

TSCF 2010 Shipbuilders meeting



PSPC, Preparation and application in Korean Shipyard

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- 2. Preparation for PSPC**
- 3. Coating Technical File**
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1. Status of PSPC

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PSPC for WBT



- ✓ *Res.MSC.215(82)*
- ✓ *MSC.1/Circ.1279*
- ✓ *MSC.1/Circ.1330*

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PSPC for VOID



- ✓ *Res.MSC.244(83)*
- ✓ *MSC.1/Circ.1279*

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PSPC for COT



- ✓ *Res.MSC.288(87)*
- ✓ *Res.MSC.289(87)*
- ✓ *MSC.1/Circ.1279*
- ✓ *MSC.1/Circ.xxxx*

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Requirements for PSPC/WBT

Item	IMO PSPC	Remark
NDFT	2 spray coats, Epoxy 320 mic. (90/10 Rule)	
Dust	- Rating "1" for size class "3", "4", "5" - Invisible with naked eyes for size class "1", "2"	
Salts	≤ 50 mg/m ²	
Stripe coat	2 stripe coats, 1 stripe coat can be dispensed on welds subject to meet NDFT Stripe coat shall be applied by brush or roller. Roller to be used for scallops, rat holes, etc. only.	All welds & Edges
Edge	2R, 3 pass grinding or equivalent	
DFT	shall be measured in accordance with Annex 3	
Steel condition	ISO 8501-3 P2	
Profile	30 ~ 75 mic. in case of blasting	

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Item	IMO PSPC	Remark
Surface preparation before erection	-Shop Primer damage area : Sa 2.5 -Contamination : Sweeping or H.P washing or equivalent	
Surface preparation after erection	-Butt : St 3 or better -Damage up to 2 % / tank : St 3 -Contiguous damage up to 25 m ² : St 3	
Coating Technical File	-prepared by the shipyard -on boarded and maintained	
Qualification of inspector	NACE Level 2, FROSIO Level III or equivalent	
TAC	-All epoxy system shall be type approved -Cross over test with shop primer shall be performed	
Procedure & Inspection	-Three parties agreement -Certified inspector agreed by three parties -CTF shall be verified by the Administration	

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Requirements for PSPC/VOID

Item	IMO PSPC	Remark
NDFT	1 spray coat, Epoxy 200 mic. (90/10 Rule)	
Dust	- Rating "2" for size class "3", "4", "5"	
Salts	≤ 50 mg/m ² for PSP & ≤ 100 mg/m ² for SSP	
Stripe coat	1 stripe coat on thermally cut free edges only	
	Stripe coat shall be applied by brush or roller. Roller to be used for scallops, rat holes, etc. only.	
Edge	1 pass grinding or equivalent	
DFT	shall be measured in accordance with Annex 3	
Steel condition	ISO 8501-3 P1	
Profile	30 ~ 75 mic. in case of blasting	

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Item	IMO PSPC	Remark
Surface preparation before erection	-Shop Primer damage area : Sa 2 or St 3 -Contamination : Sweeping or H.P washing or manufacturer's recommendation	
Surface preparation after erection	-Butt : St 3 or better	
Coating Technical File	-prepared by the shipyard -on boarded and maintained	
Qualification of inspector	NACE Level 2, FROSIO Level III or equivalent	
TAC	-All epoxy system shall be type approved -Cross over test with shop primer shall be performed	
Procedure & Inspection	-Three parties agreement -Certified inspector agreed by three parties -CTF shall be verified by the Administration	

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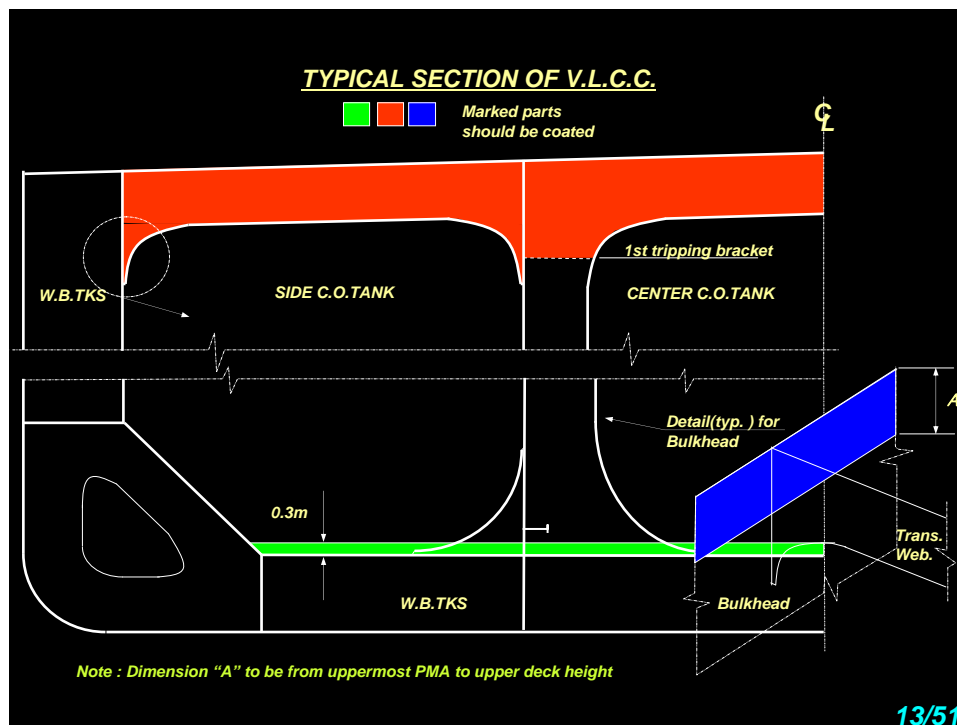
Requirements for PSPC/COT

Item	IMO PSPC	Remark
Coating range	- Deckhead down to PMA height - Bottom up to 0.3 m upward	See figure
NDFT	2 spray coats, Epoxy 320 mic. (90/10 Rule)	
Dust	- Rating "1" for size class "3", "4", "5" - Invisible with naked eyes for size class "1", "2"	
Salts	≤ 50 mg/m ²	
Stripe coat	2 stripe coats, 1 stripe coat can be dispensed on welds subject to meet NDFT Stripe coat shall be applied by brush or roller. Roller to be used for scallops, rat holes, etc. only.	All welds & Edges
Edge	2R, 3 pass grinding or equivalent	
DFT	shall be measured in accordance with Annex 3	
Steel condition	ISO 8501-3 P2	
Profile	30 ~ 75 mic. in case of blasting	

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Item	IMO PSPC	Remark
Surface preparation before erection	-Shop Primer damage area : Sa 2 or St 3 -Contamination : Sweeping or H.P washing or equivalent	
Surface preparation after erection	-Butt : St 3 or better -Damage up to 3 % / tank for Deckhead : St 3 -Damage up to 20 % / tank for Bottom : St 3 -Contiguous damage up to 25 m ² : St 3	
Coating Technical File	-prepared by the shipyard -on boarded and maintained	
Qualification of inspector	NACE Level 2, FROSIO Level III or equivalent	
TAC	-All epoxy system shall be type approved -Cross over test with shop primer shall be performed	
Procedure & Inspection	-Three parties agreement -Certified inspector agreed by three parties -CTF shall be verified by the Administration	

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Comparison/summary of PSPC

Item	PSPC/WBT	PSPC/COT	PSPC/VOID
Method of application	Mandatory		Non-mandatory
Type of ships	All type of ships	Crude oil tanker*	Bulk & Tanker
Area to be protected	All area	Top & Bottom	All area
NDFT	2 coats, 320 μ m		1 coat, 200 μ m
Dust for size "3", "4", "5"	Rating "1"		Rating "2"
Allowable salt level	50 mg/m ²		100 mg/m ²
Stripe coat	2 coats on all edges & welds		1 coat on cut edge
Edge treatment	2R, 3 pass		1 pass
Steel condition	P2		P1
SSP at block	Sa 2 $\frac{1}{2}$		Sa 2 or St 3
St 3 for after erection	Damage < 2 %	Damage < 3 % or 20%	-

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Definition of Crude oil tanker

Res.MSC.288(87) ; 2.1 Crude oil tanker is as defined in Annex I of MARPOL 73/78.

- Crude oil tanker means an oil tanker engaged in the trade of carrying crude oil.

- Product carrier means an oil tanker engaged in the trade of carrying oil other than crude oil.

Res.MSC.291(87) – amendment to SOLAS CHAPTER II-1, 3-11 ;
Crude oil tanker : Refer to items 1.11.1 or 1.11.4 of the Supplement to the International Oil Pollution Prevention Certificate (Form B).

- 1.11.1 Crude oil tanker

- 1.11.4 Crude oil/product carrier

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2.1 Preparation for PSPC (IMO activity, etc.)

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IMO activity

- **Participation to IMO meeting**

- DE & MSC**
- Drafting group, Corresponding group & Joint working group**

- **Submission of papers to IMO**

- **Introduction of technical investigation ;**
 - Salt limit**
 - Edge treatment**
 - Shop primer removal**
 - DFT measurement**
 - Stripe coating**
 - DFT limit**
 - Dust removal**

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IMO activity

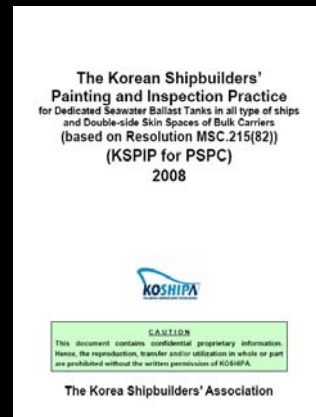
- **Examination and discussion on Guideline ;**

- Demonstration of Salt measurement**
- Demonstration of Stripe coating**
- Demonstration of Dust removal**

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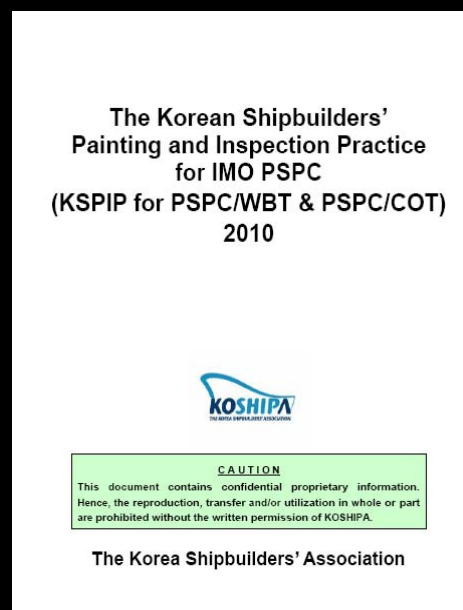
TFT in KOSHIPA

- **Cooperation and promotion on technology**
- **Prepare KSPIP**
- **Prepare sample CTF**



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KSPIP

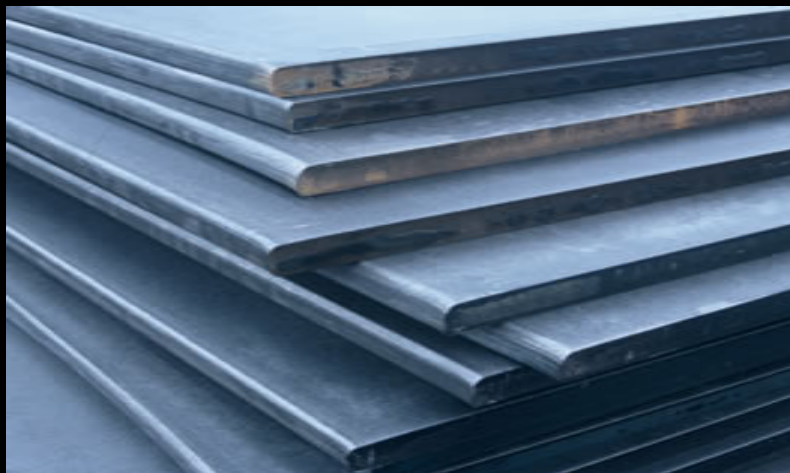


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2.2 Preparation for PSPC ***(Edge treatment)***

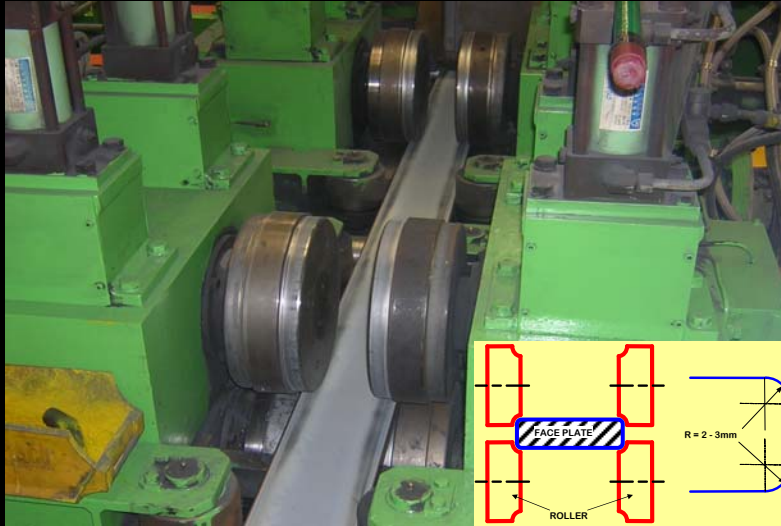
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Rolled sections



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Edge rolling machine



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Edge Cutter



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2.3 Preparation for PSPC *(Reinforcement of facility)*

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Reinforcement of facility

Separate type (Painting cells)



[Outside]



[Inside]

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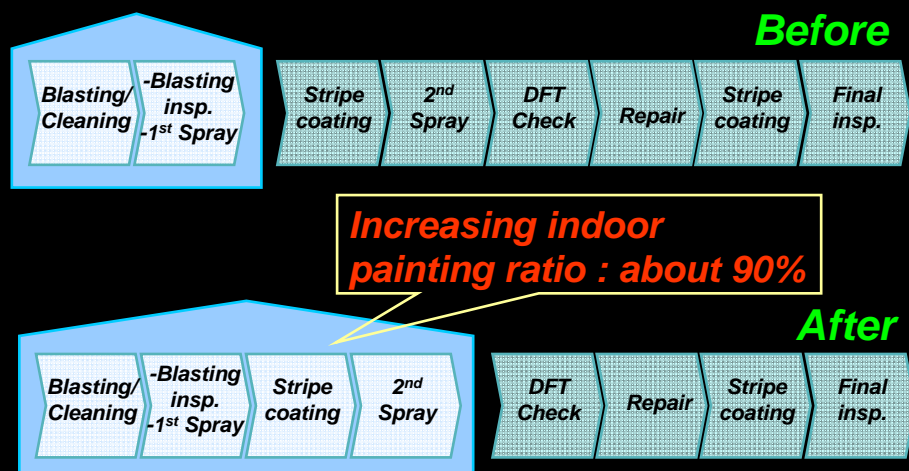
Reinforcement of facility

Stock area



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Reinforcement of facility

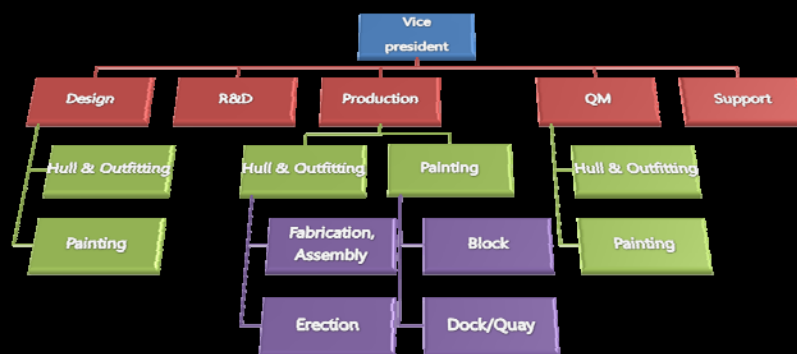


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2.4 Preparation for PSPC (Organization for PSPC)

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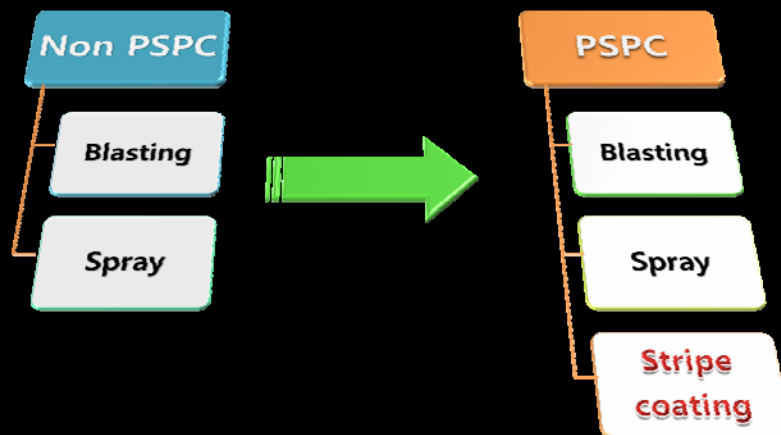
Operation of PSPC committee



- Development of application method, etc.
- Quality control of welding, cutting, edge treatment, etc.
- Framing work of documentation, inspection format, etc.

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Restructuring organization



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2.5 Preparation for PSPC *(Human resources)*

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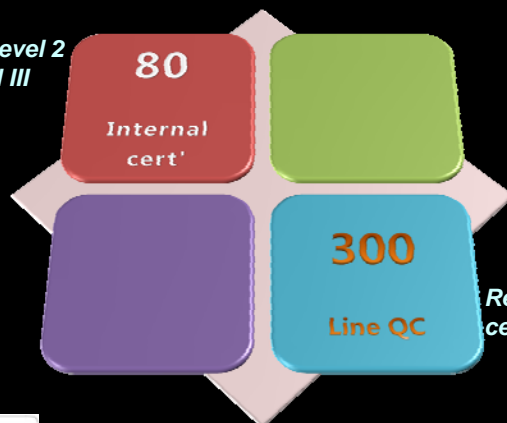
NACE & FROSIO certified



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Internally certified

Similar to NACE Level 2
and FROSIO Level III
course



Regularly educated &
certified by QM



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2.6 Preparation for PSPC *(3 Parties agreement)*

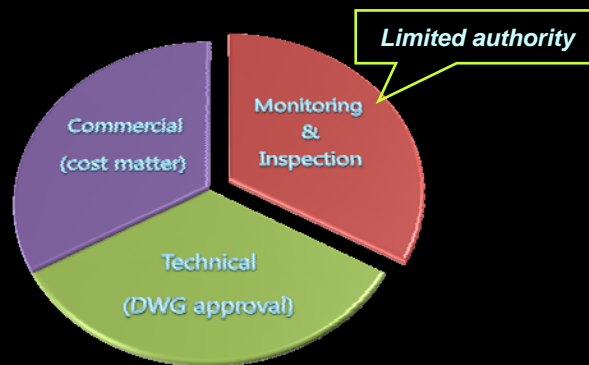
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IACS UI SC 223

*Inspection of surface preparation and coating processes agreement shall be signed by shipyard, ship owner and coating manufacturer and **shall be presented by the shipyard to the Administration for review prior to commencement of any coating work on any stage** of a new building and as a minimum shall comply with the PSPC.*

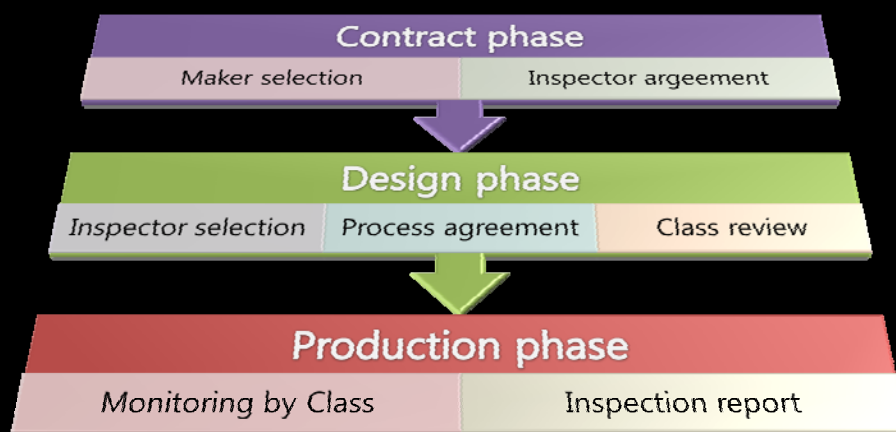
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Authority of site team



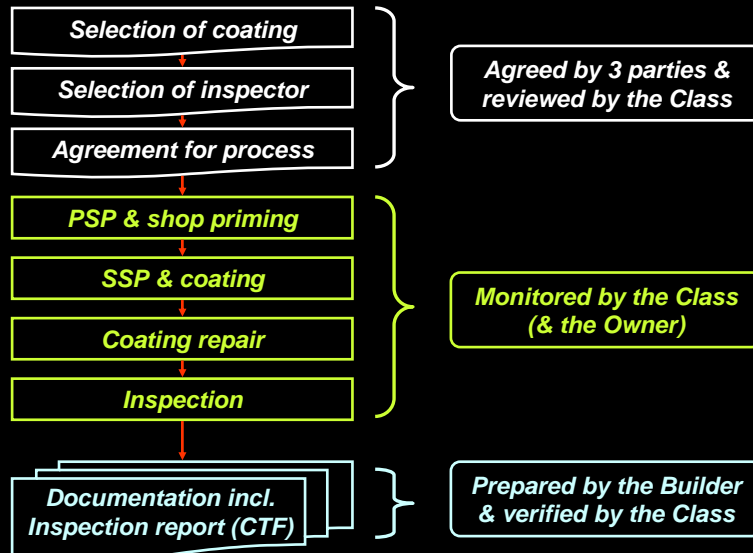
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3 Parties agreement



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Application procedure



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3. Coating Technical File

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As for the PSPC/WBT ;

*Completed **30** vessels
as of Oct. 2010*

*Since HHI Started PSPC
from Aug. 2008*

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Contents of CTF



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Example CTF

I. Agreement for procedure and Inspection

1. Cover
2. Coating specification & TAC
3. Coating inspector
4. Block / Compartment list
5. Technical data sheets
 - 1) Technical data sheet (TDS)
 - 2) Material safety data sheet (MSDS)
6. Procedure for coating and inspection
(KSPIP : Korean Shipbuilders' Painting and Inspection Practice)

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II. Inspection reports

1. PSP
2. SSP and coating log (Block)
3. SSP and coating log (Erection joint)
4. List of water ballast tanks
5. Summary report for block
6. Summary report for each tank

III. Procedure for in-service maintenance and repair ; refer to MSC.1/Circ.1330

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4. Summary & Conclusion

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- 1. Korean shipyard (HHI) has been well prepared for PSPC in software aspect as well as hardware aspect.***

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2. Korean shipyard (HHI) has sufficient facilities as well as abundant qualified people, which are enough to build the vessels meeting PSPC.

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3. Korean shipyard's verified system for PSPC application assures required coating quality.

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In addition, PSPC related inspection should be performed by the qualified persons who have good knowledge on PSPC and are familiar with the builder's practice.

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Certification is the least for the qualification, inspection is to be prepared to confirm whether to meet PSPC requirement, not to resolve inspector's personal doubts / curiosity / ignorance

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