

Measurement of pressure losses of pipes and elbows

Measurement 6.

Name, Neptun:

Course:

Lecturer:

Students:

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Place of measurement:

Date:

Signature:

1. Aim of the measurement:

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2. Short description of the measurement:

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3. Sketch of the test rig:

4. Formulae for the evaluation:

5. Devices used during the measurement:

- Pump:

- Multi-manometer:

6. Shape loss coefficient for different radii of curvature

	1	2	3	4	5	6
R/d [-]						
$\zeta_{\text{shape average}}$ [-]						

7. Summary of the measurement (*in a few sentences*)

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8. Attachments

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Name:
Course:

Neptun:
Date:

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R ₁ /d [-]	R ₂ /d [-]

The calculated constant C: C= [], l₁₂=_____ [mm], R₁=_____ [mm], R₂=_____ [mm]

	h ₁	h ₂	h ₃	h ₄	h ₅	h ₆	h ₇	h ₂ - h ₃	h ₄ - h ₅	$Q = C\sqrt{h_6 - h_7}$	$\bar{v} = Q / A$	ζ_{shape1} [-]	ζ_{shape2} [-]
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[cm ³ /s]	[m/s]	l ₂₃ =	l ₄₅ =
1.													
2.													
3.													
4.													
5.													
6.													
7.													
8.													

Formulae:

$$\Delta p = \rho g \Delta h; \zeta_{shape} = \frac{\Delta p}{\frac{\rho}{2} \bar{v}^2} - \lambda \frac{l}{d}, \text{ where: } \lambda = 0.019; d = 0.02 \text{ m;}$$

$$\lambda_{measurd} = \frac{\Delta p_{12}}{l_{12} \frac{\rho}{2} \bar{v}^2} =$$

$\zeta_{shape1_ave.}$	$\zeta_{shape2_ave.}$