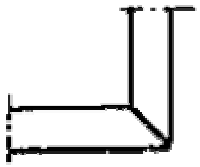
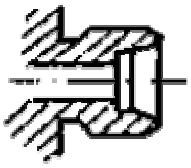
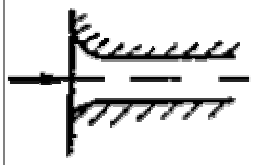
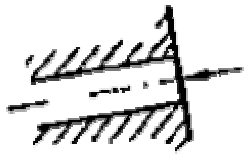
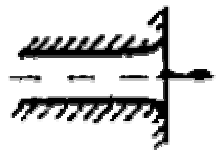
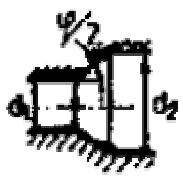
# Straty ciśnienia w linii

<table>
<tr><th>Element</th><th>Współczynnik strat miejscowych</th></tr>
<tr><td>  </td><td>
<table>
<tr><td>$r_g/D_z$</td><td>1</td><td>2</td><td>4</td><td>6</td><td>10</td></tr>
<tr><td>gładkie</td><td>0.21</td><td>0.14</td><td>0.11</td><td>0.09</td><td>0.11</td></tr>
<tr><td>chropowate</td><td>0.51</td><td>0.30</td><td>0.23</td><td>0.18</td><td>0.20</td></tr>
</table>
</td></tr>
<tr><td>  </td><td>$\zeta$ = 1.65 ... 2.1</td></tr>
<tr><td>  </td><td>$\zeta$ = 0.1 ... 0.15</td></tr>
<tr><td>  </td><td>$\zeta$ = 0.5 (ostra krawędź)<br>$\zeta$ = 0.25 (lekko załamana krawędź)</td></tr>
<tr><td>  </td><td>$\zeta$ = 0.05</td></tr>
<tr><td>  </td><td>$\zeta$ = 1</td></tr>
<tr><td>  </td><td>$\zeta$ = 0.12</td></tr>
<tr><td>  </td><td>
<table>
<tr><td>$d_2/d_1$</td><td>$\varphi$= 5 ... 30 [deg]</td><td>$\varphi$= 30 ... 60 [deg]</td></tr>
<tr><td>12 ... 2</td><td>0.8 ... 0.22</td><td>0.22 ... 0.3</td></tr>
<tr><td>2 ... 3</td><td>1 ... 0.54</td><td>0.32 ... 0.75</td></tr>
<tr><td>3 ... 4</td><td>0.12 ... 0.55</td><td>0.38 ... 0.8</td></tr>
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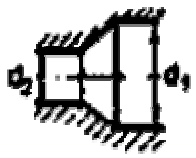
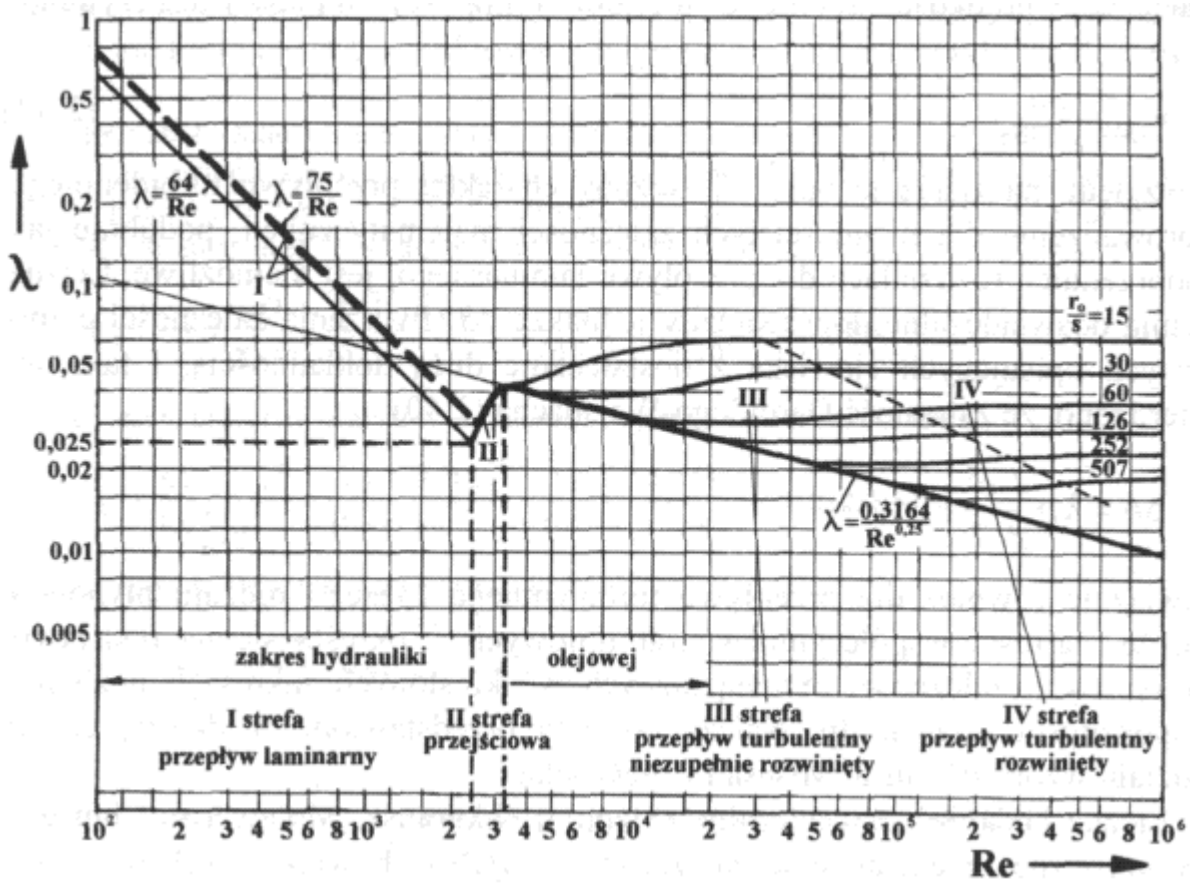
<tr><td>  </td><td>$\zeta_1 = \zeta (1 - d_2/d_1)$<br>gdzie:<br>$\zeta$ - współczynnik spadku ciśnienia na wlocie</td></tr>
<tr><td>  </td><td><table>
<tr><td>% otwarcia</td><td>10</td><td>20</td><td>30</td><td>40</td><td>50</td><td>60</td><td>70</td><td>80</td><td>90</td><td>100</td></tr>
<tr><td>$\zeta$</td><td>100</td><td>35</td><td>10</td><td>4.5</td><td>2</td><td>1</td><td>0.4</td><td>0.2</td><td>0.06</td><td>0.05</td></tr>
</table></td></tr>
<tr><td>  </td><td>$\zeta = 1$</td></tr>
</table>




Zależność współczynnika oporów liniowych od liczby Reynoldsa