500µ
  - How to calculate the 2 % damaged "in-situ"
    - IACS and JWG have stipulated some guidelines for calculating, but in general it is important to have a very experience "approved" paint inspector.
    - We have to produce and maintain a CTF before and during building of the vessel.
      - Yes...

NACE Training for LR’s Client Shipyard’s Personnel

- Training being facilitated by Lloyd’s Register, China
- Training delivered to shipyard coating inspectors in Mandarin
- Training Delivered by NACE Certified Trainers
- A first for China.
- Approx 150 attendees and a graduation level for NACE CIP I & II approx 95%
Internal Training for LR's Surveyors on PSPC

- Special designed training for LR surveyors first held in Korea for Chinese & Korea Surveyors.
- 5 day course, both practical and theoretical
- Give the surveyor enough knowledge to monitor, verify and approve PSPC vessels

Future; develop training course for Ship-owners building in the region.

- A special designed course for ship-owners on corrosion / Paint chemistry and PSPC
- Will give ship-owners a thoroughly knowledge upon IMO MSC 215 (82) PSPC, PR 34 and SC 223 & LR guidelines
- 2 day course for Ship-owners & their representatives building in China or World wide.
- Will focus on Ship – owners duties and responsibilities with PSPC
- The course will NOT be a qualifying course, but an informative and educational.
- Till date 3 courses given in: Shanghai, Piraeus, and Dubai

LR's Developments:

- **ShipRight ACS Notation** (Anti - Corrosion System)
  - For all vessels fulfilling the requirements in IMO MSC 215 (82) PSPC
  - Notation for all vessels build to PSPC or / and CSR vessels will under LR class get ShipRight ACS (B) notation (B= Ballast-tanks)
  - Notation for all bulk carriers build to CSR (PSPC) will under LR class get ShipRight ACS (B,D) notation (B = Ballast tanks and D = Double - side skin spaces)
LR Practical Guidance and Assistance

LR’s commitments:
• Fulfil Class’s / RO’s responsibility required by PSPC
• Provide assistance to yards and owners through:
  • Clear interpretation of PSPC by providing training/seminars
  • Developing practical guidelines
  • Work together with shipyards to develop practical verification procedures
  • Develop services that can improve yard compliance with PSPC:
    • Inspector training courses facilitated and approved
    • Yard coating process quality control approval
  • Technical advice and assistance in R&D

Preparing for the IMO Performance Standard for Protective Coatings (PSPC)

Thank you for your time, any questions are welcome.

For further information please contact Lloyd’s Register Asia:
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