

# PSPC

## Guideline & its effect

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# Guideline

History & Progress

Inspector

Primary Surface Preparation

Edge grinding

Steel preparation

Secondary Surface Preparation

Surface Preparation after Erection

Salt contents

DFT

Stripe coat

Dust

DFT measurement

# History & Progress

✓ Approved at MSC 81

✓ IACS, early implementation to CSR ships

✓ Request UI to IACS

✓ IACS PR 34

✓ KOSHIPA-IACS Meeting

✓ JWG/COATING 1<sup>st</sup> & 2<sup>nd</sup> Meeting

✓ Guideline for Implementation of MSC 215(82)

## PSPC

- ❖ Shall be agreed upon the parties and presented to the Administration for review.

## Guideline

- Choice of Inspectors should be a part of agreement
- Assistant can be used
- Clear reason for additional test & measurement

## PSPC

- ❖ Shall be agreed upon the parties and presented to the Administration for review.
- ❖ Inspections to be carried out as per para. 6.2

## Guideline

- Recommend to using the steel plate of rust grade **A** or **B**
- More inspection to the plate of Rust Grade **C** & **D**
- Process control on automated PSP line
- Typical QA control on abrasives

# Edge grinding

## PSPC

- ❖ 2R,  
or 3 pass grinding  
or at least  
equivalent process

## Guideline

- “Equivalent” means  
a geometrically  
equivalent to,  
or better than  
(considering  
effective coating  
performance)

## PSPC

- ❖ Before secondary surface preparation starts, a visual inspection shall be carried out

## Guideline

- By the coating inspector



## PSPC

## Guideline

- ❖ Damage : Sa 2.5
- ❖ Retainment S/Primer :  
Sweeping High  
pressure  
etc

- Power tool for repair  
(2% rule can be  
applied)

Damage (shop primer) :

**burnt or corroded**

- Contamination on  
er :  
ating  
Manufacturer's  
recommendation

# After Erection

## PSPC

- ❖ Butt : St 3 or better or Sa 2.5 where applicable
- ❖ Damage < 2% : St 3
- ❖ Damage > 2% or 25m<sup>2</sup> : Sa 2.5

## Guideline

- Erection joints : St 3 or better or Sa 2.5 where applicable
- Damage < 2% : St 3
- Damage > 2% or 25m<sup>2</sup> : Sa 2.5

Damage (coating) : damage reaches to steel surface only

## Guideline

### PSPC

- ❖ Water soluble salt equivalent to NaCl after blasting or grinding : 50 mg/m<sup>3</sup> of NaCl
- ❖ Method : ISO 8502-9

➤ None

## PSPC

- ❖ 2 spray coats
- ❖ NDFT 320 mic.
- ❖ 90/10 rule

## Guideline

- 2 equal coat is not required, min. DFT recommended by the Paint manufacturer to be followed for each coat.

# Stripe coat

## PSPC

- ❖ 2 stripe coats on edges & welds
- ❖ 2<sup>nd</sup> stripe coat can be dispensed on welds
- ❖ Roller/brush

## Guideline

- 2 stripe coats on all edges
- 1 stripe coat on welds (DFT is verified by annex 3, flat surface case)
- Roller or brush but, roller for small holes

## PSPC

- ❖ Class 3,4,5 : Grade 1 (Tape test)
- ❖ Class 1,2 to be removed if visible

## Guideline

- No tape test if agreed
- Visible small sized dust to be removed up to invisible
- 1 measurement per block

# DFT measurement

## PSPC

- ❖ Annex 3 ;
  - Gir/Web : 3 points/3m
  - Long'l : 2 points/3m
  - Opening : 2 points
- ❖ WFT measurement for quality control purpose.

## Guideline

- Girder & Floor in D/Hull : 1 point/5m<sup>2</sup>
- Flat bar & Bulb plate long'l : 1 point/3m
- Opening : 400 mm dia & over
- WFT by sprayer

# DFT measurement

## PSPC

- ❖ DFT readings to be attached in LOG

## Guideline

- Representative DFT measurement for 1<sup>st</sup> coat as a guide for next work.
- Statistical summary only to be recorded (Numbers, minimum, maximum, average DFT)



# Cost Effect

Cost Effect (item by item)

Cost Effect (Summary)

Q & A

## PSPC

- ❖ Shall be agreed upon the parties and presented to the Administration for review.

## Cost Effect

- Increased inspection activity about 100%
- Additional cost if agreed to invite 3<sup>rd</sup> party as inspector

## PSPC

- ❖ shall be agreed upon the parties and presented to the Administration for review.
- ❖ Inspections to be carried out as per para. 6.2

## Cost Effect

- Additional cost for regular inspection

## Edge grinding

### PSPC

- ❖ 2R,  
or 3 pass grinding  
or at least  
equivalent process

### Cost Effect

- 100% or more cost  
is required for  
additional edge  
treatments

# Cost Effect

## Steel condition

### PSPC

- ❖ Before secondary surface preparation starts, a visual inspection shall be carried out

### Cost effect

- Additional cost for steel inspection
- Additional **stock time** for inspection

### PSPC

- ❖ Damage : Sa 2.5
- ❖ Retained S/Primer :  
Sweeping or High  
pressure washing or  
equivalent

### Cost Effect

- 30% more surface  
preparation cost is  
required for  
sweeping , etc.

# Cost Effect

## After erection

### PSPC

- ❖ Butt : St 3 or better or Sa 2.5 where applicable
- ❖ Damage < 2% : St 3
- ❖ Damage > 2% or 25m<sup>2</sup> : Sa 2.5

### Cost Effect

- Dispute for applying **higher grade** of surface preparation
- Additional coat for inspection & **assessment of Damage %**



# Cost Effect

## Salt contents

### PSPC

- ❖ Water soluble salt equivalent to NaCl after blasting or grinding : 50 mg/m<sup>3</sup> of NaCl
- ❖ Method : ISO 8502-9

### Cost Effect

- Additional cost for **Test & Washing**
- Washing to be applied about **20%** of Blocks  
(Blocks from sub-contractor : 50%,  
Other Blocks : 10%)

### PSPC

- ❖ 2 spray coats
- ❖ NDFT 320 mic.
- ❖ 90/10 rule

### Cost Effect

- 20% more painting cost due to increasing total DFT
- 10% more painting cost due to 90/10 rule

## Stripe coat

### PSPC

- ❖ 2 stripe coats on edges & welds
- ❖ 2<sup>nd</sup> stripe coat can be dispensed on welds
- ❖ Roller/brush

### Cost Effect

- 150% more painting cost due to increasing number of stripe coating & area of stripe coating

## PSPC

- ❖ Class 3,4,5 : Grade 1 ( Tape test)
- ❖ Class 1,2 to be removed if visible

## Cost Effect

- 15% more cleaning cost is required
- Vacuum cleaner to be provided for final cleaning on bottom

# DFT measurement

## PSPC

- ❖ Annex 3 ;
  - Gir/Web : 3 points/3m
  - Long'l : 2 points/3m
  - Opening : 2 points
- ❖ WFT measurement for quality control purpose.

## Cost Effect

- 5% more painting cost due to increasing number of DFT measurement
- 20% more surface preparation cost due to control of Max. DFT (partial repair for areas exceeding Max. DFT)

## PSPC

❖ Para. 6.2

## Cost Effect

➤ Increased inspection activity about 100%

# Process - BSRCe

Stock area

PSP

Block fabrication

- ✓ Quality control by QA system
- ✓ Periodically checked by the inspector
- ✓ 2R or 3 pass grinding or equivalent
- ✓ Inspected by the inspector

# Process - BSRCe

Mill Maker

PSP  
(Sub-contractor)

Transportation

Block fabrication  
(Sub-contractor)

- ✓ Quality control by their QA system
- ✓ Periodically checked by the inspector

- ✓ 2R or 3 pass grinding or equivalent
- ✓ Inspected by the inspector



**SSP**  
**Block painting**



**SSP**  
**P.E & Erection joint**

- ✓ Sa2.5 + Sweeping or HPW or equivalent
  - ✓ Inspection incl. salt & dust check
  - ✓ 2 stripe coats on all edges & welds
  - ✓ DFT measurement as per Annex 3
  - ✓ Check min. & max. DFT
  - ✓ CTF
- 
- ✓ Damage assessment , St3
  - ✓ Inspection incl. salt & dust check
  - ✓ 2 stripe coats on all edges & welds
  - ✓ DFT measurement as per Annex 3
  - ✓ Check min. & max. DFT
  - ✓ CTF

**Repair**

✓ **all repair : confirm**

✓ **CTF**

# Cost Effect Summary

Sub-item	Cost Effect	Remarks
Design MH	about 10%	
Production MH	about 100%	
Material cost	about 20%	
Manpower	about 30%	

Additional costs for the paint manufacturers & Class fee to be considered separately

Thank you  
for attention