

Rohr widerstandsbeiwert  $\lambda$

$$\lambda^{\frac{1}{2}} = 1,14 - 2 \cdot \lg \frac{k}{d}$$

rau-turbulente Strömung

relative Rauigkeit  $d/k = 100$

200

500

1000

2000

$$\lambda = \frac{64}{Re}$$

$$\lambda = \frac{0,3164}{Re^{0,25}}$$

hydr. glattes Rohr  $k = 0$

$10^3$

2

3

4

5

6

8

$10^4$

2

3

4

5

6

8

$10^5$

2

3

4

5

6

8

$10^6$

$$Re = \frac{c \cdot d}{\nu}$$

laminare

turbulente Strömung

$$Re_{krit} = 2300$$