Legal Statement

- The purpose of the information in this presentation is to guide ICA programs and provide members with information to make independent business decisions.

Antitrust Guidelines

Antitrust Guidelines for Copper Industry
Trade Association Meetings

The following guidelines with respect to compliance with antitrust laws of the United States, Japan and European Community[1] are intended to govern the conduct of participants in copper industry trade association meetings, both at the meeting itself and in informal discussions before or after the formal meeting.

Price: Competitors should not discuss future prices (including terms of sale) of their products. There is no blanket prohibition against the mention of or reference to current or past prices but limits must be observed. Such references or mentions should occur only when necessary in connection with the development of association programs. For example, reference to a particular price level in comparing the cost of a copper product to a competing product is permitted. Whenever possible, such references should be discussed in advance with legal counsel.

Competitive Information: Competitors should not discuss the market share of a particular copper producer or copper fabricator's products. Furthermore, nothing should be said at a meeting which could be interpreted as suggesting prearranged market shares for such products or producer production levels. The overall market share of copper products may be discussed with regard to competition with non-copper products and general market acceptance.

New Products: Competitors should not encourage or discourage the introduction of a new product by another competitor or reveal a particular copper company's plans to change the production rate of an existing product or to introduce a new product. No company should disclose to another company whether it is in a position to make or market a new product. New products may be discussed in a technical manner or from the standpoints of competition with non-copper products and general market acceptance. In addition, proposed methods for and results of field and laboratory testing can be considered.

The Role of Legal Counsel: Legal counsel attends association meetings to advise association staff and other meeting attendees regarding the antitrust laws and to see that none of the matters discussed or materials distributed raise even the appearance of antitrust improprieties. During the course of a meeting, if counsel believes that the discussion is turning to a sensitive or inappropriate subject, counsel will express that belief and request that the attendees return the discussion to a less sensitive area.

A paper entitled 'Copper Industry Trade Associations and Antritrust Laws' is available upon request.

10/92, 5/93, 10/10

1. Other foreign competition laws apply to International Copper Association, Ltd. (ICA)'s activities worldwide.

Copper Specification Trends

September 2017

Methodology

With the objective of indicating where copper is specified:

- Show focus of specification by geography, product and market
- Data provided as Copper content
- Sources:
  - Unique data set
  - IWCC data
- Calculations based on semi-manufactures estimated end use
- Scaling in geographical analysis illustrates extent of change in specification
  - (i) change, (ii) significant change and (iii) major change
- Analysis provides focus on trends in key geographies, products and markets

Specifier Key Trends

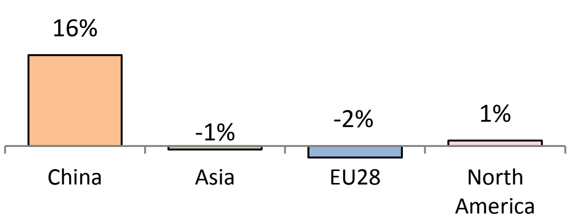
2016

- China dominates global specification, accounting for 44% of global tonnage specified
- China's dominance is in all market and product groups. It accounts for 58% of global specification in the Infrastructure market group
- Asia is the second largest region for specification, accounting for 22% of global tonnage specified

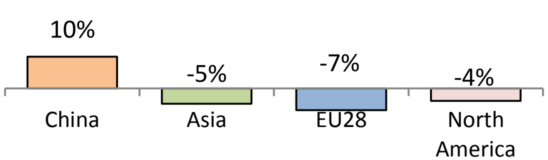
Change

- China's position of strength is illustrated by its 16% increase in tonnage specification and its 10% increase in share of global tonnage specification
- Overall, the other regions are experiencing little change or decline in tonnage specification

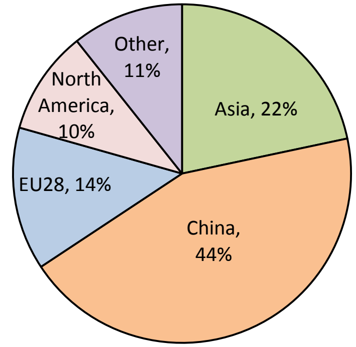
2013-16 % change in Global tonnage specification



2013-16 % change in share of Global specification



2016 % of Global specification



2016 % of global specification	China	Asia	EU28	N. America
Market Groups				
Building Construction	35%	24%	16%	11%
Infrastructure	58%	17%	8%	7%
OEM & General	45%	22%	14%	10%
Product Groups				
Wire & Cable	44%	22%	12%	10%
Copper Mill	48%	23%	11%	11%
Alloy Mill	40%	18%	20%	9%
Other	43%	21%	18%	10%

2013-2016 % change in tonnage specification	China	Asia	EU28	N. America
Market Groups				
Building Construction	5%	3%	-6%	-6%
Infrastructure	37%	-11%	-6%	7%
OEM & General	13%	0%	2%	5%
Product Groups				
Wire & Cable	19%	2%	-3%	3%
Copper Mill	16%	2%	1%	2%
Alloy Mill	12%	-15%	-1%	-7%
Other	0%	0%	0%	0%

China 2013–2016

Key themes

- China is the only region to have any **Major Changes** – 2 in markets and 2 in products
- Significant increase in tonnage volume (16%) and share of global specification (10%)
- Specification influence however remains lower compared to end use tonnage

Market change

- Increase in specification in 17 of the 18 markets
- Major increase in specification for Infrastructure Power and Automotive Electrical
- At least significant increase in specification in half of OEM & General

Product change

- Increase in specification in 17 of the 20 products
- Major increase in specification for Power Utility and Copper PSS
- Increase in specification in all products in Wire & Cable and Alloy Mill and all but one in Copper Mill

MARKETS					PRODUCTS
BUILDING CONSTRUCTION	Aircon	▲	▲	LV Energy - Other OEM	WIRE & CABLE
	Electrical	▲	▲	Power - Utility	
	Other	▲	▲	Power - Industrial	
	Telecom/Data	▲	▲	Wire - Winding	
	Plumbing	▼	▲	LV Energy - Auto	
INFRASTRUCTURE	Power	▲	▲	Wire - Bare	
	Other	▲	▲	LV Energy - Building	
	Telecom	▲	▲	Telecom/Data - Ext. Telecom	
OEM & GENERAL	ACR	▲	▲	Telecom/Data - Other	
	Consumer Products	▲	▼	Plumbing tube	COPPER MILL
	Automotive - Non-electrical	▲	▲	ACR Tube	
	Industrial - Non Electrical	▲	▲	PSS	
	Other Transport	▲	▲	Foil	
	Industrial - Electrical	▲	▲	RBS	
	General Market	▲	▲	Wire	ALLOY MILL
	Automotive - Electrical	▲	▲	Tube	
	Consumer Electronics	▲	▲	PSS	
	Business Electronics	▲	▲	RBS	
			►	Powder	OTHER
			▼	Castings	

Asia 2013–2106

Key themes

- Decrease in both tonnage volume (-1%) and share of global specification (-5%)
- Specification influence remains lower compared to end use tonnage

Market change

- Specification lost in all markets in Infrastructure and in half of OEM & General
- Asia is the region to have experienced decline in most markets - 10 in total
- Significant increase in specification in Consumer Electronics and Business Electronics

Product change

- Asia has experienced a significant decline in specification for 3 products and a significant increase in 1 product
- In total there is a decline in specification in 9 products and an increase in specification in 9 products

MARKETS					PRODUCTS
BUILDING CONSTRUCTION	Aircon	▲	▲	LV Energy - Other OEM	WIRE & CABLE
	Electrical	▲	►	Power - Utility	
	Other	▼	▼	Power - Industrial	
	Telecom/Data	▲	▲	Wire - Winding	
	Plumbing	▼	▲	LV Energy - Auto	
INFRASTRUCTURE	Power	▼	▼	Wire - Bare	
	Other	▼	▲	LV Energy - Building	
	Telecom	▼	▲	Telecom/Data - Ext. Telecom	
OEM & GENERAL	ACR	▲	▼	Telecom/Data - Other	
	Consumer Products	▼	▼	Plumbing tube	COPPER MILL
	Automotive - Non-electrical	▲	▲	ACR Tube	
	Industrial - Non Electrical	▼	▼	PSS	
	Other Transport	▼	▲	Foil	
	Industrial - Electrical	▼	▲	RBS	
	General Market	▼	▲	Wire	ALLOY MILL
	Automotive - Electrical	▲	▼	Tube	
	Consumer Electronics	▲	▼	PSS	
	Business Electronics	▲	▼	RBS	
			►	Powder	OTHER
			▼	Castings	

EU28 2013–2016

Key themes

- A slight decrease in tonnage volume (-2%) and a decrease in share of global specification (-7%)
- Specification influence however remains higher compared to end tonnage usage
- EU28 is the region experiencing the least significant changes in specification (these 2 are both negative)

Market change

- Increase in 8 markets and decrease in 8 markets
- Decline in all 5 markets in Building Construction
- Increase in 8 of the 10 markets in OEM & General
- Significant change in only 1 market - the decline in Infrastructure Telecom

Product change

- EU28 is the region to have experienced decline in most products - 11 in total
- Decline in 7 of the 9 products in Wire & Cable
- Significant decline in LV Energy Building

MARKETS					PRODUCTS
BUILDING CONSTRUCTION	Aircon	▼	▲	LV Energy - Other OEM	WIRE & CABLE
	Electrical	▼	▼	Power - Utility	
	Other	▼	▼	Power - Industrial	
	Telecom/Data	▼	▼	Wire - Winding	
	Plumbing	▼	▲	LV Energy - Auto	
INFRASTRUCTURE	Power	►	▼	Wire - Bare	
	Other	▼	▼	LV Energy - Building	
	Telecom	▼	▼	Telecom/Data - Ext. Telecom	
OEM & GENERAL	ACR	▲	▼	Telecom/Data - Other	
	Consumer Products	▲	▼	Plumbing tube	COPPER MILL
	Automotive - Non-electrical	▲	►	ACR Tube	
	Industrial - Non Electrical	▲	▼	PSS	
	Other Transport	▼	▲	Foil	
	Industrial - Electrical	►	▲	RBS	
	General Market	▲	▲	Wire	ALLOY MILL
	Automotive - Electrical	▲	►	Tube	
	Consumer Electronics	▲	▼	PSS	
	Business Electronics	▲	▼	RBS	
			►	Powder	OTHER
			►	Castings	

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North America 2013–2016

Key themes

- Tonnage specification has increased slightly (1%), but percentage of global share of specification has declined slightly (-4%)
- North America in particular however continues to retain a greater influence of specification compared to physical end use

Market change

- Relatively strong performance in specification in the Infrastructure market group
- There has been 1 significant change in each of the 3 market groups

Product change

- A significant increase in 5 products in Wire & Cable (compared to China which has experienced a minimum of a significant increase in 3 products in this group)
- In total an increase in 8 of the 9 products in Wire & Cable

MARKETS					PRODUCTS
BUILDING CONSTRUCTION	Aircon	►	▲	LV Energy - Other OEM	WIRE & CABLE
	Electrical	▼	▲	Power - Utility	
	Other	▲	▲	Power - Industrial	
	Telecom/Data	▲	▲	Wire - Winding	
	Plumbing	▼	▲	LV Energy - Auto	
INFRASTRUCTURE	Power	▲	▲	Wire - Bare	
	Other	▲	▼	LV Energy - Building	
	Telecom	▲	▲	Telecom/Data - Ext. Telecom	
OEM & GENERAL	ACR	▼	▲	Telecom/Data - Other	
	Consumer Products	▲	▲	Plumbing tube	COPPER MILL
	Automotive - Non-electrical	▼	▼	ACR Tube	
	Industrial - Non Electrical	▼	▲	PSS	
	Other Transport	▲	▼	Foil	
	Industrial - Electrical	▲	▲	RBS	
	General Market	▲	►	Wire	ALLOY MILL
	Automotive - Electrical	▲	▼	Tube	
	Consumer Electronics	▲	▼	PSS	
	Business Electronics	▲	▼	RBS	
			►	Powder	OTHER
			►	Castings	