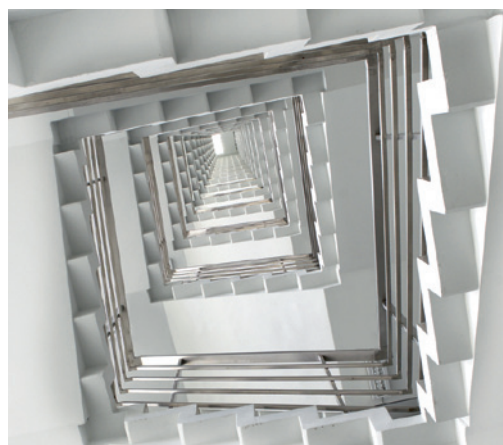




aperam
made for life

Our stainless steel tubes for automotive, decorative and other industries

Applications



Applications



Decotubes packaging



Typical DECO

Diameter	Thickness	
	1,5	2
33,7	x	x
35	x	x
38	x	x
40	x	x
42	x	x
42,4	x	x
45	x	x
48	x	x
48,3	x	x
48,6	x	x
50	x	x
50,8	x	x
52	x	x
54	x	x
55	x	x
57	x	x
57,2	x	x
60	x	x
60,3	x	x
63,5	x	x
65	x	x
70	x	-

Other diameters on request.

Applies to grades

Grades		
EN	AISI	US
1.4301	304	UNS30400
1.4307	304L	UNS30403

Other grades on request.

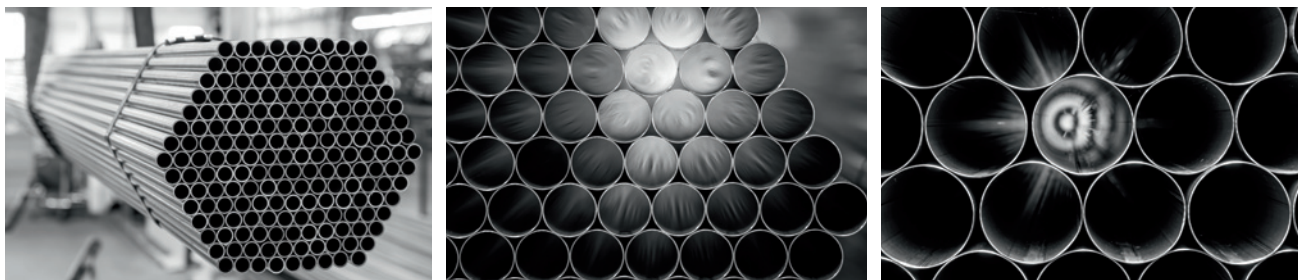
Surface treatment
Mill finished (as welded)
Brushed (spazzolato)
Polished Satin
Polished Mirror

Other surfaces on request

Round tubes



Stainless Services & Solutions Tubes CZ s.r.o.
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Mechanical characteristics on the most frequent grades

Grades			YS* [MPa]	UTS* [MPa]	Elongation* [%]	Expansion* [%]	Cone expansion* [%]
KARA	EN	AISI					
K41X	1.4509	441	> 250	> 430	> 18	> 25	> 40
K39M	1.4510	430Ti	> 240	> 420	> 23	> 25	> 40
K09X	1.4512	409	> 210	> 380	> 25	> 25	> 40
K33X	1.4513	436	> 280	> 430	> 25	> 25	> 40
K44X	1.4521	444	> 280	> 400	> 20	> 25	> 40
	1.4301	304	> 230	> 500	> 40	> 35	> 50
	1.4307	304L	> 230	> 500	> 40	> 35	> 50
	1.4401	316	> 230	> 500	> 40	> 35	> 50
	1.4541	321	> 220	> 540	> 40	> 35	> 50
	1.4828	309S	> 230	> 550	> 40	> 35	> 50

General tolerances

Diameter	Long tubes	Cut tubes
		standard D4 (ISO 1127: ± 0,5%)
Thickness	standard T3 (ISO 1127: ± 10%)	
Length	< 500 mm	± 0,5 mm
	500 ≤ L < 2000 mm	-0/+1 mm
	2000 ≤ L < 3000 mm	-0/+2 mm
	5500 ≤ L < 7500 mm	-0/+5 mm
Linearity	2 mm/m	
Internal weld bead height	-0/+0,2 mm	

Typical chemical composition

KARA	EN	AISI		C	Si	Mn	Cr	Cr	Ni	Ni	N	Mo	Mo	Ti	Ti	Nb	Nb
				max.	max.	max.	min.	max.	min.	max.	max.	min.	max.	min.	max.	min.	max.
K41X	1.4509	441	X2CrTiNb18	0,030	1,000	1,000	17,500	18,500						0,100	0,690	3x C+0,3	1,0
K39M	1.4510	430Ti	X3CrTi17	0,050	1,000	1,000	16,000	18,000						4x(C+N)+0,15	0,800		
K09X	1.4512	409	X2CrTi12	0,030	1,000	1,000	10,500	12,500			0,030			6x(C+N)	0,650		
K33X	1.4513	436	X2CrMoTi17-1	0,020	0,500	0,500	17,000	18,000		0,500	0,020	0,800	1,000	0,300	0,500		
K44X	1.4521	444	X2CrMoTi18-2	0,025	1,000	1,000	17,000	20,000			0,030	1,800	2,500	4x(C+N)+0,15	0,800		
	1.4301	304	X5CrNi18-10	0,070	1,000	2,000	17,000	19,500	8,000	10,500	0,110						
	1.4307	304L	X2CrNi8-9	0,030	1,000	2,000	17,500	19,500	8,000	10,500	0,110						
	1.4401	316	X5CrNiMo17-12-2	0,070	1,000	2,000	16,500	18,500	10,000	13,000	0,110	2,000	2,500				
	1.4541	321	X6CrNiTi18-10	0,080	1,000	2,000	17,000	19,000	9,000	12,000				5xC	0,700		
	1.4828	309S	X15CrNiSi20-12	0,200	2,500	2,000	19,000	21,000	11,000	13,000	0,110						

*Values are indicative, all depend on diameter and thickness

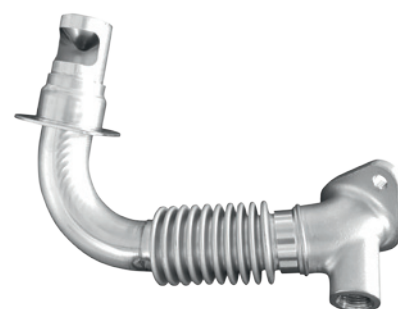
Production Range



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Typical exhaust's applications

Grades			Surface condition	Standard application
KARA	EN	AISI		
K41X	1.4509	441	FERRITIC 2D	Manifold area (hot part), catalytic converter, downpipe T<950°C
K39M	1.4510	430Ti		Connecting pipe, rear pipe
K09X	1.4512	409		Catalytic converter, silencer connecting pipe, cold part T<800°C
K33X	1.4513	436		Cold pipe, manifold area (hot part), converter, downpipe, connecting pipe, silencer T<950°C
K44X	1.4521	444		Hot pipe T<1050°C
	1.4301	304	AUSTENITIC 2B	Visible end pipe, cold part
	1.4307	304L		Visible end pipe, cold part
	1.4401	316		Manifold area
	1.4541	321		Manifold area (hot part)
	1.4828	309S		Hot pipe



Production range

Diameter	Thickness					
	0.8	1.0	1.2	1.5	1.8	2.0
8						
10						
12						
14						
15						
18						
20						
22						
25						
28						
30						
32						
33						
33,7						
34						
35						
38						
38,1						
40						
42						
42,4						
42,7						
43						
44,5						
45						
46,2						
48						
48,3						
48,6						

Diameter	Thickness					
	0.8	1.0	1.2	1.5	1.8	2.0
50						
50,8						
51,5						
52						
53						
54						
55						
57						
57,2						
60						
60,3						
60,5						
63						
63,5						
65						
70						
75						
76,2						
80						
88,9						
101,6						
108						
114,3						
127						
129						
139,7						
154						
168,3						

- LASER
- HF or LASER

Standards used for tubes and material:

EN 10088-2 (raw material)
 EN 10296-2 (tubes)

Dimension standards:

ISO 1127

Company certification:

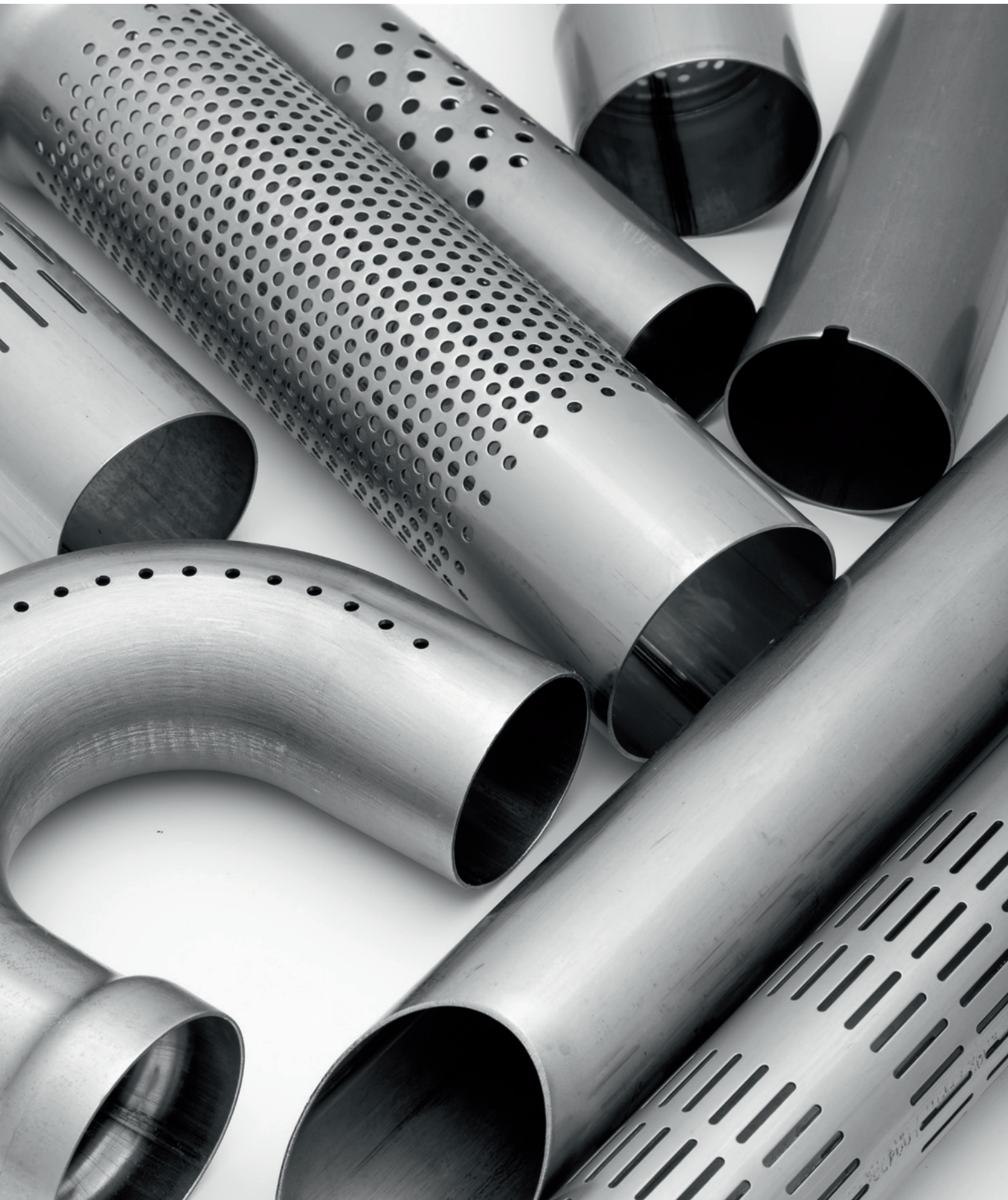
IATF 16949
 ISO 9001
 ISO 14001
 OHSAS 18001 / ISO 45001

Other dimensions or grades on request.

Manipulated tubes



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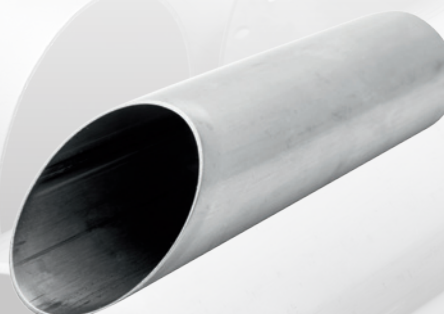
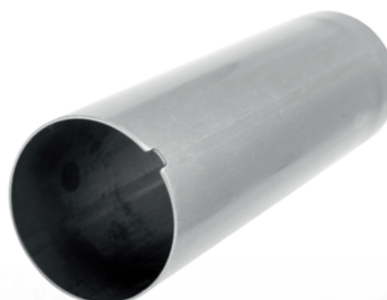


Perforation on tube

First a plain long tube is produced, then cut and perforated on a perf. machine.

Perforation on strip

Here already the strip is perforated with a press. Then it's formed and weld into a long perforated tube and cut to the specified length.



Standard packaging



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Long tubes in hexagonal bundles



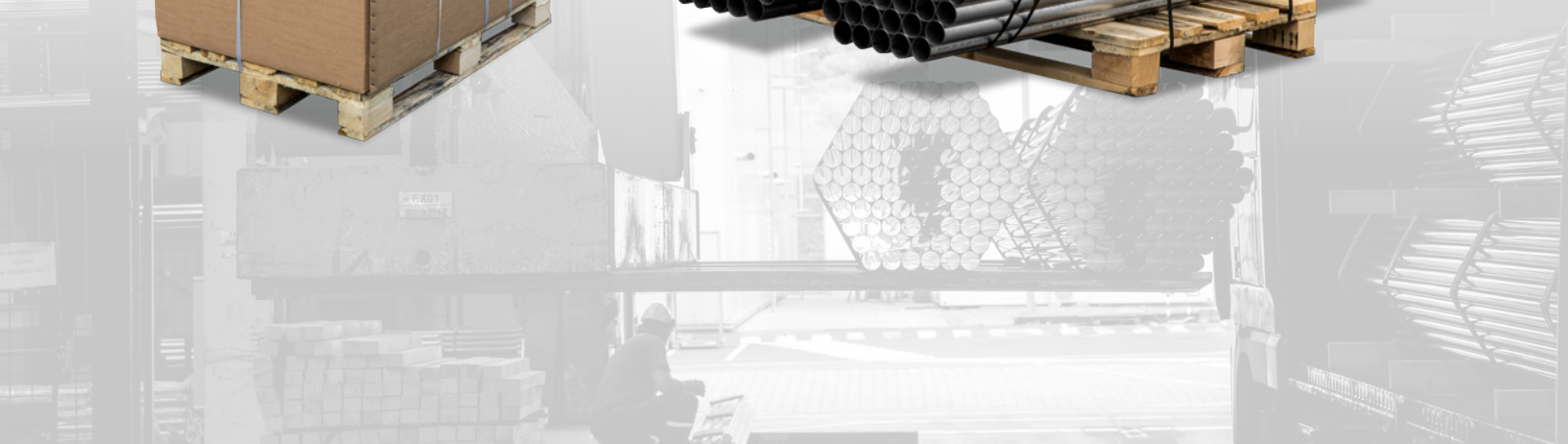
Gitterboxes



Paperbox



Fix length tubes on pallets

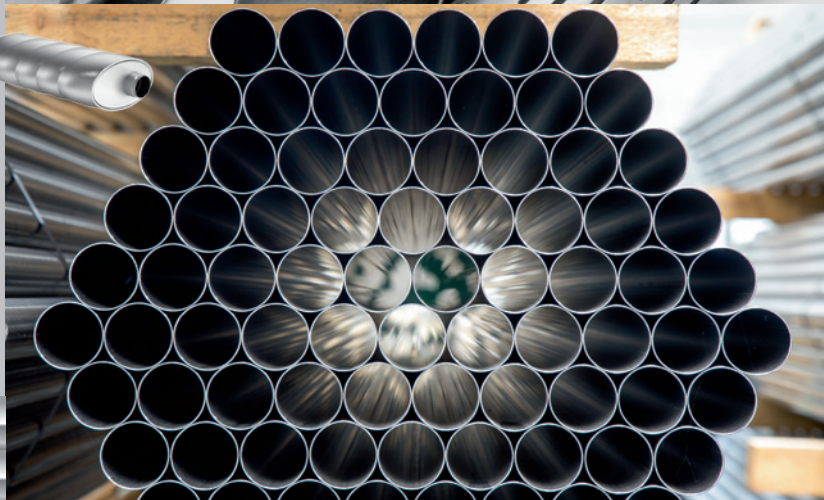


KLT



Various types of packaging





Aperam Ústí

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