

Inspection No.:

REPORT OF THIRD PARTY INSPECTION

Order No.: /

Client:

Contact Person:

Manufacturer Name: Southwest Aluminum (Kunshan) Co, Ltd.

Contact Person: Zhang jingjing

Inspection Place: Maoxu Rd.NO525,Kunshan City,Jiangsu

Inspection Date: Nov.08. 2024

Inspector: Mr. Song kuanhong

Quality System Status: N/A

Project Name: Aluminum alloy Plate

Product Drawing Number: /

Inspection No.:

The authorized inspector Mr. Song of TÜV SÜD Certification and Testing (China) Co., Ltd. performed inspection in accordance with the requirements of client. The following are the inspection description and/or results:

Overall result:

Result		Comments
Satisfactory	☒	/
Unsatisfactory	☐	/
HSE issues	☐	/

Inspection project list:

Pos.Nr. Item No. Poste No. No pos.	Stückzahl Number of Qte Numero pezzi Numero di Quantità	Gegenstand - Article – Désignation du produit – Tipo di prodotto	Schmelze-Nr. Heat No. No. Coulée No. Colata	Los-Nr. Lot No. No. de lot. No. di lotto	Seriennummer. Serial No. Numéro de série. Numero di serie.
1	380*660*1346 2pcs 372*547*742 1pcs 372*547*742 1pcs	7050-T7452	22405251 B2404-0040 22302372	22405251/3 2404-0040 22302372	X24-02457-1 X24-02457-2 X24-02459-1 X24-02459-2

Inspection and test plan items covered:

ITEM	ITP inter- vention point no.	Activity description	Acceptance norms	Inspection type for TÜV SÜD ¹	Sample size – extent of inspection (100% - specific %)
1	/	Product chemical analysis test for Aluminum alloy plate	AMS 4108F	W	Each Lot. No.
2	/	Tensile test & Electrical Conductivity test & Fracture Toughness for Aluminum alloy plate	AMS 4108F	W	Each Heat No.
3	/	Visual and Dimensional inspection	AMS 4108F	W	100%
4	/	Ultrasonic detection	ASTM B594	W	100%
5	/	Identification & Marking inspection	AMS 4108F	M	100%
6	/	MTC Packing List, Tally List review	AMS 4108F	R	100%

Reference documentation:

Number/Reference	Rev/Date	Title/Approval status
AMS 4108™ F	2015	Aluminum Alloy, Hand Forgings 6.2Zn-2.3Cu-2.2Mg-0.12Zr(7050-T7452) Solution Heat Treated, Compression Stress-Relieved, and Overaged

Measuring/testing equipment and calibration status:

Equipment description	Serial no.	Last cal date	Cal due date
Universal tester	LH-L-010	2024.10.10	2025.10.09
Digital calipers (0-600mm)	S2110190009	2024.01.03	2025.01.02
Ultrasonic flaw detector	16117553	2024.06.11	2025.06.10
Inductively coupled plasma emission spectrometer	ZCHT-10001	2023.06.21	2025.06.20

Inspection details:



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Activities performed, results and deviations:

1. Chemical analysis

TÜV SÜD Inspector witnessed the chemical composition test as per AMS 4108F, the result was acceptable. Inspector reviewed the calibration certificate of spectrometer, and they were within valid date.

Item 7050-T7452 Plate (wt%)										
Chemical Analysis	Lot No.	Si	Fe	Cu	Mn	Mg	Zn	Cr	Ti	Zr
	22405251/3	0.041	0.077	2.01	0.005	2.08	6.09	0.015	0.043	0.086
	2404-0040	0.040	0.082	2.05	0.005	2.59	6.32	0.007	0.041	0.091
	22302372	0.036	0.080	2.04	0.005	2.58	6.25	0.007	0.043	0.091
AMS 4108F Requirement		≤0.12	≤0.15	2.0-2.6	≤0.10	1.9-2.6	5.7-6.7	≤0.04	≤0.06	0.08-0.15

2. Mechanical properties test

TÜV SÜD Inspector witnessed the mechanical properties test as per AMS4108F, the result was acceptable. Inspector reviewed the calibration certificate of mechanical property machine, and they were within valid date. Inspector checked the dimension of specimen and found the result was acceptable.

The test result as the table follows:

Item 7050-T7452 Plate							
Testing Item	Testing Results						
Tensile test for Plate	Specification	Heat No	Lot No.	Yield Strength	Tensile Strength	Elongation	Reduction of Area
				YS0.2 (MPa)	TS(MPa)	% 5D	% RA
	380*660*1346	22405251	22405251/3	414	488	11.5	34
	372*547*742	B2404-0040	2404-0040	508	561	12.5	30
	372*547*742	22302372	22302372	513	567	10.5	25
AMS 4108F Requirement				/	/	/	/

Remark: Thickness > 203mm Mechanical properties are not required under AMS 4108F-2015 standard.

Item 7050-T7452 Plate					
Testing Item	Testing Results				
Electrical Conductivity test for Plate	Specification	Heat No.	Lot No.	Actual measurement MS/m	
				1	2
	380*660*1346	22405251	22405251/3	26.55	26.78
	372*547*742	B2404-0040	2404-0040	27.13	27.52
	372*547*742	22302372	22302372	27.08	27.12
AMS 4108F Requirement				22.0MS/m min.	

Item 7050-T7452 Plate				
Testing Item	Testing Results			
Fracture Toughness test for Plate	Specification	Heat No.	Lot No.	Actual measurement
				K _{IC} MPa√m
	380*660*1346	22405251	22405251/3	31.1



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	372*547*742	B2404-0040	2404-0040	29.6
	372*547*742	22302372	22302372	38.6
AMS 4108F Requirement				/

Remark: Thickness > 203mm Mechanical properties are not required under AMS 4108F-2015 standard.

3. Visual and Dimensional inspection

TÜV SÜD Inspector checked surface of the plate and did not find any visible crack and defect.

The Dimensional inspection result is as follows.

Item 7050-T7452 Plate			
Description	Tolerance	Actual value	Result
Thickness(mm)	380(0~+5)	382~384	pass
Width(mm)	660(0~+5)	663~665	pass
Length (mm)	1346(0~+10)	1345~1346	pass
Item 7050-T7452 Plate			
Description	Tolerance	Actual value	Result
Thickness(mm)	372(0~+5)	375~377	pass
Width(mm)	547(0~+5)	549~551	pass
Length (mm)	742(0~+10)	740~742	pass

4. Ultrasonic Test

TÜV SÜD Inspector checked No single defect exceeding 1.98mm flat bottom hole, multiple consecutive 1.19mm flat bottom hole defects, cracks, and bottom wave forward movement were found.

Surface	Smooth	Test Block	Work piece body	Probe Size	2.5P Φ 20
Inspection ratio	100%	Sensitivity of detection	Basic sensitivity+6dB	Standard of execution	ASTM B 594-2019
Equipment model	USM 36	Acceptance grade	A Class	Inspection quantity	4pcs
Heat No.		Serial No.		Result	
22405251		X24-02457-1		Class A/ Acc.	
22405251		X24-02457-2		Class A/ Acc.	
B2404-0040		X24-02459-1		Class A/ Acc.	
22302372		X24-02459-2		Class A/ Acc.	

5. Identification, Marking

TÜV SÜD Inspector checked the furnace number, nominal thickness, unique mark and standard number in the mark according to AMS 4108F requirements, and the results were acceptable. Use of wooden packing boxes.

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Item 7050-T7452 Plate	
On the plate:	X24-02457-1/X24-02457-1/X24-02459-1/X24-02459-1
On the packing boxes	PO NO. Item Name. Size. Quantity. Attention To. Address.

6.MTC review

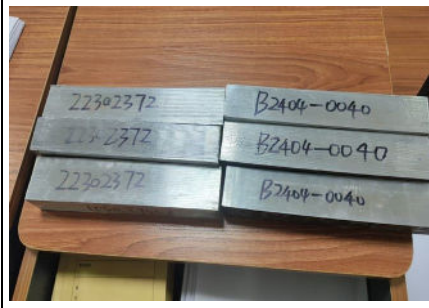
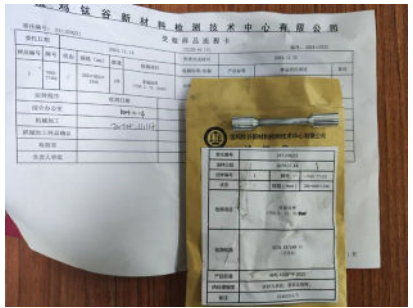
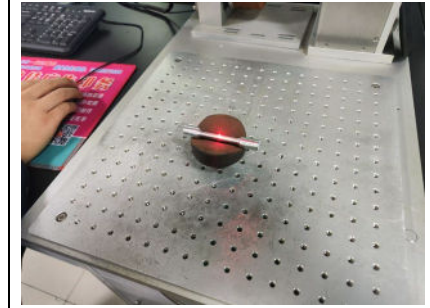
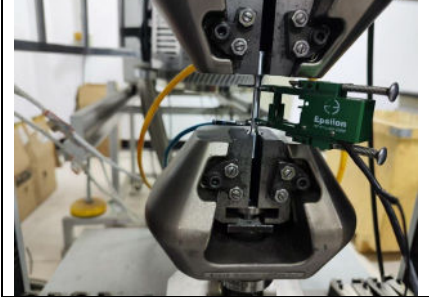
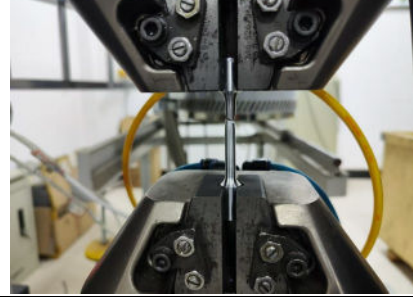
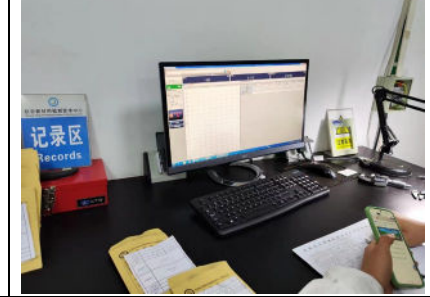
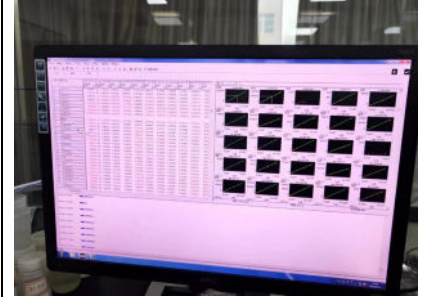
TÜV SÜD Inspector reviewed the MTC of Aluminium alloy Plate, the result was acceptable. Detail is as below:

Document Name	Document No.	Check Result
MTC of Item 1	SWA202409251/SWA202409253 SWA202409254/SWA202409263	Acc.

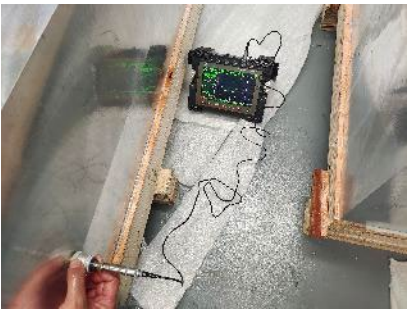
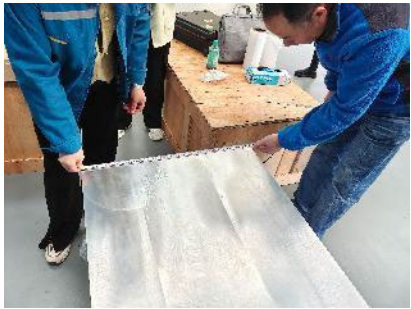
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1.Others

See attached pictures:

		
1. Physical and chemical samples	2. Test samples	3. Testing of tensile test
		
4. Testing of tensile test	5. Testing of tensile test	6. Testing of tensile test
		
7. Chemical composition analysis	8. Visual and Dimensional inspection	9. Visual and Dimensional inspection
		
10. Visual and Dimensional inspection	11. Visual and Dimensional inspection	12. Visual and Dimensional inspection

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13. Visual and Dimensional inspection	14. Visual and Dimensional inspection	15. Visual and Dimensional inspection
		
16. Ultrasonic detection	17. Ultrasonic detection	18. Ultrasonic detection
		
19. Ultrasonic detection	20. Ultrasonic detection	21. Ultrasonic detection

Inspected by:
Date of issue:2025-03-04

Reviewed: