



WORLD TRADE CENTER®  
DENVER

# CERTIFICATE OF ORIGIN


ORIGINAL



TO VALIDATE, GO TO  
VERIFY.FTGS.US

Certificate Number : **DWTC-COO-67628-691e50a83fd36**

Date : **November 19, 2025**

Seller (Exporter) Re-Steel Supply Company Inc. 900 South Pearl Street Denver CO USA	Transport Type Vessel	Port of Loading Newark, NJ
	Destination Country Turkey	Destination Port Istanbul
	Export Date *****	Exporting Carrier *****
Consignee Re-Steel Supply Co Inc. 900 S Pearl St Denver CO 80209 United States	Import Permit Number *****	Bill of Lading / AWB *****
	Owner or Agent *****	Forwarding Agent *****
	Buyer (Importer)	
Remarks		

Description (May include notes on Quantity, Item Number, Marks and Numbers, Kind of Packages.)	Weight	Country of Origin
Invar 36 Plate Marks: RE380-1EDB	2600 lbs	United States
Invar 36 Plate Marks: RE807-6MBA	2600 lbs	France
Invar 36 Plate Marks: RE807-6MBB	2600 lbs	France
Invar 36 Plate Marks: RE108-2MBB	2600 lbs	France
Invar 36 Plate Marks: RE272-2ECA	2600 lbs	United States
Invar 36 Plate Marks: RE272-2EBA	2600 lbs	United States
Invar 36 Plate Marks: RE711-2ECB	2600 lbs	United States

Name of Authorized Trade Association



Authorized Signature **Sandi Moilanen**

The Applicant (or the Applicant on behalf of the Consignor), by utilizing this document, certifies that:

- The above mentioned goods originate in the country(ies) specified above and comply with the rules of origin applicable in the country(ies) to those goods.
- The information in this certificate and in any documents provided to the World Trade Center Denver ("WTCD") is accurate, true and complete.
- The Applicant undertakes to advise WTCD and any other person(s) to whom the applicant provides this Certificate (or to whom the Certificate is provided to with the knowledge of the Applicant) promptly in writing of any inaccuracy, omission or change in such information, or in the origin of goods.
- The Applicant will maintain, and present upon request, such documentation as is necessary to verify the truth, accuracy and completeness of this certificate and accompanying documents.
- In consideration for the WTCD's issuance of this Certificate, the Applicant agrees to release, discharge and hold harmless WTCD from any liability in connection with the issuance of this certificate and to indemnify WTCD in respect of any costs and/or claims made against LAACC in connection herewith.
- The Applicant is authorized to give the undertakings set out herein.





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	Owner or Agent *****	Forwarding Agent *****
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Remarks		

Description (May include notes on Quantity, Item Number, Marks and Numbers, Kind of Packages.)	Weight	Country of Origin
Invar 36 Plate Marks: RE380-1EBA	2600 lbs	United States
Invar 36 Plate Marks: RE380-1EBA	2600 lbs	United States
Invar 36 Plate Marks: RE380-1ECA	2600 lbs	United States
Invar 36 Plate Marks: RE380-1EDC	2600 lbs	United States
Invar 36 Plate Marks: RE380-1EDA	2600 lbs	United States
Invar 36 Plate Marks: RE670-5MCA	2600 lbs	France
Invar 36 Plate Marks: RE108-3MBB	2600 lbs	France

Name of Authorized Trade Association



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Date : **November 19, 2025**

Seller (Exporter) Re-Steel Supply Company Inc. 900 South Pearl Street Denver CO USA	Transport Type Vessel	Port of Loading Newark, NJ
	Destination Country Turkey	Destination Port Istanbul
	Export Date *****	Exporting Carrier *****
Consignee Re-Steel Supply Co Inc. 900 S Pearl St Denver CO 80209 United States	Import Permit Number *****	Bill of Lading / AWB *****
	Owner or Agent *****	Forwarding Agent *****
	Buyer (Importer)	
Remarks		

Description (May include notes on Quantity, Item Number, Marks and Numbers, Kind of Packages.)	Weight	Country of Origin
Invar 36 Plate Marks: RE807-5MCB	2600 lbs	France
Invar 36 Plate Marks: RE807-5MCA	2600 lbs	France
Invar 36 Plate Marks: RE271-1EBA	2600 lbs	United States
Invar 36 Plate Marks: RE380-1ECB	2600 lbs	United States
Invar 36 Plate Marks: RE788-1EBC	2600 lbs	United States
Invar Weld Wire Marks: RM985	990 lbs	France
Invar Weld Wire Marks: 64555	220lbs	France
=====end of products=====	=====	=====

Name of Authorized Trade Association



Authorized Signature **Sandi Moilanen**

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- The Applicant is authorized to give the undertakings set out herein.

*Sandi Moilanen*



Re-Steel Supply Company - Specialty Metals Division  
900 S. Pearl St Denver CO 80209

Phone: +1-303-691-9053

E-mail: ap@re-steel.com

# Commercial Invoice

Date	Invoice No.
10/13/2025	9077

Bill To
M.F.K. Makina Freze Kalip Ltd Sti Bilecik Karayolu 4.Km Yenisehir Bursa Turkey

Consignee
M.F.K. Makina Freze Kalip Ltd Sti Hediye Parlar Bilecik Karayolu 4.Km Yenisehir Bursa Turkey

Country of Manufacture	Terms	P.O. No.	Ship Via	F.O.B.
USA & France	Advance Payment	P20 - 45024614	TBD	Ex-Works Macomb, MI

Description: Invar 36 Steel Plate	Quantity	Amount USD
44169960 NO 10 - Invar 36 Plate RE380-1EDB 0.375 x 98x 242 in EP: 9.53 EN: 2489 BOY:6147 5473-ASR1100&ASR1110-STD	1	16,495.11
NO 20 - Invar 36 Plate RE807-6MBA 0.375 x 98x 306 in EP: 9.53 EN: 2489 BOY: 7772 5473-ASR1100&ASR1110-STD	1	20,845.80
NO 30 - Invar 36 Plate RE807-6MBB 0.375 x 97x 286.5 in EP: 9.53 EN: 2464.0 BOY: 7772 5473-ASR1100&ASR1110-STD	1	19,719.00
NO 40 - Invar 36 Plate RE108-2MBB 0.375 x 99x 279 in EP: 9.53 EN: 2515 BOY: 7087 5473-ASR1100&ASR1110-STD	1	19,906.80
NO 50 - Invar 36 Plate RE272-2ECA 0.75 x 96 x 274 in EP: 19.05 EN: 2438 BOY: 6960 5473-ASR1100&ASR1110-STD	1	37,810.40
NO 60 - Invar 36 Plate RE272-2EBA 0.75 x 96 x 288 in EP: 190.05 EN: 2438 BOY: 7315 5473-ASR1100&ASR1110-STD	1	39,876.20



*Sanli Meilum*  
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**Re-Steel Supply Company - Specialty Metals Division**  
900 S. Pearl St Denver CO 80209

Phone: +1-303-691-9053

E-mail: ap@re-steel.com

# Commercial Invoice

Date	Invoice No.
10/13/2025	9077

Bill To
M.F.K. Makina Freze Kalip Ltd Sti Bilecik Karayolu 4.Km Yenisehir Bursa Turkey

Consignee
M.F.K. Makina Freze Kalip Ltd Sti Hediye Parlar Bilecik Karayolu 4.Km Yenisehir Bursa Turkey

Country of Manufacture	Terms	P.O. No.	Ship Via	F.O.B.
USA & France	Advance Payment	P20 - 45024614	TBD	Ex-Works Macomb, MI

Description: Invar 36 Steel Plate	Quantity	Amount USD
NO 70 - Invar 36 Plate RE711-2ECB 0.75 x 96.5 x 271 in EP: 19.05 EN: 2451 BOY: 6883 5473-ASR1100&ASR1110-STD	1	37,059.20
NO 80 - Invar 36 Plate RE380-1EBA 0.375 x 97x 228 in EP: 9.53 EN: 2464 BOY: 5791 5474-ASR1101&ASR1111-STD	1	16,495.09
NO 80 - Invar 36 Plate RE380-1EBA 0.375 x 99x 230 in EP: 9.53 EN: 2515 BOY: 5842 5474-ASR1101&ASR1111-STD	1	16,495.11
NO 80 - Invar 36 Plate RE380-1ECA 0.375 x 99 x 231in EP: 9.53 EN: 2515 BOY: 5867 5474-ASR1101&ASR1111-STD	1	16,495.10
NO 80 - Invar 36 Plate RE380-1EDC 0.375 x 95.5 x 240in EP: 9.53 EN: 2426 BOY: 6096 5474-ASR1101&ASR1111-STD	1	16,495.10
NO 80 - Invar 36 Plate RE380-1EDA 0.375 x 94 x 242in EP: 9.53 EN: 2388 BOY: 6147 5474-ASR1101&ASR1111-STD	1	16,495.11



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**Re-Steel Supply Company - Specialty Metals Division**  
900 S. Pearl St Denver CO 80209

Phone: +1-303-691-9053

E-mail: ap@re-steel.com

# Commercial Invoice

Date	Invoice No.
10/13/2025	9077

Bill To
M.F.K. Makina Freze Kalip Ltd Sti Bilecik Karayolu 4.Km Yenisehir Bursa Turkey

Consignee
M.F.K. Makina Freze Kalip Ltd Sti Hediye Parlar Bilecik Karayolu 4.Km Yenisehir Bursa Turkey

Country of Manufacture	Terms	P.O. No.	Ship Via	F.O.B.
USA & France	Advance Payment	P20 - 45024614	TBD	Ex-Works Macomb, MI

Description: Invar 36 Steel Plate	Quantity	Amount USD
NO 90 - Invar 36 Plate RE670-5MCA 0.375 x 98.5 x 271in EP: 9.53 EN: 2502 BOY: 6883 5474-ASR1101&ASR1111-STD	1	19,155.60
NO 100 - Invar 36 Plate RE108-3MBB 0.375 x 97 x 275in EP: 9.53 EN: 2464 BOY: 6985 5474-ASR1101&ASR1111-STD	1	19,468.60
NO 110 - Invar 36 Plate RE807-5MCB 0.375 x 98 x 266in EP: 9.53 EN: 2489 BOY: 6756 5474-ASR1101&ASR1111-STD	1	18,592.20
NO 120 - Invar 36 Plate RE807-5MCA 0.375 x 98 x 263in EP: 9.53 EN: 2489 BOY: 6680 5474-ASR1101&ASR1111-STD	1	18,341.80
NO 130 - Invar 36 Plate RE271-1EBA 0.75 x 94.5 x 260 in EP: 19.05 EN: 2400 BOY: 6604 5474-ASR1101&ASR1111-STD	1	34,743.00
NO 140 - Invar 36 Plate RE380-1ECB 0.375 x 95.5 x 229.5in EP: 9.53 EN: 2426 BOY: 5829 5475-ASR1102&ASR1112-STD	1	16,495.11



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**Re-Steel Supply Company - Specialty Metals Division**  
900 S. Pearl St Denver CO 80209  
Phone: +1-303-691-9053  
E-mail: ap@re-steel.com

# Commercial Invoice

Date	Invoice No.
10/13/2025	9077

Bill To
M.F.K. Makina Freze Kalip Ltd Sti Bilecik Karayolu 4.Km Yenisehir Bursa Turkey

Consignee
M.F.K. Makina Freze Kalip Ltd Sti Hediye Parlar Bilecik Karayolu 4.Km Yenisehir Bursa Turkey

Country of Manufacture	Terms	P.O. No.	Ship Via	F.O.B.
USA & France	Advance Payment	P20 - 45024614	TBD	Ex-Works Macomb, MI

Description: Invar 36 Steel Plate	Quantity	Amount USD
NO 140 - Invar 36 Plate RE788-1EBC 0.375 x 93.5 x 229.5in EP: 9.53 EN: 2375 BOY: 6807 5475-ASR1102&ASR1112-STD	1	16,495.10
90001247 KAYNAK TELI NO 180 - Invar Weld Wire 1.14mm x 13.61 kg Spool RE-Invar NB 5473-ASR1100&ASR1110-STD	33	17,721.00
NO 190 - Invar Weld Wire 2.36mm x 914.4mm Rod NILO TIG Wire - 4.54 kg Tubes 5473-ASR1100&ASR1110-STD	22	6,358.00

	<b>Total</b>	<b>\$441,558.43</b>
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# Packing Slip

PO BOX 6797 · DENVER CO. 80206 · Re-Steel Supply Company – Specialty Metals Division

Ship From
Re-Steel Supply Company 51640 Quadrate Drive Macomb, MI 48042 Justin McCallum (248) 504-9795

Ship To
Makina Freze Kalip Bilecik Karayolu 4. Km Yenişehir Merkez/Bursa, Hediye Parlar +90 224 773 4141

SHIP DATE:	10/13/2025
CARRIER:	

SHIPPING TERMS:	Ex-Works Macomb, MI
PO #:	P.O. # P20 - 45024614
JOB #	JOB # N/A

## PLEASE TARP LOAD

WO ITEM #	THK (in & mm)	WID (in & mm)	LEN (in & mm)	QTY	LBS	KG	HEAT NUMBER
1	0.375 9.525	99 2515	230 5842	1	2,690	1,220	RE380-1EBB
2	0.375 9.525	96 2426	230 5829	1	2,650	1,202	RE380-1ECB
3	0.375 9.525	99 2515	231 5867	1	2,670	1,211	RE380-1ECA
4	0.375 9.525	96 2426	240 6096	1	2,580	1,170	RE380-1EDC
5	0.375 9.525	98 2489	242 6147	1	2,660	1,207	RE380-1EDB
6	0.375 9.525	94 2388	242 6147	1	2,570	1,166	RE380-1EDA
7	0.375 9.525	94 2375	268 6807	1	2,670	1,211	RE788-1EBC
8	0.375 9.525	97 2464	228 5791	1	2,590	1,175	RE380-1EBA
9	0.375 9.525	98 2489	306 7772	1	3,330	1,510	RE807-6MBA
10	0.375 9.525	97 2464	287 7277	1	3,150	1,429	RE807-6MBB
11	0.375 9.525	99 2515	279 7087	1	3,180	1,442	RE108-2MBB
12	0.375 9.525	99 2502	271 6883	1	3,060	1,388	RE670-5MCA
13	0.375 9.525	97 2464	275 6985	1	3,110	1,411	RE108-3MBB
14	0.375 9.525	98 2489	266 6756	1	2,970	1,347	RE807-5MCB
15	0.375 9.525	98 2489	263 6680	1	2,930	1,329	RE807-5MCA
15					42,810	19,418	



TEST REPORTS/CERTIFICATIONS INCLUDED

DWTC-C00-67628-691e50a83fd36/November 19, 2025





# Bill of Lading

PO BOX 6797 · DENVER CO. 80206 · Re-Steel Supply Company – Specialty Metals Division

Ship From
Re-Steel Supply Company 51640 Quadrate Drive Macomb, MI 48042 Justin McCallum (248) 504-9795

Ship To
Makina Freze Kalip Bilecik Karayolu 4. Km Yenişehir Merkez/Bursa, Hediye Parlar +90 224 773 4141

NO. Shipping Units	Kind of Packing, Description of Articles Special Marks and Exceptions	Class	Weight (LBS)
15	Invar 36	50	42,810

BILL FREIGHT:	<input type="checkbox"/> Prepaid	<input type="checkbox"/> 3rd Party
	<input type="checkbox"/> Collect	<input type="checkbox"/> C.O.D.

THIRD PARTY:	
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NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding \$\_\_\_\_\_ per \_\_\_\_\_.  
Received: Subject to individually determined rates or contacts that have been agreed upon in writing between the carrier and the shipper, if applicable otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper on request. The property described above, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as shown above, which said carrier agrees to carry to destination, if on it's route, or otherwise deliver to another carrier on the route to destination. Every service to be performed hereunder shall be subject to all Bill of Lading terms and conditions in the governing classification on the date of the shipment.  
Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.  
This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Shipped From:	Re-Steel Supply Company
Date:	10/13/2025
Driver Print Name:	
Receiving Print Name:	

Carrier:	
Shipped To:	Makina Freze Kalip
Driver Signature:	
Receiving Signature:	



*Justin McCallum*

DWTC-C00-67628-691e50a83fd36/November 19, 2025



# Material Test Reports

PO BOX 6797 · DENVER CO. 80206 · Re-Steel Supply Company – Specialty Metals Division

<b>Customer:</b>	Makina Freze Kalip
<b>Order No:</b>	P.O. # P20 - 45024614

<b>Date:</b>	10/13/2025
<b>Work Order No:</b>	WO-00007838

Quantity per Heat Number		
Heat Number	Qty (per Heat Number)	Weight
RE380	7	18410
RE788	1	2670
RE807	4	12380
RE108	2	6290
RE670	1	3060
		<b>42,810</b>

Chemical Composition (wt%):							
Product		Melt Heat / country of origin		Coefficient of Thermal Expansion		Specification(s)	
Invar 36		RE380 // USA		1.66 x10 <sup>-6</sup> 1/F @ 77-400F		2.99 x10 <sup>-6</sup> 1/C @ 25-204C ASTM F1684-06 (2016); Boeing D33028-2 AF	
Carbon	Manganese	Phosphorus	Sulfur	Silicon	Nickel	Chromium	Copper
0.03	0.26	0.003	0.001	0.23	36.01	0.03	0.14
Aluminum	Titanium	Cobalt	Zirconium	Selenium	Magnesium	Iron	
0.022	0.002	0.023	0.015	0.0036	0.0001	63	

Chemical Composition (wt%):							
Product		Melt Heat / country of origin		Coefficient of Thermal Expansion		Specification(s)	
Invar 36		RE788 // USA		1.79 x10 <sup>-6</sup> 1/F @ 77-400F		3.22 x10 <sup>-6</sup> 1/C @ 25-204C ASTM F1684-06 (2016); Boeing D33028-2 AF	
Carbon	Manganese	Phosphorus	Sulfur	Silicon	Nickel	Chromium	Copper
0.02	0.29	0.004	0.001	0.24	36.68	0.06	0.13
Aluminum	Titanium	Cobalt	Zirconium	Selenium	Magnesium	Iron	
0.016	0.003	0.018	0.017	0.003	0.0001	62	



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Chemical Composition (wt%):							
Product		Melt Heat / country of origin		Coefficient of Thermal Expansion		Specification(s)	
Invar 36		RE807 // France		1.3 x10 <sup>-6</sup> 1/F @ 77-400F		2.34 x10 <sup>-6</sup> 1/C @ 25-204C	
ASTM F1684-06 (2016); Boeing D33028-2 AF							
Carbon	Manganese	Phosphorus	Sulfur	Silicon	Nickel	Chromium	Copper
0.004	0.28	0.003	0.001	0.06	35.93	0.03	0.031
Aluminum	Titanium	Cobalt	Zirconium	Selenium	Magnesium	Iron	
0.01	0.01	N/A	N/A	N/A	0.002	63.589	

Chemical Composition (wt%):							
Product		Melt Heat / country of origin		Coefficient of Thermal Expansion		Specification(s)	
Invar 36		RE108 // France		x10 <sup>-6</sup> 1/F @ 77-400F		0 x10 <sup>-6</sup> 1/C @ 25-204C	
ASTM F1684-06 (2016); Boeing D33028-2 AF							
Carbon	Manganese	Phosphorus	Sulfur	Silicon	Nickel	Chromium	Copper
0.001	0.3	0.003	0.001	0.06	35.95	0.06	0.09
Aluminum	Titanium	Cobalt	Zirconium	Selenium	Magnesium	Iron	
0.001	0.001	0.034	N/A	N/A	0.002	N/A	

Chemical Composition (wt%):							
Product		Melt Heat / country of origin		Coefficient of Thermal Expansion		Specification(s)	
Invar 36		RE670 // France		1.46 x10 <sup>-6</sup> 1/F @ 77-400F		2.63 x10 <sup>-6</sup> 1/C @ 25-204C	
ASTM F1684-06 (2016); Boeing D33028-2 AF							
Carbon	Manganese	Phosphorus	Sulfur	Silicon	Nickel	Chromium	Copper
0.003	0.29	0.003	0.001	0.07	35.92	0.04	0.032
Aluminum	Titanium	Cobalt	Zirconium	Selenium	Magnesium	Iron	
0.01	0.01	0.12	N/A	N/A	0.002	63.499	

Note: "N/A" in any field indicates that the data was not available in the documentation furnished to us or the following applies:

ZR : 0.10% Max based on statistical data and certification of materials supplier

MG : 0.002% Max guaranteed by materials supplier based on historical data level not reached for the past 10 years

This material complies with DFARS requirements of subsection 225.872.1. (August 2023)

We hereby certify that the material above is in accordance with the purchase order and specification requirements. The chemical analysis and/or physical tests shown were determined by standard methods and are correct as contained in the records of the company and are a true copy of the data furnished to us.



*San Li Moilem*





# Packing Slip

PO BOX 6797 · DENVER CO. 80206 · Re-Steel Supply Company – Specialty Metals Division

Ship From
Re-Steel Supply Company 51640 Quadrate Drive Macomb, MI 48042 Justin McCallum (248) 504-9795

Ship To
Makina Freze Kalip Bilecik Karayolu 4. Km Yenişehir Merkez/Bursa, Hediye Parlar +90 224 773 4141

<b>SHIP DATE:</b>	10/13/2025
<b>CARRIER:</b>	

<b>SHIPPING TERMS:</b>	Ex-Works Macomb, MI
<b>PO #:</b>	P.O. # P20 - 45024614
<b>JOB #</b>	JOB # N/A

PLEASE TARP LOAD

WO ITEM #	THK (in & mm)	WID (in & mm)	LEN (in & mm)	QTY	LBS	KG	HEATNUMBER
1	0.75 19.05	94.5 2400	260 6604	1	5,550	2,517	RE271-1EBA
2	0.75 19.05	96 2438	274 6960	1	6,040	2,740	RE272-2ECA
3	0.75 19.05	96 2438	288 7315	1	6,370	2,889	RE272-2EBA
4	0.75 19.05	96.5 2451	271 6883	1	5,920	2,685	RE711-2ECB
				<b>4</b>	<b>23,880</b>	<b>10,832</b>	

TEST REPORTS/CERTIFICATIONS INCLUDED



*Justin McCallum*

DWTC-C00-67628-691e50a83fd36/November 19, 2025



# Bill of Lading

PO BOX 6797 · DENVER CO. 80206 · Re-Steel Supply Company – Specialty Metals Division

Ship From
Re-Steel Supply Company 51640 Quadrate Drive Macomb, MI 48042 Justin McCallum (248) 504-9795

Ship To
Makina Freze Kalip Bilecik Karayolu 4. Km Yenişehir Merkez/Bursa, Hediye Parlar +90 224 773 4141

NO. Shipping Units	Kind of Packing, Description of Articles Special Marks and Exceptions	Class	Weight (LBS)
4	Invar 36	50	23,880

BILL FREIGHT:	<input type="checkbox"/> Prepaid	<input type="checkbox"/> 3rd Party
	<input type="checkbox"/> Collect	<input type="checkbox"/> C.O.D.

THIRD PARTY:	
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NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding \$\_\_\_\_\_ per \_\_\_\_\_.  
Received: Subject to individually determined rates or contacts that have been agreed upon in writing between the carrier and the shipper, if applicable otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper on request. The property described above, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as shown above, which said carrier agrees to carry to destination, if on it's route, or otherwise deliver to another carrier on the route to destination. Every service to be performed hereunder shall be subject to all Bill of Lading terms and conditions in the governing classification on the date of the shipment.  
Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.  
This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Shipped From: Re-Steel Supply Company

Carrier:

Date: 10/13/2025

Shipped To: Makina Freze Kalip

Driver Print Name:

Driver Signature:

Receiving Print Name:

Receiving  
Signature:



*Justin McCallum*

DWTC-C00-67628-691e50a83fd36/November 19, 2025



# Material Test Reports

PO BOX 6797 · DENVER CO. 80206 · Re-Steel Supply Company – Specialty Metals Division

<b>Customer:</b>	Makina Freze Kalip
<b>Order No:</b>	P.O. # P20 - 45024614

<b>Date:</b>	10/13/2025
<b>Work Order No:</b>	WO-00007839

Quantity per Heat Number		
Heat Number	Qty (per Heat Number)	Weight
RE271	1	5550
RE272	2	12410
RE711	1	5920
		<b>23,880</b>

Chemical Composition (wt%):							
Product		Melt Heat / country of origin		Coefficient of Thermal Expansion		Specification(s)	
Invar 36		RE271 // USA		x10 <sup>-6</sup> 1/F @ 77-400F		0 x10 <sup>-6</sup> 1/C @ 25-204C	
						ASTM F1684-06 (2016); Boeing D33028-2 AF	
<b>Carbon</b>	<b>Manganese</b>	<b>Phosphorus</b>	<b>Sulfur</b>	<b>Silicon</b>	<b>Nickel</b>	<b>Chromium</b>	<b>Copper</b>
0.012	0.23	0.001	0.001	0.18	36.43	0.05	0.09
<b>Aluminum</b>	<b>Titanium</b>	<b>Cobalt</b>	<b>Zirconium</b>	<b>Selenium</b>	<b>Magnesium</b>	<b>Iron</b>	
0.019	0.002	0.017	0.001	0.002	0.001	63	

Chemical Composition (wt%):							
Product		Melt Heat / country of origin		Coefficient of Thermal Expansion		Specification(s)	
Invar 36		RE272 // USA		x10 <sup>-6</sup> 1/F @ 77-400F		0 x10 <sup>-6</sup> 1/C @ 25-204C	
						ASTM F1684-06 (2016); Boeing D33028-2 AF	
<b>Carbon</b>	<b>Manganese</b>	<b>Phosphorus</b>	<b>Sulfur</b>	<b>Silicon</b>	<b>Nickel</b>	<b>Chromium</b>	<b>Copper</b>
0.02	0.25	0.001	0.001	0.25	36.45	0.04	0.1
<b>Aluminum</b>	<b>Titanium</b>	<b>Cobalt</b>	<b>Zirconium</b>	<b>Selenium</b>	<b>Magnesium</b>	<b>Iron</b>	
0.028	0.002	0.067	0.001	0.002	0.002	63	



*Sanli Moilan*



Chemical Composition (wt%):							
Product		Melt Heat / country of origin		Coefficient of Thermal Expansion		Specification(s)	
Invar 36		RE711 // USA		1.58 x10 <sup>-6</sup> 1/F @ 77-400F		2.84 x10 <sup>-6</sup> 1/C @ 25-204C	
						ASTM F1684-06 (2016); Boeing D33028-2 AF	
Carbon	Manganese	Phosphorus	Sulfur	Silicon	Nickel	Chromium	Copper
0.02	0.32	0.002	0.002	0.3	36.23	0.05	0.19
Aluminum	Titanium	Cobalt	Zirconium	Selenium	Magnesium	Iron	
0.02	0.003	0.027	0.007	0.005	0.001	62.823	

Note: "N/A" in any field indicates that the data was not available in the documentation furnished to us or the following applies:

ZR : 0.10% Max based on statistical data and certification of materials supplier

MG : 0.002% Max guaranteed by materials supplier based on historical data level not reached for the past 10 years

This material complies with DFARS requirements of subsection 225.872.1. (August 2023)

We hereby certify that the material above is in accordance with the purchase order and specification requirements. The chemical analysis and/or physical tests shown were determined by standard methods and are correct as contained in the records of the company and are a true copy of the data furnished to us.



*San Li Meilun*



# Packing Slip

PO BOX 6797 · DENVER CO. 80206 · Re-Steel Supply Company – Specialty Metals Division

Ship From
Re-Steel Supply Company 51640 Quadrate Drive Macomb, MI 48042 Justin McCallum (248) 504-9795

Ship To
Makina Freze Kalip Bilecik Karayolu 4. Km Yenişehir Merkez/Bursa, Hediye Parlar +90 224 773 4141

SHIP DATE:	10/13/2025
CARRIER:	

SHIPPING TERMS:	Ex-Works Macomb, MI
PO #:	P.O. # P20 - 45024614
JOB #	JOB # N/A

PLEASE TARP LOAD

ITEM	DESCRIPTION (Imperial & Metric)	QTY	LBS	KG	HEAT NUMBER
1	0.045" x 30 lb Spool RE-Invar NB 1.14mm x 13.61 kg Spool RE-Invar NB	33	990	449	RM985
2	0.093" x 36" Rod NILO TIG Wire - 10 lb Tubes 2.36mm x 914.4mm Rod NILO TIG Wire - 4.54 kg Tubes	22	220	100	64555
		55	1,210	549	

TEST REPORTS/CERTIFICATIONS INCLUDED



*Justin McCallum*

DWTC-C00-67628-691e50a83fd36/November 19, 2025



# Bill of Lading

PO BOX 6797 · DENVER CO. 80206 · Re-Steel Supply Company – Specialty Metals Division

Ship From
Re-Steel Supply Company 51640 Quadrate Drive Macomb, MI 48042 Justin McCallum (248) 504-9795

Ship To
Makina Freze Kalip Bilecik Karayolu 4. Km Yenişehir Merkez/Bursa, Hediye Parlar +90 224 773 4141

NO. Shipping Units	Kind of Packing, Description of Articles Special Marks and Exceptions	Class	Weight (LBS)
33	0.045" x 30 lb. Spool RE-Invar NB MIG Wire	50	990
22	0.093" x 36" Rod NILO TIG Wire	50	220

BILL FREIGHT:	<input type="checkbox"/> Prepaid	<input type="checkbox"/> 3rd Party
	<input type="checkbox"/> Collect	<input type="checkbox"/> C.O.D.

THIRD PARTY:	
--------------	--

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding \$\_\_\_\_\_ per \_\_\_\_\_.

Received: Subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and the shipper, if applicable otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper on request. The property described above, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as shown above, which said carrier agrees to carry to destination, if on it's route, or otherwise deliver to another carrier on the route to destination. Every service to be performed hereunder shall be subject to all Bill of Lading terms and conditions in the governing classification on the date of the shipment.

Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Shipped From:	Re-Steel Supply Company
Date:	10/13/2025
Driver Print Name:	
Receiving Print Name:	

Carrier:	
Shipped To:	Makina Freze Kalip
Driver Signature:	
Receiving Signature:	



*Justin McCallum*

DWTC-C00-67628-691e50a83fd36/November 19, 2025





# Material Test Reports

PO BOX 6797 • DENVER CO. 80206 • Re-Steel Supply Company – Specialty Metals Division

<b>Customer:</b>	Makina Freze Kalip
<b>Order No:</b>	P.O. # P20 - 45024614

<b>Date:</b>	10/13/2025
<b>Work Order No:</b>	WO-00007840

Quantity per Heat Number		
Heat Number	Qty (per Heat Number)	Weight
RM985	33	990
64555	22	220
		<b>1,210</b>

Chemical Composition (wt%):							
Product		Melt Heat / country of origin		Coefficient of Thermal Expansion		Specification(s)	
		RM985 // France		N/A		N/A	
<b>Carbon</b>	<b>Manganese</b>	<b>Phosphorus</b>	<b>Sulfur</b>	<b>Silicon</b>	<b>Nickel</b>	<b>Chromium</b>	<b>Copper</b>
0.24	0.45	0.003	0.001	0.06	36.02	0.04	0.03
<b>Aluminum</b>	<b>Titanium</b>	<b>Cobalt</b>	<b>Zirconium</b>	<b>Selenium</b>	<b>Magnesium</b>	<b>Iron</b>	
0.04	0.26	N/A	N/A	N/A	N/A	61.4	

Chemical Composition (wt%):							
Product		Melt Heat / country of origin		Coefficient of Thermal Expansion		Specification(s)	
		64555 // France		N/A		N/A	
<b>Carbon</b>	<b>Manganese</b>	<b>Phosphorus</b>	<b>Sulfur</b>	<b>Silicon</b>	<b>Nickel</b>	<b>Chromium</b>	<b>Copper</b>
0.25	0.45	0.003	0.001	0.1	36.01	0.01	0.01
<b>Aluminum</b>	<b>Titanium</b>	<b>Cobalt</b>	<b>Zirconium</b>	<b>Selenium</b>	<b>Magnesium</b>	<b>Iron</b>	
0.02	0.22	N/A	N/A	N/A	N/A	61.5	

Note: "N/A" in any field indicates that the data was not available in the documentation furnished to us or the following applies:

ZR : 0.10% Max based on statistical data and certification of materials supplier

MG : 0.002% Max guaranteed by materials supplier based on historical data level not reached for the past 10 years

This material complies with DFARS requirements of subsection 225.872.1. (August 2023)

We hereby certify that the material above is in accordance with the purchase order and specification requirements. The chemical analysis and/or physical tests shown were determined by standard methods and are correct as contained in the records of the company and are a true copy of the data furnished to us.



DWTC-C00-67628-691e50a83fd36/November 19, 2025



1401 Burris Road, Newton, North Carolina 28658  
Phone (828) 465-0352 - Fax (828) 464-8953

SOLD TO

# Certified Material Test Report

HEAT #  
**64555**

Load ID. **16584200**

Page 1

Re-Steel Supply Company, Inc.  
51640 Quadrate Dr  
MACOMB, MI 48042  
USA



QUALITY SYSTEM  
CERTIFICATION  
Complies with EN ISO 10204, Type 3.1  
TUV Rheinland Cert# 9105081167

SALES ORDER / RLS  
**165842 / 1**

Date Printed **10/08/2025**

CUSTOMER P.O. <b>5979</b>	CUSTOMER PART	QUANTITY <b>400.0 Lbs 181.5 kg</b>	PIECES <b>40</b>	CMTR DATE <b>10/02/2025</b>						
PRODUCT: <b>NILO Filler Metal CF36 .093 x 36</b> <b>NCF36-093-10TS</b>										
CERTIFICATION REQUIREMENTS										
Typical Minimum Mechanical Properties		Tensile Strength 80,000 psi (550 MPa);		Elongation, (4d) 25 %						
Chemical Analysis %										
C	Mn	Fe	S	Si	Cu	Ni	Cr	Al	Ti	P
0.25	0.45	61.5	0.001	0.10	0.01	36.01	0.01	0.02	0.22	<0.003
B	Nb	Others								
0.002	1.4	<0.50								
Specifications										
Country of Origin Melted in France.										
End of Certification										

Visual and dimensional examination is satisfactory. Material, when shipped, is free from contamination by mercury radium, alpha source, and low melting point elements.



*San Li Moilem*

DATE:

PRINTED BY: mcha

DWTC-C00-67628-691e50a83fd36/November 19, 2025

Usine - Works - Werk  
Alloys Imphy  
58160 IMPHY FRANCE  
Telephone : 03 86 21 30 00  
Telecopie : 03 86 21 31 00

Client : RESTEEL  
Customer :  
Kunde :  
N/Référence : 15603701/01  
Our reference :  
Unser Auftrag Nr :  
V/Commande : 501020879  
Your order :  
Ihre Bestell. Nr :  
du : 20/01/25  
of :  
Von :  
Spécification : ASTM F1684-06 - UNS K93603  
Specification :  
Vorschrift : BOEING D33028-2 REV. Y

Produit : INVAR SLAB  
Product :  
Erzeugnisform :  
Etat de livraison : HOT ROLLED  
Condition of delivery :  
Lieferzustand : GROUND

THIC/5,5000/IN  
WIDT/49,5000/IN  
LENG/118,0000/IN

N° de Fabric. : STPL603867  
Manufact.Nr :  
Fabrik.Nr :

Composition Chimique (% poids)  
Chemical Composition (% weight)  
Chemische Zusammensetzung (% gewicht)

Coulée N° : RQ807  
Heat Nr :  
Schmelze Nr :

	C	Mn	Si	S	P	Ni	Cr	Cu	Co
%	.004	.28	.06	< .001	< .003	35.93	.03	.031	.05
Meth.	ACS	AFX	ASP	ACS	ASP	AFX	AFX	AFX	AFX
Al	Ti	Mg	Fe						
< .01	< .01	< .002	bal.						
ASP	AFX	ASP							

**-\*- MECHANICAL AND PHYSICAL TESTS -\*-**

CONFORME A L'ASTM F1684-06 - UNS NO. K93603  
BOEING D33028-2 REV Y  
ACCORDING TO ASTM F1684-06 - UNS NO. K93603  
BOEING D33028-2 REV Y

ZR : 0,10 % MAX BASED ON STATISTICAL DATA AND CERTIFICATION OF  
MATERIALS SUPPLIER



QUALITY CONTROL DOLE R  
*San Li M. Toilem*

Signature  
Signature  
Unterschrift

26/05/25  
Imphy plant  
*[Signature]*

Usine - Works - Werk  
Alloys Imphy  
58160 IMPHY FRANCE  
Telephone : 03 86 21 30 00  
Telecopie : 03 86 21 31 00

Client  
Customer  
Kunde : RESTEEL

N/Référence  
Our reference : 15603701/01  
Unser Auftrag Nr

V/Commande  
Your order : 501020879  
Ihre Bestell. Nr du  
of : 20/01/25  
Von

Spécification  
Specification : ASTM F1684-06 - UNS K93603  
Vorschrift : BOEING D33028-2 REV. Y

MG : 0,002% MAX GUARANTEED BY APERAM BASED ON HISTORICAL DATA  
LEVEL NOT REACHED FOR THE PAST 10 YEARS

**HARDNESS TEST**

<----- Test Results ----->  
HRB (HRB) 60,0

**EXTERNAL MEASUREMENT - ULTRASONIC TEST- EN 16810 - EN 10307**

<----- Test Results ----->  
TEST RESULT CONF.

**COEFFICIENT OF THERMAL EXPANSION (\*1E-6)**

<----- Test Results ----->  
77-400 °F (/°F) 1,30

APERAM ALLOYS CERTIFIES THAT THIS MATERIAL  
HAS BEEN MELTED IN FRANCE

We hereby declare, barring exceptions, reservations or exemptions listed in this statement of conformity,  
that the listed supplies comply with the contract requirements and that after completion of testing and verification  
, they completely satisfy all specified requirements and applicable standards and regulations.  
Document validated by electronic signature  
QSE manual in latest edition is available on this link : <https://www.aperam.com/documentation/>

AAA : Spectrométrie d'Absorption Atomique (SAA) = Atomic Absorption Spectrometry (AAS) / APL : Spectrométrie d'Emission Atomique à Plasma couplé Inductivement (ICP-AES)  
= Inductively Coupled Plasma Spectrometry / AFX : spectrométrie de Fluorescence X = X-Ray fluorescence spectrometry (XRF) / ASP : Spectrométrie d'Emission Optique à  
source étincelle = optical Emission Spectrometry (OES) / ACS : analyseur spécifique carbone soufre = combustion and infrared measurement / ANO : analyseur spécifique  
oxygène azote = fusion, conductivity and infrared measurement / AEX : dosage extérieur = analysis outsourced)



QUALITY CONTROL DOLE R  
*San Li M. Toilem*

Signature  
Signature  
Unterschrift

26/05/25  
Imphy plant  
*[Signature]*



# ELLWOOD QUALITY STEELS COMPANY

A PENNSYLVANIA BUSINESS TRUST  
700 MORAVIA STREET, NEW CASTLE, PA 16101

Page 1 of 1



(724) 658-6788  
Telefax (724) 658-6802

## CERTIFIED TEST REPORT

Date: 4/23/24

Report of Tests of: (3), 6" x 50" - Grade Invar 36 Ingot(s)

For Company: Re-Steel Supply  
Specialty Metals Division  
Denver, CO 80206

Customer's Order: 5820  
Date of Order: 2/22/24  
Our Shop Order: H000290428  
Specification: Boeing D33028-2 Rev.AF, Table 1 chem only

## CHEMICAL ANALYSIS

Heat #	C	Mn	P	S	Si	Ni	Cr	Mo	V	Cu	Al	Ti	Co	Zr
FC711	.02	.32	.002	.002	.30	36.23	.05	.03	.003	.19	.020	.003	.027	.007
	Se	Mg												
	.005	<.001												

The material was melted using the electric furnace-ladle refined-vacuum degas process and was subsequently bottom poured.

P+S = .004

Al + Mg + Ti + Zr < .031

Fe Balance = 63

Material meets the chemistry requirements of Boeing D33028-2 Rev. AF, Table 1 for Invar 36 and ASTM F1684-06 (reapproved 2021) table 1 UNS No K93603.

Coefficient of Thermal Expansion =  $1.58 \times 10^{-5}$  in/in/ $^{\circ}$ F (77-400 F).

The material was produced in accordance with the EQS Quality Manual dtd. 02/02/24, Rev.7, which meets the intent of the latest revisions of ISO 10012-1, MIL-I-45208, NCA-3300 (formerly NCA 3800), and 10-CFR-50 App. B for quality assurance, inspection and calibration systems. EQS QMS is certified to AS9100D and ISO 9001:2015.

The material was melted in the U.S.A.

Forged to a 7.5" x 50" from a 22" x 57" ingot. Reduction Ratio: 3.19:1. Subsequently ground to 6" x 50" slab.



I certify that the reported results and statements of compliance herein represent the actual attributes of the material furnished and are in full compliance with all purchase order/specification requirements. No falsification, false, fictitious or fraudulent statements or entries on this document may be punishable as a felony under Federal Statute. During the manufacturing process, tests, and inspections, the material did not come into contact with mercury or any of its compounds nor with any mercury containing device employing a single boundary of containment. No welding or weld repair was performed on this material. The material was produced free of radioactive elements.

Chris McVay  
Chris McVay  
Quality Assurance Manager

Electronic Signature

DWTC-C00-67628-691e50a83fd36/November 19, 2025

# ELLWOOD QUALITY STEELS COMPANY

A PENNSYLVANIA BUSINESS TRUST  
700 MORAVIA STREET, NEW CASTLE, PA 16101

Page 1 of 1



(724) 658-6788  
Telefax (724) 658-6802

## CERTIFIED TEST REPORT

Date: 4/9/25

Report of Tests of: (3), 7" x 50" - Grade Invar 36 Forged Slab(s)

For Company: Re-Steel Supply  
Specialty Metals Division  
Denver, CO 80206

Customer's Order: 5888  
Date of Order: 12/12/24  
Our Shop Order: H000297566  
Specification: Boeing D33028-2 Rev.AF, Table 1 chem only

## CHEMICAL ANALYSIS

Heat #	C	Mn	P	S	Si	Ni	Cr	Mo	V	Cu	Al	Ti	Co	Zr
FK380	.03	.26	.003	.001	.23	36.01	.03	.03	.002	.14	.022	.002	.023	.015
	Se	Mg												
	.0036	.0001												

The material was melted using the electric furnace-ladle refined-vacuum degas process and was subsequently bottom poured.

P+S = .004

Al + Mg + Ti + Zr = .039

Fe Balance = 63

Material meets the chemistry requirements of Boeing D33028-2 Rev. AF, Table 1 for Invar 36 and ASTM F1684-06 (reapproved 2021) table 1 UNS No K93603.

Coefficient of Thermal Expansion =  $1.66 \times 10^{-6}$  in/in/deg F (77 - 400 deg F)

The material was produced in accordance with the EQS Quality Manual dtd. 02/02/24, Rev.7, which meets the intent of the latest revisions of ISO 10012-1, MIL-I-45208, NCA-3300 (formerly NCA 3800), and 10-CFR-50 App. B for quality assurance, inspection and calibration systems. EQS QMS is certified to AS9100D and ISO 9001:2015.

The material was melted in the U.S.A.

Forged to a 7" x 50" Slab from a 22" x 57" ingot. Reduction Ratio: 3.19:1



I certify that the reported results and statements of the certificate represent the actual attributes of the material furnished and are in compliance with all purchase order specification requirements. Note: The recording of false, fictitious or fraudulent statements or entries on this document may be punishable as a felony under Federal Statute. During the manufacturing process, tests, and inspections, the material did not come in direct contact with mercury or any of its compounds nor with any mercury containing device employing a single boundary of containment. No welding or weld repair was performed on this material. The material was produced free of radioactive elements.

*San Li Mailem*

*Chris McVay*  
Chris McVay  
Quality Assurance Manager

DWTC-C00-67628-691e50a83fd36/November 19, 2025

# ELLWOOD QUALITY STEELS COMPANY

A PENNSYLVANIA BUSINESS TRUST  
700 MORAVIA STREET, NEW CASTLE, PA 16101

Page 1 of 1



(724) 658-6788  
Telefax (724) 658-6802

## CERTIFIED TEST REPORT

Date: 4/24/25

Report of Tests of: (3), 7" X 50" - Grade Invar 36 Forged Slab(s)

For Company: Re-Steel Supply  
Specialty Metals Division  
Denver, CO 80206

Customer's Order: 5888  
Date of Order: 12/12/24  
Our Shop Order: H000297570  
Specification: Boeing D33028-2 Rev.AF, Table 1 chem only

## CHEMICAL ANALYSIS

Heat #	C	Mn	P	S	Si	Ni	Cr	Mo	V	Cu	Al	Ti	Co	Zr
FK788	.02	.29	.004	.001	.24	36.68	.06	.02	.003	.13	.016	.003	.018	.017
	Se	Mg												
	.003	.0001												

The material was melted using the electric furnace-ladle refined-vacuum degas process and was subsequently bottom poured.

P+S = .005

Al + Mg + Ti + Zr = .036

Fe Balance = 62

Material meets the chemistry requirements of Boeing D33028-2 Rev. AF, Table 1 for Invar 36 and ASTM F1684-06 (reapproved 2021) table 1 UNS No K93603.

Coefficient of Thermal Expansion =  $1.79 \times 10^{-6}$  in/in/deg F (77 - 400 deg F)

The material was produced in accordance with the EQS Quality Manual dtd. 02/02/24, Rev.7, which meets the intent of the latest revisions of ISO 10012-1, MIL-I-45208, NCA-3300 (formerly NCA 3800), and 10-CFR-50 App. B for quality assurance, inspection and calibration systems. EQS QMS is certified to AS9100D and ISO 9001:2015.

The material was melted in the U.S.A.

Forged to a 7" x 50" Slab from a 22" x 57" ingot. Reduction Ratio: 3.19:1



I certify that the reported results and statements of the certificate represent the actual attributes of the material furnished and are in compliance with all purchase order specification requirements. Note: The recording of false, fictitious or fraudulent statements or entries on this document may be punishable as a felony under Federal Statute. During the manufacturing process, tests, and inspections, the material did not come in direct contact with mercury or any of its compounds nor with any mercury containing device employing a single boundary of containment. No welding or weld repair was performed on this material. The material was produced free of radioactive elements.

*San Li Mailem*

*Chris McVay*  
Chris McVay  
Quality Assurance Manager

DWTC-C00-67628-691e50a83fd36/November 19, 2025

Usine - Works - Werk  
Alloys Imphy  
58160 IMPHY FRANCE  
Telephone : 03 86 21 30 00  
Telecopie : 03 86 21 31 00

Client : RESTEEL  
Customer :  
Kunde :  
N/Référence : V3453818/01  
Our reference :  
Unser Auftrag Nr :  
V/Commande : 403019987  
Your order :  
Ihre Bestell. Nr :  
du : 12/03/24  
of :  
Von :  
Spécification : ASTM F1684-06 - UNS K93603  
Specification :  
Vorschrift : BOEING D33028-2 REV. Y

Produit : INVAR SLAB  
Product :  
Erzeugnisform :  
Etat de livraison : HOT ROLLED  
Condition of delivery :  
Lieferzustand : GROUND

THIC/5,5000/IN  
WIDT/49,5000/IN  
LENG/118,0000/IN

N° de Fabric. : STPL581808  
Manufact.Nr :  
Fabrik.Nr :

Composition Chimique (% poids)  
Chemical Composition (% weight)  
Chemische Zusammensetzung (% gewicht)

Coulée N° : RP670  
Heat Nr :  
Schmelze Nr :

	C	Mn	Si	S	P	Ni	Cr	Cu	Co
%	.003	.29	.07	< .001	< .003	35.92	.04	.032	.12
Meth.	ACS	AFX	ASP	ACS	ASP	AFX	AFX	AFX	AFX
Al	Ti	Mg	Fe						
< .01	< .01	< .002	bal.						
ASP	AFX	ASP							

**-\*- MECHANICAL AND PHYSICAL TESTS -\*-**

CONFORME A L'ASTM F1684-06 - UNS NO. K93603  
BOEING D33028-2 REV Y  
ACCORDING TO ASTM F1684-06 - UNS NO. K93603  
BOEING D33028-2 REV Y

ZR : 0,10 % MAX BASED ON STATISTICAL DATA AND CERTIFICATION OF  
MATERIALS SUPPLIER



QUALITY CONTROL DOLE R  
*San Li M. Toilem*

Signature  
Signature  
Unterschrift

26/06/24  
Imphy plant  
*[Signature]*

Usine - Works - Werk  
Alloys Imphy  
58160 IMPHY FRANCE  
Telephone : 03 86 21 30 00  
Telecopie : 03 86 21 31 00

Client  
Customer  
Kunde : RESTEEL

N/Référence  
Our reference : V3453818/01  
Unser Auftrag Nr

V/Commande  
Your order : 403019987  
Ihre Bestell. Nr du of : 12/03/24  
Von

Spécification  
Specification : ASTM F1684-06 - UNS K93603  
Vorschrift : BOEING D33028-2 REV. Y

MG : 0,002% MAX GUARANTEED BY APERAM BASED ON HISTORICAL DATA  
LEVEL NOT REACHED FOR THE PAST 10 YEARS

### HARDNESS TEST

<----- Test Results ----->

HRB (HRB) NO\_VAL

### EXTERNAL MEASUREMENT - ULTRASONIC CONTROL NF EN 10160 S3/E4

<----- Test Results ----->

TEST RESULT CONF.

### EXTERNAL MEASUREMENT - COEFFICIENT OF THERMAL EXPANSION (\*1E-6)

<----- Test Results ----->

77-400 °F (/°F)

APERAM ALLOYS CERTIFIES THAT THIS MATERIAL  
HAS BEEN MELTED IN FRANCE

We hereby declare, barring exceptions, reservations or exemptions listed in this statement of conformity,  
that the listed supplies comply with the contract requirements and that after completion of testing and verification  
, they completely satisfy all specified requirements and applicable standards and regulations.  
Document validated by electronic signature  
QSE manual in latest edition is available on this link : <https://www.aperam.com/documentation/>

AAA : Spectrométrie d'Absorption Atomique (SAA) = Atomic Absorption Spectrometry (AAS) / APL : Spectrométrie d'Emission Atomique à Plasma couplé Inductivement (ICP-AES)  
= Inductively Coupled Plasma Spectrometry / AFX : spectrométrie de Fluorescence X = X-Ray fluorescence spectrometry (XRF) / ASP : Spectrométrie d'Emission Optique à  
source étincelle = optical Emission Spectrometry (OES) / ACS : analyseur spécifique carbone soufre = combustion and infrared measurement / ANO : analyseur spécifique  
oxygène azote = fusion, conductivity and infrared measurement / AEX : dosage extérieur = analysis outsourced)



QUALITY CONTROL DOLE R  
*San Li M. Toilem*

Signature  
Signature  
Unterschrift

26/06/24  
Imphy plant  
*[Signature]*



**CERTIFIED TEST REPORT**Date: **2/19/25**Report of Tests of: **(2), 20" X 65" X 115" - Grade Invar 36 Ingots**For Company: **Re-Steel Supply  
Specialty Metals Division  
Denver, CO 80206**Customer's Order: **5889**  
Date of Order: **12/12/24**  
Our Shop Order: **H000297565**  
Specification: **Boeing D33028-2 Rev.AF, Table 1 chem only****CHEMICAL ANALYSIS**

Heat #	C	Mn	P	S	Si	Ni	Cr	Mo	V	Cu	Al	Ti	Co	Zr
2271A	.012	.23	.001	.001	.18	36.43	.05	.02	.002	.09	.019	.002	.017	<.001
	Se	Mg	P+S	Al + Mg + Ti + Zr	Fe Balance									
	.002	.001	.002	<.023	63									

Material certified: 2271A-01; 2271A-02

The material was melted using the electric furnace-ladle refined-vacuum degas process and was subsequently bottom poured.

Coefficient of Thermal Expansion =  $1.67 \times 10^{-6}$  in/in/°F (77 - 400°F)

This material was melted and produced in the USA, in accordance with the ENS QA Manual Rev. 5 dated 05/03/2021 which meets the intent of the latest revisions of ISO 10012-1, MIL-I-45208, NCA-3300 latest edition (formerly NCA-3800) and 10CFR50 Appendix B for quality assurance, inspection and calibration systems. ENS QMS is certified to AS9100D and ISO 9001:2015.

Material meets the chemistry requirements of Boeing D33028-2 Rev. AF, Table 1 and ASTM F 1684-06 (Reapproved 2011) Table 1 UNS No. K93603



I certify that the reported results and statements of compliance herein represent the actual attributes of the material furnished and are in full compliance with all purchase order/specification requirements. No false, fictitious or fraudulent statements or entries on this document may be punishable as a felony under Federal Statute. During the manufacturing process, tests, and inspections, the material did not come in contact with mercury or any of its compounds nor with any mercury containing device employing a single boundary of containment. No welding or weld repair was performed on this material. The material was produced free of radioactive elements.

*Thomas Piotrowski*  
Thomas Piotrowski  
Quality Engineer

Electronic Signature

DWTC-C00-67628-691e50a83fd36/November 19, 2025

**CERTIFIED TEST REPORT**Date: **2/19/25**Report of Tests of: **(2), 20" X 65" X 115" - Grade Invar 36 Ingots**For Company: **Re-Steel Supply  
Specialty Metals Division  
Denver, CO 80206**Customer's Order: **5889**Date of Order: **12/12/24**Our Shop Order: **H000297564**Specification: **Boeing D33028-2 Rev.AF, Table 1 chem only****CHEMICAL ANALYSIS**

Heat #	C	Mn	P	S	Si	Ni	Cr	Mo	V	Cu	Al	Ti	Co	Zr
2272A	.020	.25	.001	<.001	.25	36.45	.04	.05	.002	.10	.028	.002	.067	<.001
	Se	Mg	P+S	Al + Mg + Ti + Zr	Fe Balance									
	.002	.002	<.002	<.033	63									

Material certified: 2272A-01; 2272A-02

The material was melted using the electric furnace-ladle refined-vacuum degas process and was subsequently bottom poured.

Coefficient of Thermal Expansion =  $1.73 \times 10^{-6}$  in/in/°F (77 - 400°F)

This material was melted and produced in the USA, in accordance with the ENS QA Manual Rev. 5 dated 05/03/2021 which meets the intent of the latest revisions of ISO 10012-1, MIL-I-45208, NCA-3300 latest edition (formerly NCA-3800) and 10CFR50 Appendix B for quality assurance, inspection and calibration systems. ENS QMS is certified to AS9100D and ISO 9001:2015.

Material meets the chemistry requirements of Boeing D33028-2 Rev. AF, Table 1 and ASTM F 1684-06 (Reapproved 2011) Table 1 UNS No. K93603



I certify that the reported results and statements of compliance herein represent the actual attributes of the material furnished and are in full compliance with all purchase order, specification requirements. No false, fictitious or fraudulent statements or entries on this document may be punishable as a felony under Federal Statute. During the manufacturing process, tests, and inspections, the material did not come in contact with mercury or any of its compounds nor with any mercury containing device employing a single boundary of containment. No welding or weld repair was performed on this material. The material was produced free of radioactive elements.

*Thomas Piotrowski*  
Thomas Piotrowski  
Quality Engineer

Electronic Signature

DWTC-C00-67628-691e50a83fd36/November 19, 2025



Welding Products Company  
1401 Burris Road, Newton, North Carolina 28658  
Phone (828) 465-0352 - Fax (828) 464-8953

# Certified Material Test Report

HEAT #  
**RM985**

Load ID. **16194200**

Page 1

SOLD TO

Re-Steel Supply Company, Inc.  
50335 Patricia  
Chesterfield, MI 48051  
USA



QUALITY SYSTEM  
CERTIFICATION  
Complies with EN ISO 10204, Type 3.1  
TUV Rheinland Cert# 9105081167

SALES ORDER / RLS  
**161942 / 1**

Date Printed **12/18/2023**

CUSTOMER P.O. <b>5786</b>	CUSTOMER PART	QUANTITY <b>200.0 Lbs 90.8 kg</b>	PIECES <b>20</b>	CMTR DATE <b>12/15/2023</b>						
PRODUCT: <b>NILO Filler Metal CF36 .093 x 36</b> <b>NCF36-093-10TS</b>										
CERTIFICATION REQUIREMENTS										
Typical Minimum Mechanical Properties		Tensile Strength 80,000 psi (550 MPa);		Elongation, (4d) 25 %						
Country of Origin: Melted and Manufactured in the USA.										
Chemical Analysis %										
C	Mn	Fe	S	Si	Cu	Ni	Cr	Al	Ti	P
0.24	0.45	61.4	0.001	0.06	0.03	36.02	0.04	0.04	0.26	<0.003
B	Nb	Others								
0.002	1.4	<0.50								
Specifications										
Country of Origin Melted in France.										
End of Certification										

Visual and dimensional examination is satisfactory. Material, when shipped, is free from contamination by mercury radium, alpha source, and low melting point elements.



*Sanli Moilem*

*Stephen H. Deaton*

12/18/2023

DATE:

PRINTED BY: sburton

DWTC-C00-67628-691e50a83fd36/November 19, 2025

Usine - Works - Werk  
Alloys Imphy  
58160 IMPHY FRANCE  
Telephone : 03 86 21 30 00  
Telecopie : 03 86 21 31 00

Client : RESTEEL  
Customer :  
Kunde :  
N/Référence : 15600376/01  
Our reference :  
Unser Auftrag Nr :  
V/Commande : 406020337  
Your order :  
Ihre Bestell. Nr :  
du : 28/06/24  
of :  
Von :  
Spécification : ASTM F1684-06 - UNS K93603  
Specification :  
Vorschrift : BOEING D33028-2 REV. Y

Produit : INVAR SLAB  
Product :  
Erzeugnisform :  
Etat de livraison : HOT ROLLED  
Condition of delivery :  
Lieferzustand :  
GROUND

THIC/5,5000/IN  
WIDT/49,5000/IN  
LENG/118,0000/IN

N° de Fabric. : STPL590354  
Manufact.Nr :  
Fabrik.Nr :

Composition Chimique (% poids)  
Chemical Composition (% weight)  
Chemische Zusammensetzung (% gewicht)

Coulée N° : RQ108  
Heat Nr :  
Schmelze Nr :

	C	Mn	Si	S	P	Ni	Cr	Cu	Co
%	< .001	.30	.06	< .001	< .003	35.95	.06	.034	.09
Meth.	ACS	AFX	ASP	ACS	ASP	AFX	AFX	AFX	AFX
Al	Ti	Mg	Fe						
< .01	< .01	< .002	bal.						
ASP	AFX	ASP							

DWTC-C00-67628-691e50a83fd36/November 19, 2025

**-\*- MECHANICAL AND PHYSICAL TESTS -\*-**

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BOEING D33028-2 REV Y  
ACCORDING TO ASTM F1684-06 - UNS NO. K93603  
BOEING D33028-2 REV Y

ZR : 0,10 % MAX BASED ON STATISTICAL DATA AND CERTIFICATION OF  
MATERIALS SUPPLIER



QUALITY CONTROL DOLE R  
*Sanli M. Dole R*

Signature  
Signature  
Unterschrift

06/11/24  
Imphy plant  
*[Signature]*

Usine - Works - Werk  
Alloys Imphy  
58160 IMPHY FRANCE  
Telephone : 03 86 21 30 00  
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Kunde : RESTEEL

N/Référence  
Our reference : 15600376/01  
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Your order  
Ihre Bestell. Nr : 406020337

du  
of : 28/06/24  
Von

Spécification  
Specification  
Vorschrift : ASTM F1684-06 - UNS K93603  
BOEING D33028-2 REV. Y

MG : 0,002% MAX GUARANTEED BY APERAM BASED ON HISTORICAL DATA  
LEVEL NOT REACHED FOR THE PAST 10 YEARS

### HARDNESS TEST

<----- Test Results ----->

HRB (HRB) 72,1

### EXTERNAL MEASUREMENT - ULTRASONIC CONTROL NF EN 10160 S3/E4

<----- Test Results ----->

TEST RESULT CONF.

### COEFFICIENT OF THERMAL EXPANSION (\*1E-6)

<----- Test Results ----->

77-400 °F (/°F) 1,41

APERAM ALLOYS CERTIFIES THAT THIS MATERIAL  
HAS BEEN MELTED IN FRANCE

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= Inductively Coupled Plasma Spectrometry / AFX : spectrométrie de Fluorescence X = X-Ray fluorescence spectrometry (XRF) / ASP : Spectrométrie d'Emission Optique à  
source étincelle = optical Emission Spectrometry (OES) / ACS : analyseur spécifique carbone soufre = combustion and infrared measurement / ANO : analyseur spécifique  
oxygène azote = fusion, conductivity and infrared measurement / AEX : dosage extérieur = analysis outsourced)



QUALITY CONTROL DOLE R  
*San Li M. Toilem*

Signature  
Signature  
Unterschrift

06/11/24  
Imphy plant  
*[Signature]*