Brand Name	**ISA-CON®1000+**
Material Code	1)
Abbreviation	**Cu Ag 7 Zr**

Chemical Composition (mass components) in %.
Average values of alloy components

Cu	**Ag**	**Zr**			
Rem.	7	0.18			

PRELIMINARY VERSION

Features and Application Notes

The ISA-CON® product family is renowned by its unique combination of mechanical strength and electrical conductivity. The combination of properties compared to well-known alloys is exceeded by a factor of 2 to 3. ISA-CON®1000+ achieves a mechanical strength of 1,400 MPa at 61% IACS which is a factor of 30 increase in electrical conductivity compared to steel having identical mechanical strength and a factor of 2 to 4 increase in mechanical strength compared to similarly conductive Cu alloys. The alloy can be coated with nickel, tin or silver in order to ensure surface properties such as solderability, coatability and corrosion resistance. ISA-CON®1000+ is also developed for excellent flex life and high softening resistance for use at higher temperatures or to withstand high temperatures during the extrusion process.

Form of Delivery

ISA-CON®1000+ is supplied in the form of round wires and stranded wires in the range of 0.05 to 0.30 mm Ø. Greater diameters and flat wires available on request. ISA-CON®1000+ is available in three combinations of conductivity and strength. For special applications the combination of electrical conductivity and mechanical strength can be adjusted between 850 MPa and 1,400 MPa according to customer demands.

Electrical Properties in Hard Condition

Temperature coefficient of electrical resistance between	Electrical conductivity			Electrical resistance
+20 °C and +105 °C 10^{-6}/K	+20 °C tolerance ±5%			+20 °C
approx. +3,000		**% IACS**	**m/Ω mm²**	**µΩ x cm**
	ISA-CON®1000	**71**	**40.8**	**2.45**
	ISA-CON®1200	**66**	**38.3**	**2.61**
	ISA-CON®1400	**61**	**35.3**	**2.84**

Strength Properties at +20 °C in Hard Condition

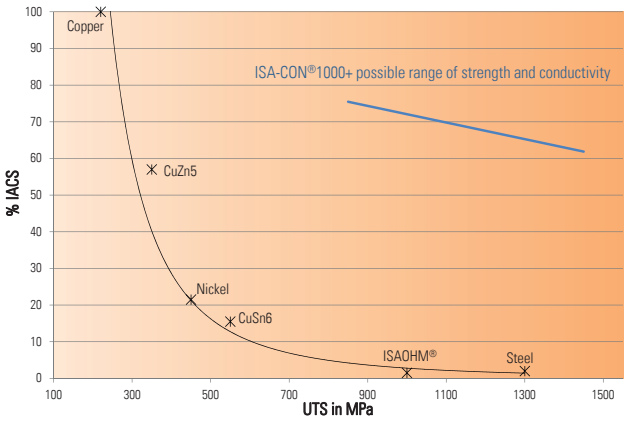
Tensile Strength			Elongation (L_0 = 100 mm) % at 0.2 mm diameter
	MPa	**ksi**	**%**
ISA-CON®1000	**1,000**	**145**	**1**
ISA-CON®1200	**1,200**	**174**	**1**
ISA-CON®1400	**1,400**	**203**	**1**

Physical Characteristics (Reference Values)

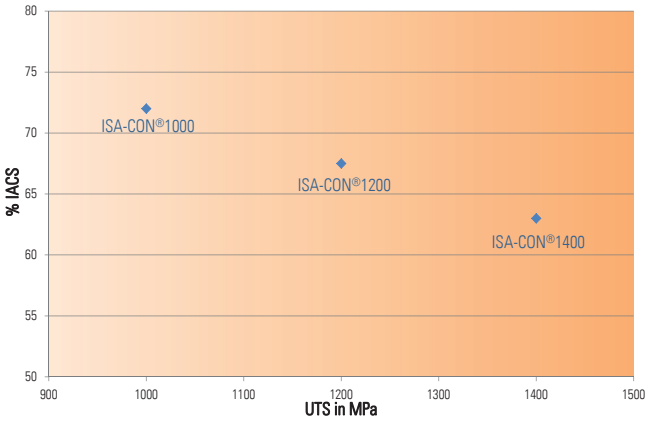
Density at +20 °C		Melting point	Specific heat at +20 °C	Thermal conductivity at +20 °C	Average linear thermal expansion coefficient between +20 °C and		Thermal EMF against copper at
					+100 °C	+400 °C	+20 °C
g/cm³	**lb/cub in**	**°C**	**J/g K**	**W/m K**	**10^{-6}/K**		**µV/K**
8.9	**0.32**	**925**	**soon**	**soon**	**16.7**		**soon**

Notes on Treatment // This alloy can be soldered and brazed like copper.

1) ISA-CON®1000+ is not a standardized alloy.



Graph 1: Possible production range of ISA-CON®1000+



Graph 2: Standard specifications of ISA-CON®1000+