



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.	Max	C	Si	Mn	P	S	Cr	Mo	Ni
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.	Max	Cu	V	Cr+Mo	Cr+Mo+Cu+Ni+V	Fe	C _{req}
1	HB102	0.01	0.002	0.02	0.072	BASE	0.386
2							
3							
4							
5							
	Min	---	---	---	---	---	---

Mechanical Properties

Heat No.	Max	Tensile Test				Hardness Test	Impact Test		
		YS (N/mm ²)	UTS (N/mm ²)	ΔL (%)	ΔA (%)		Ind. :	Ave. : 28	Temp. : -46
1	HB102	321	510	25	36	197 HBW	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



FAHAMEH
Eng. & Ind. Co.
Witnessed
Reviewed



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.	Max	C	Si	Mn	P	S	Cr	Mo	Ni
1	HB470	0.022	0.39	1.3	0.025	0.030	20.00	Trace	8.30
2									
3									
4									
5									
Min		---	---	---	---	---	18.00	---	8.00

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

Mechanical Properties

Heat No.	Max	Tensile Test				Hardness Test	Impact Test		
		YS (N/mm ²)	UTS (N/mm ²)	EL (%)	EA (%)		Ind. :	Ave.:	Temp. :
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	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	According to the procedure	According To STANDARD	according to the NDT procedure	...	according to the MSS SP25	ACC
2						
3						
4						
5						

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Quality & Development Manager

Quality Control Supervisor





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.	Max	C	Si	Mn	P	S	Cr	Mo	Ni
		1	HB102	0.35	0.35	1.05	0.035	0.040	0.30
2		0.19	0.27	1.13	0.016	<0.003	<0.005	0.02	0.04
3									
4									
5									
Min		---	0.10	0.60	---	---	---	---	---

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

Mechanical Properties

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

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