# PONGSAN

ANNUAL REPORT 2019

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## **MISSION**

Poongsan Corporation contributes to human progress through its superior products, employment opportunities, and uncompromising service.

### **VISION**

Poongsan sets the industry's global standard for excellence.



## **CORE VALUES**



#### Challenge

Poongsan overcomes obstacles to success.

#### Create

Poongsan generates value in each of its operations.

#### Change

Poongsan constantly seeks ways to improve itself, its industry, and the world.

#### Confirm

Poongsan consistently checks to ensure superior quality in its process and products.

#### Communicate

Poongsan communicates openly with its customers, employees, partners, and shareholders.



### To Our Valued Customers, Partners and Shareholders,

In 2019, the trade dispute between the United States and China in their competition for leadership of the global economy intensified. The rising uncertainty and negative sentiment stemming from this standoff impacted business activity worldwide. In some countries, this dynamic aggravated the cyclical and structural slowdowns that were already underway.

As a result, economic growth was at its weakest in 2019 since the global financial crisis ten years ago, demonstrating not only country-specific factors, but also common influences across markets.

Despite this turbulent environment, Poongsan Group continued to generate corporate

income and profit. Overall, Poongsan recorded overall sales of KRW 1.9 trillion (US\$  $1.6\,$ 

billion), a 13.1% decrease from last year's sales. The copper alloy sector recorded sales of

KRW 1.3 trillion (US\$ 1.1 billion), while the defense sector recorded sales of KRW 0.6

trillion (US\$ 0.5 billion). These sales yielded an overall profit of KRW 25 billion (US\$

21 million), a 71.6% decrease from last year's profit. This decrease is attributable to the

decline in copper prices, decreased demand for copper products for automobile and

electronic materials, as well as a decrease in defense sales.

Accordingly, Poongsan is working to further improve its strong revenue structure based

on its current business sectors rather than expansion into new industries. We are also

exploring ways to strengthen export sales to overcome limited growth prospects in the

domestic market.

As always, we continue taking steps toward leading our global industry through innovation

and new product development in the copper alloy and defense fields. Responding to rising

demand for high quality copper alloy materials, Poongsan will develop and supply hi-tech

components for the semiconductor, IT, and automotive electronics industries. With respect

to the defense industry, we plan to increase sales by developing new products and

diversifying the markets to which we export. As a global supplier of specialized

ammunition, Poongsan will continue to lead the industry by quickly meeting the needs of

our customers and supplying them with high quality products.

Most importantly, I would like to salute and thank our employees for their commitment to

undertake new challenges so that we can continue to be leaders in our industries. When it comes to delivering the highest quality products and customer service, their dedication to

creating the highest standards in our industries is nothing short of inspiring.

The entire Poongsan Group is grateful to each of our shareholders, suppliers, and business

partners for their confidence in us. We do not take that trust for granted, and look forward

to your continued support in the years to come.

Jin Roy Ryu

Chairman and Chief Executive Officer

Poongsan Group

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# PRODUCT INFORMATION





## Coin Blanks

"One Stop Service" from melting old coin scraps to producing new coin blanks enables Poongsan to be an undisputed world leader in the coin blank industry.



Over the past fifty years, Poongsan has earned a reputation as a trusted supplier of coin blanks to the global market. In 1970, the company was designated as the sole coin blank manufacturer of the Republic of Korea by the Korea Minting, Security Printing & ID Card Operating Corporation. In 1973, Poongsan first exported its coin blanks to Taiwan. Since then, it has supplied over 70 countries in 6 continents with its coin blanks. As a recognized participant in the production of Euro coins, Poongsan not only continues to supply coin blanks to the EU market, but also has expanded to include Slovenian Euro coin blanks in 2006, Cyprus Euro coin blanks in 2007, Latvian Euro coin blanks in 2013, and Lithuanian coin blanks in 2014. Poongsan has continued its global market expansion with sales to Poland, the Czech Republic, Chile, and Peru. Today, forty-seven years after its first export, it is the world's largest coin blank manufacturer, accounting for more than half of the world's coin blank trade volume.



Poongsan casts over 50 different types of coin blank materials - from brass, nickel silver, cupronickel, and aluminum bronze to other special copper alloys. In recent years, it has concentrated on meeting the global demand for bi-metal, clad metal and nordic coin blanks. It has also expanded its coin blank production to include stainless steel coin blanks.



Poongsan also operates special facilities dedicated to the production of precious metal coin blanks for commemorative coins and medallions. With its expertise of fifty years, it is a leader in the global market for precious metal blanks. Poongsan has supplied them for a variety of domestic and international events which include the 1988 Olympic Games, the 2002 FIFA World Soccer Game, the Asia-Pacific Economic Cooperation(APEC) in 2005, the 2014 Asian Games, and the 2018 Winter Olympic Games.











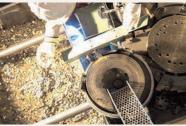


A large part of Poongsan's success in supplying its customers with superior products in a timely manner lies in its integrated production system. A sophisticated automatic gauge control system precisely manages the thickness of strips used to produce coin blanks and simultaneously manages the weight and surface of the coin blanks to meet the particular specifications of each of Poongsan's customers. Similar automated production systems are used for the processes of melting & casting, rolling, blanking, testing and packing. Poongsan performs rigorous tests at each stage to ensure exceptional quality in each product.

To further enhance its efficiency and effectiveness of production and delivery, Poongsan works closely with a global production network that spans Asia and the Americas. Established in October 2000, Siam Poongsan is strategically located in Thailand to improve Poongsan's ability to supply coin blanks to countries in Southeast Asia. It has a production capacity of 20,000 tons of copper alloy products. PMX, Poongsan's affiliate in the United States, manufactures materials used for minting coins in various countries, including coin blank strips for the dollar coins in the United States. With an annual production capacity of 120,000 tons of copper and copper alloy strips, PMX has emerged both as a trusted supplier of coinage strips and as an important supplier of industrial-based material.

With sophisticated technology and uncompromising dedication to excellence, Poongsan prides itself on consistent and timely delivery of its products at competitive prices. With uncompromising focus on superior products, reliable performance, and customer satisfaction, Poongsan has cultivated strong and loyal relationships with each of its customers. The ability to network globally coupled with an effective "one stop service" approach to production strategically positions Poongsan to further strengthen its global presence and to safeguard its place as the world's premier manufacturer of coins.









# **Sheets & Strips**

Poongsan's rolled products vary in size ranging from 630mm to 9.2mm in width and from 2.4mm to 0.05mm in thickness.

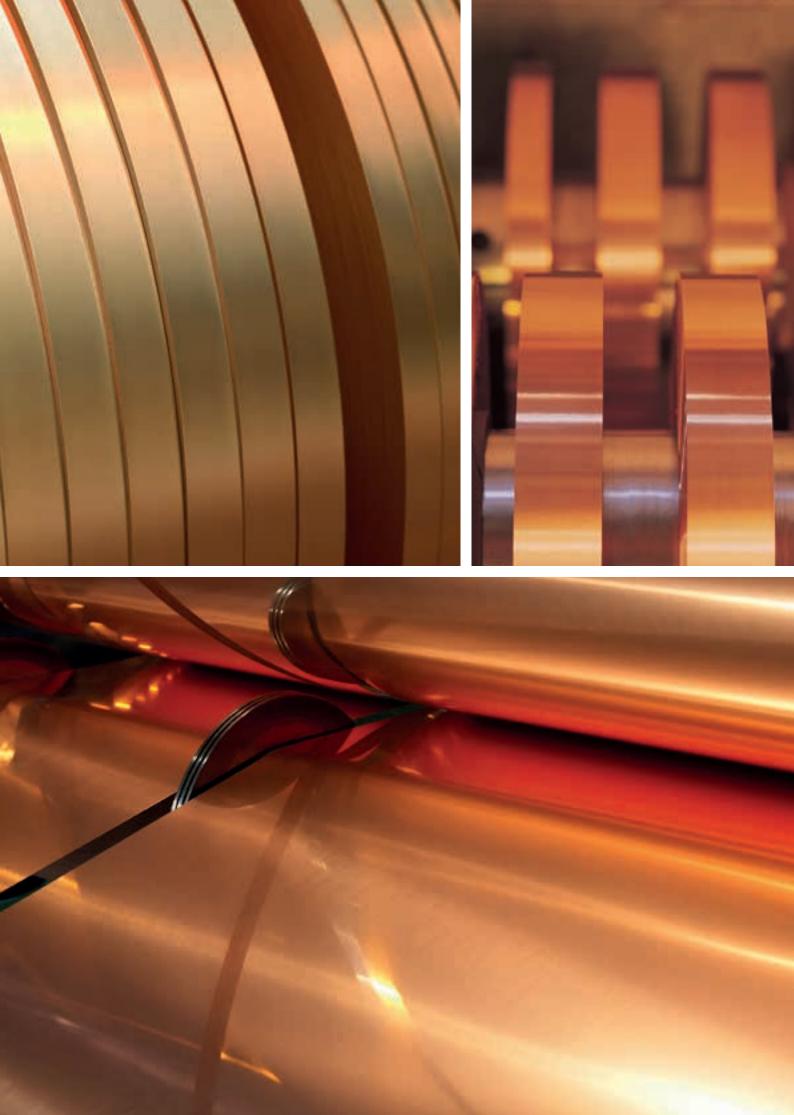


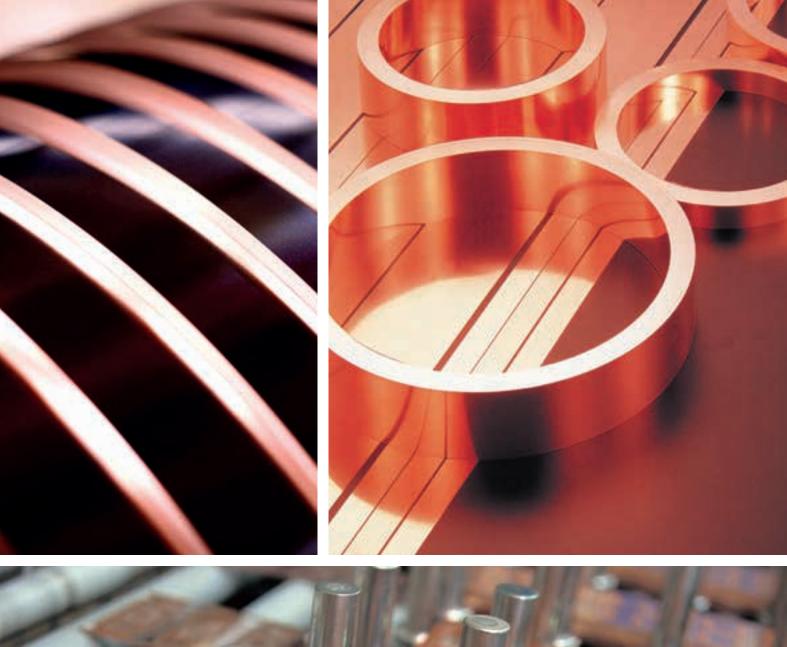


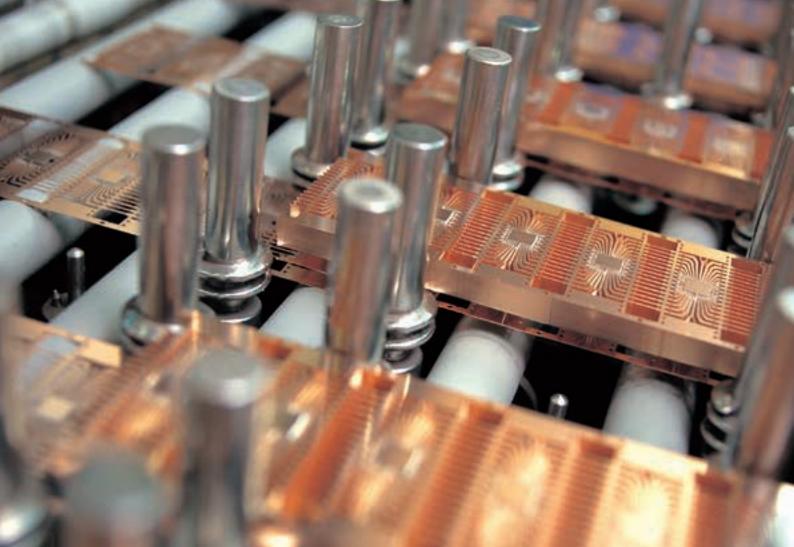
Poongsan takes pride in its efficiently and effectively integrated production system that includes the world's largest shaft furnace, hot mill, cold rolling mill, and slitting processing station. Housed in Poongsan's Ulsan plant, this system manufactures high quality, competitive products. Each of these products undergoes rigorous quality inspection using the latest equipment available in order to ensure accuracy in size and superior quality in both physical and surface properties. This detailed attention to quality results in Poongsan's ability to consistently meet the specific, individual needs of its customers.

Poongsan produces a diverse range of copper and copper alloy sheets and strips for use across many industries. This includes use in interior and exterior applications for both commercial and residential real estate as well as use in construction, machinery, automobiles, electronics, semiconductors, and telecommunication. These rolled products are available in copper, brass, cupro-nickel, phosphorous deoxidized copper, phosphor bronze, nickel silver, aluminum bronze, and other high performance alloys.

In addition to copper and copper alloy products, Poongsan produces tin-plated strips, multi-gauge strips, and stainless steel strips. As with rolled products, these strips are manufactured using state-of-the-art methods to ensure the highest quality products for customers. Poongsan's tin-plated, multi-gauge, and stainless steel strips boast uniform plating thickness, superior surface brightness, excellent welding and corrosion-resistant property factors, and a long-lasting plating layer that resists deterioration. As a result, they are widely used in switches, connectors, terminals, and other various electronic parts.

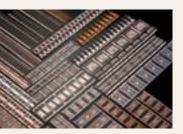






# Leadframe Alloys

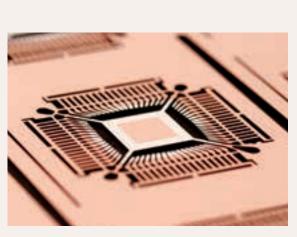
Using its forty years of experience in fabricated copper, Poongsan now offers new high-tech materials for use in semiconductor leadframes and connectors.



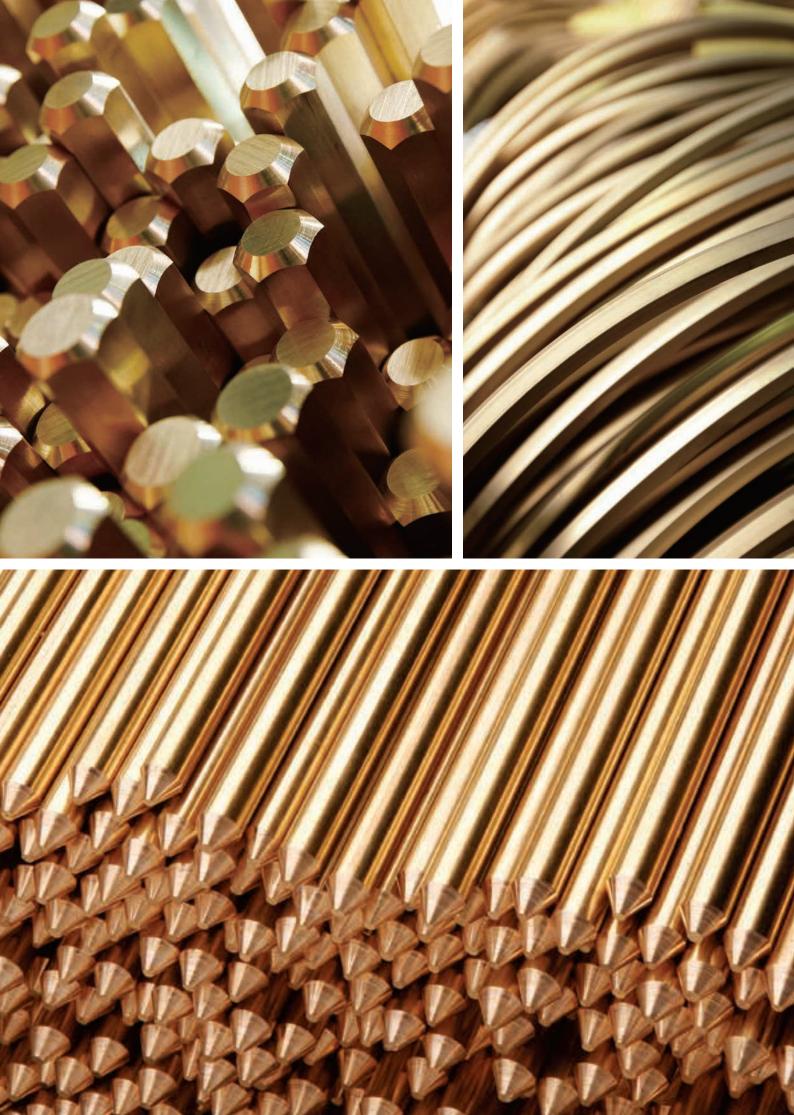
Having already developed various copper alloys, Poongsan is now offering new copper alloys - PMC 102 and PMC 102M - that contain nickel, silicon and phosphorus. These alloys contain the ideal properties required in semiconductor leadframes - superior electrical and thermal conductivity as well as high strength and thermal resistance at high temperatures. Poongsan maintains patents for these alloys in the U.S., Japan and the United Kingdom.

In addition to PMC 102, Poongsan offers other copper alloys such as C194, PMC 90, PMC 90 (multi-gauge), C1100 and C1220. The properties of these versatile materials are ideally suited for use in leadframes, transistors, power-transistors and heat sink components.

In order to ensure the production of high quality leadframe alloys, Poongsan maintains dedicated production lines equipped with a casting furnace, rolling mill, tension leveler, tension annealer and slitting station at its Ulsan plant.







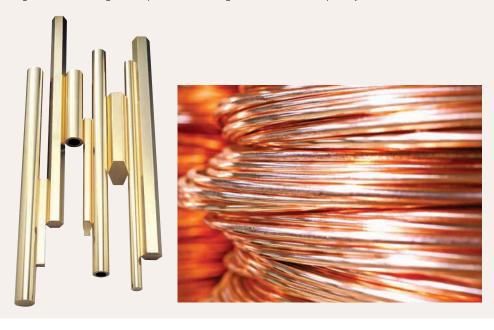
# Rods, Bars & Wires

Using a 4,000 ton extruding press, rod blocks and a combined drawing machine, Poongsan produces bars, rods and wires with diameters that range from 2.0mm to 105mm.



Poongsan produces a full range of high-quality copper and copper alloy rods, bars, and wires. In 2006, Poongsan developed and obtained a patent for the production of lead-free brass bars and wires. Bars are widely used in nuts and bolts, valves, various machinery, electrical parts and accessory components for automobiles and industrial equipments. Poongsan's free cutting brass bars boast superior welding and cutting capabilities and are popular for use in nuts and bolts, connectors, and electrical and electronic parts. Additionally, Poongsan brass wires are used in specialty products such as EDM wires. Currently, Poongsan is expanding its presence in the high-purity oxygen-free copper rods market.

Poongsan prides itself in the high quality products that it delivers to its customers. Its automated production line by product type ensures that the exact specifications requested by each of its customers are always achieved. Through strict quality control procedures from casting to chamfering to inspection, Poongsan focuses on quality from start to finish.





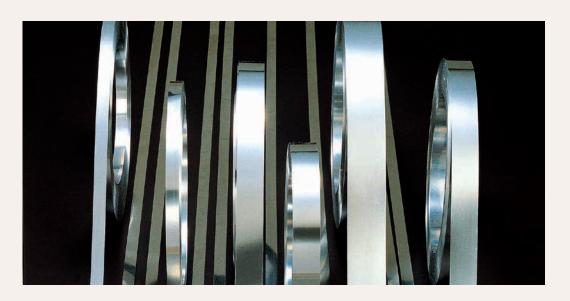
# Stainless Steel Strips

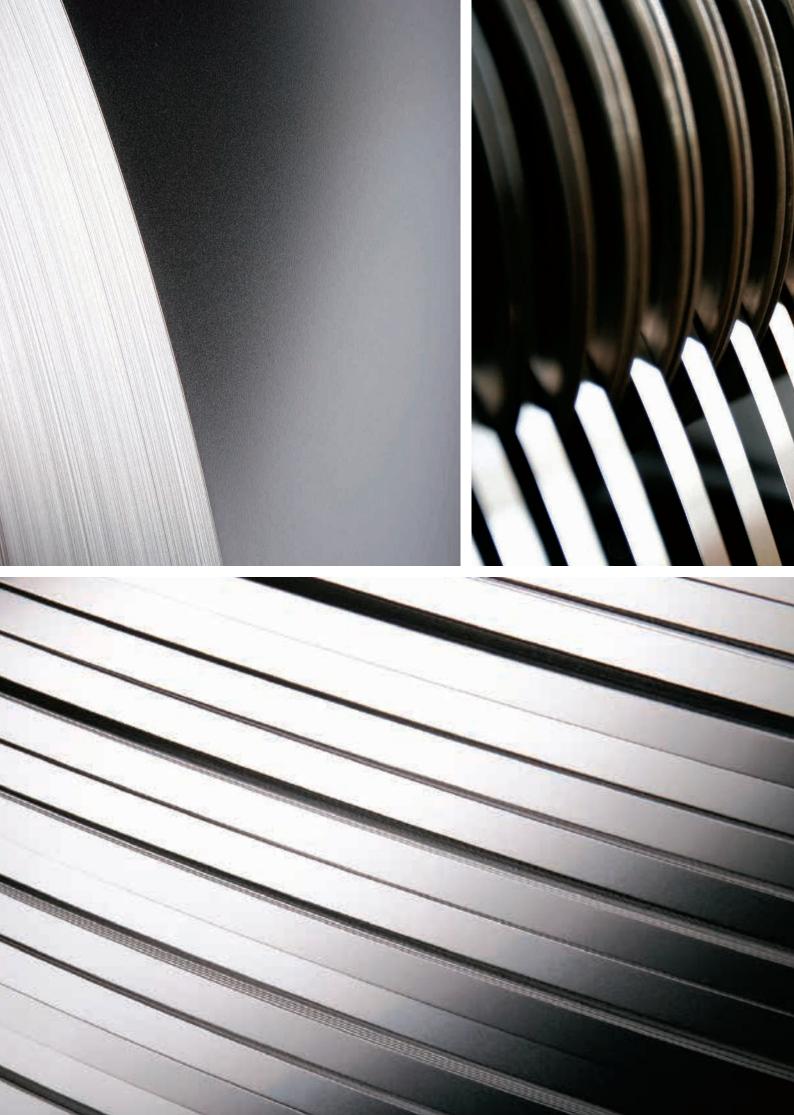
A long history in metal rolling technology combined with new capabilities enables Poongsan Special Metal Corporation to produce superior stainless steel strips.



Poongsan Special Metal's precision slitters, tension leveler, tension annealing furnace and computer control systems such as Automatic Gauge Controls and Automatic Flatness Control System all contribute to ensure superior processing of stainless steel strips for a wide range of industrial purposes.

As with all of its other products, Poongsan Special Metal takes pride in its commitment and ability to meet the specific needs of its customers. The thin-gauge, narrow-width stainless steel strips that Poongsan Special Metal produces can be made as thin as 0.03mm and as narrow as 3mm. Poongsan Special Metal's superior rolling and heat-treatment technologies yield a range of desired properties and consistent quality. These Poongsan Special Metal products satisfy standard specifications set by KS, JIS, and AISI. Poongsan Special Metal's stainless steel strips for spring products are particularly popular and widely used in lightweight, high-strength components such as switches, relays and ITs that require strong spring capability.













# **Precision Forgings**

Through aggressive investment in equipment and technology, Poongsan continues to expand and supply its line of large-scale and precision-forging products to many different industries ranging from shipbuilding and automobiles to high tech, space and aviation.



With the completion of the Angang plant in the early 1970's, Poongsan began operating its own forging facility. Soon thereafter, the Korean government designated Poongsan as a national precision technology plant and calibration center. Today, the Angang plant is globally recognized as an international certification test center.

Over the past four decades, Poongsan has demonstrated that it is a dedicated and dependable supplier of parts to its customers in various industries. It has diligently invested in the acquisition and development of technology in the field of precision forging. Poongsan acquired certification in the ISO/TS 16949 and SQ Mark, enabling it to supply parts to the automobile industry. It has also received similar approval to produce and supply parts to the shipbuilding industry. Additionally, Poongsan has supplied small scale body parts for military weapons to the defense industry. Since the incorporation of two hydraulic presses (with capacities of 6,000 tons and 12,000 tons) into its production line in 2004, the Angang plant has had the capacity to produce larger scale products such as aluminum wheels for tanks, body and metal parts for warheads, guided missiles, and torpedoes. In 2012, Poongsan installed a 4,000 ton hydraulic press in order to enhance medium-sized forging capability. Since Poongsan has obtained certification of the AS9100 quality management system for aviation, space, and defense, it is now able to produce AS9100 compliant turbine blades and aerospace components that are used by aircraft manufacturers.

The Angang plant is fully equipped with a complete quality assurance system required by domestic and global automobile and shipbuilding manufacturers. To that end, the plant is organized to maintain independent production systems for different forging product categories. It is equipped with sophisticated and comprehensive test centers to further ensure the superior quality of its products. In addition, the DEFORM (Design Environment for Forming) system and Material Data Base Software for forging process design have enabled Poongsan to provide superior forging products at reduced costs and to shorten delivery times to its customers.



Poongsan is committed to ensuring a continued supply of high quality, competitive products to its customers. Poongsan's R&D is currently focused on enhancing cold and hot precision forging and other processing technologies in an effort to develop and mass produce essential parts for the transportation industry.



# **Military Ammunition**

With forty years of experience and expertise in utilizing copper and copper alloy production technologies in the manufacture of defense products, Poongsan is a leader in the production and supply of high-tech precision ammunition to the military worldwide.

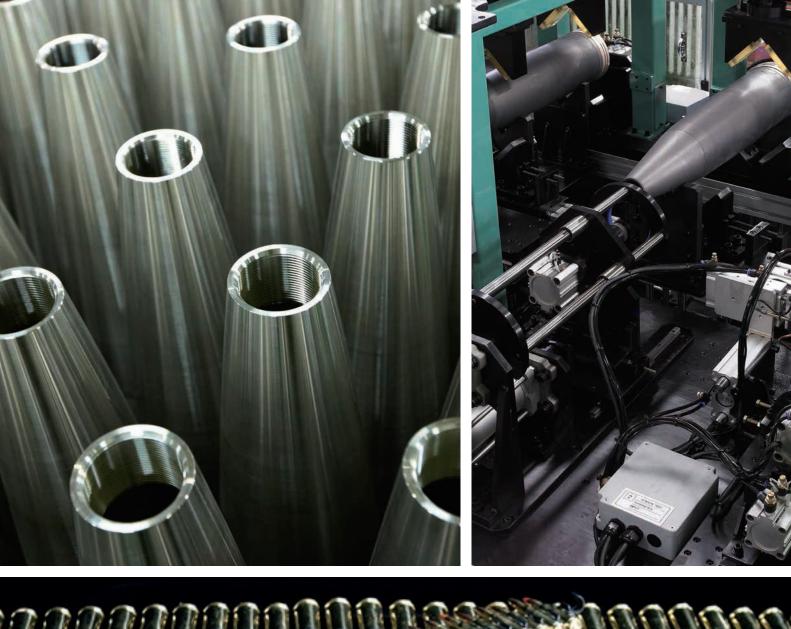


Poongsan operates two defense product plants, one in Busan and the other in Angang. These two plants develop and supply a wide range of small to large caliber ammunition, ranging from 5.56mm cartridges to 155mm projectiles for howitzers. Poongsan's defense products include ammunition used in small caliber arms, anti-aircraft guns, mortars, howitzers, tank guns, recoilless guns and naval guns.

The Busan and Angang plants employ a vertically integrated production system that ensures reliable management of the production process from raw material to finished product, which, as a result, produces superior quality defense ammunition and components. Furthermore, Poongsan's defense products undergo ISO9001-2015 certified performance tests and inspections.















# Components of Ammunition

In response to the growing market, ammunition components and semi-finished defense products have become some of Poongsan's principal export items.



Poongsan manufactures semi-finished products and components used in the production of ammunition. They include primers, fuzes, bullet jacket cups, case cups, discs, cones, rotating bands, links, tungsten penetrators and shell bodies. Poongsan FNS produces and supplies fuzes for use in naval ammunition, mortar shells and multiple launch rocket systems. In addition to these components, Poongsan produces chemicals, such as nitrocellulose and nitroglycerine, contained in propellants. Today, Poongsan produces and supplies both domestic and international customers with single-, double- and multiple-base propellants.





# Commercial Ammunition

Poongsan develops and exports over 40 different types of sporting ammunition.



Poongsan's commercial ammunition, PMC (Precision Made Cartridges), is widely used throughout the world for recreational hunting and shooting and has earned a reputation for excellence in quality.

Poongsan is committed to providing high performance, competitively priced commercial ammunition to its customers. Its commercial ammunition plants have vertically integrated manufacturing systems that allow for strict and precise management of the production process from raw materials to finished cartridges. To further ensure customer satisfaction, Poongsan's commercial ammunition undergoes quality inspections and tests that are as stringent as those for its military ammunition.

In addition to providing high quality products at competitive prices, Poongsan is dedicated to developing environmentally friendly ammunition using frangible projectiles and nontoxic primers. These primers contain no heavy metals such as lead, mercury, halogens, boron, barium, bismuth or strontium, and actually exceed current EPA standards. Spectrographic analysis of primer residue shows only trace amounts of potash, which is harmless and actually acts as a fertilizer.

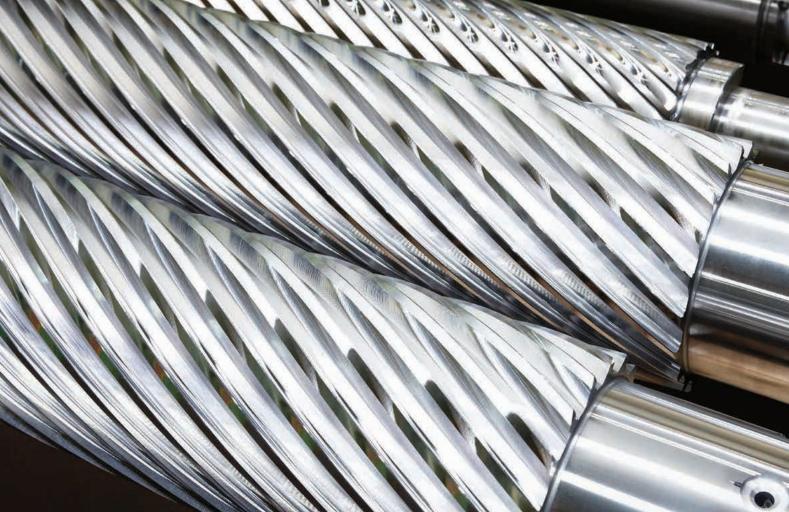














# Machinery

Poongsan builds metal processing machineries and other customized equipments for the steel, automobile and defense industries.



In the early 1970's, Poongsan Machinery began as a maintenance shop for Poongsan Corporation. Over the following four decades, it not only has transformed into a supplier of machinery and customized equipment, but also has become a leading producer of machinery and tools. Poongsan Machinery specializes in rolling related products (such as annealing, pickling, degreasing, buffing, tin plating, and slitting machineries), scalping lines, and rolling oil coolant systems. Currently, it is developing and manufacturing high-capacity Force, Mass, and Torque Standard Machinery in partnership with the Korea Research Institute of Standards and Science. Poongsan Machinery is renowned throughout the industry as the best provider of quality tools, multi-gauge strips, gauges, and fixtures.

Today, Poongsan Machinery continues to maintain strong relationships with prominent domestic companies such as Korea Electric Power Corporation.





# Research & Development

Dedicated to meet customer needs, Poongsan remains committed to research and development.



From its inception, Poongsan has aggressively pursued initiatives to enhance technology and to develop and improve both new and existing products. Today, Poongsan continues to emphasize and invest in research and development of fabricated copper and copper alloy products used in both the commercial and defense industries.

Through its tireless dedication to research and development over the past fifty years, Poongsan takes pride in its ever expanding intellectual property portfolio. To date, Poongsan has registered many patents worldwide that include patents for high performance copper alloys such as PMC102M, PMC26 and defense products. Poongsan invests and strategically allocates resources to develop value-added products, to optimize manufacturing processes and to invest in products with future growth. To this end, Poongsan actively recruits and trains core talent, integrates existing technologies with new ones, and selects and manages projects that meet market and customer demands.

Looking to the future, Poongsan is ever more committed to research and development. Poongsan has built a results-driven R&D organization that benefits from global networking and collaboration among the various research laboratories at Ulsan, Poongsan Special Metal, PMX and Siam Poongsan. In June 2011, it invested more than 30 billion KRW to open its Research Institute in Daejeon to centralize its R&D. In May 2014, Poongsan partnered with the Korea Advanced Institute of Science and Technology (KAIST) to found the Poongsan-KAIST Future Technology Research Center to pursue further development in business and technology.

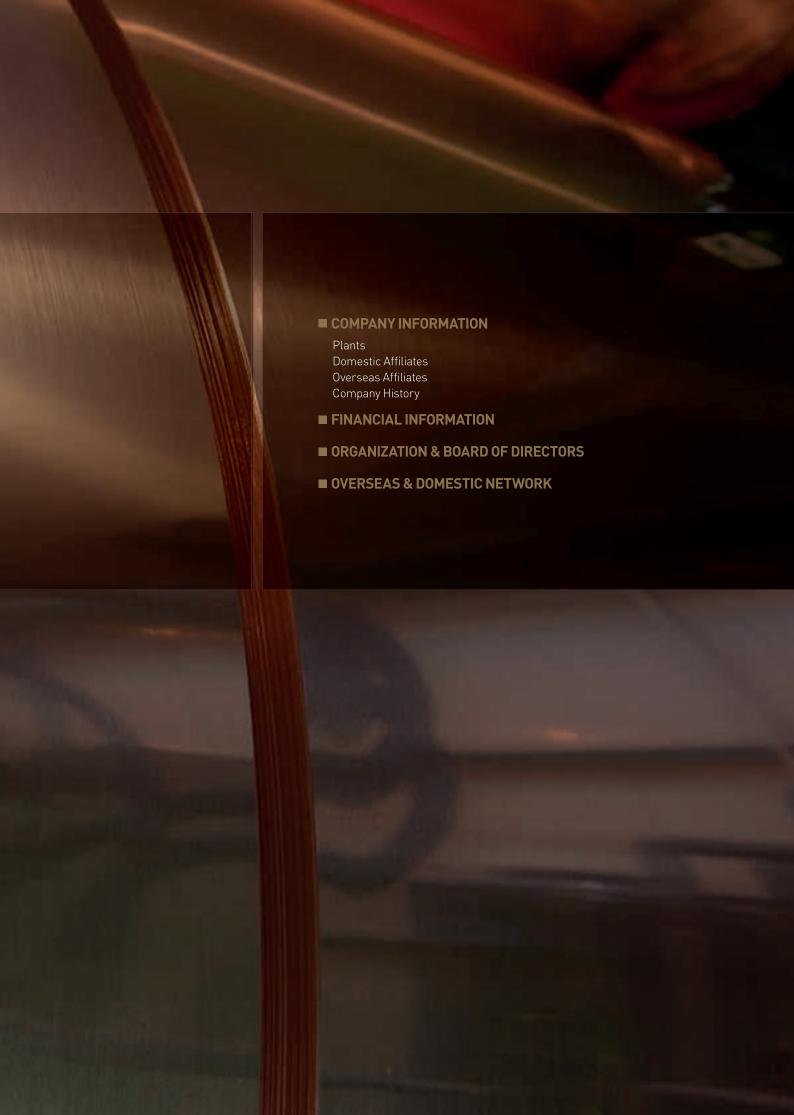
Armed with the latest ammunition technology, Poongsan is quickly emerging as a global specialist in manufacturing high performance missile warheads and smart ammunition with stronger fire power, longer range, and greater accuracy. Poongsan is working to develop the next generation of high tech materials such as functional materials for information technology and leadframe materials for LED & semiconductors. Poongsan's commitment to R&D focusing on environmentally friendly products is evidenced by its dedication to developing environmentally friendly processes for the manufacturing of these products.

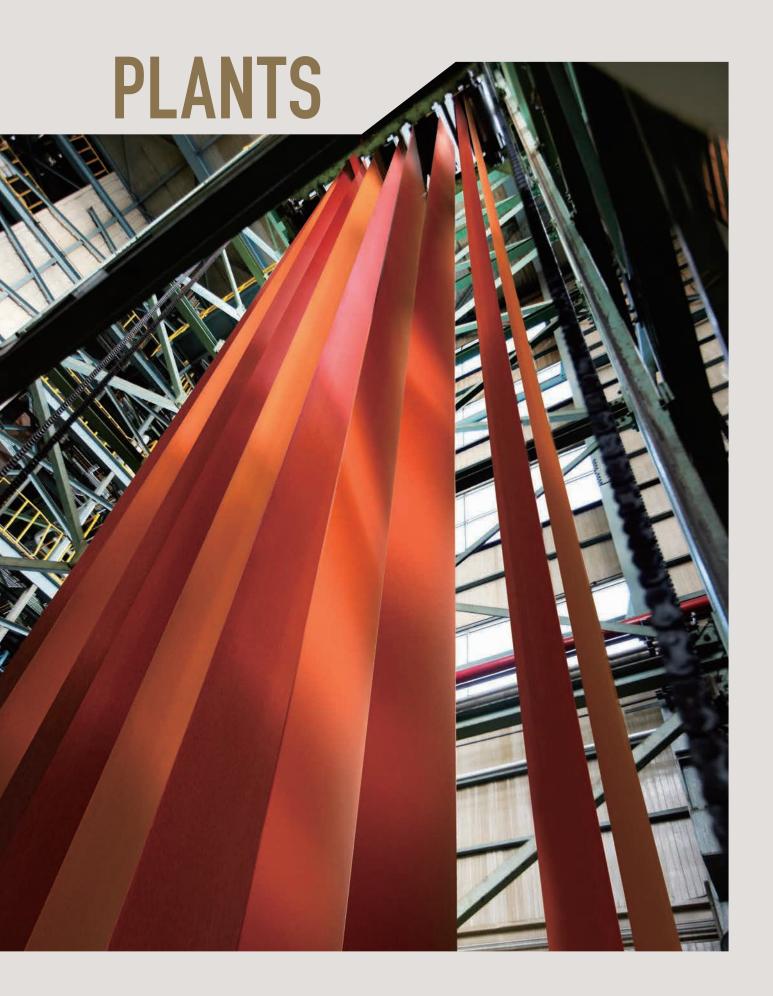






# COMPANY & FINANCIAL INFORMATION





#### **■ ULSAN PLANT**

Poongsan's Ulsan plant began operations in 1980. Since then, the Ulsan plant has continually increased its production output. Today, the plant boasts one of the world's largest production capacities and is unrivaled in product quality. It continues to be dedicated to efficient production and superior products. To help maximize operational efficiency, the plant has implemented Poongsan's ERP system. It has also completed the installation of a new state-of-the-art shaft furnace to further enhance competitiveness and meet the rising demand for high-value alloy products. In addition, its casting capacity for semiconductor leadframe and automobile connector materials has been improved to allow for increased downstream production capacity and improved product quality. Furthermore, a new breakdown mill, bell furnace and precision CNC slitter have been installed. In order to meet the specific demands of its customers with regard to product quality and service, the Ulsan plant actively enforces the Six-Sigma Initiative.



LOCATION: Utju-gun, Utsan
PRODUCTS: Copper and copper alloy sheets,
strips, rods, wires,
raw materials for leadframes,
tin-plated strips and coin blanks

#### **■ ANGANG PLANT**

Established in 1973, Poongsan's 1,068-acre Angang plant was Korea's very first facility exclusively dedicated to manufacturing ammunition and is regarded as the birthplace of Korea's domestic defense industry. Today, the Angang plant produces an array of military and sporting ammunition, defense components and precision forging products ranging from 5.56mm small arms to 155mm extended range artillery rounds. Since its establishment, the plant has successfully contributed to the strength of the Korean armed forces and self-reliance of our national defense. Its manufacturing process is vertically integrated beginning with raw materials and ending with complete rounds of ammunition. Its defense and commercial products are superior in quality and competitive in price in the global market. Recently, the plant released new conceptual munitions for the next generation weapon platforms. Currently, it is focusing on the production of smart ammunition with selective precision attack capability designed for digitalized future battlefields.



LOCATION: Angang-eup, Gyeongju

PRODUCTS: A complete line of ammunition
for small arms, medium- to
large-caliber arms and sporting

#### **■ BUSAN PLANT**

Poongsan's Busan plant is located in Korea's second largest city. The Busan plant not only concentrates on production and quality, but also focuses on maintaining good labor relations. In 2011, it received a government award commending Poongsan's effort and success in maintaining good labor relations. Originally, it produced a variety of small caliber, sporting and hunting ammunition and tracer products. Today, it is also developing environmentally friendly ammunition such as frangible ammunition, green bullet ammunition and EPR (Enhanced Performance Round). Exports account for more than 80% of the Busan plant's total volume of sales.



LOCATION: Haeundae-gu, Busan
PRODUCTS: Small arms and sporting

# DOMESTIC AFFILIATES



LOCATION : Changwon, Gyeongnam

**PRODUCTS**: Multi-gauge strips, ammunition parts, machinery, equipment, and metal powders

Poongsan Holdings Corporation is the parent company of the Poongsan Group and includes two manufacturing plants – the Changwon plant produces a wide range of high-quality and high-tech products such as ammunition parts, multi-gauge strips for leadframes and metal powders, while the Busan plant builds metal processing facilities for the steel, automobile and defense industries.

#### **■ POONGSAN SPECIAL METAL CORPORATION**

Drawing on our 40 years of experience and world-class facilities, Poongsan Special Metal Corporation specializes in stainless steel strips, nickel alloy strips and precious metal coin blanks. We take particular pride in our automated production system and superior rolling and heat treatment technologies that enable us to meet the specific needs of our valued customers. Recently, Poongsan Special Metal strengthened its competitiveness in the market by developing core materials, including nickel and nickel alloy products for high-tech electronics products.

LOCATION : Gyeyang-gu, Incheon

PRODUCTS: Stainless steel strips, nickel alloy

### **■ POONGSAN METAL SERVICE CORPORATION**

Poongsan Metal Service Corporation was founded in February 2007 to meet the various requirements of our customers. With its modern slitting equipment, Poongsan Metal Service supplies a diverse range of copper and copper alloy sheets and strips in a prompt manner. It also manages warehousing of copper and copper alloy rods and wires.

LOCATION : Pyeongtaek, Gyeonggi
PRODUCTS : Copper & copper alloy sheets,
strins

### **■ POONGSAN FNS CORPORATION**

Poongsan FNS Corporation was established in 1973 to produce precision machinery products. In particular, it specialized in fuze products and sensors for the defense sector, as it produced nuclear fuel assembly (WH-type top and bottom nozzle) parts and specialty tools for the nuclear power plant sector. Poongsan acquired Poongsan FNS Corp. in February of 2004 to connect its traditional ammunition production expertise to Poongsan FNS's precision fuze manufacturing and develop state-of-the-art ammunition. Additionally, Poongsan FNS entered the aerospace industry by forming industry-education cooperation agreements with the Agency for Defense Development and the Korea Institute of Science & Technology, enabling research, development and production of precision machinery parts.

LOCATION: Nonsan, Chungnam

PRODUCTS: Fuse products, accelerometers
for inertia navigational systems,
and core products for top and

### **■ PNT CORPORATION**

PNT Corporation is a joint venture established in June 2001 with JX Nippon Mining & Metals Corporation, one of the largest non-ferrous metal companies in Japan. Responding to the rising demand from the various industries such as electronics and information technology, PNT specializes in tin-plated copper alloy strips.

LOCATION: Ulju-gun, Ulsan
PRODUCTS: Tin-plated copper alloy strips

### **■ POONGSAN HWADONG**

Poongsan Hwadong is a numismatic company that has been distributing collectable numismatic items in Korea for over 45 years. Previously established on March 27, 1972 under the name "Hwadong," it joined the Poongsan Group in January 2012 and adopted the new name "Poongsan Hwadong". Poongsan Hwadong has distinguished itself as one of the world's major numismatic company with an industry-wide recognition as the first and the largest numismatic company in Korea. Serving as the authorized distributor of more than 20 major mint bureaus in the world, Poongsan Hwadong also has been designated as the official domestic distributor of most major world events' commemorative coins since the Olympic Games Seoul 1988.

LOCATION: Seocho-gu, Seoul
PRODUCTS: Coins, Bank Notes and Medals,



# OVERSEAS AFFILIATES



**LOCATION**: Cedar Rapids, Iowa, USA **PRODUCTS**: Copper and copper alloy strips

### **■ PMX INDUSTRIES, INC.**

Incorporated in 1989, PMX Industries is a fabricated rolled-copper producer with an annual production capacity of 120,000 tons of copper and copper alloy strips. PMX has earned a strong reputation as a reliable supplier of copper and copper alloy strips for use in ammunition, automotive and electrical connectors, coinage, and high performance alloys, and as a result, plays a crucial role in supporting many different industries in North America. PMX has received patents for EPA-approved alloys under the trademark MicroGuard, with additional patents pending. MicroGuard, strictly governed by U.S. EPA regulations, kills six types of antibiotic resistant bacteria in less than two hours of contact. This product will be critical in the fight against hospital-acquired infections in the U.S. and overseas. PMX's Production, Sales and Marketing Teams work closely with one another to develop and promote cutting edge products that meet the changing needs of their customers and communities.

### **■ POONGSAN (H.K.) LTD.**

Recognizing the importance of a distribution base for the Chinese and Southeast Asian markets, Poongsan established an affiliate company in Hong Kong in 1991 followed by a slitting center in Dongguan. In 2010, Poongsan Hong Kong closed its Dongguan slitting center and opened a newer and larger scale slitting center in Songgang (Shenzhen, China). This new facility will enable Poongsan to expand and increase sales of high value-added products both in Southern China and in other Southeast Asian markets.



LOCATION: Kowloon, Hong Kong
PRODUCTS: Copper and copper alloy sheets
and strips, brass rods,
and stainless steel strips

### **■ POONGSAN (SHENZHEN) CO., LTD.**

Poongsan Shenzhen opened for business in 2010. The slitting center supplies copper alloy strips including leadframe materials as well as stainless steel strips to customers in China and Southeast Asia. This facility is strategically located to be able to provide on-time delivery and better service to our customers in this region.



LOCATION: Yanchuanshequ, Songgang, Shenzhen, China

**PRODUCTS**: Copper and copper alloy sheets and strips, stainless steel strips

### **■ POONGSAN (SHANGHAI) CO., LTD.**

Poongsan established an office inside the Shanghai Free Trade Zone in order to gain access to the Chinese copper market in 2002. Since its inception, Poongsan Shanghai has steadily grown its sales of high value fabricated copper products to the high-tech and automotive industries. It supplies copper and copper alloy sheets and strips, ACR tubes, brass rods and stainless steel strips to local customers throughout China as well as to U.S. and Japanese companies with operations in China.



LOCATION: Hongkou District

PRODUCTS: Copper and copper alloy sheets and strips, brass rods, and stainless steel strips

### **■ POONGSAN (LIANYUNGANG) CO., LTD.**

Poongsan Lianyungang was established in July 2012 to develop new business and to stay closer to existing Poongsan customers expanding into the world's most populous nation. Poongsan Lianyungang also operates its own slitting center to supply leadframe material and general rolled products. It supplies copper and copper alloy sheets and strips, brass rods, and stainless steel strips to local Chinese businesses as well as to U.S. and Japanese companies operating in China.



LOCATION : Dapu Industrial Park, Lianyungang, China

PRODUCTS: Copper and copper alloy sheets and strips, brass rods, and stainless steel strips



LOCATION: Laemchabang, Chonburi, Thailand PRODUCTS: Copper and copper alloy sheets

### ■ SIAM POONGSAN METAL CO., LTD.

Established in October 2000, Siam Poongsan Metal is the only manufacturer of rolled copper and copper alloy products in Southeast Asia. Products manufactured at Siam Poongsan range from sheets and strips and coin blanks to other copper and copper alloy products. Siam Poongsan is a major supplier of coin blanks to the Thai government. With its completely integrated copper and copper alloy production facilities - from melting and casting to slitting - Siam Poongsan has contributed significantly to the development of the Southeast Asian region by providing alternative sources of fabricated materials for key industries. As a result, it has become a recognized and reliable supplier of copper and copper alloy products not only to Thailand, but also to the other nations in the region. Siam Poongsan is aggressively working to expand its facilities in order to meet the anticipated increase in demand for fabricated copper products in Southeast Asia.



LOCATION : (Head Offie) Tokyo, Japan (Kawaguchi Office) Kawaguchi,

PRODUCTS: Copper and copper alloy sheets

### **■ POONGSAN JAPAN CORPORATION**

In April 2002, Poongsan Japan Corporation was established in Kawaguchi City, Japan to address the demanding product specifications and service required by the Japanese market. Poongsan Japan processes and sells phosphor bronze, copper, brass and tin-plated strips and high-value copper rolling products. Through prompt delivery, consistent and reliable quality assurance, and effective customer service, Poongsan Japan continues to grow its domestic market share of not only copper rolling products but also stainless steel strips.



LOCATION: Kota Kemuning, Shah Alam, Selangor, Malaysia

**PRODUCTS**: Copper and copper alloy sheets and strips, brass rods

### **■ POONGSAN (M) SDN BHD**

Poongsan (M) SDN BHD, which also operates its own slitting center, was established in November 2001 to promote Poongsan products throughout Malaysia, Singapore and other ASEAN countries. It sells copper and copper alloy sheets, strips, rods, bars and wires as well as stainless steel strips, offering its customers reliable quality, on-time delivery and customer service.



LOCATION : Los Angeles, California, USA

### **■ POONGSAN AMERICA CORPORATION**

Incorporated in 2002, Poongsan America plays a critical role in supplying Poongsan Corporation with copper and copper alloy scraps, machinery and spare parts, and chemicals and other sub-materials. Poongsan America also promotes Poongsan products to overseas customers, especially in the Americas and in developing countries.

### **COMPANY HISTORY**

Oct.	1968	Poongsan Metal Corp. founded
	1969	Bupyung Plant completed
Apr.	1970	Poongsan designated as coin blank producer for the Mint of Korea
Mar.	1973	Angang Ammunition Plant completed
Jul.	1980	Ulsan Plant Phase One completed
Jan.	1982	Busan Plant completed
Jan.	1983	Precision Dies Manufacturing Shop at Busan Plant completed
Aug.	1985	Leadframe Manufacturing Shop at Busan Plant completed
Oct.	1988	Ulsan Plant Phase Two completed
Mar.	1989	Poongsan Metal Corp. renamed Poongsan Corporation
Apr.	1992	PMX Industries, Inc. in Cedar Rapids, Iowa, U.S.A. established
Dec.	1993	Quality Standard Certificate ISO 9002 for copper and copper alloy products awarded
Dec.	1996	Quality Standard Certificate ISO 9002 for titanium tubes and stainless steel strips awarded
Oct.	1997	Poongsan Metal Plant in Dongguan, China completed
Nov.	1999	Quality Standard Certificate ISO 9001 and ISO 9002 for defense industry products awarded
Oct.	2000	Siam Poongsan Metal Co., Ltd. established in Thailand
Jun.	2001	PNT Corporation JV established in Ulsan
Nov.	2001	Poongsan (M) SDN BHD established in Johor, Malaysia
Jan.	2002	Poongsan (Shanghai) Co., Ltd. established in China
Apr.	2002	Poongsan Japan Corp. established in Saitama, Japan
Jul.	2002	Poongsan America Corp. established in Los Angeles, California, U.S.A.
Dec.	2003	Environmental Standard Certificate ISO14001 awarded to Poongsan for its copper and copper alloy products
Feb.	2004	Acquisition of fuse and precision machinery parts maker Hyopchin Industrial Co., Ltd.
May.	2004	Poongsan Valinox Corporation JV established in Bupyung
Jun.	2004	Angang Plant acquires international accreditation as certification and inspection body
Nov.	2004	Poongsan honored with Productivity Innovation Award at National Quality Management Convention
Apr.	2005	Hyopchin Industrial Co., Ltd. renamed Poongsan FNS Co., Ltd.
Oct.	2005	Ulsan Plant obtains KOSHA18001 (Occupational Safety and Health Management System)
Apr.	2006	Poongsan designated as the frst environmentally friendly company among national nonferrous metals industries
Oct.	2006	Poongsan obtains patent for its Lead Free Brass Bars
Feb.	2007	Poongsan Metal Service Corporation established
May.	2007	Poongsan honored with Korean System Management Grand Prix Award at International System Certification Convention
Nov.	2007	Poongsan received Bronze Tower Order of Industrial Service Merit at National Quality Management Competition
Nov.	2007	"\$700 Million Export Tower" awarded on the 44th Annual Trade Day
Jul.	2008	Establishment of Poongsan Holdings Corporation
Dec.	2008	Poongsan honored with Korean Ministry of National Defense Award in recognition of its defense product exports
Dec.	2009	Poongsan honored with Defense Quality Management Grand Prix Award
Dec.	2010	Poongsan Microtec Corp. sold to a local IT company Hidis
Jun.	2011	Poongsan R&D Institute opened in Daejeon
	2011	Poongsan headquarters moved into the new Poongsan Building
Jan.	2012	Poongsan acquired Poongsan Hwadong
Jul	2012	Poongsan(Lianyungang) Co., Ltd. established in China
Feb.	2013	Angang Plant obtains ISO27001 (Information Security Management System)
		and AS9100 (Aerospace Industry Quality Management System)
	2013	Angang Plant honored with Total Productive Management Grand Prix Award
	2013	PMC Ammunition Inc. established in Texas, USA
,	2014	Ulsan Plant obtains ISO/TS 16949 (Automotive Industry Quality Management System)
-	2014	Poongsan made an agreement with KAIST to found Future Technology Research Center
	2015	Angang Plant honored with a Presidential Award at National Quality Management Convention
,	2017	Poongsan Valinox Corporation was renamed Poongsan Neotiss Co., Ltd. and moved to Pyeongtaek
Oct.	2018	Poongsan celebrated its 50th anniversary

### FINANCIAL INFORMATION

### ♦ Results of Operations

In 2019, the trade dispute between the United States and China in their competition for leadership of the global economy intensified. The rising uncertainty and negative sentiment stemming from this standoff impacted business activity worldwide. In some countries, this dynamic aggravated the cyclical and structural slowdowns that were already underway.

Despite this turbulent environment, Poongsan Group continued to generate corporate income and profit. This decrease is attributable to the decline in copper prices, decreased demand for copper products for automobile and electronic materials, as well as a decrease in defense sales.

Poongsan's sales for 2019 totaled 1.9 trillion KRW (US\$ 1.6 billion), a 13.1 percent decrease from 2018. Sales from the Nonferrous Metal Division comprised 67.8 percent of total sales, while sales from the Defense Products Division accounted for the remaining 32.2 percent.

Yearly Revenue	Poongsan Cor	poration)
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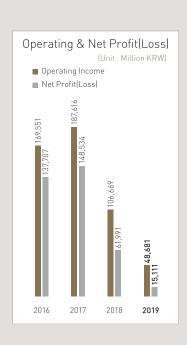
realty Neverlde (1 0011g	san corporation,			Unit : Million KRW
	2019	2018	2017	2016
Nonferrous Metal				
Domestic	454,432	477,032	511,085	459,892
Export	821,085	985,301	909,546	763,884
Sub-Total	1,275,517	1,462,333	1,420,631	1,223,776
Defense Products				
Domestic	468,052	513,913	515,788	517,138
Export	137,192	186,300	320,844	293,550
Sub-Total	605,245	700,213	836,632	810,688
Total	1,880,762	2,162,546	2,257,263	2,034,464

### Operating Income

In 2019, the company's operating income was 48,681 million KRW, down by 54.4 percent from 2018. The ratio of operating profit to revenue was 2.6 percent, down 2.3 percent from previous year.

### Net Income

Net income for 2019 decreased to 15,111 million KRW. The company recognized 9,579 million KRW in corporate taxes, a decrease of 15,246 million KRW from the previous year. Net profit ratio decreased from 2.87 percent in 2018 to 0.80 percent in 2019



### Operating & Net Profit(Loss)

				OTTIL: MILLIOTT KINW
	2019	2018	2017	2016
Operating Income	48,681	106,669	187,616	169,551
Net Profit(Loss)	15,111	61,991	148,534	137,707

Note) Based on Separate Financial Statements

### Capital Expenditure

In 2019 the company recorded 50,837 million KRW in capital expenditures, a 20.8 percent decrease from 2018

### Capital Expenditure & Depreciation Expense

ouplied Experience of Depression Experies			U	nit : Million KRW
	2019	2018	2017	2016
Capital Expenditure	50,837	64,153	69,878	85,874
Depreciation & Amount	77,910	72,430	68,890	64,738

Note) Based on Separate Financial Statements

### ♦ Financial Position

### Assets

The company's total assets as of December 31, 2019 were 2,277,278 million KRW, a decrease of 4.9 percent from the previous year. Current assets in 2019 were 880,089 million KRW, a decrease of 12.1 percent from 2018. Non-current asset increased 0.3 percent over 2018.

### Liabilities

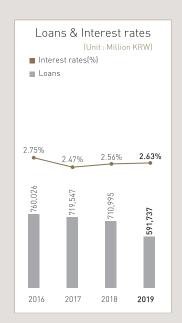
Total liabilities as of December 31, 2019 stood at 898,012 million KRW, down 11.7 percent from the previous year. Current liabilities were 572,822 million KRW, a decrease of 10.3 percent from 2018. Non-current liabilities, meanwhile, were 325,190 million KRW, an decrease of 13.9 percent from 2017.

Short-term borrowings for 2019 comprised 32.2 percent of total current liabilities for an amount of 184,525 million KRW. This represented an decrease of 96,582 million KRW from the previous year. Long-term borrowings of non-current liabilities increased in 2019 to 37,687 million KRW. The balance from bond issues increased by 13 million KRW to close at 199,497 million KRW. The debt to equity ratio was 65.1 percent, a decrease of 8.7 percent from the previous year.



Eddiis & litterest rates				Unit : Million KRW
	2019	2018	2017	2016
Loans	591,737	710,995	719,547	760,026
Interest rates(%)	2.63	2.56	2.47	2.75

Note) Based on Separate Financial Statements



### Shareholders' Equity

The ratio of stockholders' equity to total assets was to 60.6 percent by end of year 2019, an increase of 3.1 percent from 2018. Total stockholders' equity was posted at 1,379,266 million KRW, an increase of 2,042 million KRW from the previous year.

### Key Performance Indicators

		2019	2018	2017	2016
Stability	Debt ratio(%)	65.11	73.80	87.44	89.78
Profitability	Net profit to sales(%)	0.80	2.87	6.58	6.77
Activity	Receivables turnover(times)	5.51	5.76	5.03	4.56
Growth	Increase in EBIT Over Last Year(%)	▲ 58.27	▲ 51.26	9.81	49.94
Productivity	Value-Added per Person(million KRW)	127	147	170	158

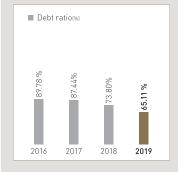
Note) Based on Separate Financial Statements

### Share Value Analysis

	Unit	2019	2018	2017	2016
EPS(Earnings per Share)	KRW	539	2,213	5,302	4,916
EBITDA	Billion KRW	122.3	178.7	286.9	263.3
BPS(Book value Per Share)	KRW	49,237	49,164	46,660	44,081

Note) Based on Separate Financial Statements

### **Key Performance Indicators**









### ♦ Non-Consolidated Statements of Financial Position

Exchange Rate : KRW 1,157.80=US\$1(End of 2019) Exchange Rate : KRW 1,118.10=US\$1(End of 2018)

			Conversion int	W 1,118.10=US\$1(End of 2018) Conversion into Thousands	
	Millions of Ko	rean Won	of United Sta		
	2019	2018	2019	2018	
CURRENT ASSETS					
Cash and cash equivalents	15,084	6,288	13,028	5,624	
Trade receivables, net	311,471	372,964	269,020	333,569	
Inventories, net	526,903	597,028	455,090	533,967	
Other current assets	26,631	24,368	23,001	21,794	
TOTAL CURRENT ASSETS	880,089	1,000,648	760,139	894,954	
NON-CURRENT ASSETS					
Investments	283,481	284,192	244,845	254,174	
Investment Property	108,352	109,969	93,584	98,354	
Property, Plant and Equipment & Intangible assets, net	970,880	991,479	838,556	886,753	
Land	359,123	359,267	310,177	321,319	
Buildings	198,451	198,023	171,404	177,107	
Structures	40,456	39,394	34,942	35,233	
Machinery	294,263	292,994	254,157	262,046	
Others	78,587	101,801	67,876	91,048	
Other Non-current Assets	34,477	7,381	29,778	6,601	
TOTAL NON-CURRENT ASSETS	1,397,189	1,393,021	1,206,762	1,245,882	
TOTAL ASSETS	2,277,278	2,393,669	1,966,901	2,140,836	
CURRENT LIABILITIES					
Trade payables	44,497	84,576	38,432	75,643	
Short-term borrowings	184,525	281,107	159,376	251,415	
Other payables	36,918	41,220	31,886	36,866	
Current portion of long-term borrowings, net of discount	170,029	134,225	146,855	120,047	
Other current liabilities	136,853	97,308	118,201	87,030	
TOTAL CURRENT LIABILITIES	572,822	638,436	494,750	571,001	
NON-CURRENT LIABILITIES	072,022	000,100	474,700	071,001	
Bonds issued, net	199,497	199,484	172,307	178,413	
Long-term borrowings, net	37,687	96,178	32,551	86,019	
Accrued severance benefits, net	17,573	19,713	15,178	17,631	
Deferred Tax Liabilities - Non Current	52,292	52,912	45,165	47,323	
Other Non-current liabilities	18,141	9,722	15,669	8,695	
TOTAL NON-CURRENT LIABILITIES	325,190	378,009	280,870	338,081	
TOTAL LIABILITIES	898,012	1,016,445	775,620	909,082	
EQUITY	070,012	.,,	770,020	, , , , , , ,	
Issued Capital	140,121	140,121	121,023	125,321	
Capital surplus	494,520	494,520	427,120	442,286	
Capital adjustments	(152)	(152)	(131)	(136)	
Other comprehensive income/loss accumulated amount	14,712	35	12,707	31	
Retained earnings(accumulated deficit)	730,065	742,700	630,562	664,252	
TOTAL EQUITY	1,379,266	1,377,224	1,191,281	1,231,754	
TOTAL EQUITY AND LIABILITIES	2,277,278	2,393,669	1,191,281	2,140,836	

Note) These financial statements are made and reported based on K-IFRS(Korean International Financial Reporting Standards).

These financial statements include equity method income and loss.

### ♦ Non-Consolidated Statements of Operations

Exchange Rate : KRW 1,157.80=US\$1(End of 2019) Exchange Rate : KRW 1,118.10=US\$1(End of 2018)

	Millions of Ko	rean Won	Conversion int of United Sta	
	2019	2018	2019	2018
Revenue	1,880,762	2,162,546	1,624,427	1,934,126
Cost of Goods Sold	1,730,799	1,945,446	1,494,903	1,739,957
Gross profit	149,963	217,100	129,524	194,169
Selling general administrative expenses	101,282	110,431	87,478	98,767
Operating income	48,681	106,669	42,046	95,402
Others gains	49,644	51,630	42,878	46,177
Gain on foreign currency transactions & translations	20,649	21,600	17,835	19,319
Gain on transaction of derivative instrument	10,861	12,318	9,381	11,017
Gain on valuation derivative instrument	1,141	3,143	985	2,811
Others	16,993	14,569	14,677	13,030
Others Losses	37,058	41,243	32,007	36,886
Loss on foreign currency transactions & translations	17,243	18,102	14,893	16,190
Loss on transaction of derivative instrument	12,302	11,834	10,625	10,584
Loss on valuation derivative instrument	2,017	1,588	1,742	1,420
Others	5,496	9,719	4,747	8,692
Net financial expenses	20,349	19,789	17,576	17,699
Equity method profit & loss	(16,228)	(10,451)	(14,016)	(9,347)
Profit(Loss) before tax expense	24,690	86,816	21,325	77,647
Tax expense	9,579	24,825	8,273	22,204
Net profit(loss)	15,111	61,991	13,052	55,443
Other comprehensive income(loss)	3,739	34,193	3,229	30,581
Total comprehensive income(loss)	18,850	96,184	16,281	86,024

Note) These financial statements are made and reported based on K-IFRS(Korean International Financial Reporting Standards).

These financial statements include equity method income and loss.

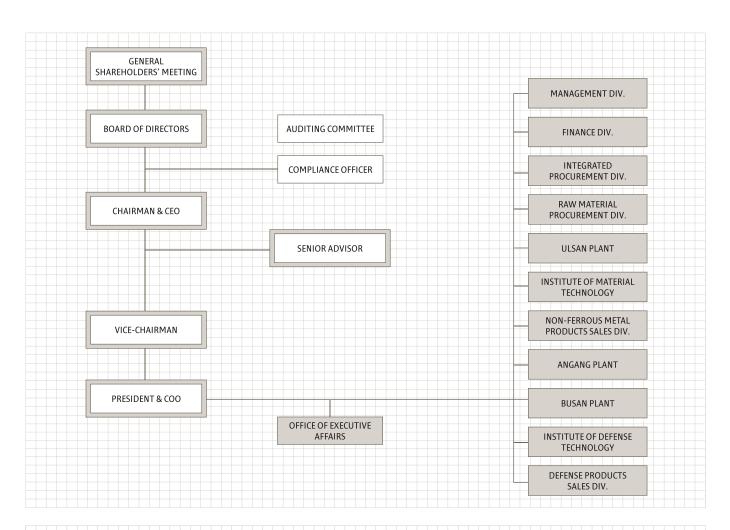
### ♦ Non-Consolidated Statements of Cash Flows

Exchange Rate : KRW 1,157.80=US\$1(End of 2019) Exchange Rate : KRW 1,118.10=US\$1(End of 2018)

	Millions of Ko	orean Won	Conversion in of United St	to Thousands ates Dollars
	2019	2018	2019	2018
I. Net cash flows from operating activities	179,682	77,621	155,193	69,422
1. Cash Flows from operating activities	233,361	151,590	201,555	135,578
1) EBT(earning before tax)	24,690	86,817	21,325	77,647
2) Addition of expenses of non-cash transactions	163,684	162,542	141,375	145,373
3) Deduction of revenues of non-cash transactions	(24,646)	(30,390)	(21,287)	(27,180)
4) Changes in assets and liabilities from operating activities	69,632	(67,379)	60,142	(60,262)
2. Income tax paid	(18,175)	(34,184)	(15,698)	(30,573)
3. Interest paid	(19,354)	(18,642)	(16,716)	(16,673)
4. Interest received	296	101	256	90
5. Dividend paid	(16,807)	(22,410)	(14,516)	(20,043)
6. Dividend received	362	1,166	313	1,043
II. Cash flows from investing activities	(50,323)	(67,867)	(43,464)	(60,698)
1.Cash inflows from investing activities	2,872	4,139	2,481	3,702
2.Cash outflows from investing activities	(53,195)	(72,006)	(45,945)	(64,400)
III. Cash flows from financing activities	(120,562)	(8,764)	(104,131)	(7,839)
1.Cash inflows from financing activities	2,833,693	2,422,652	2,447,481	2,166,758
2.Cash outflows from financing activities	(2,954,256)	(2,431,416)	(2,551,612)	(2,174,597)
IV. Net increase(decrease) in cash and cash equivalents (I+II+III)	8,796	990	7,597	885
V. Cash and cash equivalents at beginning of period	6,288	5,298	5,431	4,738
VI. Cash and cash equivalents at end of period	15,084	6,288	13,028	5,623

Note) These financial statements are made and reported based on K-IFRS(Korean International Financial Reporting Standards). These financial statements include equity method income and loss.

### **ORGANIZATION & BOARD OF DIRECTORS**





Ryu, Jin Chairman & Chief Executive Officer



Ryu, Helen Senior Advisor and Head of Global Operations and Strategic Planning



Choi, Han Myung Vice-Chairman



Park, Woo Dong President & Chief Operating Officer



Kim, Myoung Joong Outside Director Certified Public Accountant, E-Jung Accounting firm



Koh, Won Do
Outside Director
Former Vice Chairman,
Heerim Architects & Planners



Kim, Duk Joong Outside Director Former Commissioner, National Tax Service



Hwang, Hee Chul Outside Director Attorney, Law firm Kim&Chang

### **OVERSEAS & DOMESTIC NETWORK**

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