



نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض و ابنیه تحت الارض

عمومی و مشترک



شماره پیمان:

053 - 073 - 9184

PIPELINE PWPS (Preliminary Welding Procedure Specification)

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
D01	0029	PR	QC	000	PEDCO	GNRAL	BK

شماره صفحه: 1 از 9

طرح نگهداشت و افزایش تولید 27 مخزن

Pipeline PWPS (Preliminary Welding Procedure Specification)

نگهداشت و افزایش تولید میدان نفتی بینک

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Status:

IDC: Inter-Discipline Check
IFC: Issued For Comment
IFA: Issued For Approval
AFD: Approved For Design
AFC: Approved For Construction
AFP: Approved For Purchase
AFQ: Approved For Quotation
IFI: Issued For Information
AB-R: As-Built for CLIENT Review
AB-A: As-Built -Approved



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 <p>NISOC</p>	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض</p> <p>عمومی و مشترک</p>																	
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1. INTRODUCTION

Binak oilfield in Bushehr province is a part of the southern oilfields of Iran, is located 20 km northwest of Genaveh city.

With the aim of increasing production of oil from Binak oilfield, an EPC/EPD Project has been defined by NIOC/NISOC and awarded to Petro Iran Development Company (PEDCO). Also PEDCO (as General Contractor) has assigned the EPC-packages of the Project to "Hirgan Energy - Design and Inspection" JV.

GENERAL DEFINITION

The following terms shall be used in this document.

CLIENT:	National Iranian South Oilfields Company (NISOC)
PROJECT:	Binak Oilfield Development – General Facilities
EPD/EPC CONTRACTOR (GC):	Petro Iran Development Company (PEDCO)
EPC CONTRACTOR:	Joint Venture of : Hirgan Energy – Design & Inspection(D&I) Companies
VENDOR:	The firm or person who will fabricate the equipment or material.
EXECUTOR:	Executor is the party which carries out all or part of construction and/or commissioning for the project.
SHALL:	Is used where a provision is mandatory.
SHOULD:	Is used where a provision is advisory only.
WILL:	Is normally used in connection with the action by CLIENT rather than by an EPC/EPD CONTRACTOR, supplier or VENDOR.

2. SCOPE

This document covers minimum necessary requirements for the Welding and control the quality of the pipeline execution activities including control of documents & welding process in the development project of Binak oil field.

It shall be used in conjunction with data/requisition sheets for present document subject.

	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض عمومی و مشترک							 	
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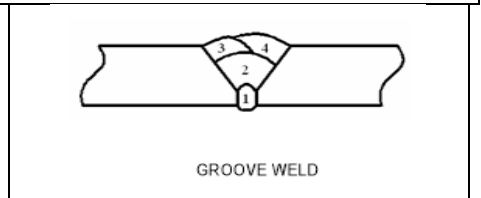
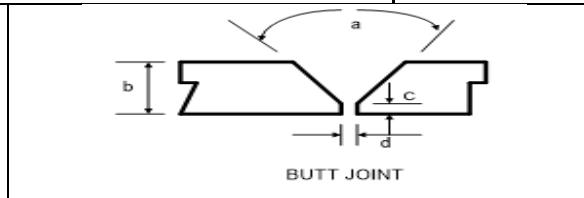


4. PWPS FOR PIPELINE

4.1 PWPS FOR PIPELINE 6 INCH (FLOWLINES)

Procedure No. : BINAK-PWPS101	Process : SMAW
Ref. Standard : API 1104 & IPS-C-Pli-270	
For: Binak Oilfield Development Project / Pipeline No. CRD – 110 – 115 - LN12 – 6" – PT/CRD – 110 – 145 - LN12 – 6" – PT/CRD–110–135-LN12–6–PT/CRD – 110 – 155 - LN12 – 6" – PT/CRD – 110 – 165 - LN12 – 6" – PT/CRD – 110 – 125 - LN12 – 6" - PT	
Material :	API 5L X52 PSL2 Group No. : 1 / P No. : 1
Diameter and Wall Thickness:	OD : (6") & Thickness : (7.9 mm)
Joint Design & Bevel angle :	Butt Joint, Single ∇ / 37.5 ± 0.5
Backing type (if applicable) & Roll or fixed position :	N/A
Electrical Characteristics :	DCEP
Position:	5G
Direction of Welding :	Uphill (Root pass), Uphill (other)
No. of Welders:	1
Time Lapse Between Passes :	Max 5 Minutes
Type and Removal of Line up Clamp :	External and Removal at least after 70% of Root Pass
Cleaning:	First Pass Grinding, Other Passes Brushing or Grinding
Preheat Temperature & Method of Heating :	50°C / Gas torch
Interpass Temperature (Min\Max)	Preheat Temperature : $180^{\circ}\text{C} \pm 10^{\circ}\text{C}$ or < 5 Min
Stringer / Weave	Root pass is Stringer and other passes are Weave
Minimum number of passes	4 pass
PWHT	N.A
NACE	NACE MR0175/ISO 15156
Shielding Gas and Flow Rate :	N.A
Shielding Flux :	N.A
Filler Metal & Flux :	Specification AWS A5.1 E-6010 Group No. : 1 Specification AWS A5.1 E-7018 Group No. : 3

Joint Design:
a : $75^{\circ} \pm 5^{\circ}$
b : 7.9 mm
c : $1.6\text{mm} \pm 0.8\text{mm}$
d : $2.5\text{mm} \pm 0.5\text{mm}$



Summary Table




Run	Bead Name	Process	Filler Metal			Electrical Characteristics	Voltage	Amperage	Travel Speed (mm/s)	Heat Input (KJ/mm)
			Group No.	AWS Classification	Size (mm)					
1	Root	SMAW	1	A5.1	2.5	E6010	20-26	75-100	2.5 - 3	0.50 – 1.04
2	Inter pass	SMAW	3	A5.1	3.2	E7018	20-26	100-130	2.5 - 3	0.66 – 1.35
3	Inter pass	SMAW	3	A5.1	3.2	E7018	20-26	100-130	2.5 - 3	0.66 – 1.35
4	Cap	SMAW	3	A5.1	3.2	E7018	20-26	100-130	2.5 - 3	0.66 – 1.35

NOTE:

Note 1 : HRC surveys of butt welds shall be Figure 5 of ANSI/NACE MR0175/ISO 15156

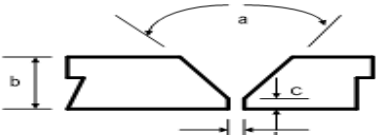
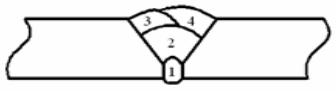
Note 2 : E7018 Electrode shall be Draying in 2 Hr at $300^{\circ}\text{C} - 350^{\circ}\text{C}$

Note 3 : Max acceptable hardness Base metal and HAZ and root metal shall be 22 HRC

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	BK	GNRAL	PEDCO	000	QC	PR	0029	D01	

4.2 PWPS FOR PIPELINE - 8 INCH (GAS PIPELINE TO SIAHMAKAN GIS)

Procedure No. : BINAK-PWPS102	Process : SMAW
Ref. Standard : API 1104 & IPS-C-Pli-270	
For: Binak Oilfield Development Project / Pipeline No. GAS – 113 – 0010 – FN27 – 8" - UG	
Material :	API 5L X52 PSL2 Group No. : 1 / P No. : 1
Diameter and Wall Thickness:	OD : (8") & Thickness : (8 mm)
Joint Design & Bevel angle :	Butt Joint, Single $\sqrt{}$ / 37.5 ± 0.5
Backing type (if applicable) & Roll or fixed position :	N/A
Electrical Characteristics :	DCEP
Position:	5G
Direction of Welding :	Uphill (Root pass), Uphill (other)
No. of Welders:	1
Time Lapse Between Passes :	Max 5 Minutes
Type and Removal of Line up Clamp :	External and Removal at least after 70% of Root Pass
Cleaning:	First Pass Grinding, Other Passes Brushing or Grinding
Preheat Temperature & Method of Heating :	50°C / Gas torch
Interpass Temperature (Min\Max)	Preheat Temperature : $180^{\circ}\text{C} \pm 10^{\circ}\text{C}$ or <5 Min
Stringer / Weave	Root pass is Stringer and other passes are Weave
Minimum number of passes	4 pass
PWHT	N.A
NACE	NACE MR0175/ISO 15156
Shielding Gas and Flow Rate :	N.A
Shielding Flux :	N.A
Filler Metal & Flux :	Specification AWS A5.1 E-6010 Group No. : 1 Specification AWS A5.1 E-7018 Group No. : 3

Joint Design: a : $75^{\circ} \pm 5^{\circ}$ b : 8 mm c : $1.6\text{mm} \pm 0.8 \text{ mm}$ d : $2.5\text{mm} \pm 0.5 \text{ mm}$	 BUTT JOINT	 GROOVE WELD
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Summary Table

Run	Bead Name	Process	Filler Metal			Electrical Characteristics	Voltage	Amperage	Travel Speed (mm/s)	Heat Input (KJ/mm)
			Group No.	AWS Classification	Size (mm)					
1	Root	SMAW	1	A5.1	2.5	E6010	20-26	75-100	2.5 - 3	0.50 – 1.04
2	Inter pass	SMAW	3	A5.1	3.2	E7018	20-26	100-130	2.5 - 3	0.66 – 1.35
3	Inter pass	SMAW	3	A5.1	3.2	E7018	20-26	100-130	2.5 - 3	0.66 – 1.35
4	Cap	SMAW	3	A5.1	3.2	E7018	20-26	100-130	2.5 - 3	0.66 – 1.35

NOTE:

Note 1 : HRC surveys of butt welds shall be Figure 5 of ANSI/NACE MR0175/ISO 15156

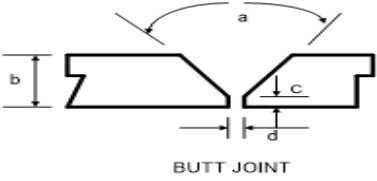
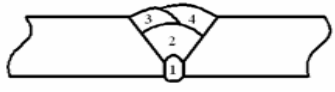
Note 2 : E7018 Electrode shall be Draying in 2 Hr at $300^{\circ}\text{C} - 350^{\circ}\text{C}$

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4.3 WPQR FOR PWPS

Procedure No. : BINAK-PWPS103	Process : SMAW
Ref. Standard : API 1104 & IPS-C-Pli-270	
For: Binak Oilfield Development Project / Pipeline No. GAS – 113 – 0010 – FN27 – 8" - UG / CRD – 110 – 115 - LN12 – 6" – PT/CRD – 110 – 145 - LN12 – 6" – PT/ CRD–110–135-LN12–6–PT/CRD – 110 – 155 - LN12 – 6" – PT/CRD – 110 – 165 - LN12 – 6" – PT/CRD – 110 – 125 - LN12 – 6" - PT	
Material :	API 5L X52 PSL2 Group No. : 1 / P No. : 1
Diameter and Wall Thickness:	OD : (6") & Thickness : (7.9 mm)
Joint Design & Bevel angle :	Butt Joint, Single <u>U</u> / 37.5 ± 0.5
Backing type (if applicable) & Roll or fixed position :	N/A
Electrical Characteristics :	DCEP
Position:	5G
Direction of Welding :	Uphill (Root pass), Uphill (other)
No. of Welders:	1
Time Lapse Between Passes :	Max 5 Minutes
Type and Removal of Line up Clamp :	External and Removal at least after 70% of Root Pass
Cleaning:	First Pass Grinding, Other Passes Brushing or Grinding
Preheat Temperature & Method of Heating :	50°C / Gas torch
Interpass Temperature (Min\Max)	Preheat Temperature : 180°C ± 10°C or < 5 Min
Stringer / Weave	Root pass is Stringer and other passes are Weave
Minimum number of passes	4 pass
PWHT	N.A
NACE	NACE MR0175/ISO 15156
Shielding Gas and Flow Rate :	N.A
Shielding Flux :	N.A
Filler Metal & Flux :	Specification AWS A5.1 E-6010 Group No. : 1 Specification AWS A5.1 E-7018 Group No. : 3

Joint Design: a : 75° ± 5° b : 7.9 mm c : 1.6mm ± 0.8 mm d : 2.5mm ± 0.5 mm	 <p style="text-align: center;">BUTT JOINT</p>	 <p style="text-align: center;">GROOVE WELD</p>
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Summary Table

Run	Bead Name	Process	Filler Metal			Electrical Characteristics	Voltage	Amperage	Travel Speed (mm/s)	Heat Input (KJ/mm)
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4	Cap	SMAW	3	A5.1	3.2	E7018	20-26	100-130	2.5 - 3	0.66 – 1.35

NOTE:

Note 1 : HRC surveys of butt welds shall be Figure 5 of ANSI/NACE MR0175/ISO 15156

Note 2 : E7018 Electrode shall be Draying in 2 Hr at 300°C - 350°C

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BK	GNRAL	PEDCO	000	QC	PR	0029	D01											

4.4 WELD LIST FOR PIPELINE

Pipeline No.	Procedure No. for PWPS	Procedure No. for WPQR No.	Procedure No. for WPS Approve	Procedure No. for WPQR.
CRD - 110 - 115 - LN12 - 6" - PT	BINAK-PWPS101	BINAK-PWPS103	---	---
CRD - 110 - 145 - LN12 - 6" - PT	BINAK-PWPS101	BINAK-PWPS103	---	---
CRD - 110 - 135 - LN12 - 6" - PT	BINAK-PWPS101	BINAK-PWPS103	---	---
CRD - 110 - 155 - LN12 - 6" - PT	BINAK-PWPS101	BINAK-PWPS103	---	---
CRD - 110 - 165 - LN12 - 6" - PT	BINAK-PWPS101	BINAK-PWPS103	---	---
CRD - 110 - 125 - LN12 - 6" - PT	BINAK-PWPS101	BINAK-PWPS103	---	---
GAS - 113 - 0010 - FN27 - 8" - UG	BINAK-PWPS102	BINAK-PWPS103	---	---