



# BUTTING

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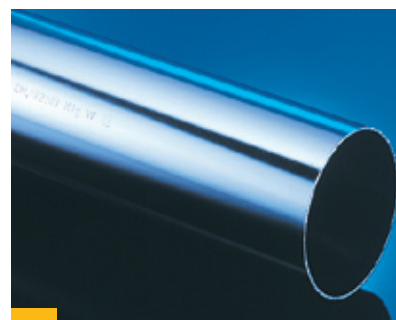
# Stainless steel pipes for the food industry

made in Germany

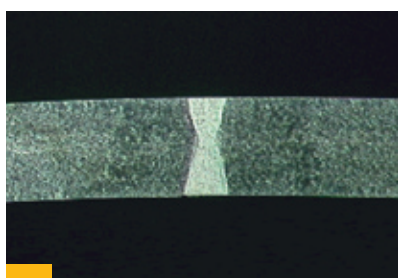
## Stainless steel pipes for the food and beverage industry according to DIN 11850

Since the development of stainless steel, the core activity of our business has been the production of longitudinally welded stainless steel pipes of supreme quality. Almost no other company in Europe is able to look back at such long experience

and variety in the production of stainless steel pipes. Today and in the future we prove our competence in the forming, jointing and material techniques. Stainless steel pipes, meeting constantly revised high hygienic and corrosive



**Pipe with outside surface ground for the food industry**



**Macrograph of a laser weld**



**Clear advantage – full body pickling of the inside and outside surface**

requirements, are the basis of the machining for selected food and beverages.

As one of the most specialized producers of selected stainless steel pipes for the food, pharmaceutical and chemical industries in Germany we adhere not only strict to DIN 11850, but also realize higher demands.

### Comparable materials according to DIN, EN and ASTM standards

Material number	Material according to the following standard	C ≤	Si ≤	Mn ≤	P max.	S ≤	N ≤	Cr	Mo	Ni
<b>V2A</b>										
1.4301	DIN EN 10217-7	0.07	1.0	2.0	0.045	0.015	0.11	17.0 19.5	—	8.0 10.5
304	ASTM A269/270	0.08	0.75	2.0	0.045	0.030	0.10	18.0 20.0	—	8.0 10.5
1.4307	DIN EN 10217-7	0.03	1.0	2.0	0.045	0.015	0.11	17.5 19.5	—	8.0 10.0
304L	ASTM A269/270	0.03	0.75	2.0	0.045	0.030	0.10	18.0 20.0	—	8.0 12.0
<b>V4A</b>										
1.4404	DIN EN 10217-7	0.03	1.0	2.0	0.045	0.015	0.11	16.5 18.5	2.0 2.5	10.0 13.0
316L	ASTM A269/270	0.03	0.75	2.0	0.045	0.030	0.10	16.0 18.0	2.0 3.0	10.0 14.0

No guarantee for correctness



## Your advantages through guaranteed quality

### BUTTING offers:

- low surface roughnesses through selective raw material procurement with  $R_a < 0.5 \mu\text{m}$
- absolute standard conformity, i. e. tolerances of form and position of our stock pipe dimensions strictly adhere to line 2 of DIN 11850
- tight tolerances for pipe end ovality, straightness and angular deviation, optimizing the required orbital welding technique at site for the circumferential seams
- absolutely lowest  $R_a$ -values of the inside weld area by our laser welding process for DN 15 to DN 100
- the option for improvement of the mechanical properties and corrosion resistance by heat treatment



**Roughness measurement of inside surface of longitudinally welded pipes**

Stock programme				Materials:		1.4301 / TP 304		1.4307 / TP 304L		1.4404 / TP 316L	
DN/NB	OD (mm)	s (mm)	Pipe weight (kg/m)**	CC	BC	CC	BC	CC	BC	CC	BC
15 *	18.0	1.50	0.62	●	●	●	●	●	●	●	●
15	19.0	1.50	0.66	●	●	●	●	●	●	●	●
20 *	22.0	1.50	0.77	●	●	●	●	●	●	●	●
20	23.0	1.50	0.81	●	●	●	●	●	●	●	●
25 *	28.0	1.50	1.00	●	●	●	●	●	●	●	●
25	29.0	1.50	1.03	●	●	●	●	●	●	●	●
32 *	34.0	1.50	1.22	●	●	●	●	●	●	●	●
32	35.0	1.50	1.26	●	●	●	●	●	●	●	●
40 *	40.0	1.50	1.45	●	●	●	●	●	●	●	●
40	41.0	1.50	1.50	●	●	●	●	●	●	●	●
50 *	52.0	1.50	1.90	●	●	●	●	●	●	●	●
50	53.0	1.50	1.93	●	●	●	●	●	●	●	●
65	70.0	2.00	3.41	●	●	●	●	●	●	●	●
80	85.0	2.00	4.16	●	●	●	●	●	●	●	●
100	104.0	2.00	5.11	●	●	●	●	●	●	●	●
125	129.0	2.00	6.36	●	●	●	●	●	●	●	●
150	154.0	2.00	7.61	●	●	●	●	●	●	●	●
200	204.0	2.00	10.12	●	●	●	●	●	●	●	●

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Designs CD and BD (with ground outer surface) available on request.

\*) similar DIN 11850 \*\*\*) indications of weight are approximate values

- **full body pickling** – the constant and complete cleaning of the entire inside and outside surfaces removing deposits and tinting and guaranteeing the complete formation of a passive layer
- a complete documentation of the roughness measurements during the production in order to improve the hygiene levels of the prospective facility
- 100 % non-destructive testing of the weld seams by means of eddy-current testing
- pipe testing according to EN 10217-7 (TC1 or TC2)
- an additional labelling with the reference "made by BUTTING in Germany"
- the possibility of increasing pipe testing according to AD2000-Merkblatt W2

- additional protection of pipe inside surfaces by closing pipe ends with plastic caps
- an optional perennial guarantee of quality to be agreed contractually for the delivery of faultless and standard conforming products, appropriately processed
- the availability of different materials (see table material comparison)
- constant stock of pipes according to DIN 11850 in the materials 1.4301 / AISI 304, 1.4307 / AISI 304 L and 1.4404 / AISI 316 L

No compromise with your pipe selection – they are the lifeline of your products!

**Surface roughnesses and conditions comparative table following DIN 11850**

Production process and raw material	Status of heat treatment	Surface condition and roughness			Abbreviations according to table 4
		Inside surface	Inside weld area	Outside surface and weld area	
welded, inside weld rolled, cold-rolled parent metal according to DIN EN 10088-2 table 6, 2B or 2R	not annealed	$R_a < 0.80 \mu\text{m}$ pickled and passivated	$R_a < 1.60 \mu\text{m}$ pickled and passivated	pickled and passivated	CC
				ground $R_a < 1.00 \mu\text{m}$	CD
welded, inside weld rolled, cold-rolled parent metal according to DIN EN 10088-2 table 6, 2B or 2R	annealed	$R_a < 0.80 \mu\text{m}$ pickled and passivated or bright annealed	$R_a < 1.60 \mu\text{m}$ pickled and passivated or bright annealed	pickled and passivated or bright annealed	BC
				ground $R_a < 1.00 \mu\text{m}$	BD

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