

Rechentafel 1

				Schnitte			
Nr.	Beziehung	Rechnung	Bemerkung	Nabe	Mitte	Außen	Einheit
1	t/l		gewählt				
2	β_1		Geschw-Dreieck	41.6	30.4	25.2	°
3	β_2		"	77.4	42.2	31.2	°
4	$\cot \beta_1 = 1/\tan \beta_1$			1.13	1.70	2.13	
5	$\cot \beta_2 = 1/\tan \beta_2$			0.22	1.10	1.65	
6	$\cot \beta_\infty$			0.67	1.40	1.89	
7	$\beta_\infty=90^\circ-\arctan$			56.0	35.5	27.9	°
8	w_{1u}		Geschw-Dreieck	98.02	148.07	185.04	m/s
9	w_{2u}		Geschw-Dreieck	19.48	96.08	143.44	m/s
10	$\Delta w_u = w_{1u} - w_{2u}$	[8]-[9]		78.54	51.99	41.60	m/s
11	$w_\infty = \sqrt{w_{\infty u}^2 + c_m^2}$			104.94	149.88	185.84	m/s
12	$c_\alpha \cdot l/t$	Gitterbelastungszahl		1.50	0.70	0.44	
13	$\frac{t}{l} \approx \frac{(0,4 \dots 0,5) w_\infty}{\Delta w_u}$			0.60	1.30	2.01	
14	c'_w	f(12, 13)	Diagr. 1	0.038	0.02	0.016	
15	$1-c_a/c_{a,th}$	f(14)	Diagr. 2	0.12	0.12	0.12	
16	$c_a/c_{a,th}=1-(1-c_a/c_{a,th})$	1-[15]		0.88	0.88	0.88	
17	$c_{a,th} \cdot l/t$	[12]/[16]		1.70	0.79	0.50	
18	$2 \cdot \sin \beta_{\infty,th}$		(*)	1.66	1.16	0.94	
19	(**)	[17]/[18]		1.03	0.68	0.54	
20	$\cot \beta_{2,th}$	[4]-[19]		0.10	1.02	1.59	
21	$\cot \beta_{\infty,th}$	0,5*([20]+[4])		0.61	1.36	1.86	
22	$\beta_{\infty,th}$			58.48	36.27	28.32	°
23	$\beta_{2,th}$			84.27	44.41	32.22	°

(*) 1. Iteration $\beta_{\infty,th}=\beta_\infty$, 2.Iteration $\beta_{\infty,th} n=\beta_{\infty,th} n-1$

(**)

$$c_{a,th} \cdot \frac{l}{t} \Big/ 2 \sin \beta_{\infty,th}$$

theoretische Werte berücksichtigen Gittereinfluss

$$w_u = u - c_u$$

$$w_{\infty u} = \frac{w_{1u} + w_{2u}}{2}$$

$$c_\alpha \cdot \frac{l}{t} = 2 \cdot \sin \beta_\infty (\cot \beta_1 - \cot \beta_2)$$