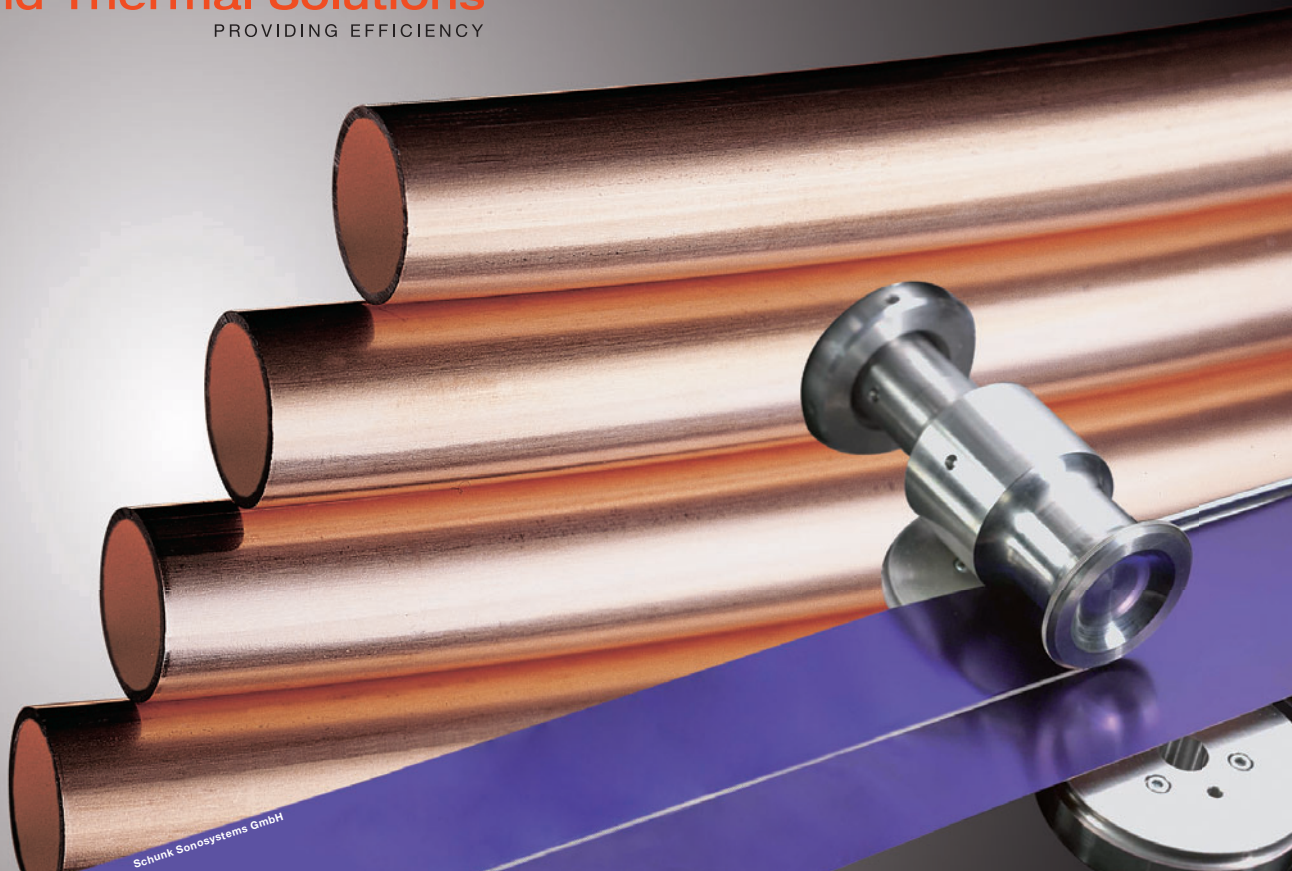


solarclean[®] copper tubes

Functional outer surface optimised for ultrasonic or laser welding joining technologies for the production of solar heat absorbers

Wieland Thermal Solutions[®]
PROVIDING EFFICIENCY



In the manufacture of solar panels, seamless copper tubes are welded with copper or aluminium plates.

Lubricants used in the production of copper tubes cause problems in the manufacture of solar heat absorber elements as they affect the welding of absorber plate and copper tube. Wieland has, therefore, developed a process to manufacture copper tubes with super clean outer surfaces.

This surface quality is referred to as **solarclean[®]**.

solarclean[®] copper tubes increase manufacturing productivity of solar heat absorbers and due to their surface quality high welding speeds can be achieved. Depending on the manufacturing process it is possible to dispense with at least

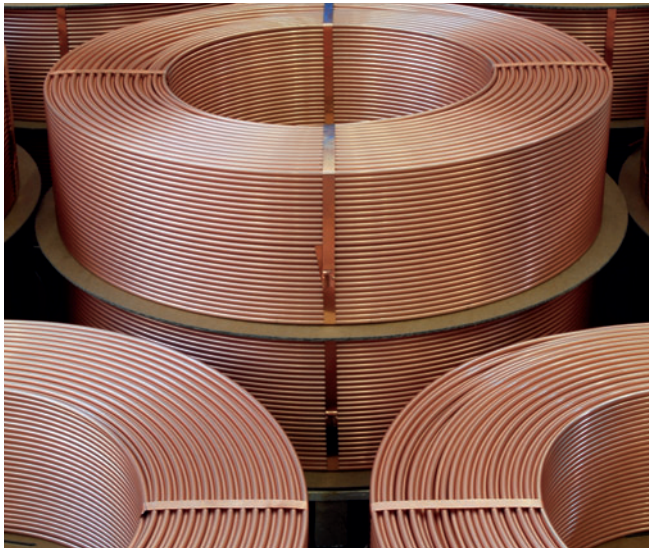
one cleaning operation of the copper tubes or an extensive pre-treatment of the weld.

The surface cleanliness of **solarclean[®]** copper tubes is monitored via a special process.

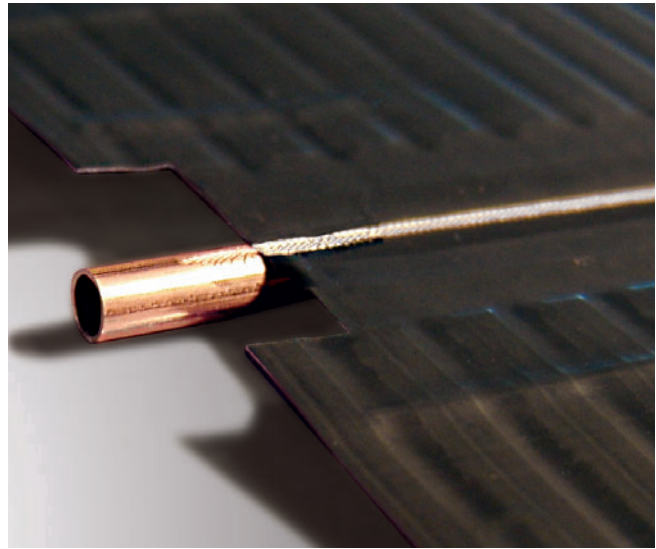
solarclean[®] copper tubes have outstanding bending properties and can, for example, be bent into meanders. The reduced lubrication film ensures sufficient holding grip of tool and copper tube.

solarclean[®] copper tubes improve the thermal efficiency of solar heat absorbers as copper has the highest thermal conductivity of all materials after silver.

solarclean®



solarclean® copper tubes with optimised outer surface



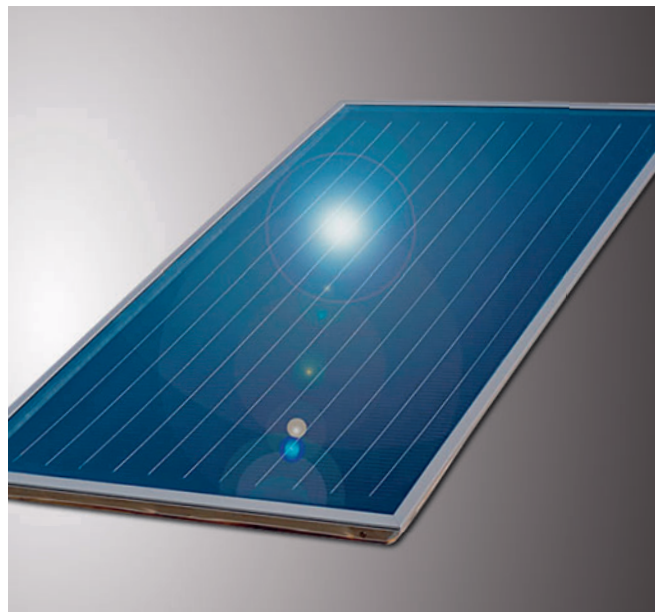
solarclean® copper tubes for efficient solar heat absorbers with a long life expectancy

Technical information at a glance

Material	Cu-DHP according to EN DIN 12449
Surface quality	company standard solarclean®
Product	copper tubes in straight lengths
Temper	hard as drawn, R 360 or half-hard, R 250
Standard	EN DIN 12449
Product	copper tubes in level-wound coils (LWC)
Temper	hard as drawn, R 360
Standard	company standard R1001

Thermal conductivity of different materials W/mK

Copper (Cu-DHP)	372
Aluminium	238
Steel	52
Stainless steel (V2A)	15



Solar panel with solarclean® copper tubes

Available sizes	Outside diameter (mm)	Wall thickness (mm)
Level-wound coils (LWC)	6 – 15	0.3 – 1.2
Straight lengths up to 7900 mm		

other sizes on request



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