

DOTL: DRAGON OIL (TURKMENISTAN) LTD

PROJECT: EPIC OF NEW FLARE SYSTEM AT CPSF

DOCUMENT TITLE: INSPECTION AND TEST PLAN COATING

DOCUMENT №: CPSF-QA-VND-01-HZ2032-704-01

CONTRACT №: CFT/45/21/1034

Rev	Date	Description	Prepared	Reviewed	Approved
A1	06.12.2024	Issued for Review			



ProjectEPIC of New Flare System at CPSF





Vendor

Hunan Standard Steel Co., Ltd



 Contract
 Accounted Copy
 Date
 Signature
 Doc. No: CPSF-QA-VND-01-HZ2032-704-01

 CFT/45/21/1034
 No.
 Page 2 of 12

Related te	rms are defined as follow:
HOLD	The relevant inspectors shall be informed of time and location of testing and witnessing is required for each unit.
	Witnessing is mandatory the cycle and written notice through a registered check advice at least 2 week in advance for
	special inspection or important stages and 24hoursin advance for regular inspection.
	Customer representative shall sign and seal the reports.
Witness	The relevant inspectors shall be informed of time and location of testing through a registered check advice or other kind of
	official letter which shall be submitted to related parties at least 2 week in advance for special inspection or important
	stages and 24 hours in advance for regular inspection.
	However, work may proceed without the presence of the inspector discretion.
	Customer representative shall sign and seal the reports.
Monitor	Work proceeds without the presence and special information of the test.
	Inspectors reserve the right to attend this activity at any time.
Review	Check of certifications and /or documents, with approved procedures, specification and acceptance criteria.
	Documents reviewed by Customer representative, shall be signed and sealed as reviewed.
Perform	Mill performs.

H-HOLD, W-Witness, M-Monitor, R-Review, P-Perform

D	Company	Project EPIC of New Flare System at CPSF		Contractor ES "SOVDA GURLUSHYK MASLAHAT"	SGM 8-909th GELLUNTY MALLAUT	
Dragon Oil	DRAGON OIL (TURKMENISTAN) LTD.			Vendor Hunan Standard Steel Co., Ltd		
Contract	Accounted Copy	Date	Signature	Doc. No: CPSF-QA-VND-01-	HZ2032-704-01	
CFT/45/21/1034	No.			Page 3 of 12		

Coating Summary:

Paint Requirem	Paint Requirement for CFT/45/21/1034									
Description	Surface Preparation	Primer coat	Intermediate Coat	Top Coat	Brand	Color Shade/ RAL code	Total Dry Film Thickness			
Uninsulated Operating tem up to 120 °C	SA 2.5	Inorganic Zinc Silicate Jotun Resist 86 Jotun Thinner No. 4 DFT 75µm	Epoxy Polyamide Jotun Penguard FC Jotun Thinner No. 17 DFT 2×100μm	Polyurethane Hard top XP Jotun Thinner No. 10 DFT 75µm	Jotun.	Grey /RAL Code 9018	350μm			

Coating Quantity

			Specifi	cation	Coating Quantity			
No.	Description	Diameter	WT	Length	Kg/m	Pieces	m	Tons
		(mm)	(mm)	(m)	1.6/			
	PIPE BE, ASME B36.10M, SCH XS,							
11	Material: API 5L GR. B (PSL-2) SAW 100% RADIOGRAPHED	1016.00	12.7	12	314.235	70.0	840.00	263.96
	Piping class: B013, BORE 1 (DN): 1000							
	PIPE BE, ASME B36.10M, SCH XS,							
13	Material: API 5L GR. B (PSL-2) SAW 100% RADIOGRAPHED	1016.00	12.7	6	314.235	2	12.00	3.77
	Piping class: B013, BORE 1 (DN): 1000							



ProjectEPIC of New Flare System at CPSF

ContractorES "SOVDA GURLUSHYK MASLAHAT"



Vendor

Hunan Standard Steel Co., Ltd



ContractAccounted CopyDateSignatureDoc. No: CPSF-QA-VND-01-HZ2032-704-01CFT/45/21/1034No.Page 4 of 12

	Item Controlling Testing Frequency Testing N		Testing Methods	Testing		P	arties 检验方					
No. 序号	项目	Requirement for testing 检验控制要求	检验频次	检验方法	Instrument & Equipment 检验仪器设备	Acceptability Criteria 可接受的标准	Report 报告	Coating Factory 涂敷厂家	TPI/Client 第三方/业 主			
1.0	Verification of the O	Calibration of the In	spection Equipment	检测仪器校验证书	检测仪器校验证书的审核							
1.1	Thermometer, Hygrometer 温度计	AWWA C210-15	One per shift 每班一次	Manufacturer's Recommendation 制造商建议	N/A 不适用	N/A 不适用	Calibration Report 校验证书	М	/			
1.2	Profile Tester 锚纹测试仪	AWWA C210-15	One per shift 每班一次	Manufacturer's Recommendation 制造商建议	N/A 不适用	N/A 不适用	Calibration Report 校验证书	М	/			
1.3	Far Infrared Temperature Measurement Instrument 远红外测温仪	AWWA C210-15	One per shift 每班一次	Manufacturer's Recommendation 制造商建议	N/A 不适用	N/A 不适用	Calibration Report 校验证书	М	/			
1.4	Coating Thickness Gauge 测厚仪	AWWA C210-15	One per shift 每班一次	Manufacturer's Recommendation 制造商建议	N/A 不适用	The average of 5 reading shall be within ±5% of the reference value 读数偏差值参考数值±5%)	Calibration Report 校验证书	М	/			



ProjectEPIC of New Flare System at CPSF

ContractorES "SOVDA GURLUSHYK MASLAHAT"



Vendor

Hunan Standard Steel Co., Ltd



Contract Accounted Copy Date Signature Doc. No: CPSF-QA-VND-01-HZ2032-704-01

CFT/45/21/1034 No. Page **5** of **12**

		Controlling	Testing		Testing		P	arties 检验力	ĵ
No. 序号	Item 项目	Requirement for testing 检验控制要求	Frequency 检验频次	Testing Methods 检验方法	Instrument & Equipment 检验仪器设备	Acceptability Criteria 可接受的标准	Report 报告	Coating Factory 涂敷厂家	TPI/Client 第三方/ 业主
1.5	Pull-off tester 拉拔测试仪	AWWA C210-15	One per shift 每班一次	Manufacturer's Recommendation 制造商建议	N/A 不适用	N/A 不适用	Calibration Report 校验证书	М	/
1.6	Holiday Detector 漏点检测仪	AWWA C210-15	One per shift 每班一次	Manufacturer´s Recommendation 制造商建议	N/A 不适用	Travel speed: Between 0.2 and 0.3 meter per second Voltage:100V per mil of coating thickness (1500V maximum) (测试速度每秒 0.2-0.3 米,检漏电压每密耳涂层厚度用 100 伏电压检测,最大检测电压1500 伏)	Calibration Report 校验证书	M	/



ProjectEPIC of New Flare System at CPSF

ContractorES "SOVDA GURLUSHYK MASLAHAT"



Vendor





 Contract
 Accounted Copy
 Date
 Signature
 Doc. No: CPSF-QA-VND-01-HZ2032-704-01

 CFT/45/21/1034
 No.
 Page 6 of 12

	Item Controlling Requirement		Testing		Testing			Parties 检验力	ī
No. 序号	项目	for tosting	Frequency 检验频次	Testing Methods 检验方法	Instrument Equipment 检验仪器设备	Acceptability Criteria 可接受的标准	Report 报告	Coating Factory 涂敷厂家	TPI/Client 第三方/业 主
2.0	Raw Material Recepti	ion and Manufacturer's I	Documentat	ion (原材料接收	(和制造商资料	()			
2.1	Steel Pipe 钢管	AWWA C210-15 &Rev 01 CFT 1034 painting Proposal check list- HSCO	Every Pipe	Visual Measurement 目测	N/A 不适用	The steel pipe meets the contract requirements, the packaging and marking are intact, and the documents are complete 钢管符合合同要求,包装和标识完好,单据齐全	Manufact urer 生产厂家	RH	М
2.2	Inorganic Zinc Silicate 环氧富锌底漆 Jotun Resist 86 Jotun Thinner No. 4	AWWA C210-15 &Rev 01 CFT 1034 painting Proposal check list- HSCO	Every Batch	Visual Measurement 目测	N/A 不适用	The coating match the order; the packaging and labeling are intact, within valid expiry date and the documents are complete 涂料与订单相符合;钢包标签完好,有效期内,单据齐全	Jotun	RM	/
2.3	Epoxy Polyamide 环氧中间漆 Jotun penguard FC Jotun Thinner No. 17	AWWA C210-15 &Rev 01 CFT 1034 painting Proposal check list- HSCO	Every Batch 每一批	Visual Measurement 目測	N/A 不适用	The coating match the order; the packaging and labeling are intact, within valid expiry date and the documents are complete 涂料与订单相符合;钢包标签完好,有效期内,单据齐全	Jotun	RM	/
2.4	Polyurethane 聚氨酯面漆 Jotun Hard top XP Jotun Thinner No. 10	AWWA C210-15 &Rev 01 CFT 1034 painting Proposal check list- HSCO	Every Batch 每一批	Visual Measurement 目測	N/A 不适用	The coating match the order; the packaging and labeling are intact, within valid expiry date and the documents are complete 涂料与订单相符合;钢包标签完好,有效期内,单据齐全	Jotun	RM	/



ProjectEPIC of New Flare System at CPSF

ContractorES "SOVDA GURLUSHYK MASLAHAT"



Vendor

Hunan Standard Steel Co., Ltd



 Contract
 Accounted Copy
 Date
 Signature
 Doc. No: CPSF-QA-VND-01-HZ2032-704-01

 CFT/45/21/1034
 No.
 Page 7 of 12

No.	Item	Controlling	Testing	Testing	Testing	Acceptability Criteria	P	arties 检验方	
序号	项目	Requirement for testing 检验控制要求	Frequency 检验频次	Methods 检验方法	Instrument & Equipment 检验仪器设备	可接受的标准	Report 报告	Coating Factory 涂敷厂家	TPI/Client 第三方/业 主
3.0	PQT 预涂合格检测	冽							
3.1	PQT 预实验	Rev 01 CFT 1034 painting Proposal check list- HSCO	One for an order 一个订单一 次	3 rd Party Lab 第三方 实验室	3 rd Party Lab 第三方实验室			P	W
3.2	PQT Sample Test in 3 rd party Lab PQT 样品第三方 实验室送检	Rev 01 CFT 1034 painting Proposal check list- HSCO	One for an order 一个订单一 次	Property Wet film thickness per coat Dry film thickness Total thickness Adhesion Degree ofCure Humidity Resistance Water Resistance Surface Preparation Maximum Temperature Resist Table 11.1 Te		Test Method ASTM D1212-91 ASTM D4138-07/ASTM D6132-13 ISO2808 ASTM D3359-02 ISO12013-2:2012 ISO6270 ISO2812-2:2007 ISO 8502-9 stance ASTM D-6944 ests to qualify Painting Systems	3 rd Party 第三方实 验室		Р



ProjectEPIC of New Flare System at CPSF

ContractorES "SOVDA GURLUSHYK MASLAHAT"



Vendor

Hunan Standard Steel Co., Ltd



 Contract
 Accounted Copy
 Date
 Signature
 Doc. No: CPSF-QA-VND-01-HZ2032-704-01

 CFT/45/21/1034
 No.
 Page 8 of 12

No.			Acceptability Criteria	Pa	rties 检验方				
序号	项目	Requirement for testing 检验控制要求	Frequency 检验频次	Methods 检验方法	Instrument & Equipment 检验仪器设 备	可接受的标准	Report 报告	Coating Factory 涂敷厂家	TPI/Client 第三方/业 主
4.0	Steel Surface Prepa	ration/ Blasting 钢管	表面处理						
4.1	Environment Before Blasting 喷砂前的环境条 件	ISO 8502-9	Once per Shift 每班一次	Measured with instrument 用仪器测量	Thermomet er, Hygrometer 温度计,湿 度计	The pipe surface temperature shall be at least 3℃ above the dew point . The relative humidity of environment <85% 钢管表面温度比露点温度最小高 3℃;相对湿度<85%	Coating Department 防腐厂	М	/
4.2	Blasting 除锈	SA 2.5	Once per Shift 每班一次	Measured with instrument 用仪器测量	Profile Tester 锚纹测试 仪	Sa 2.5	Coating Department 防腐厂	M	М
4.3	Profile Depth 锚纹深度	ISO 8502-9	Once per Shift 每班一次	Measured with instrument 用仪器测量	Profile Tester 锚纹测试 仪	50-100 μ m	Coating Department 防腐厂	М	/
4.4	Imperfection on the appearance after removing rust 除锈后表面缺陷	ISO 8502-9	Every Pipe 每支管	Visual Measurement 目測	N/A 不适用	Without burr or welding residue,dust and sediment on the appearance must be cleaned 无毛刺和焊渣,表面附着的灰尘及磨料清洗干净	Coating Department 防腐厂	М	М



ProjectEPIC of New Flare System at CPSF

ContractorES "SOVDA GURLUSHYK MASLAHAT"



Vendor

Hunan Standard Steel Co., Ltd



ContractAccounted CopyDateSignatureDoc. No: CPSF-QA-VND-01-HZ2032-704-01CFT/45/21/1034No.Page 9 of 12

No.	Item	Controlling	Testing	Testing	Testing	Acceptability Criteria	Pa	rties 检验方	
序号	项目 -	Requirement for testing 检验控制要求	Frequency 检验频次	Methods 检验方法	Instrument & Equipment 检验仪器设备	可接受的标准	Report 报告	Coating Factory 涂敷厂家	TPI/Client 第三方/ 业主
5.0	Pipe coating 钢管	涂敷							
5.1	Application temperature 涂敷温度	AWWA C210-15&Rev 01 CFT 1034 painting Proposal check list- HSCO	one time per Shift 每班一次	Measured with instrument 用仪器测量	Infrared temperature measurement instrument 红外线测温 仪	Temperature on the surface of pipe is 3° C higher than the environment dew point. The temperature of mixed epoxy material shall not be Lower than 10° C 钢管温度应该比露点温度高 3° C。喷涂原料的温度不低于 10° C	Coating Departme nt 防腐厂	Н	/
5.2	Wet film thickness per coat 湿膜厚度	ASTM D1212-91	one time per Shift 每班一次	Measured with instrument 用仪器测量	Thickness gauge 测厚仪	Primer: Jotun Resist 86 ≥ 105 µ m Intermediate: Jotun penguard FC ≥ 250 µ m, Top: Jotun Hard top XP ≥ 105 µ m (RAL 9018)	Coating Departme nt 防腐厂	Н	/
5.3	Dry film thickness 干膜厚度	ASTM D4138-07/ASTM D6132-13	Once per batch 每批一次	Measured with instrument 用仪器测量	Thickness gauge 测厚仪	Primer: Jotun Resist 86 ≥ 75 µ m Intermediate: Jotun penguard FC ≥ 200 µ m, Top: Jotun Hard top XP ≥ 75 µ m (RAL 9018) Total thickness ≥ 350 µ m	Coating Departme nt 防腐厂	Н	М
5.4	Adhension 黏结性能	ASTM D3359-02	Once per batch 每批一次	Instrument 用仪器测量	Pull-off tester 拉拔测试仪	≥5Mpa	Coating Departme nt 防腐厂	Р	/



ProjectEPIC of New Flare System at CPSF

ContractorES "SOVDA GURLUSHYK MASLAHAT"



Vendor

Hunan Standard Steel Co., Ltd

HE	w

 Contract
 Accounted Copy
 Date
 Signature
 Doc. No: CPSF-QA-VND-01-HZ2032-704-01

 CFT/45/21/1034
 No.
 Page 10 of 12

No.	Item	Controlling	Testing	Testing	Testing	Acceptability Criteria	Parties 检验方			
序号	项目	Requirement for testing 检验控制要求	Frequency 检验频次	Methods 检验方法	Instrument Equipment 检验仪器设 备	可接受的标准	Report 报告	Coating Factory 涂敷厂 家	TPI/Client 第三方/ 业主	
6.0	Testing Offline 线下实验									
6.1	Appearance 外观	AWWA C210-15&Rev 01 CFT 1034 painting Proposal check list- HSCO	Every Pipe 每只管	Visual Measurement 目测	N/A 不适用	The epoxy shall be generally smooth and free of sharp protrusions. The epoxy shall have no blisters, cracks, bubbles, delaminations, or any other visible defects. There shall be no wet or sticky areas in the epoxy. 环氧树脂应光滑,无尖锐突出物。环氧树脂应光滑,无尖锐突出物。环氧树脂不得有气泡,裂纹,分层或任何其他可见缺陷。环氧树脂中不得有潮湿或粘性区域	Coating Department 防腐厂	Р	М	
6.2	Cure 固化	AWWA C210-15&Rev 01 CFT 1034 painting Proposal check list- HSCO	Once per batch 每批一次	Visual Measurement 目测	N/A 不适用	Per Juton Instruction 符合油漆厂家要求	Coating Department 防腐厂	Р	/	
6.3	Dry film thickness 干膜厚度	AWWA C210-15 &Rev 01 CFT 1034 painting Proposal check list- HSCO	Once per batch 每批一次	Measured with instrument 用仪器测量	Thickness gauge 测厚仪	≥350 µ m	Coating Department 防腐厂	н	М	



ProjectEPIC of New Flare System at CPSF

ContractorES "SOVDA GURLUSHYK MASLAHAT"



Vendor

Hunan Standard Steel Co., Ltd



 Contract
 Accounted Copy
 Date
 Signature
 Doc. No: CPSF-QA-VND-01-HZ2032-704-01

 CFT/45/21/1034
 No.
 Page 11 of 12

No.	Item	Controlling	Testing	Testing	Testing	Acceptability Criteria	Parties 检验方		
序号	项目	Requirement for testing 检验控制要求	Frequency 检验频次	Methods 检验方法	Instrument & Equipment 检验仪器设备	可接受的标准	Report 报告	Coating Factory 涂敷厂家	TPI/Client 第三方/ 业主
6.4	Electrical continuity inspection 电火花检测	AWWA C210-15	Every Pipe 每支管	Measured with instrument 用仪器测量	Holiday Detector 漏点检测仪	The Voltage should be recommended by the epoxy manufacturer, No Holiday 无漏点;供货商推荐电压值	Coating Department 防腐厂	н	М
6.5	Marking 标识	As Contract/ PI required 根据合同要求	Every Pipe 每支管	Visual Measurement 目測	N/A 不适用	As Contract/ PI required 根据合同要求	Coating Department 防腐厂	Р	М
6.6	Cut Back 预留长度	AWWA C210-15	Every Pipe 每支管	Measured with instrument 用仪器测量	N/A 不适用	150mm±20mm	Coating Department 防腐厂	Р	/
7.0	Package&Storage	存储							
7.1	Package 包装	AWWA C210-15&Rev 01 CFT 1034 painting Proposal check list- HSCO	Every Pipe 每支管	Visual Measurement 目測	N/A 不适用	As customer's request 根据客户要求	Coating Department 防腐厂	Р	М
7.2	Storage 存储	AWWA C210-15&Rev 01 CFT 1034 painting Proposal check list- HSCO	Every Pipe 每支管	Visual Measurement 目测	N/A 不适用	Put steel pipes on the sleepers, and the distance from the bottom of coated pipe to land is 150mm 底层防腐管离地面距离不低于 150mm	Coating Department 防腐厂	Р	M



ProjectEPIC of New Flare System at CPSF

ContractorES "SOVDA GURLUSHYK MASLAHAT"



Vendor

Hunan Standard Steel Co., Ltd



 Contract
 Accounted Copy
 Date
 Signature
 Doc. No: CPSF-QA-VND-01-HZ2032-704-01

 CFT/45/21/1034
 No.
 Page 12 of 12

No.	Item	Controlling	Testing	Testing	Testing	Acceptability Criteria	Parties 检验方		
序号	项目	Requirement for testing 检验控制要求	Frequency 检验频次	Methods 检验方法	Instrument & Equipment 检验仪器设备	可接受的标准	Report 报告	Coating Factory 涂敷厂家	TPI/Client 第三方/业 主
8.0	Document 文件								
8.1	Document 文件	Meet contract requirement 满足合 同要求	Every Order 每个订单	N/A 不适用	N/A 不适用	Qualification Test Report singed by Inspector 质量检测报告第三方签字	Coating Department 防腐厂	Н	Н