



Wieland K65[®]

High Strength Copper Alloy

SIMPLE.
NATURAL.
COOL.

Wieland K65[®] - High Strength Copper Alloy

K65[®] – What is it ?

Wieland K65[®] is a high strength tube ...

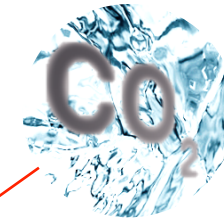
- made of the high copper alloy K65[®]
- for industrial applications and
- for pipework (K65[®] tube system consisting of IBP brazing fittings and Wieland tubes)



Wieland K65[®] - High Strength Copper Alloy

K65[®] – What is it for ?

Wieland K65[®] is designed for high pressure ACR applications



e.g. for applications with CO₂ as refrigerant



CO₂ is mainly used in commercial refrigeration such as supermarkets



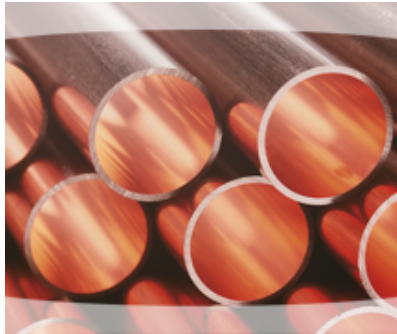
CO₂ as natural refrigerant is replacing standard HFC refrigerants in many countries due to ecological and/or legal reasons



Wieland K65[®] - Tube Product Offering

Alloy: Wieland Alloy Code **K65[®]**
EN CuFe2P, CW107C
UNS C19400

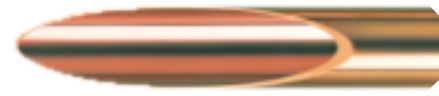
Straight Lengths



Level-Wound Coils



Inner Grooved



Smooth



Wieland K65® - Certification

ZERTIFIKAT ◆ CERTIFICATE ◆ CERTIFICADO ◆ CERTIFICAT ◆ CERTIFIKAT ◆ 認証証書 ◆ CERTIFICATE ◆ ZERTIFIKAT

Mitglied von




Industrie Service

CERTIFICATE

The Certification Body of
TÜV SÜD Industrie Service GmbH
 (a Pressure Equipment Directive Notified Body)

certifies that

Wieland Werks AG
Graf-Arco-Str. 34
D-89079 Ulm

as a material manufacturer for the scope of

pipes and bars material copper and copper alloy

has implemented, operates and maintains a
**quality-assurance system in accordance with the
 Pressure Equipment Directive 97/23/EC (PED)
 Annex I, Paragraph 4.3**

The manufacturer is authorized to issue certificates of specific
 product control within the scope of the assessed quality system in
 accordance with the Pressure Equipment Directive 97/23/EC
 and applied technical specifications.

Details of the scope are mentioned in the annex of the certificate
 AD2000 – Merkblatt WO / TRD 100 and Report Nr. 600304783/63195

Certificate No. IS-DD1-ULM-11-05-10574287-01
 valid until December 2013




Dipl.-Ing. (FH) G. Neumann

Notified Body No.: 0036
 Member of
 CONFÉDÉRATION EUROPÉENNE

 D'ORGANISMES DE CONTRÔLE

Ulm, 15. June 2010

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TÜV SÜD Industrie Service GmbH · PED-QA-Certification-Body · 68167 Mannheim · Germany

TUV®



Wieland K65® - Certification

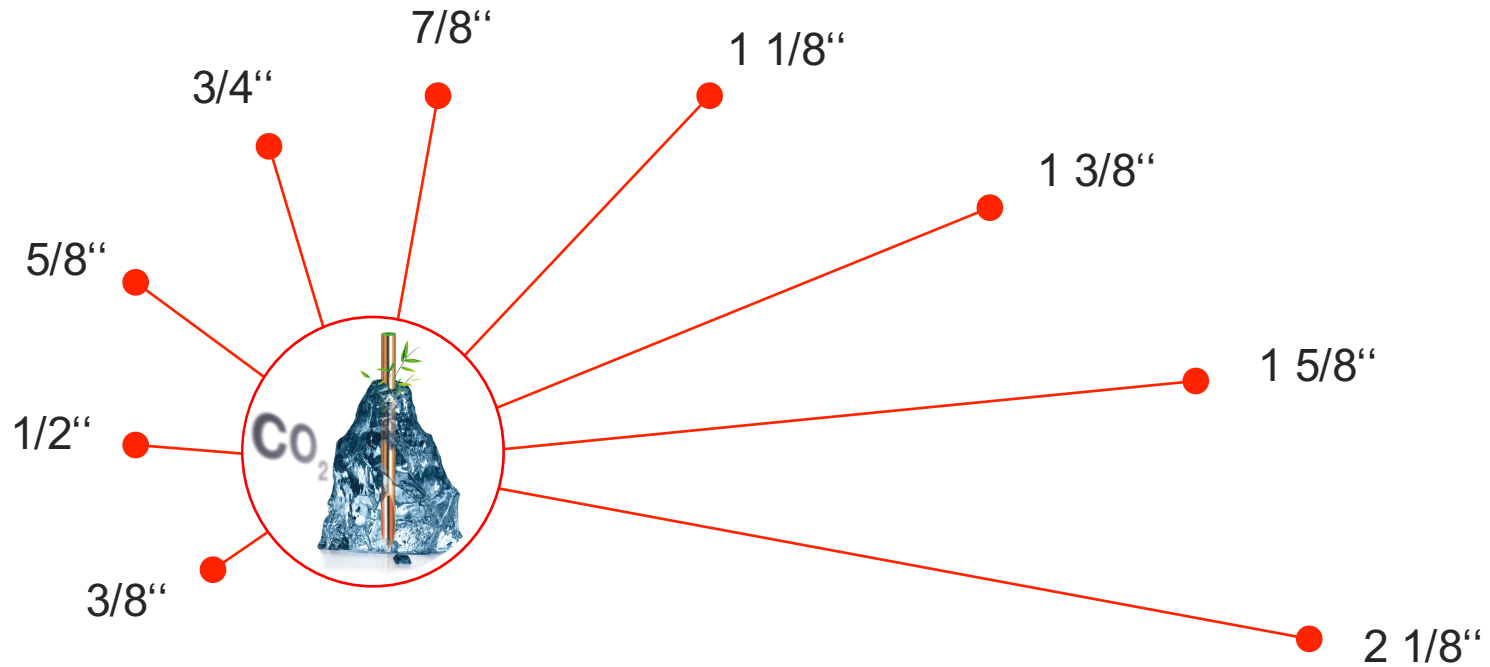


UL 207 Standard for Safety

**UL-Certification of
tubes and fittings
pending**



Wieland K65® - Product Range for 120 bar Operating Pressure



Conex | Bänninger

Conex Universal Limited

Global House
95 Vantage Point
The Pensnett Estate
Kingswinford, West Midlands
DY6 7FT, UK

Registered in England no. 07563347

Wieland

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Fax (336) 548-1576
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www.wielandcopper.com



Best quality. Better service.

Wieland K65® - Product Range of Fittings for 120 bar Operating Pressure

>B< K65 fittings for 120 bar

Type designation 3/8" up to 1 5/8"

>B< K65 90° and 45° bends

>B< K65 tees and reduction tees

>B< K65 reductions and metric adapters

>B< K65 straight couplings

>B< K65 caps



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www.wielandcopper.com



Best quality. Better service.

Wieland K65® - Product Identification

K65® tubes are marked with “**K65**” and max. allowable pressure. Tube ends are closed with green plugs and bundled with green tape.

Fittings and fittings bags are marked with **K65®** as well.

K65® alloy is slightly magnetic and can easily be identified by a strong magnet.

K65®



Wieland K65® - Processing Information

Joining Techniques

The **K65®** system is designed for hard brazing.

The alloy composition of **K65®** may be used for brazing with silver brazing alloys without any restrictions.

Chart 1: Recommended brazing alloys.

Brazing alloy	DIN EN ISO 17672	DVGW-Number	Working temperature [°C]	Composition [% by weight]				
				Ag	Cu	Zn	Sn	P
BrazeTec 4576	Ag 145	DV-0105CM0043	670	45	27	25,5	2,5	-
BrazeTec 3476	Ag 134	DV-0105CM0045	710	34	36	27,5	2,5	-
BrazeTec 4404	Ag 244	DV-0105CM0044	730	44	30	26	-	-
BrazeTec S 15	CuP 284	-	700	15	80	-	-	5.0
BrazeTec S 5	CuP 281	-	710	5	89	-	-	6.0
BrazeTec S 2	CuP 279	DV-0105CL0475	740	2	91,7	-	-	6.3

Chart 2: Recommended flux.

Flux	DIN EN 1045	DVGW-Number	Active temperature [°C]	Annotations
BrazeTec h	FH 10	DV-0101AU2227	550 -970	Flux residues are corrosive and must be removed.

Excerpt form UMICORE BrazeTec brochure: "Brazing recommendation Wieland **K65®**"

For more information please contact UMICORE BrazeTec



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E-Mail: jim.nugent@am.umicore.com



Wieland K65® - References

Mobile Applications of K65® Tubes: Air Conditioners and Break Lines

Usage in
Break Lines
for decades



Collector tubes
of bus A/C Units

Gas cooler tubes
of bus A/C Units

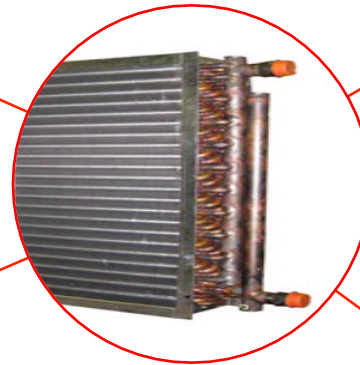
- Various vehicles equipped with **K65®** tubes are in successful operation for years across Europe
- No field problems reported.



Wieland K65® - References

Stationary Applications of K65® Tubes: Heat Exchangers for Commercial Refrigeration

Fabricated Parts
fittings, valves, etc.



Gas Coolers
typically 120 bar (1740 psi)
operating pressure
at 300°F

Serial Production
since 2010

→ No field problems reported.

Evaporators
usually 60 or 80 bar
(870 or 1160 psi)
operating pressure



Wieland K65® - References

Stationary Applications of K65® Tubes: Pipework and Racks

Pipework of multicompressor racks

120 bar (1740 psi) and
80 bar (1160 psi)
operating pressure

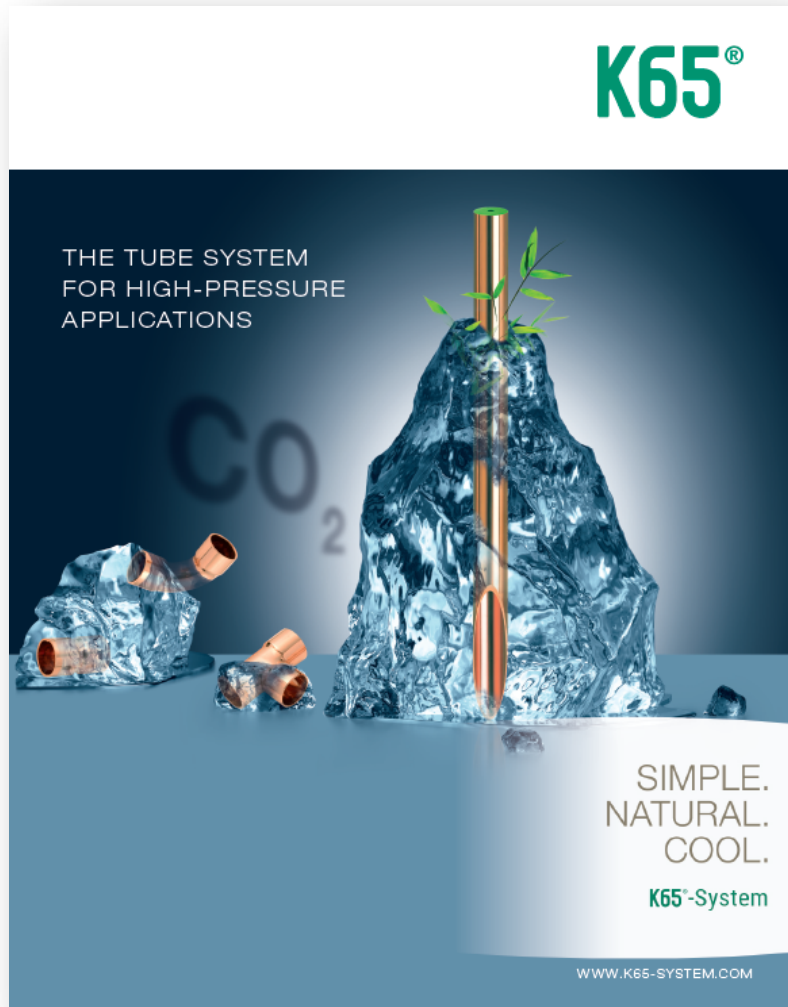


Tubing in supermarkets
connecting gas coolers and
cooling units (display cases)

Serial Production
since 2009

- >1300 commercial R744 refrigeration units in operation across Europe, most of them with K65® tubes, some of them for more than 5 years
- No field problems reported.





For further information
please refer to our brochure

Wieland K65[®]

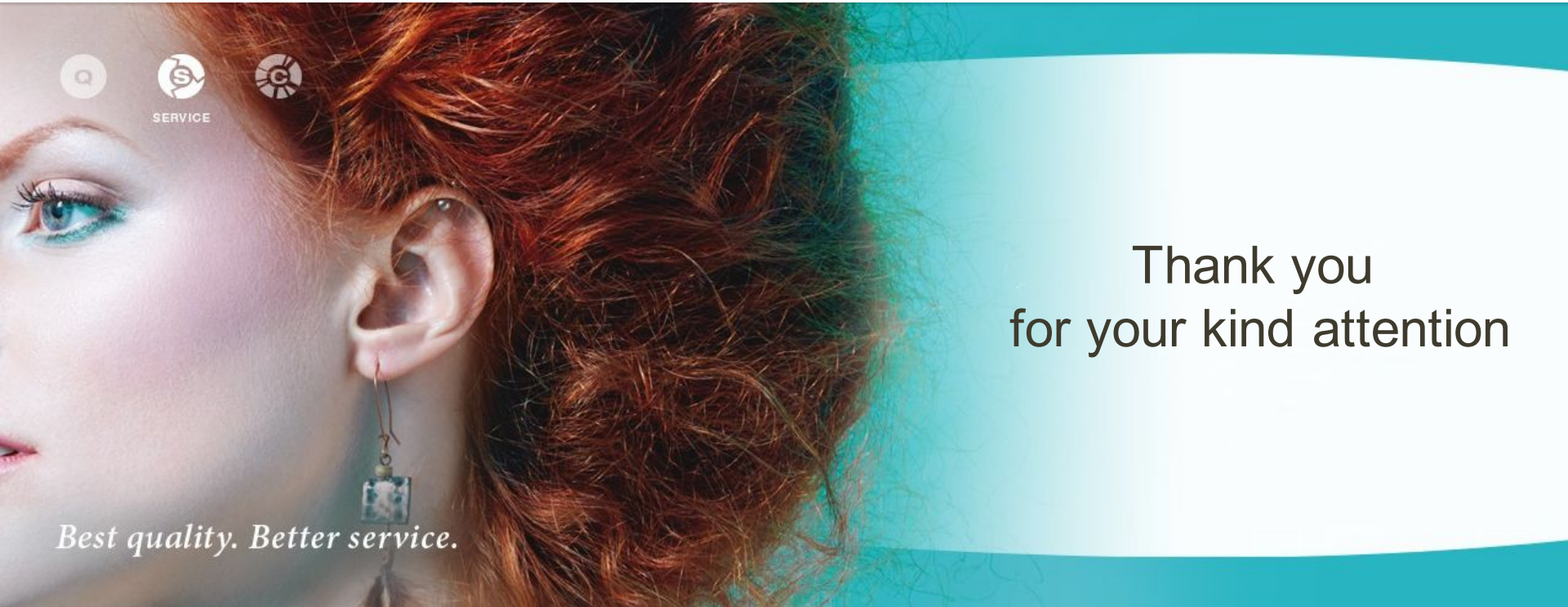
The tube system for
high-pressure applications

and / or to our websites

www.k65-system.com

www.wieland-industrialtubes.com





Thank you
for your kind attention

Best quality. Better service.