PETRO SANAT ADEL

MATERIAL TEST CERTIFICATE

Customer :	HAMIAN SANAT ENERGY
PO No. :	S-14030920-03
PSA No. :	53577

Certificate Type :	EN 10204 - 3.1
Customer Standard :	ASTM A350 LF2-CL1

Certificate No. :	53577.05
Certificate Date:	2025.03.11

Production Description

Row	Heat No.	Item No.	Production Type	Description	DWG No.	DT ref.	QTY
1	HB102	1	FLANGE	WN - 1/2 in - 300 LBS - RF - SCH: 80	...	ASME B16.5	6
2	HB102	2	FLANGE	WN - 3/4 in - 300 LBS - RF - SCH: 80	...	ASME B16.5	8
3	HB102	3	FLANGE	WN - 6 in - 300 LBS - RF - SCH: 80	...	ASME B16.5	6
4	HB102	5	FLANGE	WN - 1 1/2 in - 300 LBS - RF - SCH: 80	...	ASME B16.5	10
5	HB102	6	FLANGE	WN - 3 in - 300 LBS - RF - SCH: 80	...	ASME B16.5	6
6	HB102	11	FLANGE	SW - 3/4 in - 300 LBS - RF - SCH: 80	...	ASME B16.5	6
7	HB102	12	FLANGE	SW - 1 1/2 in - 300 LBS - RF - SCH: 80	...	ASME B16.5	26
8	HB102	15	FLANGE	BL - 1/2 in - 300 LBS - RF	...	ASME B16.5	6
9	HB102	16	FLANGE	BL - 3/4 in - 300 LBS - RF	...	ASME B16.5	2
10	HB102	17	FLANGE	BL - 3/4 in - 300 LBS - RF	...	ASME B16.5	10
11	HB102	18	FLANGE	BL - 3 in - 300 LBS - RF	...	ASME B16.5	4
12	HB102	20	FLANGE	BL - 2 in - 300 LBS - RF	...	ASME B16.5	10

Chemical Composition (%)

	Heat No.		C	Si	Mn	P	S	Cr	Mo	Ni
		Max	0.3	0.3	1.35	0.035	0.040	0.30	0.12	0.40
1	HB102		0.19	0.27	1.13	0.016	<0.003	<0.005	0.02	0.04
2										
3										
4										
5										
		Min	---	0.15	0.60	---	---	---	---	---

	Heat No.		Cu	V	Cr+Mo	Cr+Mo+Cu+Ni+V	Fe	C_{eq}
		Max	0.40	0.08	0.32	1.00	Main	
1	HB102		0.01	0.002	0.02	0.072	BASE	0.386
2								
3								
4								
5								
		Min	---	---	---	---	---	---

Mechanical Properties

	Heat No.		Tensile Test				Hardness Test	Impact Test		
			YS (N/mm²)	UTS (N/mm²)	AL (%)	ΔA (%)		Ind. :	Ave.: 28	Temp. :-46
		Max	---	655	---	---	197 HBW	Specimen size : 10*10*55		
1	HB102		321	510	25	36	160	33		
2								30		
3								23		
4										
5										
		Min	250	485	22	30	---	16	Ave 20	

Heat Treatment Process

	Heat No.	Process Type	Holding Temp. (°C)	Holding Time (min)	Cooling Medium
1	HB102	NORMALIZED	910±10	107	AIR
2					
3					
4					
5					

NDT & Final Inspection

	Heat No.	Visual Check	Dimension Check	Ultrasonic Test	Magnetic Test	Marking Check	Result
1	HB102	According to the procedure	According To STANDARD	according to the NDT procedure	according to the NDT procedure	according to the MSS SP25	ACC
2							
3							
4							
5							

we certify above material is manufactured , inspected & Tested under material specification requirement and meets purchase order.

Quality & Development Manager

Quality Control Supervisor

Address : unit 10 - NARGES building - SAAM alley - GHAEM MAGHAM St - TEHRAN - IRAN
Tel : +98 4773 6000

PETRO SANAT ADEL

MATERIAL TEST CERTIFICATE

Customer :	HAMIAN SANAT ENERGY
PO No. :	S-14030920-03
PSA No. :	53577

Certificate Type :	EN 10204 - 3.1
Customer Standard :	ASTM A182 F304

Certificate No. :	53577.03
Certificate Date:	2025.03.11

Production Description

Row	Heat No.	Item No.	Production Type	Description	DWG No.	DT ref.	QTY
1	HB470	14	FLANGE	SW - 1/2 in - 150 LBS - RF - SCH: 80	...	ASME B16.5	2
2	HB470	21	FLANGE	BL - 2 in - 300 LBS - RF-THD	...	ASME B16.5	2
3	HB470	22	FLANGE	BL - 1/2 in - 300 LBS - RF-THD	...	ASME B16.5	4
4	HB470	23	FLANGE	BL - 1/2 in - 150 LBS - RF	...	ASME B16.5	2
5	HB470	24	FLANGE	BL - 3/4 in - 300 LBS - RF-THD	...	ASME B16.5	2

Chemical Composition (%)

	Heat No.		C	Si	Mn	P	S	Cr	Mo	Ni
		Max	0.08	1.00	2.00	0.045	0.030	20.00	..	11.00
1	HB470		0.022	0.39	1.3	0.025	0.003	18.20	Trace	8.30
2										
3										
4										
5										
		Min	---	...	...	---	---	18.00	---	8.00

	Heat No.								
		Max							
1	HB470								
2									
3									
		Min	---	---	---	---	---	---	---

Mechanical Properties

	Heat No.		Tensile Test				Hardness Test	Impact Test		
			YS (N/mm^2)	UTS (N/mm^2)	ΔL (%)	ΔA (%)		Ind. :	Ave.:	Temp. :
		Max	---	---	---	---	...	Specimen size :		
1	HB470		345	640	61	79	158			
2										
3										
		Min	205	515	30	50	---			

Heat Treatment Process

	Heat No.	Process Type	Holding Temp. (°C)	Holding Time (min)	Cooling Medium
1	HB470	SOLUTION & QUENCH	1060±10	74	WATER
2					
3					

NDT & Final Inspection

	Heat No.	Visual Check	Dimension Check	Ultrasonic Test	Magnetic Test	Marking Check	Result
1	HB470	According to the procedure	According To STANDARD	according to the NDT procedure	...	according to the MSS SP25	ACC
2							
3							
4							
5							

we certify above material is manufactured , inspected & Tested under material specification requirement and meets purchase order .

Quality & Development Manager

Quality Control Supervisor

QC OK

Address : unit 10 - NARGES building - SAAM alley - GHAEM MAGHAM St - TEHRAN - IRAN
Tel : +98 4773 6000

PETRO SANAT ADEL

MATERIAL TEST CERTIFICATE

Customer :	HAMIAN SANAT ENERGY
PO No. :	S-14030920-03
PSA No. :	53577

Certificate Type :	EN 10204 - 3.1
Customer Standard :	ASTM A105N

Certificate No. :	53577.04
Certificate Date:	2025.03.11

Production Description

Row	Heat No.	Item No.	Production Type	Description	DWG No.	DT ref.	QTY
1	HB102	8	FLANGE	WN - 3 in - 300 LBS - RF - SCH: 80	...	ASME B16.5	2

Chemical Composition (%)

	Heat No.		C	Si	Mn	P	S	Cr	Mo	Ni
		Max	0.35	0.35	1.05	0.035	0.040	0.30	0.12	0.40
1	HB102		0.19	0.27	1.13	0.016	<0.003	<0.005	0.02	0.04
2										
3										
4										
5										
		Min	---	0.10	0.60	---	---	---	---	---

	Heat No.		Cu	V	Cr+Mo	Cr+Mo+Cu+Ni+V	Fe	C_{eq}
		Max	0.40	0.08	0.32	1.00	Main	
1	HB102		0.01	0.002	0.02	0.072	BASE	0.386
2								
3								
4								
5								
		Min	---	---	---	---	---	---

Mechanical Properties

	Heat No.		Tensile Test				Hardness Test	Impact Test		
			YS (N/mm^2)	UTS (N/mm^2)	ΔL (%)	ΔA (%)		Ind. :	Ave.:	Temp. :
		Max	---	---	---	---	197 HBW	Specimen size :		
1	HB102		321	510	25	36	160			
2										
3										
4								48		
5										
		Min	250	485	22	30	---			

Heat Treatment Process

	Heat No.	Process Type	Holding Temp. (°C)	Holding Time (min)	Cooling Medium
1	HB102	NORMALIZED	910±10	107	AIR
2					
3					
4					
5					

NDT & Final Inspection

	Heat No.	Visual Check	Dimension Check	Ultrasonic Test	Magnetic Test	Marking Check	Result
1	HB102	According to the procedure	According To STANDARD	according to the NDT procedure	according to the NDT procedure	according to the MSS SP25	ACC
2							
3							
4							
5							

we certify above material is manufactured , inspected & Tested under material specification requirement and meets purchase order .

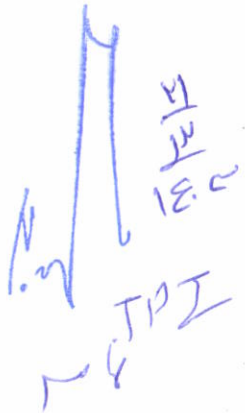
Quality & Development Manager

Quality Control Supervisor

Address : unit 10 - NARGES building - SAAM alley - GHAEM MAGHAM St - TEHRAN - IRAN
Tel : +98 4773 6000

MTO For Flanges

Item		Designation	Class	Size (Inch)	Material (ASTM)	Unit	Total Quantity
	FLANGES						
1	Flange WN	FLANGE WN, SCH80, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	80	15	A350 GR LF2 CL.1	NO's	6
2	Flange WN	FLANGE WN, SCH 80, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	80	20	A350 GR LF2 CL.1	NO's	8
3	Flange WN	FLANGE WN, SCH 80, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	80	150	A350 GR LF2 CL.1	NO's	6
4	Flange WN	FLANGE WN, SCH80, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	80	50	A350 GR LF2 CL.1	NO's	72
5	Flange WN	FLANGE WN, SCH80, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	80	40	A350 GR LF2 CL.1	NO's	10
6	Flange WN	FLANGE WN, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	80	80	A350 GR LF2 CL.1	NO's	6
7	Flange WN	FLANGE WN, 300 LB, RF, ASME B16.5, ASTM A105N	80	50	A105N	NO's	2
8	Flange WN	FLANGE WN, 300 LB, RF, ASME B16.5, ASTM A105N	80	80	A105N	NO's	2
9	Flange WN	FLANGE WN, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	80	100	A350 GR LF2 CL.1	NO's	10
10	Flange WN	FLANGE WN, SCH80, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	80	25	A350 GR LF2 CL.1	NO's	24
11	Flange SW	FLANGE SW, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	300	20	A350 GR LF2 CL.1		6
12	Flange SW	FLANGE SW, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	300	40	A350 GR LF2 CL.1	NO's	26
13	Flange SW	FLANGE SW, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	300	25	A350 GR LF2 CL.1	NO's	8
14	Flange SW	Flange SW, 150 LB, RF, ASME B16.5, ASTM 182 GR F304	150	15	A182 GR F304	No's	2
15	Blind Flange	FLANGE ~~THD~~, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	300	15	A350 GR LF2 CL.1	NO's	6
16	Blind Flange	FLANGE ~~THD~~, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	300	20	A350 GR LF2 CL.1	NO's	2
17	Blind Flange	FLANGE BLIND, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	300	20	A350 GR LF2 CL.1	NO's	10
18	Blind Flange	FLANGE BLIND, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	300	80	A350 GR LF2 CL.1	NO's	4
19	Blind Flange	FLANGE BLIND, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	300	25	A350 GR LF2 CL.1	NO's	12
20	Blind Flange	FLANGE BLIND, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	300	50	A350 GR LF2 CL2	No's	10
21	Blind Flange	FLANGE BLIND,THD, 300 LB, RF, ASME B16.5, ASTM A182 GR F304	300	50	A182 GR F304	No's	2
22	Blind Flange	Flange Blind, THD, 300 LB, RF, ASME B16.5, ASTM A182 GR F304	300	15	A182 GR F304	No's	4
23	Blind Flange	Flange Blind, 150 LB, RF, ASME B16.5, ASTM A182 GR F304	150	15	A182 GR F304	No's	2
24	Blind Flange	FLANGE BLIND, THD, 300 LB, RF, ASME B16.5, ASTM A182 GR F304	300	20	A182 GR F304	No's	2



PACKING LIST
(PROJECT:HAMIAN SANAT ENERGY)

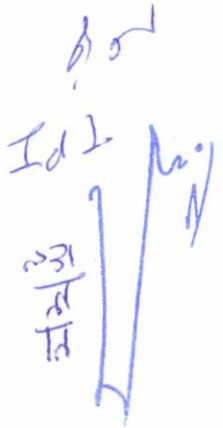
PL NO:PSA-PL-01
P.O:S-14030920-03
PSA NO:53577
DATE:1403.12.21

ROW	ITEM NO	COMMODITY	STANDARD	TYPE	SIZE	CLASS	FACE	SCH	MATERIAL	REMARK	HEAT NO	QTY	UNIT NET WEIGHT(KG)	TOTAL NET WEIGHT(KG)	TYPE OF PALLET	PALLET NO	PSA CODE
1	1	FLANGE	B16.5	WN	1/2 in	300 LBS	RF	SCH: 80	A350 LF2	CL.1	HB102	6	0.79	4.7			DBKNUD
2	2	FLANGE	B16.5	WN	3/4 in	300 LBS	RF	SCH: 80	A350 LF2	CL.1	HB102	8	1.30	10.4			BTTFN3
3	3	FLANGE	B16.5	WN	6 in	300 LBS	RF	SCH: 80	A350 LF2	CL.1	HB102	6	21.52	129.1			KOOXEI
4	4	FLANGE	B16.5	WN	2 in	300 LBS	RF	SCH: 80	A350 LF2	CL.1	HB102	72	3.65	262.8			AREDK9
5	5	FLANGE	B16.5	WN	1 1/2 in	300 LBS	RF	SCH: 80	A350 LF2	CL.1	HB102	10	3.06	30.6			UN2211
6	6	FLANGE	B16.5	WN	3 in	300 LBS	RF	SCH: 80	A350 LF2	CL.1	HB102	6	7.46	44.8			E8Y27G
7	7	FLANGE	B16.5	WN	2 in	300 LBS	RF	SCH: 80	A105	-	HB102	2	3.65	7.3			Q3NF3J
8	8	FLANGE	B16.5	WN	3 in	300 LBS	RF	SCH: 80	A105	-	HB102	2	7.46	14.9			EFQCUI
9	9	FLANGE	B16.5	WN	4 in	300 LBS	RF	SCH: 80	A350 LF2	CL.1	HB102	10	12.18	121.8			SJ7CZE
10	10	FLANGE	B16.5	WN	1 in	300 LBS	RF	SCH: 80	A350 LF2	CL1	HB102	24	1.72	41.3			81ZUOY
11	11	FLANGE	B16.5	SW	3/4 in	300 LBS	RF	SCH: 80	A350 LF2	CL.1	HB102	6	1.40	8.4			0JTP1J
12	12	FLANGE	B16.5	SW	1 1/2 in	300 LBS	RF	SCH: 80	A350 LF2	CL.1	HB102	26	2.70	70.2			NELI3I
13	13	FLANGE	B16.5	SW	1 in	300 LBS	RF	SCH: 80	A350 LF2	CL.1	HB102	8	1.50	12.0			M50X9R
14	14	FLANGE	B16.5	SW	1/2 in	150 LBS	RF	SCH: 80	A182 F304		HB470	2	0.80	1.6			QVAB6R
15	15	FLANGE	B16.5	BL	1/2 in	300 LBS	RF	-	A350 LF2	CL 1	HB102	6	1.40	8.4			IEXRBT
16	16	FLANGE	B16.5	BL	3/4 in	300 LBS	RF	-	A350 LF2	CL 1	HB102	2	1.40	2.8			7VEP4L
17	17	FLANGE	B16.5	BL	3/4 in	300 LBS	RF	-	A350 LF2	CL.1	HB102	10	1.40	14.0			7VEP4L
18	18	FLANGE	B16.5	BL	3 in	300 LBS	RF	-	A350 LF2	CL.1	HB102	4	7.30	29.2			CQYNOQ
19	19	FLANGE	B16.5	BL	1 in	300 LBS	RF	-	A350 LF2	CL.1	HB102	12	1.40	16.8			08RZQG
20	20	FLANGE	B16.5	BL	2 in	300 LBS	RF	-	A350 LF2	CL.2	HB102	10	3.70	37.0			Q7PKSR
21	21	FLANGE	B16.5	BL	2 in	300 LBS	RF	-	A182 F304	THD	HB470	2	3.70	7.4			3JQNCW
22	22	FLANGE	B16.5	BL	1/2 in	300 LBS	RF	-	A182 F304	THD	HB470	4	1.40	5.6			URBQS8
23	23	FLANGE	B16.5	BL	1/2 in	150 LBS	RF	-	A182 F304	-	HB470	2	0.90	1.8			4OW7P5
24	24	FLANGE	B16.5	BL	3/4 in	300 LBS	RF	-	A182 F304	THD	HB470	2	1.40	2.8			2Y9MBN
SUM												242	TOTAL	885.7			

PETRO SANATE ADEL	Contractor / MC	TPA
QC		

MTO For Flanges

			SCH/Class		Material	Unit	
	FLANGES						
1	Flange WN	FLANGE WN, SCH80, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	80	15	A350 GR LF2 CL.1	NO's	6
2	Flange WN	FLANGE WN, SCH 80, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	80	20	A350 GR LF2 CL.1	NO's	8
3	Flange WN	FLANGE WN, SCH 80, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	80	150	A350 GR LF2 CL.1	NO's	6
4	Flange WN	FLANGE WN, SCH80, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	80	50	A350 GR LF2 CL.1	NO's	72
5	Flange WN	FLANGE WN, SCH80, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	80	40	A350 GR LF2 CL.1	NO's	10
6	Flange WN	FLANGE WN, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	80	80	A350 GR LF2 CL.1	NO's	6
7	Flange WN	FLANGE WN, 300 LB, RF, ASME B16.5, ASTM A105N	80	50	A105N	NO's	2
8	Flange WN	FLANGE WN, 300 LB, RF, ASME B16.5, ASTM A105N	80	80	A105N	NO's	2
9	Flange WN	FLANGE WN, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	80	100	A350 GR LF2 CL.1	NO's	10
10	Flange WN	FLANGE WN, SCH80, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	80	25	A350 GR LF2 CL.1	NO's	24
11	Flange SW	FLANGE SW, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	300	20	A350 GR LF2 CL.1		6
12	Flange SW	FLANGE SW, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	300	40	A350 GR LF2 CL.1	NO's	26
13	Flange SW	FLANGE SW, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	300	25	A350 GR LF2 CL.1	NO's	8
14	Flange SW	Flange SW, 150 LB, RF, ASME B16.5, ASTM 182 GR F304	150	15	A182 GR F304	No's	2
15	Blind Flange	FLANGE ~~THD~~, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	300	15	A350 GR LF2 CL.1	NO's	6
16	Blind Flange	FLANGE ~~THD~~, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	300	20	A350 GR LF2 CL.1	NO's	2
17	Blind Flange	FLANGE BLIND, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	300	20	A350 GR LF2 CL.1	NO's	10
18	Blind Flange	FLANGE BLIND, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	300	80	A350 GR LF2 CL.1	NO's	4
19	Blind Flange	FLANGE BLIND, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	300	25	A350 GR LF2 CL.1	NO's	12
20	Blind Flange	FLANGE BLIND, 300 LB, RF, ASME B16.5, ASTM A350 GR LF2	300	50	A350 GR LF2 CL2	No's	10
21	Blind Flange	FLANGE BLIND,THD, 300 LB, RF, ASME B16.5, ASTM A182 GR F304	300	50	A182 GR F304	No's	2
22	Blind Flange	Flange Blind, THD, 300 LB, RF, ASME B16.5, ASTM A182 GR F304	300	15	A182 GR F304	No's	4
23	Blind Flange	Flange Blind, 150 LB, RF, ASME B16.5, ASTM A182 GR F304	150	15	A182 GR F304	No's	2
24	Blind Flange	FLANGE BLIND, THD, 300 LB, RF, ASME B16.5, ASTM A182 GR F304	300	20	A182 GR F304	No's	2



PETRO SANAT ADEL

MATERIAL TEST CERTIFICATE

Customer :	ARKAN SANAT PAYDAR
PO No. :	S-14030725-03
PSA No. :	53525

Certificate Type :	EN 10204 - 3.1
Customer Standard :	ASTM A350 LF2-CL1

Certificate No. :	53525.01
Certificate Date:	2025.01.01

Production Description

Row	Heat No.	Item No.	Production Type	Description	DWG No.	DT ref.	QTY
1	HB102	3	FLANGE	WN - 3 in - 300 LBS - RF - SCH: XXS- Normalized	...	ASME B16.5	3
2	HB102	4	FLANGE	WN - 2 in - 300 LBS - RF - SCH: 160- Normalized	...	ASME B16.5	4
3	HB102	5	FLANGE	LWN - 2 in - LENGTH: 450mm - 300 LBS - RF - SCH: 16.6mm- Normalized	...	ASME B16.5-MFG	1
4	HB102	7	FLANGE	WN - 1 1/2 in - 300 LBS - RF - SCH: 160 - Normalized	...	ASME B16.5	2
5	HB102	8	FLANGE	LWN - 1 1/2 in - LENGTH: 163mm - 300 LBS - RF - SCH: 15.95mm- Normalized	...	ASME B16.5-MFG	2
6	HB102	9	FLANGE	WN - 1 1/2 in - 300 LBS - RF - SCH: XXS- Normalized	...	ASME B16.5	1
7	HB102	10	FLANGE	LWN - 1 in - LENGTH: 180mm - 300 LBS - RF - SCH: 14.47mm - Normalized	...	ASME B16.5-MFG	1
8	HB102	12	FLANGE	WN - 3/4 in - 300 LBS - RF - SCH: XXS - Normalized	...	ASME B16.5	2

Chemical Composition (%)

	Heat No.		C	Si	Mn	P	S	Cr	Mo	Ni
		Max	0.3	0.3	1.35	0.035	0.040	0.30	0.12	0.40
1	HB102		0.19	0.27	1.13	0.016	<0.003	<0.005	0.02	0.04
2										
3										
4										
5										
		Min	---	0.15	0.60	---	---	---	---	---

	Heat No.		Cu	V	Cr+Mo	Cr+Mo+Cu+Ni+V	Fe	C_{eq}
		Max	0.40	0.08	0.32	1.00	Main	
1	HB102		0.01	0.002	0.02	0.072	BASE	0.386
2								
3								
4								
5								
		Min	---	---	---	---	---	---

Mechanical Properties

	Heat No.		Tensile Test				Hardness Test	Impact Test		
			YS (N/mm^2)	UTS (N/mm^2)	ΔL (%)	ΔA (%)		Ind. :	Ave.: 28	Temp. :-46
		Max	---	655	---	---	197 HBW	Specimen size : 10*10*55		
1	HB102		321	510	25	36	160	33		
2								30		
3								23		
4										
5										
		Min	250	485	22	30	---	16	Ave 20	

Heat Treatment Process

	Heat No.	Process Type	Holding Temp. (°C)	Holding Time (min)	Cooling Medium
1	HB102	NORMALIZED	910±10	90	AIR
2					
3					
4					
5					

NDT & Final Inspection

	Heat No.	Visual Check	Dimension Check	Ultrasonic Test	Magnetic Test	Marking Check	Result
1	HB102	According to the procedure	According To STANDARD	according to the NDT procedure	according to the NDT procedure	according to the MSS SP25	ACC
2							
3							
4							
5							

we certify above material is manufactured , inspected & Tested under material specification requirement and meets purchase order .

Quality & Development Manager

Quality Control Supervisor

Address : unit 10 - NARGES building - SAAM alley - GHAEM MAGHAM St - TEHRAN - IRAN
Tel : +98 4773 6000

PETRO SANAT ADEL

MATERIAL TEST CERTIFICATE

Customer :	ARKAN SANAT PAYDAR
PO No. :	S-14030725-03
PSA No. :	53525

Certificate Type :	EN 10204 - 3.1
Customer Standard :	ASTM A420 WPL6

Certificate No. :	53525.02
Certificate Date:	2025.01.01

Production Description

Row	Heat No.	Item No.	Production Type	Description	DWG No.	DT ref.	QTY
1	HB470	13	ELBOW 90 LR	BW - 2 in - SCH: 160	...	ASME B16.9	4
2	HB470	14	ELBOW 90 LR	BW - 1 1/2 in - SCH: 160	...	ASME B16.9	2
3	HB470	15	ELBOW 90 LR	BW - 3/4 in - SCH: XXS	...	ASME B16.5	2

Chemical Composition (%)

	Heat No.		C	Si	Mn	P	S	Cr	Mo	Ni
		Max	0.3	0.40	1.35	0.035	0.040	0.30	0.12	0.40
1	HB470		0.07	0.22	1.01	0.011	0.004	0.09	0.06	0.04
2										
3										
4										
5										
		Min	---	0.15	0.50	---	---	...	---	...

	Heat No.		Cu	Nb	V
		Max	0.40	0.02	0.08
1	HB470		0.07	0.004	0.036
2					
3					
		Min	---	---	---

Mechanical Properties

	Heat No.		Tensile Test				Hardness Test	Impact Test		
			YS (N/mm^2)	UTS (N/mm^2)	ΔL (%)	ΔA (%)		Ind. :	Ave.: 27	Temp. :-45°C
		Max	---	655	---	---	...	Specimen size :		
1	HB470		368	454	32.5		125	26		
2								28		
3								26		
		Min	240	415	25	...	---			

Heat Treatment Process

	Heat No.	Process Type	Holding Temp. (°C)	Holding Time (min)	Cooling Medium
1	HB470	NORMALIZED	910±10	30	AIR
2					
3					

NDT & Final Inspection

	Heat No.	Visual Check	Dimension Check	Ultrasonic Test	Magnetic Test	Marking Check	Result
1	HB470	According to the procedure	According To STANDARD	...	according to the NDT procedure	according to the MSS SP25	ACC
2							
3							
4							
5							

we certify above material is manufactured , inspected & Tested under material specification requirement and meets purchase order .

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