Pipe diameter calculation

Initial data

10 m3/h   Water flow rate

DN 80 mm   Nominal pipe diameter

Calculation results

Steel pipe 89x3,5 [mm]

0.00528 [m2]	The area of the through bore
496 [m3/h]	Kvs - flow coefficient
$(10 / 496)^2 * 100\,000 = 41$ [Pa/m]	Specific pressure losses
$10 / (0.00528 * 3600) = 0.53$ [m/s]	Flow velocity

Polypropylene pipe PP 90x8,2 [mm]

0.00425 [m2]	The area of the through bore
436 [m3/h]	Kvs - flow coefficient
$(10 / 436)^2 * 100\,000 = 53$ [Pa/m]	Specific pressure losses
$10 / (0.00425 * 3600) = 0.65$ [m/s]	Flow velocity

Copper pipe 89x2,0 [mm]

0.00567 [m2]	The area of the through bore
500 [m3/h]	Kvs - flow coefficient
$(10 / 500)^2 * 100\,000 = 40$ [Pa/m]	Specific pressure losses
$10 / (0.00567 * 3600) = 0.49$ [m/s]	Flow velocity

NPS - Nominal pipe size
American standard

DN - Nominal diameter
Metric unit system

NB - Nominal bore
European standard