TUNG MUNG DEVELOPMENT CO.,LTD.

First Quality

Best Reputation

Excellent Service









Cold Rolled Stainless Steel

Main Products

Steel Grade: 200, 300, 400 series stainless steel coils and sheets

Width: 1000 - 1300mm

Finish: No.1, 2D, 2B, BA, No.3, No.4

Thickness:

No.1	2.00 - 6.00 mm
2B/2D	0.31 - 3.00 mm
BA	0.25 - 2.00 mm
No.3/ No.4	0.30 - 3.00 mm

Company Introduction



Tung Mung Development Co., Ltd. (abbreviated as Tung Mung) was incorporated in 1968 as Tung Mung Textile Co., Ltd., which specialized in textile, fabric and garment business. In 1990, in order to respond to the government policy of encouraging investment and industry upgrade, Tung Mung sold its textile-related business to Tuntex Incorporation and changed its company name to the current one, and focused on stainless steel production and sales business.

Aiming to have the most advanced technology and highest product quality, Tung Mung signed the “Technical Assistance and Service Agreement” with Krupp in 1990 and began to establish the cold rolled stainless steel plant with designed annual capacity of 150,000 tons in Hsueh-Chia District, Tainan City.

Tung Mung launched excellent production equipments from Europe, Japan and USA. With high quality employees, Tung Mung started its commercial production and sales business in 1995. The products of Tung Mung include not only the 2B and BA finish cold rolled stainless steels of both 200 and 300 series but also those of 400 series that are much shorter supplied in domestic market. Tung Mung achieves the stable production quality and possesses the excellent competition advantage among the stainless steel companies.

Production Process and Main Equipments

2.1 Production Process

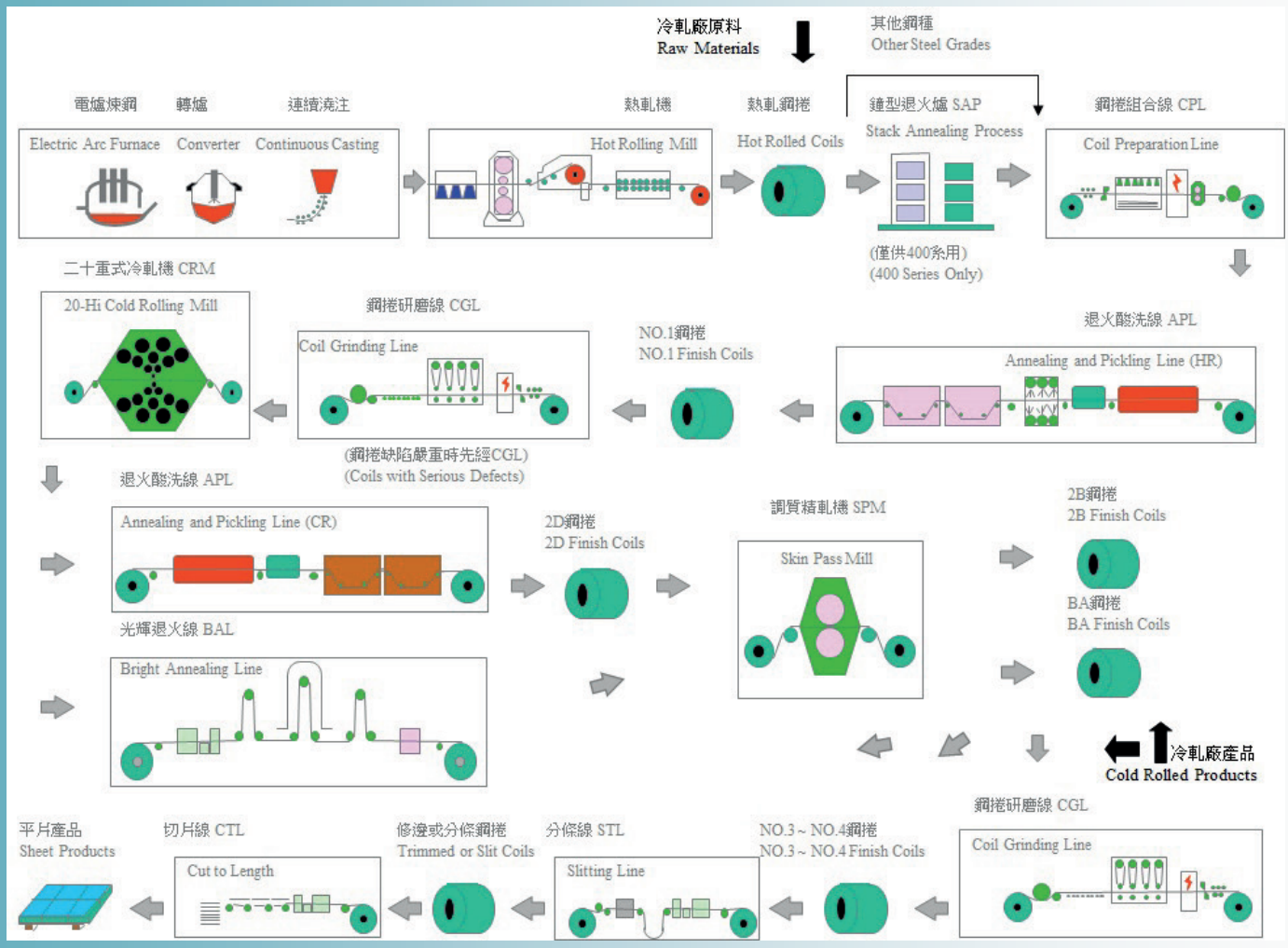
For hot rolled coils of both 200 series and 300 series, these hot rolled coils are sent to CPL first for the working processes of coil end cutting, and lead strip welding. After CPL, coils are sent to APL for the working processes of annealing, descaling, and pickling to remove surface oxidizing scales and to form passivation films. The No.1 finish coils, so-called white coils, are produced after the working processes of APL.

The No.1 finish coils can be sent to the CGL for grinding if surface defects occur. For No.1 finish coils with flawless or little defect surface, these coils can be directly sent to CRM for rolling. After CRM, coils are cold rolled to required aim thicknesses. According to the final surface finish requirements, the cold rolled coils may be sent to APL (i.e. 2D finish coils) or to BAL (then must be sent to SPM for BA finish coils). After further skin pass processes in SPM, the coils, either 2B or BA products, will posses a more smooth and flat surface.

Hot rolled coils of 400 series must be sent to SAP first for the long time period of annealing process, and the carbides in the textures can be reformed into the uniform sizes and the regular distributions. And then, the hot rolled coils are sent to CPL for the working processes of coil end cutting, and lead strip welding. After CPL, coils are sent to APL for the working processes of descaling, and pickling to remove surface oxidizing scales. The following working processes are similar to those of 300 series.

According to the requirements of customers, coils can be sent to STL for the working processes of edge trimming, separating and slitting, or sent to CTL for the working processes of cut-to-length. And then, the final products with packing will be delivered to the customers.

Production flow chart



2.2 Main Equipmets



Annealing and Picking Line (APL)

Width: 1340 mm max.

Thickness: HR 2.00 – 6.00 mm

CR 0.31 – 3.00 mm

Functions:

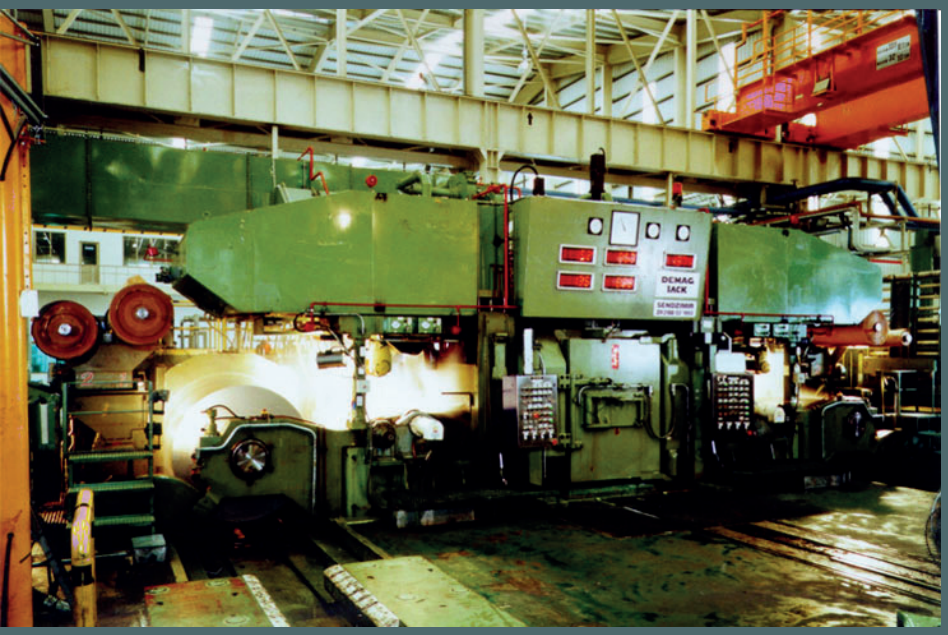
Eliminating residual stress

Recrystallization of grain size

Descaling by shot blasting

Removing oxide by pickling process

Forming passivation film



20-Hi Cold Rolling Mill (CRM)

Width: 1340 mm max.

Thickness: 0.25 – 3.00 mm

Functions:

Cold rolling to aim thickness

Controlling precise shape

Getting fine finish quality

Flat pass for grinding



Bright Annealing Line (BAL)

Width: 1340 mm max.

Thickness: 0.25 – 2.00 mm

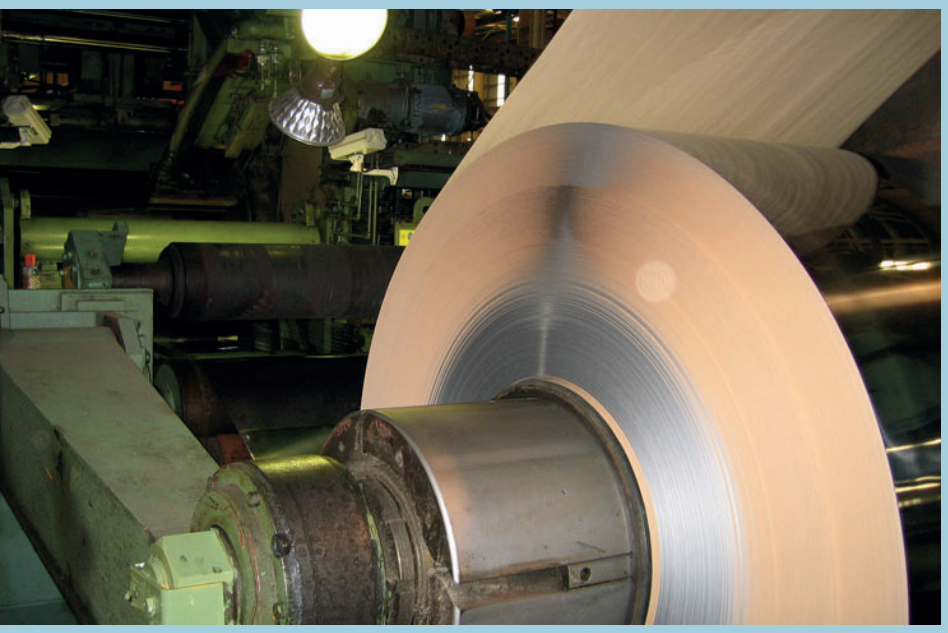
Functions:

Removing residual rolling oil

Eliminating residual stress

Recrystallization of grain size

Preserving the brightness of finish



Skin Pass Mill (SPM)

Width:	1340 mm max.	
Thickness:	CR	0.25 – 3.00 mm
	No.1	2.00 – 6.00 mm

Functions:

Improving flatness & roughness

Increasing brightness

Eliminating Luder's line

Achieving the required mechanical properties



Coil Grinding Line(CGL)

Width:	1340 mm max.	
Thickness:	No.1	2.00 – 6.00 mm
	CR	0.30 – 3.00 mm

Functions:

No.1 Steel coil surface defect grinding

cold rolled coil surface grinding (No.3 or No.4)

Quality Management

3.1 Quality Policy

First Quality

Best Reputation

Excellent Service



金屬工業研究發展中心
METAL INDUSTRIES RESEARCH & DEVELOPMENT CENTRE

CERTIFICATE
OF CONFORMITY
THIS IS TO CERTIFY THAT

Hsueh-Chia Factory, Tung Mung Development Co., Ltd.
No. 155, Yi Hsiu, Hsiu Chang Vil., Hsueh Chia Dist., Tainan City 726, Taiwan
東盟開發實業股份有限公司學甲廠
726 台南市學甲區秀昌里一秀 155 號

HAS BEEN ASSESSED AND CERTIFIED AS MEETING THE REQUIREMENTS OF

ISO 45001:2018

FOR THE FOLLOWING SCOPE

The related activities of the production of:
Cold rolled stainless steel plates, sheets and strips;
hot rolled stainless steel plates, sheets and strips.

下列項目之生產的相關活動：
冷軋不銹鋼鋼板、鋼片及鋼帶；熱軋不銹鋼鋼板、鋼片及鋼帶

Certificate No.: 6175002-00
Effective Date: March 26, 2021
Expiry Date: March 25, 2024
Originally Registered: March 26, 2021/MIRDC
(Date/Certification body)

Chairman, MIRDC

TAF Management System Certification M5019 IAF MIRDC ISO 45001

Page 1 of 1

ISO 45001:2018



經濟部標準檢驗局正字標記證書

廠 商 名 稱 東盟開發實業股份有限公司
廠 商 地 址 臺南市學甲區秀昌里13鄰一秀155號
代 表 人 姓 名 黃忠誠
生產製造工廠名稱 東盟開發實業股份有限公司學甲廠
生產製造工廠地址 臺南市學甲區秀昌里13鄰一秀155號
品管評鑑制度 CNS 12681/ISO 9001:2015
產 品 名 稱 熱軋不銹鋼鋼板、鋼片及鋼帶

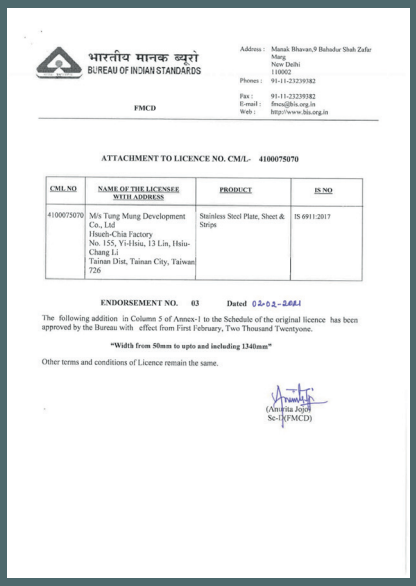
適用國家標準 總號 8497 類號 G3163
證 書 號 碼 台正字第 7831 號

上記產品依標準法第11條第1項規定審查合格，
核准使用正字標記。

局長 劉明忠

中 華 民 國 101 年 1 月 3 日

CNS Mark



भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS

Address : Manak Bhavan,9 Bahadur Shah Zafar Marg New Delhi 110002
Phones : 91-11-23239382
Fax : 91-11-23239382
E-mail : fmcd@bis.org.in
Web : http://www.bis.org.in

FMCD

ATTACHMENT TO LICENCE NO. CM/L- 4100075070

CML NO	NAME OF THE LICENSEE WITH ADDRESS	PRODUCT	IS NO
4100075070	M/s Tung Mung Development Co., Ltd Hsueh-Chia Factory No. 155, Yi-Hsiu, 13 Lin, Hsiu-Chang Li Tainan Dist, Tainan City, Taiwan 726	Stainless Steel Plate, Sheet & Strips	IS 6911:2017

ENDORSEMENT NO. 03 Dated 02-02-2021

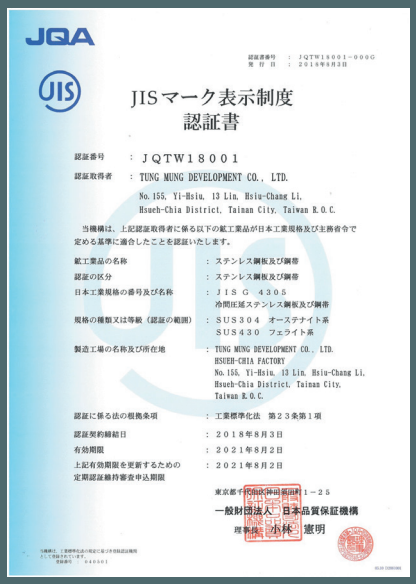
The following addition in Column 5 of Annex-I to the Schedule of the original licence has been approved by the Bureau with effect from First February, Two Thousand Twentyone.

"Width from 50mm to upto and including 1340mm"

Other terms and conditions of Licence remain the same.

(Amrita Jojo Se-I(FMCD)

BIS



JQA
JIS

JISマーク表示制度
認証書

認証番号 : JQTW18001
認証取得者 : TUNG MUNG DEVELOPMENT CO., LTD.
No. 155, Yi-Hsiu, 13 Lin, Hsiu-Chang Li, Hsueh-Chia District, Tainan City, Taiwan R.O.C.

当機構は、上記認証取得者に係る以下の鉱工業品が日本工業規格及び主務省令で定める基準に適合したことを認証いたします。

鉱工業品の名称 : ステンレス鋼板及び鋼帯
認証の区分 : ステンレス鋼板及び鋼帯
日本工業規格の番号及び名称 : ＪＩＳ Ｇ ４３０５ 冷間圧延ステンレス鋼板及び鋼帯
規格の種類又は等級（認証の範囲） : ＳＵＳ３０４ オーステナイト系 ＳＵＳ４３０ フェライト系
製造工場の名称及び所在地 : TUNG MUNG DEVELOPMENT CO., LTD. HSUEH-CHIA FACTORY No. 155, Yi-Hsiu, 13 Lin, Hsiu-Chang Li, Hsueh-Chia District, Tainan City, Taiwan R.O.C.
認証に係る法の根拠条項 : 工業標準化法 第２３条第１項
認証契約締結日 : ２０１８年８月３日
有効期限 : ２０２１年８月２日
上記有効期限を更新するための定期認証維持審査申込期限 : ２０２１年８月２日

東京都千代田区神田錦町１－２５
一般財団法人 日本品質保証機構
理事長 本林 憲明

JIS MARK G4305
PRODUCT CERTIFICATION



經濟部標準檢驗局正字標記證書

廠 商 名 稱 東盟開發實業股份有限公司
廠 商 地 址 臺南市學甲區秀昌里13鄰一秀155號
代 表 人 姓 名 黃忠誠
生產製造工廠名稱 東盟開發實業股份有限公司學甲廠
生產製造工廠地址 臺南市學甲區秀昌里13鄰一秀155號
品管評鑑制度 CNS 12681/ISO 9001:2015
產 品 名 稱 冷軋不銹鋼鋼板、鋼片及鋼帶

適用國家標準 總號 8499 類號 G3164
證 書 號 碼 台正字第 7082 號

上記產品依標準法第11條第1項規定審查合格，
核准使用正字標記。

局長 劉明忠

中 華 民 國 99 年 9 月 15 日

CNS Mark



金屬工業研究發展中心
METAL INDUSTRIES RESEARCH & DEVELOPMENT CENTRE

CERTIFICATE
OF CONFORMITY
THIS IS TO CERTIFY THAT

Hsueh-Chia Factory, Tung Mung Development Co., Ltd.
No. 155, Yi Hsiu, Hsiu Chang Vil., Hsueh Chia Dist., Tainan City 726, Taiwan
東盟開發實業股份有限公司學甲廠
726 台南市學甲區秀昌里一秀 155 號

HAS BEEN ASSESSED AND CERTIFIED AS MEETING THE REQUIREMENT OF

ISO 9001:2015

FOR THE FOLLOWING SCOPE

The production of:
Cold rolled stainless steel plates, sheets and strips,
hot rolled stainless steel plates, sheets and strips.

下列項目之生產：
冷軋不銹鋼鋼板、鋼片及鋼帶、
熱軋不銹鋼鋼板、鋼片及鋼帶

Certificate No.: 6M8Y013-11
Effective Date: September 3, 2020
Expiry Date: September 2, 2023
Originally Registered: July 22, 1996/BSMI
(Date/Certification body)

Chairman, MIRDC

TAF Management System Certification M5019 IAF MIRDC ISO 9001

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ISO9001

3.2 Quality Assurance



Universal Testing Machines



Salt Spray Test Equipment



Spark Optical Emission Spectrometer

In order to strengthen the quality assurance, Tung Mung complies with relevant international specifications to establish a strict control on the chemical and physical properties of both raw materials and products. Tung Mung not only introduced a sound surface quality inspection system from Krupp Stahl AG, a highly reputable Germany-based steel company, to strengthen the surface examination of coils but also purchased many advanced inspection and test equipments. These above-mentioned measures are used to ensure the quality of Tung Mung products and conform to the customer requirements.

Main Examination & Test Equipments:

Spark Optical Emission Spectrometer
(Bruker, GERMANY)

Metallographic microscope
(Carl Zeiss, GERMANY)

VICKERS Hardness Tester
(Matsuzawa, JAPAN)

ROCKWELL Hardness Tester
(Mitutoyo, JAPAN)

Universal Testing Machines
(Zwick, GERMANY)

Sheet Metal Ductility Tester
(Amsler, SWISS)

Hommel Tester
(Hommel, GERMANY)

Salt Spray Test Equipment
(Ten Billion, TAIWAN)

Product Applications

4.1 Finishes and Applications

The surface condition and application by the finishes are listed in the following table.

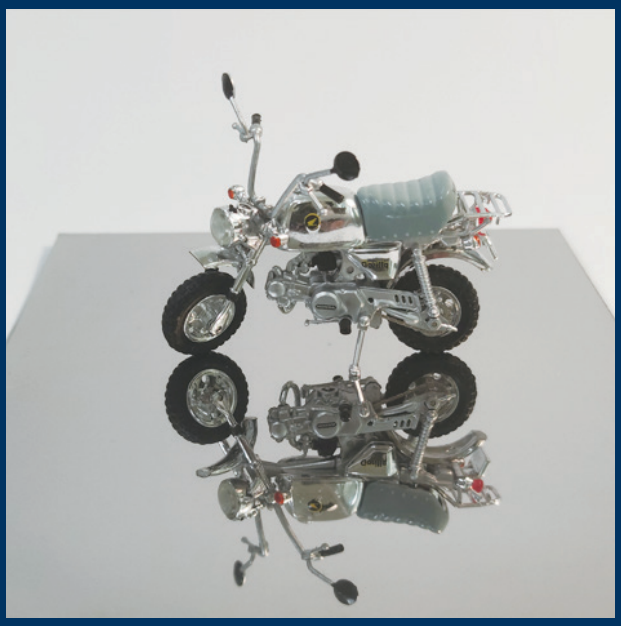
Finish	Surface Condition	Typical Application
No.1	Silver White without Luster	1. Materials for cold rolling 2. Chemical tanks & pipes
2D	Silver White Dull Luster	1. Materials for deep drawing 2. Architecture materials
2B	Better than 2D in Luster and Flatness	1. Medical tools 2. Kitchen utensils & tableware 3. Architecture materials
BA	High Reflection Near Mirror	1. Medical tools 2. Kitchen utensils & tableware
No.3	Better luster, with discontinuous roughness	1. Electrical products 2. Architectural Decoration 3. Kitchenware
No.4	Better luster, with discontinuous coarse lines, finer lines than NO.3	1. Electrical products 2. Architectural Decoration 3. Kitchenware

Surface Conditions and Applications

4.2 Characteristics and Applications



304 2B



304 BA



430 2B



430 BA

4.2 Characteristics and Applications



304 No.3



304 No.4



430 No.3



430 No.4

4.2 Characteristics and Applications

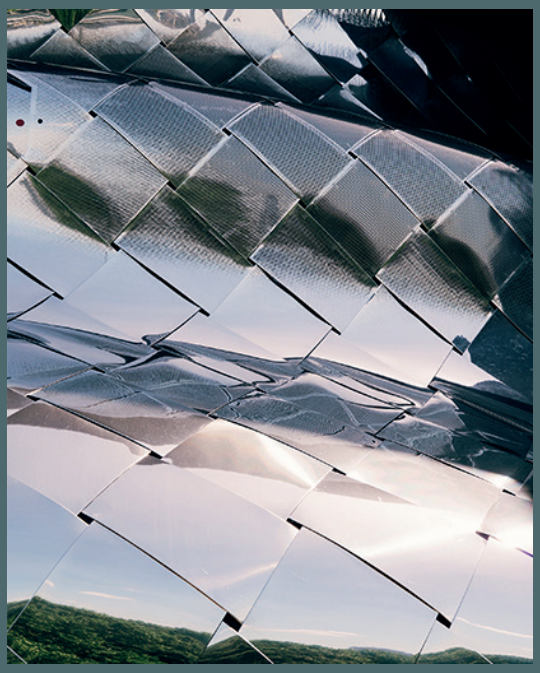
Type	Properties	Typical Application
301	High strength and hardness, excellent high temperature resistance, fatigue resistance	1.Spring material 2.Vehicle use 3.Architecture and decorative uses
304	Properties such as corrosion resistance, heat resistance, formability and weldability are excellent and well-balanced.	1.General home appliances, utensils 2.Architecture and decorative uses 3.Medical tools
304L1 304L2	Excellent grain boundary corrosion resistance and suited for work which permits no heat treatment after welding	1.Oil refining industry 2.Chemical industry 3. Nuclear power industry
316	Having good corrosion resistance in salt, acid and sea circumstance, and good creep strength at elevated temperatures.	1.Chemical, pulp, photographic and food-processing facilities 2.Seashore architectural uses 3.Materials for pitting corrosion resistance
316L1 316L2	Grain boundary corrosion resistance and the ability to suppress welding sensitivity are better than 316	1.Nuclear power, chemical industry equipment 2.Parts are difficult to be heat treated after welding
409 409L	Heat resistance is good	1.Exhaust pipes 2.Manifolds
430	Typical Cr-based stainless steel with magnetism, and its pitting corrosion resistance and formability are good.	1.Daily-use durable goods 2.Kitchenware 3.Architectural trimming
420J2	Higher quench hardness	1.Cutlery 2.Valves & nozzles

Product Applications

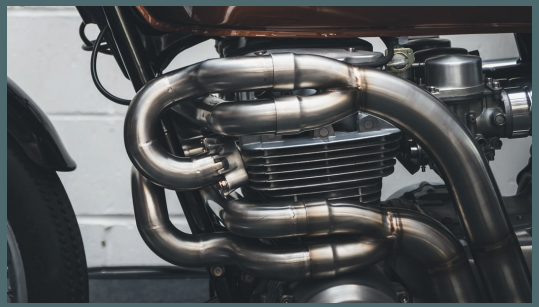












Product Specifications

5.1 Chemical Composition

The chemical composition specifications of Tung Mung products shall be as given in the following tables.

Chemical Composition of Austenitic Series Unit:%

Steel Grade	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	N	Other
301	0.15 max	1.00 max.	2.00 max.	0.045 max.	0.030 max.	6.00 to 8.00	16.00 to 18.00	—	—	—	—
304	0.08 max.	1.00 max.	2.00 max.	0.045 max.	0.030 max.	8.00 to 10.50	18.00 to 20.00	—	—	—	—
304L1	0.030 max.	1.00 max.	2.00 max.	0.045 max.	0.030 max.	8.00 to 12.00	17.50 to 19.50	—	—	0.10 max	—
304L2	0.030 max.	1.00 max.	2.00 max.	0.045 max.	0.030 max.	9.00 to 13.00	18.00 to 20.00	—	—	—	—
316	0.08 max.	1.00 max.	2.00 max.	0.045 max.	0.030 max.	10.00 to 14.00	16.00 to 18.00	2.00 to 3.00	—	—	—
316L1	0.030 max.	1.00 max.	2.00 max.	0.045 max.	0.030 max.	10.00 to 14.00	16.00 to 18.00	2.00 to 3.00	—	0.10 max	—
316L2	0.030 max.	1.00 max.	2.00 max.	0.045 max.	0.030 max.	12.00 to 15.00	16.00 to 18.00	2.00 to 3.00	—	—	—

Chemical Composition of Ferritic Series Unit:%

Steel Grade	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	N	Other
409	0.08 max.	1.00 max.	1.00 max.	0.040 max.	0.030 max.	—	10.50 to 11.75	—	—	—	Ti:6xC to 0.75
409L	0.03 max.	1.00 max.	1.00 max.	0.040 max.	0.030 max.	—	10.50 to 11.75	—	—	—	Ti:6xC to 0.75
430	0.12 max.	0.75 max.	1.00 max.	0.040 max.	0.030 max.	—	16.00 to 18.00	—	—	—	—

Chemical Composition of Martensitic Series Unit:%

Steel Grade	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	N	Other
420J2	0.26 to 0.40	1.00 max.	1.00 max.	0.040 max.	0.030 max.	—	12.00 to 14.00	—	—	—	—

5.2 Mechanical Properties

Mechanical Properties in Solution Treatment Conditions（Austenitic Series）

Steel Grade	Tensile Test			Hardness Test	
	Proof Stress N/mm²	Tensile Strength N/mm²	Elongation %	HRB	HV
301	205min.	520 min.	40 min.	95 max.	218 max.
304	205 min.	520 min.	40 min.	90 max.	200 max.
304L1	170 min.	485 min.	40 min.	92 max.	—
304L2	175 min.	480 min.	40 min.	90 max.	200 max.
316	205 min.	520 min.	40 min.	90 max.	200 max.
316L1	170 min.	485 min.	40 min.	95 max.	—
316L2	175 min.	480 min.	40 min.	90 max.	200 max.

Mechanical Properties in Annealed Conditions（Ferritic Series）

Steel Grade	Tensile Test			Hardness Test		Bending test	
	Proof Stress N/mm²	Tensile Strength N/mm²	Elongation %	HRB	HV	Angle	Inside radius
409	175 min.	360 min.	22 min.	80 max.	175 max.	180°	1 time thickness
409L	175 min.	360 min.	25 min.	80 max.	175 max.	180°	1 time thickness
430	205 min.	420 min.	22 min.	88 max.	200 max.	180°	1 time thickness

Mechanical Properties in Annealed Conditions（Martensitic Series）

Steel Grade	Tensile Test			Hardness Test	
	Proof Stress N/mm²	Tensile Strength N/mm²	Elongation %	HRB	HV
420J2	225 min.	540 min.	18 min.	99 max.	247 max.

5.3 Dimensions and Tolerances of Cold Rolled Products

The tolerances on dimensions of cold rolled products by JIS shall be as given in the following tables.

Tolerances on Thickness of Cold Rolled Coils Unit:mm

Thickness	Width	
	W＜1250	1250≦ W ＜1600
0.25≦ T ＜0.30	±0.04	—
0.30≦ T ＜0.60	±0.05	±0.08
0.60≦ T ＜0.80	±0.07	±0.09
0.80≦ T ＜1.00	±0.09	±0.10
1.00≦ T ＜1.25	±0.10	±0.12
1.25≦ T ＜1.60	±0.12	±0.15
1.60≦ T ＜2.00	±0.15	±0.17
2.00≦ T ＜2.50	±0.17	±0.20
2.50≦ T ＜3.15	±0.22	±0.25

Remarks:Tolerances on thickness shall be as agreed upon by seller and purchaser and specified in the purchase order.

Tolerances on Width of Cold Rolled Coils Unit:mm

Edge	Width
	1000≦ W ＜1524
Mill Edge	+30/0
Trimmed Edge	+5/0

5.4 Dimensions and Tolerances of No.1 Finish Products

The tolerances on dimensions of No.1 finish products by JIS shall be as given in the following tables.

Tolerances on Thickness of No.1 Coils Unit：mm

Thickness	Width	
	1000≦ W ＜1250	1250≦ W ＜1600
2.50≦ T ＜3.15	±0.35	±0.40
3.15≦ T ＜4.00	±0.40	±0.45
4.00≦ T ＜5.00	±0.45	±0.50
5.00≦ T ＜6.00	±0.55	±0.60

Tolerances on width of No.1 Coils Unit：mm

Edge	Width
	1000≦ W ＜1524
Mill Edge	+30/0
Trimmed Edge	+10/0

5.5 Available Products Sizes

The available product sizes of Tung Mung shall be as given in the following table.

Available Product Sizes Unit:mm

Finish	Thickness	Width
2B/ 2D/ No.3/ No.4	0.30 ~ 3.00	1000 ~ 1300
BA/BA(D)	0.25 ~ 2.00	1000 ~ 1300
No.1	2.00 ~ 6.00	1000 ~ 1300

Remarks:The specifications not shown in table shall be as agreed upon by seller and purchaser and specified in the purchase order.