



Exploration & Production

GENERAL SPECIFICATION

CORROSION

GS COR 351

**External protection of structures and
equipment by painting
Floating structures**

03	10/03	General review – Change of Group name and logo
02	10/02	Binders cooling
01	10/01	General review
00	02/01	First issue
Rev.	Date	Notes



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1. Scope

This document defines the technical requirements for the execution of coating operations for the high durability external and internal protection of equipment against corrosion and/or of products against pollution or contamination.

2. Reference documents

The reference documents listed below form an integral part of this General Specification. Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the EFFECTIVE DATE of the CONTRACT.

Standards

Reference	Title
ISO 12944-1	Paints and varnishes-Corrosion protection of steel structures by paint systems. Part 1: General introduction
ISO 12944-2	Paints and varnishes-Corrosion protection of steel structures by paint systems. Part 2: Classifications of environments
ISO 12944-3	Paints and varnishes-Corrosion protection of steel structures by paint systems. Part 3: Design and constructive requirements
ISO 12944-4	Paints and varnishes-Corrosion protection of steel structures by paint systems. Part 4: Surface types and preparation
ISO 12944-7	Paints and varnishes-Corrosion protection of steel structures by paint systems. Part 7: Execution and supervision of painting work
ISO 12944-8	Paints and varnishes-Corrosion protection of steel structures by paint systems. Part 8: Development of specifications for new and maintenance work
ISO 20340	Paints and varnishes-Performance requirements for protective paint systems for offshore and related structures.
ISO 11124-2 to 4	Preparation of steel substrates before application of paints and related products. Specifications for metallic blast-cleaning abrasives
ISO 11125-1 to 7	Preparation of steel substrates before application of paints and related products. Methods for testing metallic blast-cleaning abrasives
ISO 11126-3	Preparation of steel substrates before application of paints and related products. Specifications for metallic blast-cleaning abrasives: copper refinery slag
ISO 11126-6	Preparation of steel substrates before application of paints and related products. Specifications for metallic blast-cleaning abrasives: iron furnace slag
ISO 11126-7	Preparation of steel substrates before application of paints and related products. Specifications for non-metallic blast-cleaning abrasives: fused aluminium oxide

Reference	Title
ISO 11126-8	Preparation of steel substrates before application of paints and related products. Specifications for metallic blast-cleaning abrasives: olivine sand
ISO 11127-1 to 7	Preparation of steel substrates before application of paints and related products. Methods for testing non-metallic blast-cleaning abrasives
ISO 8501-1	Preparation of steel substrates before application of paints and related products. Visual assessment of surface cleanliness. Part 1: Rust grades and preparation grades of uncoated steel substrates and of steel substrates after overall removal of previous coatings
ISO 8501-2	Preparation of steel substrates before application of paints and related products. Visual assessment of surface cleanliness. Part 2: Visual assessment of surface cleanliness
ISO 8501-3	Preparation of steel substrates before application of paints and related products. Visual assessment of surface cleanliness. Part 3: Preparation grades of welds, cut edges and other areas with surface imperfections
ISO 8502-1 to 4	Preparation of steel substrates before application of paints and related products. Tests for the assessment of surface cleanliness
ISO 8502-6	Preparation of steel substrates before application of paints and related products. Tests for the assessment of surface cleanliness: extraction of soluble contaminants for analysis-The Bresle method
ISO 8502-9	Preparation of steel substrates before application of paints and related products. Tests for the assessment of surface cleanliness: Field method for conductometric determination of water-soluble salts.
ISO 8503-1 to 4	Preparation of steel substrates before application of paints and related products. Surface profile of abrasive blast-cleaned steel
ISO 8504-1 to 3	Preparation of steel substrates before application of paints and related products. Methods for surface preparation
ISO 4578	Adhesives. Determination of peel resistance of high-strength adhesive bonds
ISO 1513	Paints and varnishes. Examination and preparation of samples for testing
ISO 19840	Paints and varnishes. Determination of dry film thickness. Non-destructive magnetic flux method
NF T 30-125	Paints. Determination of wet film thickness
ISO 2409	Paints and varnishes. Cross-cut test
ISO 4624	Paints and varnishes. Pull-off test

Reference	Title
ISO 7253	Paints and varnishes. Determination of resistance to neutral salt sprays
ISO 787-10	General methods of test for pigments and extenders - Part 10: Determination of density. Pyknometer method
ISO 2812-1	Paints and varnishes - Determination of resistance to liquids Part 1: General method
ISO 2812-2	Paints and varnishes - Determination of resistance to liquids Part 2: Water immersion method
ISO 6270	Paints and varnishes - Determination of resistance to damp (continuous condensation)
ISO 4628-1	Evaluation of paint and varnish defects. Designation of intensity, quantity and size of common types of defect - Part 1: General principles and rating schemes
ISO 4628-2	Evaluation of paint and varnish defects. Designation of intensity, quantity and size of common types of defect - Part 2: Designation of degree of blistering
ISO 4628-3	Evaluation of paint and varnish defects. Designation of intensity, quantity and size of common types of defect - Part 3: Designation of degree of rusting
ISO 4628-4	Evaluation of paint and varnish defects. Designation of intensity, quantity and size of common types of defect - Part 4: Designation of degree of cracking
ISO 4628-5	Evaluation of paint and varnish defects. Designation of intensity, quantity and size of common types of defect - Part 5: Designation of degree of flaking
ISO 4628-6	Evaluation of paint and varnish defects. Designation of intensity, quantity and size of common types of defect - Part 6: Rating of degree of chalking by tape method
ISO 9223	Corrosion of metals and alloys. Atmospheres corrosivity. Classification
ISO 3678	Paints and varnishes. Print-free test
ISO 7724-1 to 3	Paints and varnishes. Determination of colour and colour difference
NF A 49 711	External triple layer polypropylene based coating - Appendix K: Test for evaluating delamination resistance under negative polarization

Professional Documents

Reference	Title
RAL 840 HR ACQPA	Colors standard "Association pour la Certification et la Qualification en Peinture Anticorrosion". Certified systems by ACQPA

Regulations

Reference	Title
Not applicable	

Codes

Reference	Title
ASTM D 4752	Standard test method for measuring MEK resistance of ethyl silicate (inorganic) Zinc-rich primer by solvent rub
ASTM D 4940	Standard test method for conductimetric analysis of water soluble ionic contamination of Blasting abrasives
NACE RP 0178	Fabrication details, surface finish requirements, and proper design considerations for tanks and vessels to be lined for immersion service

Other documents

Reference	Title
Not applicable	

Total General Specifications

Reference	Title
GS COR 350	External protection of structures and equipment by painting
GS COR 352	Internal protection of equipment by painting

3. Conditions of use

Paint systems are defined according to the following parameters:

- Atmosphere or environment
- Type of substrate
- Minimum and maximum temperatures of use.



3.1 Definition of atmosphere or environment

The Marine atmosphere prevails at sea, along coastlines and immediately inland. It is characterized by the presence in the air of sea water spray, more or less saline mist and by the absence of dust. Condensates are normally alkaline ($\text{pH} > 7$).

Note: The "tropical" atmosphere is treated as marine atmosphere, depending on the geographic location of the structure.

Offshore structures shall be considered to be in a marine atmosphere.

3.1.5 Buried areas: any underground structure.

3.1.6 Immersed areas: any structure contained in the aqueous phase.

3.2 Definition of substrate types

3.2.1 Carbon and cast iron

Carbon steel and cast iron.

3.2.2 Stainless steel and special alloys

Stainless or nickel steel, monel, etc.

3.2.3 Galvanized steels

Zinc-coated carbon steels.

3.2.4 Galvanized and cadmium-plated bichromated steels

Carbon steels coated with cadmium or zinc and then bichromated.

3.2.5 Plastics

Thermosetting plastics or resins, reinforced or otherwise.

3.2.6 Concretes and similar products

Different types of cement-based, or fire-proofing products.

3.3 Parameter coding system and identification of systems

3.3.1 Parameter coding system

3.3.1.1 Parameter 1: Atmosphere or environment

MA	Marine
IM	Immersed

3.3.1.2 Parameter 2: Substrate

AF	Carbon steel or cast iron
AI	Stainless steels and special alloys
AG	Galvanized steels
AB	Galvanized or cadmium-plated bichromated steels
PL	Plastics
BE	Concretes and similar products

3.3.1.3 Parameter 3: Operating temperatures

SNNN/SNNN: two-part code comprising a sign (S) and three digits (NNN) indicating the minimum and maximum Operating temperatures.

3.3.2 Identification of systems

Systems are identified as follows:

MA	AF	+121/+300	
Parameter 1	Parameter 2	Parameter 3	System number

3.4 Approved systems

The approved systems are given in the reference standards.

4. Conditions of execution of the work

4.1 Grade of cleanliness

This is specified in each system.

4.2 Surface roughness (Ra)

This shall be measured using a roughness meter with adapted cut-off. The roughness value, Ra, required is specified in each system.

It could be characterized with ISO surface profile comparators.

4.3 Substrates contamination

They are defined according to ISO standards and compatible with the high durability of the paint systems:

- Salts contamination
- Dust level
- Others, etc.

4.4 Preparation of AF type surfaces

All structures and equipment are built with a design in accordance with ISO standard for high durability of the paint systems.

All Sharp edges shall be rounded (minimum radius > 2 mm).

There is no interstice, not inaccessible area, etc.

All oil or grease shall be removed by washing with appropriate solvents or any other suitable means before beginning blast-cleaning operations.

Bolt holes in piping assemblies shall be cleaned with solvent before blast-cleaning.

Weld spatter and remains of temporary welds, deposits or surface defects shall be eliminated by appropriate means; removal by deep grinding is subject to the approval of the OWNER.

The CONTRACTOR shall protect all equipment that is not to be painted or liable to be affected by the presence of abrasives or paint. Special attention shall be paid to avoiding splashes of zinc paint on equipment made of austenitic steels to prevent stress cracking corrosion at high temperatures.

All surfaces to be coated shall be blast-cleaned according to the recommendations defined for each system.

For any surface blast-cleaned on the construction site, all dust must be removed using an industrial vacuum cleaner before the application of the paint.

All blast-cleaned surfaces shall be coated before the deterioration of the "grade of cleanliness" specified in the system can be compromised.

The proposal shall be submitted to the OWNER for approval.

4.5 Preparation of AF surfaces on automatic production lines in steel Operating plants

These operations shall comply with current standards.

All surfaces to be coated shall be blast-cleaned to grade of cleanliness SA 3.

The CONTRACTOR's proposal defining the profile that affords maximum adhesion shall include the following elements:

- Surface roughness (Ra)
- Dust level
- Substrate contamination checks
- Abrasive composition.

The proposal shall be submitted to the OWNER for approval.

The CONTRACTOR shall check the roughness (Ra) twice per shift using a surface roughness recording instrument. Inspection forms and charts shall be handed over to the OWNER.

4.6 Preparation of AG or AI surfaces

4.6.1 AG surfaces

Galvanized surfaces to be coated shall be cleaned, degreased and etched using the product specified in the systems.

4.6.2 AI surfaces

To obtain the roughness required for adhesion of the chosen system, stainless steel surfaces to be coated shall be etched or degreased and blast-cleaned with a non-ferrous and chlorine-free abrasive.

The CONTRACTOR's proposal defining the profile that affords maximum adhesion shall include the following elements:

- Abrasive composition
- Surface roughness – Ra: 8/10 micrometres / Low in relation to the product to be implemented – endeavour to keep it to a minimum of 10 micrometres roughness.
- Dust level - level 2 maximum.
- Substrate contamination checks. ferrous contamination / direct colorimetry method using Prussian blue (potassium ferricyanide) – no surface pollution can be accepted.
- Applicable paint systems:
 - Stainless steel as 304, 321 → system P 05 on all surface
 - Stainless steel as 316L, 904, duplex, ... → system P 05 second only on thermally insulated piping or to prevent corrosion risk in interstices.

4.7 The proposal shall be submitted to COMPANY for approval. Preparation of AB surfaces

Galvanized or cadmium-plated bichromated surfaces shall be cleaned and degreased.

4.8 Conditions for products

4.8.1 Procurement and storage

4.8.1.1 Paints and thinners

All major paint systems are certified by a third part laboratory in accordance with standards and approved by COMPANY.

The quantities required to coat the structure shall be procured before the work commences, except in cases where the shelf life of the product is less than the anticipated duration of the work.

The products shall be stored in optimal conditions for their best conservation (air-conditioned store, etc.), and delivered in their original packaging. The packaging must precise the batch number, the fabrication date and expired date.



The maximum expired dates considered starting to the fabrication dates are:

- For zinc ethyl silicate six (6) months
- For another products one (1) year
- For some particular products in accordance with the products maker recommendations and the OWNER approval.

4.8.1.2 Abrasives

Products shall be sealed in hermetic packaging. Any product delivered in defective packaging shall be rejected. Products must be stored sheltered from the elements.

Conductivity shall be less than $150 \cdot 10^{-6}$ SIEMENS/cm and salt contamination shall be less than 30 mg/m².

Notes:

- Conductivity for the treatment of immersed areas shall be less than $30 \cdot 10^{-6}$ SIEMENS/cm and salt contamination shall be less than 20 mg/m².
- Using copper slag is forbidden to avoid copper surface contamination.

4.8.2 Samples

From each batch of products used during the work, the CONTRACTOR shall take two samples to be made available to the OWNER.

4.8.3 Qualification of the application procedures for the different systems

Two month before work commences, all the chosen systems shall be applied (graded) on representative elements of the structure. The products used shall be taken from the same batches as those intended for the structure.

The system shall be applied in the presence of the SUPPLIER of the coating products and the OWNER's representative, in climatic conditions that are as similar as possible to worst case conditions that can be foreseen during the work on the construction site. Application shall be performed by the painting specialist who will be responsible for application during the work.

4.9 Application conditions

A pre-operational technical meeting shall be organized by the CONTRACTOR in the presence of the OWNER and the SUPPLIERS to analyze all the details concerning performance of the work, and the application and inspection principles.

The SUPPLIERS shall provide the CONTRACTOR with technical assistance.

Minimum and maximum times between coats shall be consistent with the data sheets and with the schedule of the work.

Paint shall always be applied to surfaces that are dry, clean and degreased (substrate or previous coat).

- Paint shall never be applied before the temperature of the substrate is at least 3°C above the dew point.

Paint shall never be applied in rainy or foggy weather, except under shelter, and subject to verification of the requirements above.

The minimum and maximum temperatures of the ambient atmosphere and the support shall be in accordance with the product data sheets. The minimum application temperature for:

- epoxy is 10°C
- top coat type acryl-polyurethane is 5°C.

The CONTRACTOR shall keep a continuous daily record of the temperature, ambient atmosphere and relative humidity. He shall record the temperature of the support to determine the dew point before and during the work to ensure that the application conditions are acceptable. These records shall be kept and made available to the OWNER.

Different colours shall be used for all successive coats of the paint system. The finishing coat of the required colour shall be sufficiently opaque to cover the shade of the undercoat.

During the painting work, the CONTRACTOR shall prepare two specimen plates (200 mm x 100 mm) for each area of the equipment (location defined in the selection parameters in Appendix 2 and for each system).

The thickness of each coat shall be checked by the CONTRACTOR. The measured values shall be recorded and made available to the OWNER.

The thickness tolerances and the minimum frequency for thickness measurement are defined in the related standard .

The CONTRACTOR shall ensure that his work does not show any defects, such as:

- "Orange peel"
- Cracking
- Bubbling
- Pin-holes
- Runs and sags
- Blistering
- Etc.

4.9.1 Special cases

4.9.1.1 Zinc ethyl silicate

During application, the product shall be stirred at all times. It shall be sprayed systematically with fresh water for at least two hours after application.

Before covering, this primer shall be subjected to a soaking test using MEK (Methyl Ethyl Ketone) to ensure that the hydrolysis is total.

If complete hydrolysis is not obtained within eight days after application, the coating shall be completely removed and re-done.

4.9.1.2 Galvanized or cadmium-plated bichromated bolting

All surfaces shall be coated.

4.10 Defect repair conditions

Subject to the agreement of the OWNER and after determining the scale and type of the defects, the following methods of repair shall be applied:

4.10.1 Major defects (products, application and unsatisfactory tests results)

The paint shall be removed completely by abrasive blast-cleaning and the entire system shall be re-applied.

4.10.2 Minor defects (localized appearance, scratches, etc.)

Subject to the agreement of the SUPPLIER of the product and according to the system chosen, localized blast-cleaning with total or partial elimination of the system and re-painting.

5. Certification of personnel

5.1 Operators

Whatever the application process used for the liquid paints and the nature of the environment, the operators shall be individually certified by an approved organization (ACQPA, FROSIO, etc.).

5.2 Inspectors

The inspectors shall be individually certified by an approved organization (ACQPA, FROSIO, NACE International (minimum level 3), etc.).

6. Technical content of tenders

Tenders shall specify the following:

- Proposed paint system(s)
- Product data sheets
- Certificates specifying the durations, requirements and performance levels of warranties as issued by the Office National d'Homologation des Garanties de Peinture Industrielle or any other agreed Office equivalent
- Type approval certificate and/or test certificates for coatings in contact with specific products (food products, jet fuel, etc.)
- Location of each system on the structure
- Quality Assurance Plan including in particular:
 - An annotated functional flow diagram
 - Acceptance, storage (traceability), sampling conditions
 - Location of each of the systems on the equipment
 - A list of the various phases of application and inspection and associated procedures validated by the SUPPLIER
 - Surface preparation conditions, showing the methods to be used to obtain the required roughness value

- Conditions of application of the coats that make up the systems
- A list of all apparatus and equipment used in the workshop and on site
- Maximum thickness of each coat to ensure the properties of the coat concerned and of the system as a whole
- Minimum and maximum intervals between coats for each system and according to climatic conditions
- Measures taken to protect against adverse weather conditions
- Safety measures applied
- A list of inspection materials used in the workshop and on site.
- The personnel certificates of the operators and inspectors.

7. Checks, inspection and acceptance

7.1 Checks

Throughout the duration of the work, the CONTRACTOR's Quality Control department shall check the following points in accordance with the chosen system. The results of these checks shall be recorded (quality control report).

- Construction quality
 - Suitability for the coating:
 - Corners, sharp edges
 - Form, quality and continuity of welds.
- Surface preparation quality:
 - Grade of cleanliness,
 - Cleanliness (dust level, etc.)
 - Roughness, Ra.
- Salts contamination or others
- Climatic conditions for application
- Substrate temperature
- Drying and polymerization state of primer and of each coat.
- Special cases
 - Zinc ethyl silicate
 - . Washing with fresh water and solvent test.
 - Thermosetting
 - . Temperature curve check.
- Interval between coats

- Number of coats.

This shall be in accordance with the system(s) chosen.

- Wet film thickness of each coat on application
- Thickness of the various coats and of the final system.

According to the tolerances specified in the standards referred to in section 2.

- Porosity

The porosity of the coating shall be checked across the entire surface using a wet sponge or an electrical brush in accordance with system instructions.

No arcing at the voltages specified in the system data sheet shall be permitted.

- Appearance

The test shall meet the requirements of section 4.9.

- Compliance of specimen plates

According to the various phases of application and reference areas (see section 4.9).

- Adherence

The tests shall be carried out on the "specimen" plates; they shall be carried out only when the system is completely dry and fully polymerized.

If the results are unsatisfactory, the tests shall be carried out on the corresponding surfaces of the equipment. The extent of the tests on site shall be defined in agreement with the OWNER.

- Cross-cut test (systems less than 200 µm)

The test shall be carried out in accordance with the standard and shall be applied even for a multi-coat system.

The adherence test results based on the use of a scalpel and after application of adhesive tape shall comply with class 0.

- Pull-off test (systems 200 µm or above)

The tests shall be carried out in accordance with the standard. The minimum level of performance shall be 4 MPa for checks made with mechanical equipment (type Ersad, Satec, or equivalent) and 6 MPa for checks made with hydraulic equipment (Type PAT or equivalent) except another indication in the system's data sheets.

The measuring instrument must be fitted with a storage pressure gauge recording pulling force.

In the system's data sheets only the minimum performance level obtained with mechanical equipment are indicated.

7.2 Inspection

An inspection plan shall be drawn up including all the points in subsection 7.1.

As part of the quality assurance plan, the OWNER shall define inspection procedures for the different work and inspection phases.



7.3 Provisional acceptance

At handover time, the OWNER shall check that all the inspections set out in subsection 7.1 have been carried out and that all the results are satisfactory.

7.4 Guarantees

The coatings shall be covered by a specific guarantee, the durations, criteria and levels of performance of which shall be specified in each system's data sheet.

The CONTRACTOR, the Applier and the SUPPLIER shall jointly underwrite the guarantee.

7.5 Final acceptance

An inspection shall be carried out at the end of the warranty period.

8. Technical file

The technical file, handled over by the CONTRACTOR at the end of the work, shall include:

- Certificate specifying durations, criteria and levels of performance of the guarantees, issued by the French National Office for the approval of industrial paint system guarantees
- The insurance certificate for the guarantee
- Approval and/or test certificates for coatings in contact with specific products: food products, jet fuel, etc.
- The various inspection reports
- Provisional acceptance reports.



Appendix 1 Approved list of SUPPLIERS

SUPPLIER	Code	Phone No.	Fax No.	Remarks
AMERON	A	01 30-71-50-50	01-30-53-49-07	technical.nl@ameron-bv.com
CARBOLINE	C	01-60-06-55-66	01-60-06-55-70	Carboline.France @stoncor.com
HEMPEL	H	03-44-08-28-90	03-44-08-28-99	stephane_moritz@fr.hempel.com
INTERNATIONAL COATINGS	I	02-35-22-13-50	02-35-22-13-52	edward.grattepanche@uk.akzonobel.com
JOTUN	J	01-45-19-38-87	01-45-19-38-94	jose.menaches@jotun.com
SIGMAKALON	SF	01-57-61-01-65	01-57-61-01-82	Frederic.Coulon@SigmaKalon.com

Appendix 2 List of systems

Floating structures

Important warning:

Zinc ethyl silicate-based primers are systematically sprinkled with fresh water at least two hours after application to ensure hydrolysis.

The minimum interval between coats depends on the results of the "MEK test".

Intervals between coats are given for 20°C and a relative humidity of 60%.

The temperatures indicated in the code are the mini/maxi Operating temperatures.

ACQPA internet address: www.acqpa.com

Structure	Code	System No.	Remarks
Shop-primed surfaces			
	MA AF -010/+400	P 208	
Hull			
Quickwork Bottom Boot top	MA AF -010/+080	P 201	Additional protection by cathodic protection required
Deadworks			
	MA AF -010/+080	P 202	
Superstructures			
Bridge house Stack/Funnel Helideck	MA AF -010/+080 MA AF -010/+080	P 203 P 03	
Deck			
Cargo gear Galvanized surfaces	MA AF -010/+080 MA AG -010/+080	P 204 P 05	All galvanized surfaces, except gratings, stairs and associated galvanized fasteners
Cd/bi Cr surfaces Zn/bi Cr surfaces	MA AB -010/+080 MA AB -010/+080	P 06 P 06	Above 80°C, system adapted to adjacent surfaces systems.



Structure	Code	System No.	Remarks
Tanks			
Crude oil tanks	MA AF -010/+080	P 206	Extend 2 m down from the roof and 1 m up from the bottom Additional protection by sacrificial anodes required
Slops tanks	MA AF -010/+080	P 206	Additional protection by sacrificial anodes required
Permanent ballast tanks	MA AF -010/+080	P 206	Additional protection by sacrificial anodes required
Voids/cofferdam	MA AF -010/+080	P 207	
Storage			
Gas-oil	MA AF -010/+050	P 106	Report from authorized organization
Jet fuel/jet A1		P 109	
Drinking water tank	MA AF -010/+050	P 105	Health and safety reports
Galvanized surfaces	MA AG -010/+080	P 05	All galvanized surfaces, except gratings, stairs and associated galvanized fasteners
Cd/bi Cr surfaces	MA AB -010/+080	P 06	Above 80°C, system adapted to adjacent surfaces systems.
Zn/bi Cr surfaces	MA AB -010/+080	P 06	
Piping			
Uninsulated: t < 80°C	MA AF -010/+080	P 01	Including adjacent surfaces
81 < t < 150°C	MA AF +081/+150	P 10	
151 < t < 400°C	MA AF +151/+400	P 11	
Insulated: t < 90°C	MA AF -030/+089	P 12	Including adjacent surfaces
90 < t < 200°C	MA AF +090/+200	P 13	
Galvanized surfaces	MA AG -010/+080	P 05	
Cd/bi Cr surfaces	MA AB -010/+080	P 06	All galvanized surfaces, except gratings, stairs and associated galvanized fasteners
Zn/bi Cr surfaces	MA AB -010/+080	P 06	
			Above 80°C, system adapted to adjacent surfaces systems.



Exploration & Production

General Specification

Date: 10/03

GS COR 351

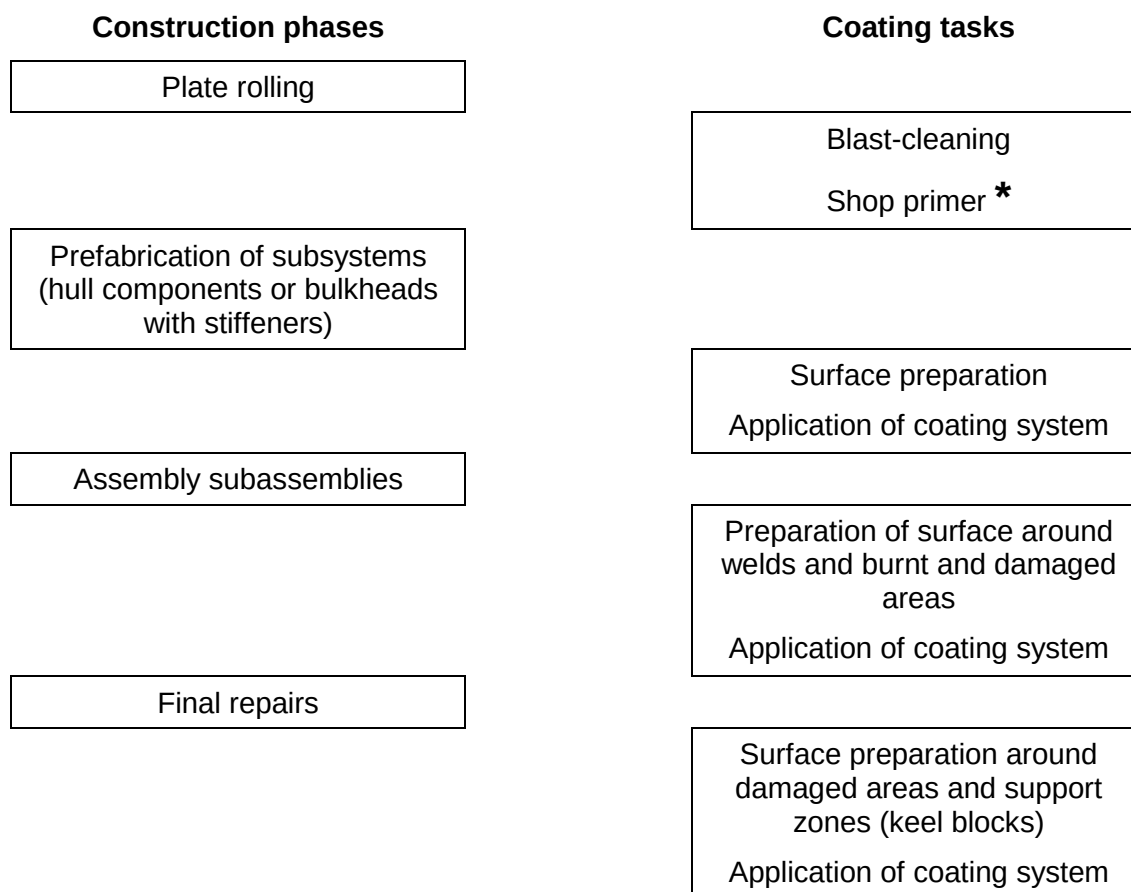
Rev: 03

Appendix 2

Structure	Code	System No.	Remarks
Machinery			
t < 80°C	MA AF -010/+080	P 14	SUPPLIER's system applied if approved by Total E&P
Shops/Stores			
Workshop	MA AF -010/+080	P 205	Sub-concrete coat (others: system P02)
Air conditioned rooms			
Floors		P 17	

Appendix 3 Construction principles/Precautions

1. Floating structures - Construction principles



- Important: the shop primer is for temporary protection. It shall be completely removed before application of coating.

2. Floating structures - Precautions

2.1 Initial coating of as-rolled plate

All plates shall be shop-primed after blast-cleaning to grade of cleanliness SA 3 according to P 208 systems (shop primer based on zinc ethyl silicate or epoxy or other).

2.2 Corner edges

All corner edges shall be chamfered before applying coatings (minimum radius > 2 mm).



2.3 Surface preparation

The zinc ethyl silicate or epoxy or other based shop primer (P 208 system) shall be carefully removed before applying the final coating system.

Areas around welds and damaged areas shall be brushed to at least grade of cleanliness SA 21/2 ([ISO 8501-1: 1988](#)).

Appendix 4 SUPPLIERS' systems

Binders coding

Binders	Codes	Remarks
Acrylic	AY	
Zinc ethyl silicate	ESI	
Rich Zinc epoxy	EPRZ	[Zn] > 80% (ISO 12944-5)
Poor Zinc Epoxy	EPZ	[Zn] < 80% (ISO 12944-5)
Epoxy	EP	
Phenolic Epoxy	EPPH	
Modified Epoxy	EPM	
Vinylic Epoxy	EPVI	
Ester Epoxy	EPES	
Zinc Phosphate Epoxy	EPHZ	
Tar Epoxy	Tar EP	
Glass flake Epoxy	EPGF	
Polyurethane	PUR	
Polyester	PY	
Silicone	SI	
Vinyl-ester	VY	



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System No. **P 201 A**
Coating **Hull**
SUPPLIER **AMERON**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Amercoat 71 primer	50 microns	51	85	4 hours	unlimited
Tie-coat	EP	Amercoat 385	200 microns	71	85	12 hours	unlimited
Intermediate							
Finish coat	EP	Amercoat 385	200 microns	71	85	12 hours	unlimited

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Amercoat 71 primer	50 microns	51	85	4 hours	unlimited
Tie-coat	EP	Amercoat 385	200 microns	71	85	12 hours	unlimited
Intermediate							
Finish coat	EP	Amercoat 385	200 microns	71	85	12 hours	unlimited

4. Remarks

Operating temperature resistance: less than 60°C

Guarantee: 5 years

Degree of rusting Ri 2

Minimum mechanical pull-off test value: 4 MPa



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System No. **P 202 A**
Coating **Deadworks**
SUPPLIER **AMERON**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Amercoat 71 primer	50 microns	51	85	4 hours	unlimited
Tie-coat	EP	Amercoat 385	175 microns	71	85	12 hours	unlimited
Intermediate	EP	Amercoat 385	175 microns	71	85	12 hours	unlimited
Finish coat	PUR	Amercoat 450 S	50 microns	58	85	4 hours	unlimited

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Amercoat 71 primer	50 microns	51	85	4 hours	unlimited
Tie-coat	EP	Amercoat 385	175 microns	71	85	12 hours	unlimited
Intermediate	EP	Amercoat 385	175 microns	71	85	12 hours	unlimited
Finish coat	PUR	Amercoat 450 S	50 microns	58	85	4 hours	unlimited

4. Remarks

Operating temperature resistance: less than 60°C

Guarantee: 5 years

Degree of rusting Ri 2

Minimum mechanical pull-off test value: 4 MPa



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System No. **P 203 A**
 Coating **Superstructures**
 SUPPLIER **AMERON**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Amerlock 400 Alu	150 microns	85	85	16 hours	unlimited
Tie-coat	EP	Amercoat 385	150 microns	71	85	12 hours	unlimited
Intermediate							
Finish coat	PUR	Amercoat 450 S	50 microns	58	85	4 hours	unlimited

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Amerlock 400 Alu	150 microns	85	85	16 hours	unlimited
Tie-coat	EP	Amercoat 385	150 microns	71	85	12 hours	unlimited
Intermediate							
Finish coat	PUR	Amercoat 450 S	50 microns	58	85	4 hours	unlimited

4. Remarks

Operating temperature resistance: less than 60°C

Guarantee: 5 years

Degree of rusting Ri 2

Minimum mechanical pull-off test value: 4 MPa



System No. **P 204 A**
Coating **Deck**
SUPPLIER **AMERON**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Amercoat 71 primer	50 microns	51	85	4 hours	unlimited
Tie-coat							
Intermediate	EPGF	Amerlock 400 GFA	350 microns	85	85	16 hours	unlimited
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Amercoat 71 primer	50 microns	51	85	4 hours	unlimited
Tie-coat							
Intermediate	EPGF	Amerlock 400 GFA	350 microns	85	85	16 hours	unlimited
Finish coat							

4. Remarks

Operating temperature resistance: less than 60°C

Guarantee: 5 years

Degree of rusting Ri 2

Minimum mechanical pull-off test value: 4 MPa



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System No. **P 205 A**
Coating **Workshops/Stores**
SUPPLIER **AMERON**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Amerlock 400	150 microns	85	85	16 hours	unlimited
Tie-coat							
Intermediate							
Finish coat	PUR	Amercoat 450 S	50 microns	55	85	4 hours	unlimited

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Amerlock 400	150 microns	85	85	16 hours	unlimited
Tie-coat							
Intermediate							
Finish coat	PUR	Amercoat 450 S	50 microns	55	85	4 hours	unlimited

4. Remarks

Operating temperature resistance: less than 60°C

Guarantee: 5 years

Degree of rusting Ri 2

Minimum mechanical pull-off test value: 4 MPa



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System No. **P 206 A**
Coating **Tanks**
SUPPLIER **AMERON**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Amercoat 351	200 microns	100	85	16 hours	7 days
Tie-coat							
Intermediate	EP	Amercoat 351	200 microns	100	85	16 hours	7 days
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Amercoat 351	200 microns	100	85	16 hours	7 days
Tie-coat							
Intermediate	EP	Amercoat 351	200 microns	100	85	16 hours	7 days
Finish coat							

4. Remarks

Operating temperature resistance: less than 50°C

Guarantee: 5 years

Degree of rusting Ri 2

Minimum mechanical pull-off test value: 4 MPa



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System No. **P 207A**
Coating **Voids/Cofferdam**
SUPPLIER **AMERON**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Amerlock 400 C	150 microns	87	85	16 hours	unlimited
Tie-coat							
Intermediate							
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Amerlock 400 C	150 microns	87	85	16 hours	unlimited
Tie-coat							
Intermediate							
Finish coat							

4. Remarks

Operating temperature resistance: less than 80°C		
Guarantee: 5 years	No blistering	Minimum mechanical pull-off test value: 4 MPa



System No. **P 208 A**
Coating **Shop-Primed Surfaces**
SUPPLIER **AMERON**

1. Surface preparation

Grade of cleanliness Sa 3 ([ISO 8501-1: 1988](#))
Roughness Grit-medium (G) ([ISO 8503-2: 1988](#))

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	ESI	DSP 210	20 microns	38	90	-	-
Tie-coat							
Intermediate							
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ ([ISO 8501-1: 1988](#))

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	ESI	DSP 210	20 microns	38	90	-	-
Tie-coat							
Intermediate							
Finish coat							

4. Remarks

Operating temperature resistance: less than 400°C

Guarantee:



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System No. **P 201 C**
Coating **Hull**
SUPPLIER **CARBOLINE**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Carboguard 193 primer	50 microns	52	85	12 hours	unlimited
Tie-coat	EPGF	Carboguard 1209	400 microns	88.5	85	16 hours	7 days
Intermediate							
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Carboguard 193 primer	50 microns	52	85	12 hours	unlimited
Tie-coat	EPGF	Carboguard 1209	400 microns	88.5	85	16 hours	7 days
Intermediate							
Finish coat							

4. Remarks

Operating temperature resistance: less than 60°C		
Guarantee: 5 years	Degree of rusting Ri 2	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 202 C**
 Coating **Deadworks**
 SUPPLIER **CARBOLINE**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)
 Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Carboguard 893	100 microns	77	85	16 hours	unlimited
Tie-coat							
Intermediate	EP	Carboguard 890	300 microns	77	85	8 hours	unlimited
Finish coat	PUR	Carbothane 134	50 microns	57	80	24 hours	unlimited

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Carboguard 893	100 microns	77	85	16 hours	unlimited
Tie-coat							
Intermediate	EP	Carboguard 890	300 microns	77	85	8 hours	unlimited
Finish coat	PUR	Carbothane 134	50 microns	57	80	24 hours	unlimited

4. Remarks

Operating temperature resistance: less than 60°C		
Guarantee: 5 years	Degree of rusting Ri 2	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 203C**
Coating **Superstructures**
SUPPLIER **CARBOLINE**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Carbomastic 15	150 microns	90	85	24 hours	48 hours
Tie-coat	EPM	Carboguard 893	150 microns	77	85	16 hours	unlimited
Intermediate							
Finish coat	PUR	Carbothane 134	50 microns	57	80	24 hours	unlimited

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Carbomastic 15	150 microns	90	85	24 hours	48 hours
Tie-coat	EPM	Carboguard 893	150 microns	77	85	16 hours	unlimited
Intermediate							
Finish coat	PUR	Carbothane 134	50 microns	57	80	24 hours	unlimited

4. Remarks

Operating temperature resistance: less than 60°C

Guarantee: 5 years

Degree of rusting Ri 2

Minimum mechanical pull-off test value: 4 MPa



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System No. **P 204 C**
 Coating **Deck**
 SUPPLIER **CARBOLINE**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)
 Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Carboguard 193	50 microns	52	85	12 hours	unlimited
Tie-coat							
Intermediate	EPGF	Carboguard 1209	400 microns	88.5	85	16 hours	7 days
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Carboguard 193	50 microns	52	85	12 hours	unlimited
Tie-coat							
Intermediate	EPGF	Carboguard 1209	400 microns	88.5	85	16 hours	7 days
Finish coat							

4. Remarks

Operating temperature resistance: less than 60°C		
Guarantee: 5 years	Degree of rusting Ri 2	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 205 C**
 Coating **Workshops/Stores**
 SUPPLIER **CARBOLINE**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Carboguard 893	150 microns	77	85	16 hours	unlimited
Tie-coat							
Intermediate							
Finish coat	PUR	Carbothane 134	50 microns	57	80	24 hours	unlimited

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Carboguard 893	150 microns	77	85	16 hours	unlimited
Tie-coat							
Intermediate							
Finish coat	PUR	Carbothane 134	50 microns	57	80	24 hours	unlimited

4. Remarks

Operating temperature resistance: less than 60°C

Guarantee: 5 years

Degree of rusting Ri 2

Minimum mechanical pull-off test value: 4 MPa



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System No. **P 206 C**
 Coating **Tanks**
 SUPPLIER **CARBOLINE**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Carbomastic 18 NT	200 microns	80	85	6 hours	6 days
Tie-coat							
Intermediate							
Finish coat	EPM	Carbomastic 18 NT	200 microns	80	85	6 hours	6 days

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Carbomastic 18 NT	200 microns	80	85	6 hours	6 days
Tie-coat							
Intermediate							
Finish coat	EPM	Carbomastic 18 NT	200 microns	80	85	6 hours	6 days

4. Remarks

Operating temperature resistance: less than 50°C

Guarantee: 5 years

Degree of rusting Ri 2

Minimum mechanical pull-off test value: 4 MPa



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System No. **P 207 C**
 Coating **Voids/Cofferdam**
 SUPPLIER **CARBOLINE**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Carboguard 893	150 microns	77	85	16 hours	unlimited
Tie-coat							
Intermediate							
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Carboguard 893	150 microns	77	85	16 hours	unlimited
Tie-coat							
Intermediate							
Finish coat							

4. Remarks

Operating temperature resistance: less than 80°C

Guarantee: 5 years

No blistering

Minimum mechanical pull-off test value: 4 MPa



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System No. **P 208 C**
Coating **Shop-Primed Surfaces**
SUPPLIER **CARBOLINE**

1. Surface preparation

Grade of cleanliness Sa 3 ([ISO 8501-1: 1988](#))

Roughness Grit-medium (G) ([ISO 8503-2: 1988](#))

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	ESI	Carboweld 11 P 40	20 microns	43	95	24 hours	unlimited
Tie-coat							
Intermediate							
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ ([ISO 8501-1: 1988](#))

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	ESI	Carboweld 11 P 40	20 microns	43	95	24 hours	unlimited
Tie-coat							
Intermediate							
Finish coat							

4. Remarks

Operating temperature resistance: less than 400°C

Guarantee:



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System No. **P 201 H**
Coating **Hull**
SUPPLIER **HEMPEL**

1. Surface preparation

Grade of cleanliness SA 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Hempadur 1559	50 microns	44	85	8 hours	14 days
Tie-coat	EPM	Hempadur 4575	200 microns	81	85	6 hours	30 days
Intermediate							
Finish coat	EPM	Hempadur 4575	200 microns	81	85	6 hours	30 days

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Hempadur 1559	50 microns	44	85	8 hours	14 days
Tie-coat	EPM	Hempadur 4575	200 microns	81	85	6 hours	30 days
Intermediate							
Finish coat	EPM	Hempadur 4575	200 microns	81	85	6 hours	30 days

4. Remarks

Operating temperature resistance: less than 60°C

Guarantee: 5 years

Degree of rusting Ri 2

Minimum mechanical pull-off test value: 4 MPa



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System No. **P 202 H**
Coating **Deadworks**
SUPPLIER **HEMPEL**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Hempadur 1559	50 microns	44	85	8 hours	14 days
Tie-coat	EPM	Hempadur 4575	200 microns	81	85	6 hours	30 days
Intermediate	EPM	Hempadur 4588	100 microns	80	85	6 hours	unlimited
Finish coat	PUR	Hempathane 5521	40 microns	50	85	16 hours	unlimited

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Hempadur 1559	50 microns	44	85	8 hours	14 days
Tie-coat	EPM	Hempadur 4575	200 microns	81	85	6 hours	30 days
Intermediate	EPM	Hempadur 4588	100 microns	80	85	6 hours	unlimited
Finish coat	PUR	Hempathane 5521	50 microns	50	85	16 hours	unlimited

4. Remarks

Operating temperature resistance: less than 60°C

Guarantee: 5 years

Degree of rusting Ri 2

Minimum mechanical pull-off test value: 4 MPa



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System No. **P 203 H**
 Coating **Superstructures**
 SUPPLIER **HEMPEL**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Ra 7/10 microns

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Hempadur 4515 MIO	150 microns	85	85	12 hours	unlimited
Tie-coat							
Intermediate	EPM	Hempadur 4588	150 microns	80	85	6 hours	unlimited
Finish coat	PUR	Hempathane 5521	50 microns	50	85	16 hours	unlimited

3. Repair system

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Hempadur 4515 MIO	150 microns	85	85	12 hours	unlimited
Tie-coat							
Intermediate	EPM	Hempadur 4588	150 microns	80	85	6 hours	unlimited
Finish coat	PUR	Hempathane 5521	50 microns	50	85	16 hours	unlimited

4. Remarks

Operating temperature resistance: less than 60°C		
Guarantee: 5 years	Degree of rusting Ri 2	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 204 H**
Coating **Deck**
SUPPLIER **HEMPEL**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Hempadur 1559	50 microns	44	85	8 hours	14 days
Tie-coat							
Intermediate	EPGF	Hempadur GF 3587	350 microns	87	85	4 hours	7 days
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Hempadur 1559	50 microns	44	85	8 hours	14 days
Tie-coat							
Intermediate	EPGF	Hempadur GF 3587	350 microns	87	85	4 hours	7 days
Finish coat							

4. Remarks

Operating temperature resistance: less than 60°C

Guarantee: 5 years

Degree of rusting Ri 2

Minimum mechanical pull-off test value: 4 MPa



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System No. **P 205 H**
Coating **Rooms**
SUPPLIER **HEMPEL**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Hempadur 4588	150 microns	80	85	6 hours	unlimited
Tie-coat							
Intermediate							
Finish coat	PUR	Hempathane 5521	50 microns	50	85	16 hours	unlimited

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Hempadur 4588	150 microns	80	85	6 hours	unlimited
Tie-coat							
Intermediate							
Finish coat	PUR	Hempathane 5521	50 microns	50	85	16 hours	unlimited

4. Remarks

Operating temperature resistance: less than 60°C

Guarantee: 5 years

Degree of rusting Ri 2

Minimum mechanical pull-off test value: 4 MPa



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System No. **P 206 H**
Coating **Tanks**
SUPPLIER **HEMPEL**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Ra 13/15 microns

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Hempadur 4575	200 microns	81	85	6 hours	30 days
Tie-coat							
Intermediate							
Finish coat	EPM	Hempadur 4575	200 microns	81	85	6 hours	30 days

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Hempadur 4575	200 microns	81	85	6 hours	30 days
Tie-coat							
Intermediate							
Finish coat	EPM	Hempadur 4575	200 microns	81	85	6 hours	30 days

4. Remarks

Operating temperature resistance: less than 50°C

Guarantee: 5 years

Degree of rusting Ri 2

Minimum mechanical pull-off test value: 4 MPa



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System No. **P 207H**
Coating **Voids/Cofferdam**
SUPPLIER **HEMPEL**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Hempadur 4575	200 microns	81	85	6 hours	30 days
Tie-coat							
Intermediate							
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Hempadur 4575	200 microns	81	85	6 hours	30 days
Tie-coat							
Intermediate							
Finish coat							

4. Remarks

Operating temperature resistance: less than 80°C

Guarantee: 5 years

No blistering

Minimum mechanical pull-off test value: 4 MPa



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System No. **P 208 H**
 Coating **Shop-Primed Surfaces**
 SUPPLIER **HEMPEL**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)
 Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	ESI	Shopprimer ZS 1589	20 microns	25	85	4 hours	1 year
Tie-coat							
Intermediate							
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	ESI	Shopprimer ZS 1589	20 microns	25	85	4 hours	1 year
Tie-coat							
Intermediate							
Finish coat							

4. Remarks

Operating temperature resistance: less than 400°C

Guarantee:



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System No. **P 201 I**
 Coating **Hull**
 SUPPLIER **INTERNATIONAL COATINGS**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Intergard 269	50 microns	47	85	24 hours	unlimited
Tie-coat							
Intermediate	EPGF	Interzone 505	400 microns	88	85	6 hours	4 days
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Intergard 269	50 microns	47	85	24 hours	unlimited
Tie-coat							
Intermediate	EPGF	Interzone 505	400 microns	88	85	6 hours	4 days
Finish coat							

4. Remarks

Operating temperature resistance: less than 60°C

Guarantee: 5 years

Degree of rusting Ri 2

Minimum mechanical pull-off test value: 4 MPa



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System No. **P 202 I**
 Coating **Deadworks**
 SUPPLIER **INTERNATIONAL COATINGS**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)
 Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Intergard 269	50 microns	47	85	24 hours	unlimited
Tie-coat							
Intermediate	EPGF	Interzone 505	350 microns	88	85	6 hours	4 days
Finish coat	PUR	Interthane 990	50 microns	57	85	16 hours	unlimited

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Intergard 269	50 microns	47	85	24 hours	unlimited
Tie-coat							
Intermediate	EPGF	Interzone 505	350 microns	88	85	6 hours	4 days
Finish coat	PUR	Interthane 990	50 microns	57	85	16 hours	unlimited

4. Remarks

Operating temperature resistance: less than 60°C		
Guarantee: 5 years	Degree of rusting Ri 2	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 203 I**
 Coating **Superstructures**
 SUPPLIER **INTERNATIONAL COATINGS**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Intergard 269	50 microns	47	85	24 hours	unlimited
Tie-coat							
Intermediate	EPGF	Interzone 505	250 microns	88	85	6 hours	4 days
Finish coat	PUR	Interthane 990	50 microns	57	85	16 hours	unlimited

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Intergard 269	50 microns	47	85	24 hours	unlimited
Tie-coat							
Intermediate	EPGF	Interzone 505	250 microns	88	85	6 hours	4 days
Finish coat	PUR	Interthane 990	50 microns	57	85	16 hours	unlimited

4. Remarks

Operating temperature resistance: less than 60°C

Guarantee: 5 years

Degree of rusting Ri 2

Minimum mechanical pull-off test value: 4 MPa



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System No. **P 204 I**
 Coating **Deck**
 SUPPLIER **INTERNATIONAL COATINGS**

1. Surface preparation

Grade of cleanliness Sa 3 ([ISO 8501-1: 1988](#))
 Roughness Grit-medium (G) ([ISO 8503-2: 1988](#))

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Intergard 269	50 microns	47	85	24 hours	unlimited
Tie-coat							
Intermediate	EPGF	Interzone 505	350 microns	88	85	6 hours	4 days
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ ([ISO 8501-1: 1988](#))

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Intergard 269	50 microns	47	85	24 hours	unlimited
Tie-coat							
Intermediate	EPGF	Interzone 505	350 microns	88	85	6 hours	4 days
Finish coat							

4. Remarks

Operating temperature resistance: less than 60°C		
Guarantee: 5 years	Degree of rusting Ri 2	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 205 I**
 Coating **Workshops/Stores**
 SUPPLIER **INTERNATIONAL COATINGS**

1. Surface preparation

Grade of cleanliness Sa 3 ([ISO 8501-1: 1988](#))
 Roughness Grit-medium (G) ([ISO 8503-2: 1988](#))

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Interseal 670 HS	150 microns	82	85	8 hours	3 months
Tie-coat							
Intermediate							
Finish coat	PUR	Interthane 990	50 microns	57	85	16 hours	unlimited

3. Repair system

Grade of cleanliness Sa 2 ½ ([ISO 8501-1: 1988](#))

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Interseal 670 HS	150 microns	82	85	8 hours	3 months
Tie-coat							
Intermediate							
Finish coat	PUR	Interthane 990	50 microns	57	85	16 hours	unlimited

4. Remarks

Operating temperature resistance: less than 60°C		
Guarantee: 5 years	Degree of rusting Ri 2	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 206 I**
 Coating **Tanks**
 SUPPLIER **INTERNATIONAL COATINGS**

1. Surface preparation

Grade of cleanliness Sa 3 ([ISO 8501-1: 1988](#))
 Roughness Grit-medium (G) ([ISO 8503-2: 1988](#))

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Intergard 423	200 microns	68	85	6 hours	15 days
Tie-coat							
Intermediate	EP	Intergard 423	200 microns	68	85	6 hours	15 days
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ ([ISO 8501-1: 1988](#))

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Intergard 423	200 microns	68	85	6 hours	15 days
Tie-coat							
Intermediate	EP	Intergard 423	200 microns	68	85	6 hours	15 days
Finish coat							

4. Remarks

Operating temperature resistance: less than 50°C		
Guarantee: 5 years	Degree of rusting Ri 2	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 207 I**
 Coating **Voids/Cofferdam**
 SUPPLIER **INTERNATIONAL COATINGS**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer Tie-coat Intermediate Finish coat	EPM	Interseal 670 HS	150 microns	82	85	8 hours	3 months

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer Tie-coat Intermediate Finish coat	EPM	Interseal 670 HS	150 microns	82	85	8 hours	3 months

4. Remarks

Operating temperature resistance: less than 80°C		
Guarantee: 5 years	No blistering	Minimum mechanical pull-off test value: 4 MPa



System No. **P 208 I**
Coating **Shop-Primed Surfaces**
SUPPLIER **INTERNATIONAL COATINGS**

1. Surface preparation

Grade of cleanliness Sa 3 ([ISO 8501-1: 1988](#))
Roughness Grit-medium (G) ([ISO 8503-2: 1988](#))

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer Tie-coat Intermediate Finish coat	ESI	Interplate NQA 805/NQA 806	20 microns	30	90	24 hours	unlimited

3. Repair system

Grade of cleanliness Sa 2 ½ ([ISO 8501-1: 1988](#))

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer Tie-coat Intermediate Finish coat	ESI	Interplate NQA 805/NQA 806	20 microns	30	90	24 hours	unlimited

4. Remarks

IS approval No. 26192 according to French standard [NF J 17-115](#) (REF: DLC/790 425)

Operating temperature resistance: less than 400°C

Guarantee:



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System No. **P 201 J**
Coating **Hull**
SUPPLIER **JOTUN**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Primastic Universal AL	100 microns	75	85	10 hours	unlimited
Tie-coat	EPGF	Jotamastic 87 GF	350 microns	80	85	10 hours	unlimited
Intermediate							
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Primastic Universal AL	100 microns	75	85	10 hours	unlimited
Tie-coat	EPGF	Jotamastic 87 GF	350 microns	80	85	10 hours	unlimited
Intermediate							
Finish coat							

4. Remarks

Operating temperature resistance: less than 60°C		
Guarantee: 5 years	Degree of rusting Ri 2	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 202 J**
Coating **Deadworks**
SUPPLIER **JOTUN**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Primastic Universal AL	200 microns	75	85	10 hours	unlimited
Tie-coat							
Intermediate	EPM	Primastic	200 microns	78	85	12 hours	unlimited
Finish coat	PUR	Hardtop AS	50 microns	50	85	5 hours	unlimited

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Primastic Universal AL	200 microns	75	85	10 hours	unlimited
Tie-coat							
Intermediate	EPM	Primastic	200 microns	78	85	12 hours	unlimited
Finish coat	PUR	Hardtop AS	50 microns	50	85	5 hours	unlimited

4. Remarks

Operating temperature resistance: less than 60°C		
Guarantee: 5 years	Degree of rusting Ri 2	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 203J**
Coating **Superstructures**
SUPPLIER **JOTUN**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Primastic Universal AL	150 microns	75	85	10 hours	unlimited
Tie-coat							
Intermediate	EPM	Primastic	150 microns	78	85	12 hours	unlimited
Finish coat	PUR	Hardtop AS	50 microns	50	85	5 hours	unlimited

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Primastic Universal AL	150 microns	75	85	10 hours	unlimited
Tie-coat							
Intermediate	EPM	Primastic	150 microns	78	85	12 hours	unlimited
Finish coat	PUR	Hardtop AS	50 microns	50	85	5 hours	unlimited

4. Remarks

Operating temperature resistance: less than 60°C		
Guarantee: 5 years	Degree of rusting Ri 2	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 204 J**
Coating **Deck**
SUPPLIER **JOTUN**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPRZ	Barrier	40 microns	53	85	90 minutes	unlimited
Tie-coat							
Intermediate	EPGF	Jotamastic 87 GF	360 microns	80	85	10 hours	unlimited
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPRZ	Barrier	40 microns	53	85	90 minutes	unlimited
Tie-coat							
Intermediate	EPGF	Jotamastic 87 GF	360 microns	80	85	10 hours	unlimited
Finish coat							

4. Remarks

Operating temperature resistance: less than 60°C

Guarantee: 5 years

Degree of rusting Ri 2

Minimum mechanical pull-off test value: 4 MPa



System No. **P 205 J**
Coating **Workshops/Stores**
SUPPLIER **JOTUN**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)
Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Primastic	150 microns	78	85	12 hours	unlimited
Tie-coat							
Intermediate							
Finish coat	EP	Penguard Topcoat	50 microns	53	85	7 hours	unlimited

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Primastic	150 microns	78	85	12 hours	unlimited
Tie-coat							
Intermediate							
Finish coat	EP	Penguard Topcoat	50 microns	53	85	7 hours	unlimited

4. Remarks

By To be replaced WG Primastic if the average ambient temperature is less than 10°C.

Operating temperature resistance: less than 60°C		
Guarantee: 5 years	Degree of rusting Ri 2	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 206 J**
Coating **Tanks**
SUPPLIER **JOTUN**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Polyguard SS	200 microns	96	85	12 hours	unlimited
Tie-coat							
Intermediate	EPM	Polyguard SS	200 microns	96	85	12 hours	unlimited
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Polyguard SS	200 microns	96	85	12 hours	unlimited
Tie-coat							
Intermediate	EPM	Polyguard SS	200 microns	96	85	12 hours	unlimited
Finish coat							

4. Remarks

Operating temperature resistance: less than 50°C

Guarantee: 5 years

Degree of rusting Ri 2

Minimum mechanical pull-off test value: 4 MPa



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System No. **P 207J**
 Coating **Voids/Cofferdam**
 SUPPLIER **JOTUN**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Polyguard SS	200 microns	96	85	12 hours	unlimited
Tie-coat							
Intermediate							
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPM	Polyguard SS	200 microns	96	85	12 hours	unlimited
Tie-coat							
Intermediate							
Finish coat							

4. Remarks

Operating temperature resistance: less than 80°C		
Guarantee: 5 years	No blistering	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 208 J**
 Coating **Shop-Primed Surfaces**
 SUPPLIER **JOTUN**

1. Surface preparation

Grade of cleanliness SA 3 (ISO 8501 unlimited 1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	ESI	Muki Z n° 3000	20 microns	28	95	48 hours	unlimited
Tie-coat							
Intermediate							
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	ESI	Muki Z n° 3000	20 microns	28	95	48 hours	unlimited
Tie-coat							
Intermediate							
Finish coat							

4. Remarks

Operating temperature resistance: less than 400°C

Guarantee:



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System No. **P 201 SF**
 Coating **Hull**
 SUPPLIER **SIGMA COATINGS-FREITAG**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)
 Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Sigmacover primer	50 microns	57	85	8 hours	6 months
Tie-coat							
Intermediate	EPGF	Sigmacover TCP glass flake	400 microns	84	85	16 hours	28 days
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Sigmacover primer	50 microns	57	85	8 hours	6 months
Tie-coat							
Intermediate	EPGF	Sigmacover TCP glass flake	400 microns	84	85	16 hours	28 days
Finish coat							

4. Remarks

Operating temperature resistance: less than 60°C		
Guarantee: 5 years	Degree of rusting Ri 2	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 202 SF**
 Coating **Deadworks**
 SUPPLIER **SIGMA COATINGS-FREITAG**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)
 Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Sigmacover primer	50 microns	57	85	8 hours	6 months
Tie-coat							
Intermediate	EPGF	Sigmacover TCP glass flake	300 microns	84	85	16 hours	28 days
Finish coat	PUR	Sigmadur gloss	50 microns	56	85	12 hours	unlimited

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Sigmacover primer	50 microns	57	85	8 hours	6 months
Tie-coat							
Intermediate	EPGF	Sigmacover TCP glass flake	300 microns	84	85	16 hours	28 days
Finish coat	PUR	Sigmadur gloss	50 microns	56	85	12 hours	unlimited

4. Remarks

Operating temperature resistance: less than 60°C		
Guarantee: 5 years	Degree of rusting Ri 2	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 203 SF**
 Coating **Superstructures**
 SUPPLIER **SIGMA COATINGS-FREITAG**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)
 Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Sigmacover CM primer	150 microns	61	85	4 hours	unlimited
Tie-coat							
Intermediate	EP	Sigmacover CM coating	150 microns	65	85	12 hours	unlimited
Finish coat	PUR	Sigmadur gloss	50 microns	56	85	12 hours	unlimited

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Sigmacover CM primer	150 microns	61	85	4 hours	unlimited
Tie-coat							
Intermediate	EP	Sigmacover CM coating	150 microns	65	85	12 hours	unlimited
Finish coat	PUR	Sigmadur gloss	50 microns	56	85	12 hours	unlimited

4. Remarks

Operating temperature resistance: less than 60°C		
Guarantee: 5 years	Degree of rusting Ri 2	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 204 SF**
 Coating **Deck**
 SUPPLIER **SIGMA COATINGS-FREITAG**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Sigmacover primer	50 microns	57	85	8 hours	6 months
Tie-coat							
Intermediate	EPGF	Sigmacover TCP glassflake	350 microns	84	85	16 hours	28 days
Finish coat							

3. Repair system

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Sigmacover primer	50 microns	57	85	8 hours	6 months
Tie-coat							
Intermediate	EPGF	Sigmacover TCP glassflake	350 microns	84	85	16 hours	28 days
Finish coat							

4. Remarks

Operating temperature resistance: less than 60°C		
Guarantee: 5 years	Degree of rusting Ri 2	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 205 SF**
 Coating **Workshops/Stores**
 SUPPLIER **SIGMA COATINGS-FREITAG**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)
 Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Sigmacover CM primer	150 microns	61	85	4 hours	unlimited
Tie-coat							
Intermediate							
Finish coat	PUR	Sigmadur gloss	50 microns	56	85	12 hours	unlimited

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EP	Sigmacover CM primer	150 microns	61	85	4 hours	unlimited
Tie-coat							
Intermediate							
Finish coat	PUR	Sigmadur gloss	50 microns	56	85	12 hours	unlimited

4. Remarks

Operating temperature resistance: less than 60°C		
Guarantee: 5 years	Degree of rusting Ri 2	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 206 SF**
 Coating **Tanks**
 SUPPLIER **SIGMA COATINGS-FREITAG**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)
 Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPPH	Sigma Novaguard	200 microns	100	85	24 hours	20 days
Tie-coat							
Intermediate							
Finish coat	EPPH	Sigma Novaguard	200 microns	100	85	24 hours	20 days

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	EPPH	Sigma Novaguard	200 microns	100	85	24 hours	20 days
Tie-coat							
Intermediate							
Finish coat	EPPH	Sigma Novaguard	200 microns	100	85	24 hours	20 days

4. Remarks

Operating temperature resistance: less than 50°C		
Guarantee: 5 years	Degree of rusting Ri 2	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 207 SF**
 Coating **Voids/Cofferdam**
 SUPPLIER **SIGMA COATINGS-FREITAG**

1. Surface preparation

Grade of cleanliness Sa 3 (ISO 8501-1: 1988)
 Roughness Grit-medium (G) (ISO 8503-2: 1988)

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer Tie-coat Intermediate Finish coat	EPM	Sigmaguard CSF 75	200 microns	100	85	24 hours	20 days

3. Repair system

Grade of cleanliness Sa 2 ½ (ISO 8501-1: 1988)

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer Tie-coat Intermediate Finish coat	EPM	Sigmaguard CSF 75	200 microns	100	85	24 hours	20 days

4. Remarks

Operating temperature resistance: less than 80°C		
Guarantee: 5 years	No blistering	Minimum mechanical pull-off test value: 4 MPa



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System No. **P 208 SF**
 Coating **Shop-Primed Surfaces**
 SUPPLIER **SIGMA**

1. Surface preparation

Grade of cleanliness Sa 3 ([ISO 8501-1: 1988](#))

Roughness Grit-medium (G) ([ISO 8503-2: 1988](#))

2. Coating system

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	ESI	Sigma weld MC	20 microns	25	90	3 days	6 months
Tie-coat							
Intermediate							
Finish coat							

3. Repair system

Grade of cleanliness Sa 2 ½ ([ISO 8501-1: 1988](#))

Constitution	Binder	SUPPLIER's reference	Nominal thickness	Volume of solids (%)	RH max. (%)	Interval between coats	
						min.	max.
Primer	ESI	Sigma weld MC	20 microns	25	90	3 days	6 months
Tie-coat							
Intermediate							
Finish coat							

4. Remarks

Operating temperature resistance: less than 400°C

Guarantee: