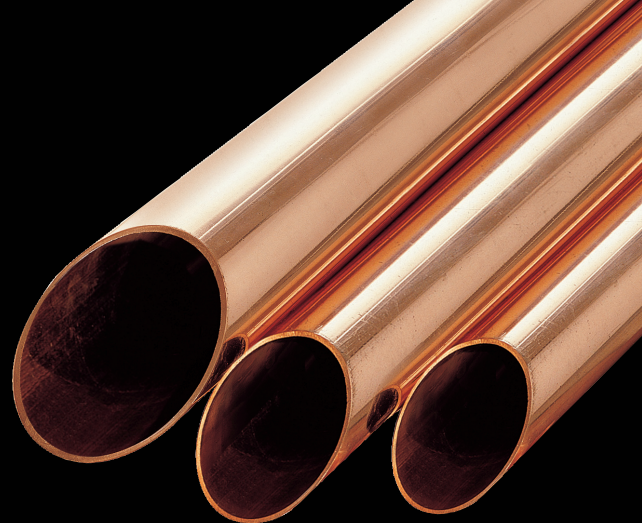


Since  
**1979**

[www.jwmetal.co.kr](http://www.jwmetal.co.kr) | [www.nwmetal.co.kr](http://www.nwmetal.co.kr)



# **COPPER**

## **FITTING & TUBE**



 JUNGWOO METAL IND. CO., LTD.  
NUNGWON METAL IND. CO., LTD.



**Mankind has relied upon **COPPER**  
for very long time...!**

**Did you know that even ancient Egyptians knew the  
benefits of using COPPER for their water supply?**

**Do you know that COPPER is still the most environment  
friendly material that can be used today?**

# Greetings from CEO



## Best Copper products of the World by JUNGWOO & NUNGWON.

Welcome and I appreciate your interest in JungWoo and NungWon and our products.  
JungWoo, NungWon is in the trade of providing highest quality and consistent copper products.

Since our establishment in 1976, our one and only focus was in constancy in quality & commitment in manufacturing COPPER products.

With over 34 years of corporate experience and focus in copper products; we are very proud to claim that we now are the de-facto standard in copper pipes and copper fittings. We not only have captivated the Korean Copper markets; we are also actively exporting to over 20 Countries.

It is our pride and joy that we already have the capacity and capabilities along with the Global certifications already at hand to produce for North America, South America, Europe, Middle East, Asia, Oceania and Africa.

This capabilities are uniquely possible for us, because JungWoo manufactures it own machinery and tooling(s) on site, by long standing staff members.

Equipped with the state of the art manufacturing facilities and mass production systems meeting or exceeding Global standards and various certifications, JungWoo and NungWon is able and willing to produce any Standard/ non-standard copper products to meet our client's various flow control application needs (water, gas, sanitation, air-conditioning & heating to various plant fittings).

We are more than confident that our products are second to none and we proudly invite your comparison of our products with anyone's and you will not be disappointed.

Lastly, I affirm to you that JungWoo & NungWon will always manufacture consistent quality products and will always be committed to supporting our partners domestic and abroad.

Sincerely,

Chairman & CEO

Kwangwon Lee 

## Company History

JUNGWOO METAL	NUNGWON METAL
1979. 02 Established "Bugwang Metal" (Produced Copper Fittings)	1986. 03 Established "DONGKWANG METAL CO." (produced Seamless Copper Water Tubes)
1983. 03 Changed the company name to "JungWoo Metal Co."	1989. 01 Corporate name changed to "SHIN HAN METAL IND.CO."
1985. 03 Acquired KS D 5578 Certification	1993. 11 Plant moved to " #314-1 DOHA-RI, EUNHYUN-MYEON YANGJU-SI, KYEONGGI-DO, KOREA
1986. 12 Corporate name changed and Incorporated to "JungWoo Metal Industry Co.,Ltd".	1994. 07 Appointed as regional industrial complex
1996. 11 Officially Commendated from Commerce and Industry Department Minister and received 1 Million Dollar Exportation's Tower on Trade Day	1995. 10 Seoul Office established : NUNGDO BLDG., SHINSEOL-DONG, DONGDAEMOON-GU, SEOUL, KOREA
1997. 04 Acquired ISO 9002 Certification	1996. 03 Renamed to "NUNGWON METAL IND.CO.LTD" - conversion to Corporation
1998. 03 Acquired Q Mark Certification(Dielectric Flange,Dielectric Union)	2000. 01 Awarded "Exporting USD 10 Million Sales"
1998. 11 Received 5 Million Exportation's Tower on Trade Day	2000. 12 Increased Capital (from 105 Million Won to 118 Million Won)
2000. 11 Received 10 Million Exportation's Tower on Trade Day	2004. 11 Awarded "Exporting USD 30 Million Sales" by Ministry of Commerce Industry and Energy
2004. 11 Received 20 Million Exportation's Tower on Trade Day	2005. 10 Awarded Gold Medal for "Korea Best Practice Skill Contest"
2005. 06 Received the Grand Prize in Kyeonggido Quality Team Contest	2006. 06 Awarded prize for "Honorable industrial safety supervisor"
2005. 09 Received the Presidential(Golden) Prize in the National Quality Team Contest	2006. 07 Completed Automatic Equipment at 2nd plant
2005. 12 Selected to be a company producing World-class product "Copper Fitting" hosted by the Ministry of Commerce, Industry and Energy.	2006. 09 Awarded Gold Prize for "2006 Quality Management Contest in Korea"
2006. 11 Received the Korean Bronze Tower order of Industrial Service Merit and 30 Million Dollar Exportation's Tower	2006. 11 Awarded "Prime Minister's Prize" & "Exporting USD 70 Million Sales" by Ministry of Commerce Industry and Energy
2007. 01 Acquired ISO 14001 Certification	2010. 11 Awarded "Exporting USD 100 Million Sales" by Ministry of Commerce Industry and Energy
2008. 11 Announced Plant Relocation and Expansion to Nam Myun	2011. 10 Awarded for its distinct relations between labor and corporation by Industrial Bank of Korea
2009. 05 Awarded "Global Standard Management Award" for Product Quality Management	2011. 11 Awarded "Exporting USD 200 Million Sales" by Ministry of Commerce Industry and Energy
2011. 07 New factory established and transferred existing facilities to new factory completed	



# **COPPER FITTING**



- Established : February 1979
- Grand open New Mill : July, 2011
- Area : 39,000 sq.m (= 9.7 Acre = 420,000 sq. ft)
- Annual Capacity : 11,000 Metric Tons (=24 Mil. Lbs)
- IAPMO, CRN, JIS, KITE, AENOR, QAS, RoHS, NSF, ISO 9001, ISO 14001



ISO 9001



KITE



QAS



IAPMO



JIS



NSF



KITE



AENOR



RoHS



ISO 14001



Q-MARK

- ▶ ELBOW : 45°, 90°, LONG RADIUS
- ▶ TEE
- ▶ COUPLING
- ▶ ADAPTER
- ▶ OTHERS : CAP, AIR-CHAMBER, RETURN BEND, Y-JOINT  
CROSS OVER, OIL-TRAP, DIELECTRIC FLANGE ADAPTER
- ▶ SIZE RANGE : 1/8" - 10"





# **COPPER** **TUBE**



- Mill #1 : Established March, 1986
- Mill #2 : Established June, 2006
- Area : 72,600 sq.m (=18 Acre = 782,000 sq.ft)
- Annual Capacity : 60,000 Metric Tons (=132 Mil. Lbs)
- IAPMO, Warnock Hersey, JIS, Water Mark, AS, RoHS, NSF, ISO 9001, ISO 14001



ISO 9001



KG



QAS



IAPMO



JIS



NSF



ISO 14001



INTERTEK

- ▶ STRAIGHT TUBE : WATER, GAS, HVAC, DRAINAGE (1/4"~12")
- ▶ LWC, PAN-CAKE COIL
- ▶ INNER GROOVED TUBE
- ▶ SQUARE, OCTAGON, HEXAGON



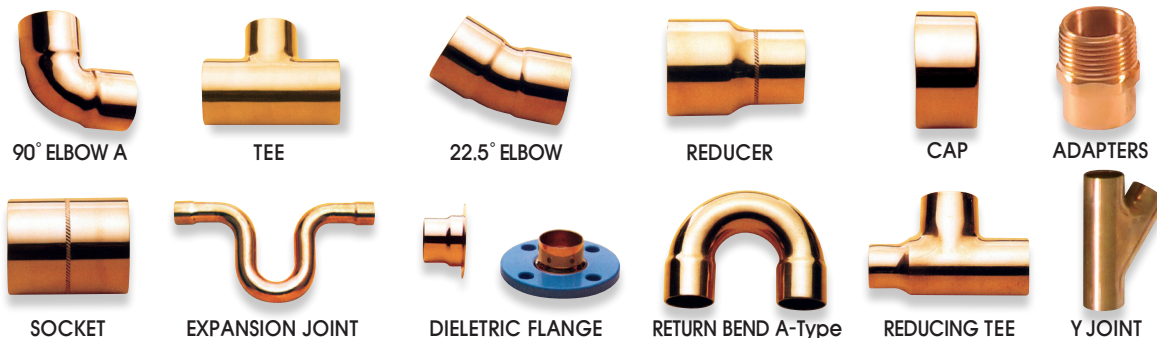
# COPPER FITTING

Copper fittings of JungWoo are recognized as one of the best products in the Global markets. JungWoo is making constant efforts to make our products better in quality and applicability for today and for the future.

**Production capacity**  
annual production capacity  
324million pieces

**SKU (6~300mm)**  
Domestic • • • KS D 5578  
Inch • • • • • ANSI B 16.22  
Metric • • • • • EN 1254  
Australia • • • AS 3688  
Japan • • • • • JIS H 3401 / JIS B 8607

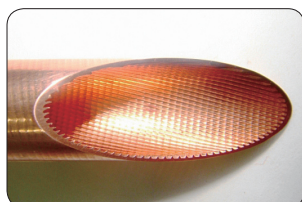
**Able to produce wide range of products at small-large quantities.**



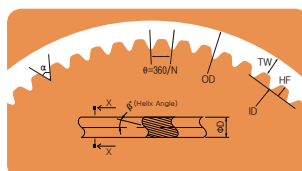
**“World best Copper products,  
Made in Korea by JungWoo and NungWon”**

# COPPER TUBE

Copper tubes made in the most technically advanced production lines, we will deliver most reliable tubes to support your application needs. Our products are recognized internationally for its level of quality.



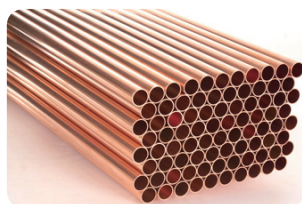
INNER GROOVED TUBE



I.G.T enlarged image

Tube with broadened surface by giving continuous spiral inner groove inside smooth copper tube, it is a highly efficient specialized tube with high thermal conductivity. Used in HVAC, contribute to reducing the size of products by reducing energy usage.

OD : 5mm~9.52mm      THK : 0.25mm~0.36mm  
Weight : 100Kg~250Kg      Temper : OL



WATER TUBE

Typical copper tube used in structural plumbing and boiler

**Standards**      KS D5301 / JIS H 3300 / ASTM B 88 / AS 1432 / BS 2871

**Production range**      OD : 8A~300A  
TYPE : K, L, K-Type(plumbing), DWV

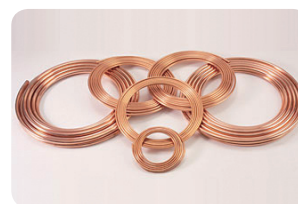


LEVEL WOUND COIL

Used in industrial air conditioner, boiler, and HVAC heat exchanger produced in long length

**Standards**      KS D5301 / JIS H 3300 / ASTM B280, B68, B75 AS/NZS1571 / BS2871

**Production range**      OD : 4mm~32mm  
THK : 0.28mm~1.65mm  
Weight : 100Kg~500Kg  
TYPE : Q, OL, H



PAN CAKE COIL

Less than 30m in length, light industrial weight and easy to handle

**Standards**      KS D5301 / JIS H 3300 / ASTM B280 / AS/NZS1571 / BS2871

**Production range**      OD : 6.35mm~28.58mm  
THK : 0.5mm~1.65mm  
Length : 8M~30M      TYPE : Q, OL



VARIANT TUBE

Hexagonal & octagonal shape specialized copper tube used to produce copper fitting adapter

**Standards**      KS D5301 / JIS H3300

**Production range**      OD : 14mm~115mm  
Length : 0.5M~6M  
TYPE : H



COPPER BILLET

Adopting vertical automatic continuous system, established high-quality copper billet mass production system

**Standards**      C111, C120, C122

**Production range**      Diameter : 90mm ~ 300mm  
Length : 300mm ~ 3,000mm



ACR STRAIGHT TUBE

Produced in straight tube used in industrial HVAC

**Standards**      KS D5301 / JIS H3300 / ASTM B280 / AS/NZS1571 / BS2871

**Production range**      OD : 4mm ~ 310mm  
THK : 0.28mm ~ 20mm  
Length : 0.1M ~ 10M  
TYPE : Q, OL, 1/2H



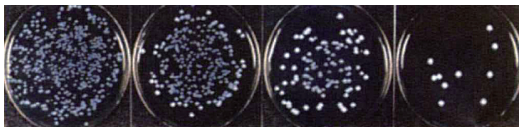
# What makes **COPPER** so special ?



## ■ EPA Certification

**Over 99.9%  
extermination**

of harmful bacteria by copper in two hours

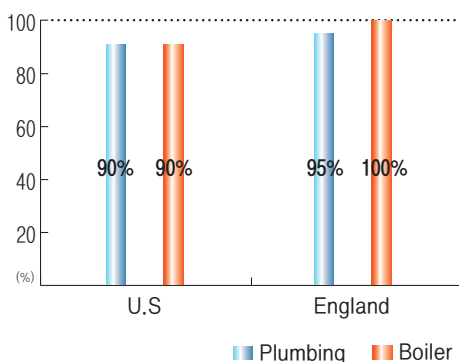


Research by Kitasato environment science center foundation about sterilization reaction of copper ion solution (after 3 hours)

## CO<sub>2</sub> emission of plumbing material

Tube type	CO <sub>2</sub>	Per length	Per length
	Index [kg-C/kg]	Weight [kg/m] (20A)	CO <sub>2</sub> emission [kg-C/m]
Plumbing carbon steel tube	0.89	1.68	1.50
Unplasticized lining steel chloride pipes	0.61	1.82	1.11
Stainless steel pipe	1.62	0.529	0.86
Copper tube (M type)	1.30	0.487	0.63

## Copper tube usage in plumbing and boiler of developed countries



## ○ **COPPER, provides the essential element needed by human body**

Copper & Iron combined will produce the most essential part of human body...the blood.  
All excess accumulations are naturally excreted out of human body.

## ○ **Excellent sterilization effects**

Copper has been proven to be effective against O-157 colon bacillus, legionella, and other germs; hence Copper is the most suitable material that can be used for plumbing products.

## ○ **No leaking due to corrosion**

Due to Copper's superior uniformity, leaks associated with concentrated corrosions commonly found on materials like stainless steel is all together avoided.

## ○ **Superior earthquake-resistance and durability**

Because of Copper's flexibility and regality, the ability to absorb common sways of high-rise buildings and earthquake resistance is high.

## ○ **Excellence in cold region plumbing**

Copper has a great low cycle fatigue characteristic and the embrittlement does not happen at low temperature so it can retain its mechanical property restricting any crack, proving it best suitable in cold region.

## ○ **Recyclable environment friendly material**

Because CO<sub>2</sub> emission during Copper manufacturing is the lowest, Copper is Earth friendly and environment friendly, furthermore it is 100% recyclable.

## ○ **Excellent constructability**

Copper with its flexibility and connect ability provides to be a simple and excellent application for flow controls.

## ○ **Widely used in developed countries**

Copper products are mostly used and preferred by plumbing and boiler applications in most of the developed urban cities and countries especially in OECD member countries. Copper is simply, the most trusted and health conscious material preferred!



## JUNGWOO METAL IND. CO., LTD.

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Europe, Middle East, Oceania : JNAE@copperlee.co.kr

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TEL: +82-31-860-0500, 0600



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