K65®

The tube system for high-pressure applications

The K65 tube system has been developed in response to the use of CO_2 R744 as an environmentally friendly refrigerant in the commercial field, especially that of supermarket refrigeration systems. The use of CO_2 as a refrigerant led to high operating pressures, and therefore variations in the gauge of tube being specified. K65 simplifies the selection process, as the Wieland K65 alloy provides the mechanical strength high enough to withstand the huge pressure ratings required. K65 has already been used with success in electrical engineering and the automotive industry, and is a safe and economical installation in refrigeration systems with high operating pressures.

Applications
High-pressure tube systems, particularly when CO_2 is used as a refrigerant. K65 can be used in other fluids applications in consultation with the manufacturer.

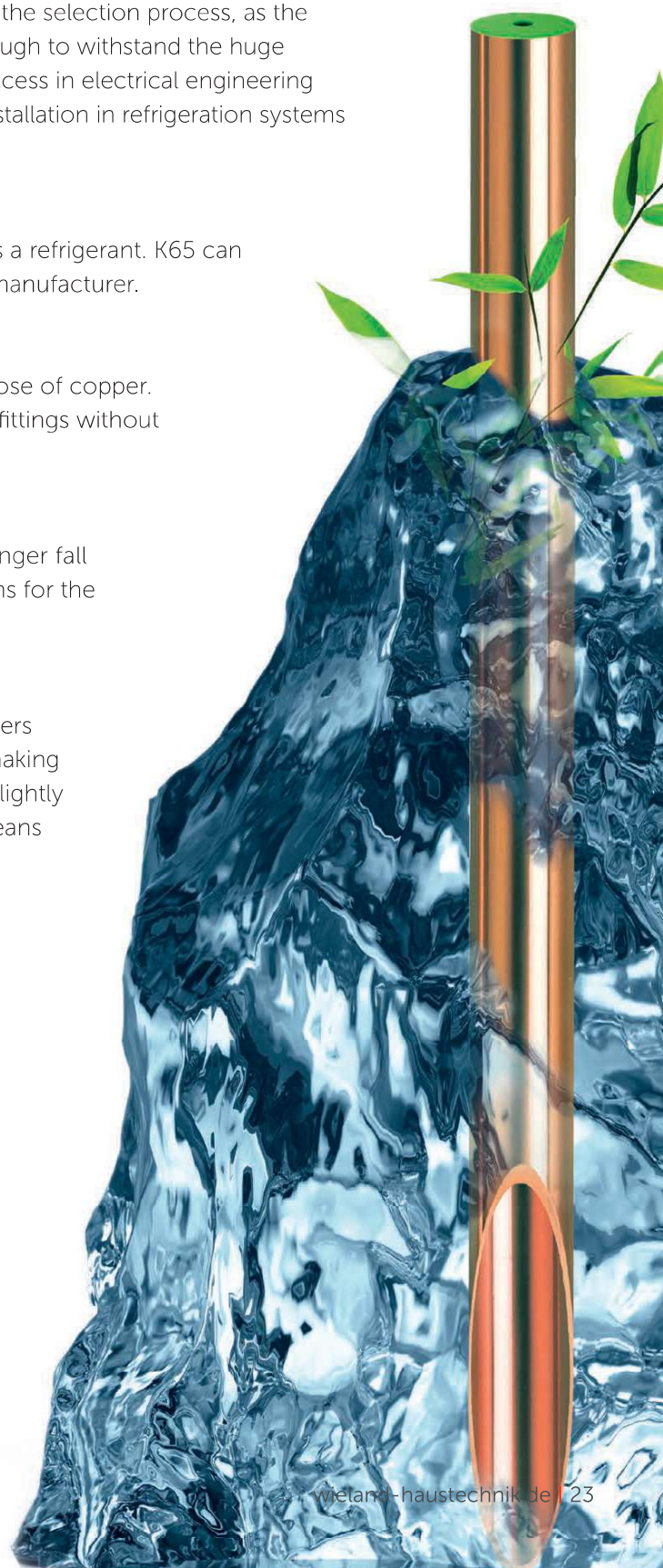
Proven joining technique
K65 has excellent processing properties that are similar to those of copper. Wieland K65 tubes can be brazed to Conex | Bänninger K65 fittings without any need for expensive or special equipment.

Safety ensured by two well-known manufacturers
K65 tubes by Wieland and K65 fittings by IBP Conex | Bänninger fall under a joint system guarantee that includes CO_2 applications for the items listed in the tables below.

Easy to identify – even after installation
All K65 system components are marked with the manufacturers own mark, as well as the K65 mark and the pressure rating making them easy to identify at all times. In addition, the material is slightly magnetic and can be easily distinguished from copper by means of a strong magnet – a helpful and practical advantage.

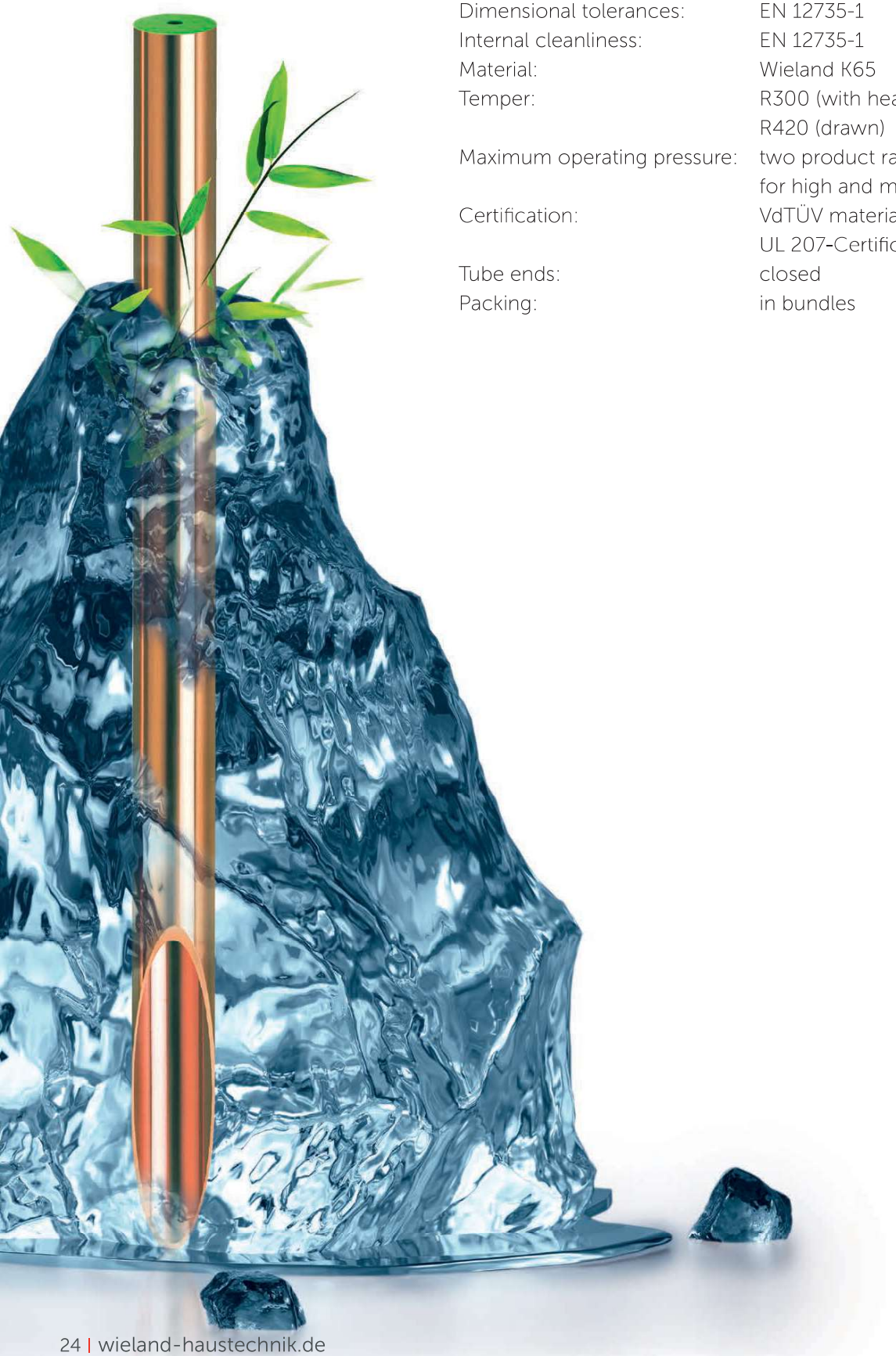
Economical
Having such a high mechanical strength, the K65 tube can be made with comparatively thin walls allowing for an conomical utilization of material, while still meeting high technical demands.

Lighter for easy handling
The thinner walls of the tubes not only saves on material, but results in a lighter weight product that is easier to handle, for example, when mounting the tubes on ceilings.



K65 Tubes

Identification:	Wieland K65
Dimensional tolerances:	EN 12735-1
Internal cleanliness:	EN 12735-1
Material:	Wieland K65
Temper:	R300 (with heat treatment) R420 (drawn)
Maximum operating pressure:	two product ranges available from stock for high and medium pressure, see tables
Certification:	VdTÜV material data sheet 567 UL 207-Certification on request
Tube ends:	closed
Packing:	in bundles



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According to the requirements of EN 14276:2020, the following dimensions are available ex stock*:

Wieland K65 tubes for up to 80 bar (at 150 °C service temperature)**, acc. to EN 14276:2020, temper R300								
Wieland material number	Dimensions		Wall thickness	Packaging unit: bundle		Packaging unit: ballot		Minimum bending radius***
	mm	inch	mm	Number of tubes per 5 m	Metres per bundle	Bundles per ballot	Metres per ballot	mm
433015878	15.87	5/8"	0.63	10	50	20	1.000	63
433019058	19.05	3/4"	0.76	10	50	20	1.000	75
433022238	22.23	7/8"	0.89	10	50	10	500	98
433028578	28.57	1 1/8"	1.2	5	25	20	500	102
433034928	34.92	1 3/8"	1.47	3	15	10	150	140
433041278	41.27	1 5/8"	1.74	3	15	10	150	140
433053978	53.97	2 1/8"	2.27	1	5	–	–	not defined

Wieland K65 tubes for up to 120 bar (at 150 °C service temperature)**, acc. to EN 14276:2020, temper R300								
Wieland material number	Dimensions		Wall thickness	Packaging unit: bundle		Packaging unit: ballot		Minimum bending radius***
	mm	inch	mm	Number of tubes per 5 m	Metres per bundle	Bundles per ballot	Metres per ballot	mm
433009522	9.52	3/8"	0.56	20	100	20	2,000	43
433012702	12.70	1/2"	0.75	20	100	20	2,000	52
433015872	15.87	5/8"	0.93	10	50	20	1,000	63
433019052	19.05	3/4"	1.19	10	50	20	1,000	75
433022232	22.23	7/8"	1.38	10	50	10	500	98
433028572	28.57	1 1/8"	1.78	5	25	20	500	102
433034922	34.92	1 3/8"	2.17	3	15	10	150	140
433041272	41.27	1 5/8"	2.56	3	15	10	150	140
433053972	53.97	2 1/8"	3.35	1	5	–	–	not defined

* *Other dimensions are available on request.*

** *K65 tubes are suitable for temperatures down to –196 °C.*

*** *The dimensions mentioned here can be cold bent with suitable bending equipment and bending segments that are precisely tailored to the outside diameter. Hot bending is not recommended. Industrial bending machines also enable tighter bending radii. Bending of hairpins is possible on suitable bending equipment.*

Processing information

The processing instructions for the installation of copper tubes according to EN 378 common for refrigeration are to be followed. Please refer to the K65 installation instructions. The safety precautions for high-pressure systems, particularly for pressure testing and commissioning have to be observed!

Application of different tubes

Refrigeration and air conditioning	Symbol	Product
Safety refrigerant		cupromed cuprofrio cuprofrio.plus cuprogeo K65
H-FCKW (Halogenated flourochlorocarbon) no longer permitted!		
H-FKW, e.g. R134a, R404A, R407C, R410A, R507		
Flammable refrigerants	C_nH_n	
Others		
Carbon dioxide*	CO_2	
Ammonia	NH_3	currently not permitted!

Technical gases	Symbol	Product
Noble gases		cupromed cuprofrio cuprogeo
Helium	He	
Neon	Ne	
Argon	Ar	
Krypton	Kr	
Xenon	Xe	
Radon	Rn	
Inert gases		
Nitrogen	N_2	
Carbon dioxide*	CO_2	
Sulphur hexafluoride	SF_6	
Fuel gases		
Hydrogen	H_2	cupromed, cupro-frio, cuprogeo
Methane	CH_4	Please contact us regarding technical set of rules
Liquid gases	C_nH_n	
Coke oven gas		
Acetylene**	C_2H_2	Copper not permitted!

Medical technology and laboratory gases	Symbol	Product
Oxygen	O_2	cupromed
Nitrogen	N_2	
Carbon dioxide*	CO_2	
Nitrous oxide	N_2O	
Argon	Ar	
Helium	He	
Xenon	Xe	
Compressed air with cleanliness requirements according to ISO 8573-1 and for medical purposes		
Vacuum		

* *The gas must be absolutely dry, as in the case, for example, in compressed air cylinders. Respect the maximum operating pressure of the tubes. For high pressures (e.g. 120 bar), use K65 tubes.*

** *Formation of the highly explosive copper acetylide possible! To observing regulations: „Industrial Safety Ordinance" (BetrSichV) and „Technical rules for acetylene plants and Calcium Carbide Bearings "(TRAC).*