

METAL

17-4PH

Basic Physical Properties

Steel number: 17-4PH	Technical conditions:CJX-Z050-2009
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Production number: 09E - 3139	Furnace number: P07601550
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Delivery status: H1075 (Solid dissolution)
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Delivery weight: 8550KG

Element	C	Mn	Si	P	S	Cr	Ni	Mo	Cu	Nb+Ta
Chemical Composition	0.06	0.40	0.32	0.018	0.012	15.50	3.20	0.20	3.70	0.17

Mechanical Properties	Sample	1. Elongation after breaking δ_5 :13	2. Tensile strength σ_b :1000Mpa
		3. Proof stress σ_s :860Mpa	4. Shrinkage ψ : 45%
		5. Hardness HRC32-38	

Others: Surface Qualified

Remarks: This certificate is subject to red stamp.

Warranty book number: Z01070601862

Contact NO: Z2009-406-ZH465A-1867

METAL

SS301

Basic Physical Properties

Contact No: 0000113781-000230	Train Wagon No:4231051
Box No: 50034215C	Grade: 301
Heat No: FA90157760K25c	Description: 9
Heat No: A1101402	Weight: 200

Element	C	Si	Mn	P	S	Cr	Ni	Cu	Al	N	Mo	Ti
Chemical Compo	0.15	1	2	0.045	0.03	16-18	6.0-8.0					

No	Standard	State	Tensile Strength (Mpa)	Yield Strength (Mpa)	Elongation after fracture A /%	Hardness			
						HB	HRB	HRC	HV
1	GB/T3280-2007	cold rolling	520	205	40	187	90		200

NOTE In case of dispute, the purchaser shall supply the number of certificate, contract, batch, vbeln, heat and trade, dimension, quantity, etc.

WE HEREBY THAT MATERIAL DESCRIED HERE IV HAS MANUFACTURED AND TESTED WITH SATISFACTORY RESULTS IN ACCORDANCE WITH REQUIREMENTS OF THE ABOVE SPECIFICATION EN 10204 3.1.

METAL

SS304

Basic Physical Properties

Specification: BXYI2012-132.304.NO2 PT.A	Train Wagon No:4231051
Box No 1: 1150080102	Heat No: 151701
Box No 2: 1150080102	Heat No: 151702
Heat No: A1101402	Weight: 200

Material Description					Chemical Composition (Heat Analysis) %									
Thick	Width	Length	Sheets	Mass (kg)	C	Si	Mn	P	S	Ni	Cr	Ceq		
mm					x10	x10 ²	x10 ²	x10 ³	x10	x10	x10 ³	x10 ³	x10	x10
65	/	Coil	/	9526	0.08	1	1.98	0.04	0.03	8.4	18.2			
2	1250	Coil	8	8657	16	2	15	12	9					

Tensile Test (G/L=L1)						
Yield Strength(Mpa)		Tensile Strength		Elongation(%)		Bend Test
1	1150080102	406		30		Ok
1	1150080102	3	425	38		Ok

WE HEREBY THAT MATERIAL DESCRIED HEREIV HA S MANUFACTURED AND TESTED WITH SATISFACTORY RESULTS IN ACCORDANCE WITH REQUIREMENTS OF THE ABOVE SPECIFICATION EN 10204 3.1.

METAL

SS316

Basic Physical Properties

BN: DA0921120	Type: 316
Size: 20	Weight (kg): 2.5

Material Description								Chemical Composition (Heat Analysis) %			
C	Si	Mn	P	S	Cr	Ni	Mo	Yield strength(Mpa)	Tensile strength(Mpa)	Elongation(%)	Surface shrinka
.078	.381	1.38	.036	.01	16.52	10.52	2.02	/	√	√	√

If my quality doubts please clarify via phone call of fax and dicate the code number of the quality certificate.

The certificate becomes valid only after it is sealed with product inspection stamped copy is invalid.

The inspection items shall be operated according to the standards and contract stipulations, and the blanks shall be non-inspectiov items.

METAL

SS316L

Basic Physical Properties

Bar No.	Heat No.	Diameter	Length	Pieces	Mass	C	Si	Mn	P	S	Ni	Cr	Mo	C	C	C
						0.000	0.000	0.000	0.000	0.000	10.000	16.000	2.000	0.000	0.000	0.000
						0.080	1.000	2.000	0.045	0.030	14.000	18.000	3.000	0.080	0.080	0.080
B635876E	216528	6.0	2500	50	22.615	0.058	0.710	1.850	0.027	0.016	10.380	16.410	2.510	0.058	0.058	0.058
B635876D	216528	8.0	2500	50	22.615	0.058	0.710	1.850	0.027	0.016	10.380	16.410	2.510	0.058	0.058	0.058
B635876D	216528	10.0	2500	50	22.615	0.058	0.710	1.850	0.027	0.016	10.380	16.410	2.510	0.058	0.058	0.058
B635876F	216528	12.0	2500	50	22.615	0.058	0.710	1.850	0.027	0.016	10.380	16.410	2.510	0.058	0.058	0.058
				Total	200	90460										

Tensile Test +

No.	Y.S. n/mm2	T.S. n/mm2	Elongation %	Hardness Test	Band Test	Surface
min	175	480	40		HV	
max						
1	320	690	57.0		265.0	Good
2	320	690	57.0		265.0	Good
3	320	690	57.0		265.0	Good
4	320	690	57.0		265.0	Good

METAL

SS420

Basic Physical Properties

Heat No: 6614102596B	Number of Piece: 2
Size: 510mm	Weight (kg): 2420
Length: 12mm	Condition of Delivery: Annealing
Heat Treatment No: 15M-4-14	Purpose of Furber Processing: Pin cutting processing

Chemical Compound (%)

C	Mn	Si	S	P	Ni	Cr	W	Mo	V	Mg	Zn	Cu
0.18	1	0.9	0.02	0.025	0.23	12.5	/	0.2	/	/	/	0.13

Mechanical Properties

OrdinaryPorosy ConterPorsity Squaresegregation SpolSegregation	A		B		C		D		Decarburized Layer
1.0	0.0		1.0		0.0		0.0		0.20
1.0	0.0		1.0		0.0		0.0		0.15
265.0	265.0		265.0		265.0		265.0		0.20
									0.15

METAL

SS455

Basic Physical Properties

Cust Pare: DIA3-5/8"RND BAR

Number of Piece: 2

Material Type: Ns Extruded

Bundle No. 21500

Length: Φ20 ft

Part Quantity: 15

Net Weight (kg): 1845

Chemical Compound (%)

	C	Cr	Mn	Ni	Si	Mo	P	S	Ti	Cu
Min	0.05	11	0.5	7.5	0.5	0.5	0.04	0.03	0.8	1.5
Max	≤	12.5	≤	9.5	≤	≤	≤	≤	1.4	2.5
Actual	0.03	11	0.3	8	0.25	0.35	0.018	0.015	0.03	1.5

Specificities No. Revision Amends

Signed:Choi Jin Ho (Quality Assurance Manager)

ASTM B221 04A

Date: Apr.27.2017

AMS-4169 K

For end on behalf of ALCOA CPE

QQ-A-200/11 E

AMS-QQ-A-200/11

We hereby certify that the material described herein has been made and tested in accordance with the requirement of purchase specification with satisfactory results

METAL

SS630

Basic Physical Properties

Warranty No: Z01070601862	Technical conditions: CJX-Z050-2009
Contract No: Z2009-406-ZN465A-1867	Heat No: P07601550
Technical Conditions: CJX-Z050-2009	Delivery status: H1075 (solid solution)
Delivery weight: 8550kg	Number of pieces: 100 (60)

Chemical Compound (%)

C	Mn	Si	P	S	Cr	Ni	Mo	Cu	Nb+Ta
0.06	0.40	0.32	0.018	0.012	15.50	3.20	0.20	3.70	0.17

Mechanical Properties

1. Elongation after fracture δ 5: 13	2. tensile strength σ b:1000Mpa
3. proof stress σ S:860Mpa	4. Shrinkage ψ : 45%
5. Hardness HRC32-38	

Other: Surface Qualified

Remarks: This certificate is subject to the red seal, and the copy is invalid

Validity Code: 00-20601