

Fig. 2: Temperature of the flow medium

For the individual fitting resistance values given in the chart below (fig. 3) can be applied by approximation. The individual joint resistance values can be determined altogether. As a standard value add an extra of 3% to 5% to the overall pressure drop.







Outside pipe diameter d mm	Drag coefficient ζ			
	16 20 25	32 40	50 63	≥ 63
	1,5	1,0	0,6	0,5
	2,0	1,7	1,1	0,8
	0,3			
	1,5			
 Stream in	0,5			
 Stream out	1,0			

Fig. 3: Pressure drop in fittings

Minimum flow pressures

Reference values for the minimum flow pressures and calculated flows for generally used drinking water service points

Minimum flow pressure $P_{min FI}$ bar	Type of drinking water service points		Calculated flow for outlet of		
			Mixed water		Either cold or hot water
			Volume flow cold l/s	Volume flow hot l/s	Volume flow l/s
0.5	outlet valve without air whirler	DN 15	-	-	0.30
0.5		DN 20	-	-	0.50
0.5	with air whirler	DN 25	-	-	1.00
1.0		DN 10	-	-	0.15
1.0		DN 15	-	-	0.15
1.0	shower heads for clinsing showers	DN 15	0.10	0.10	0.20
1.2	Pressure rinser in acc.to DIN 3265 part 1	DN 15	-	-	0.70
1.2	Pressure rinser in acc.to DIN 3265 part 1	DN 20	-	-	1.00
0.4	Pressure rinser in acc.to DIN 3265 part 1	DN 25	-	-	1.00
1.0	Pressure rinser for urinals	DN 15	-	-	0.30
0.5	corner valve for urinals	DN 15	-	-	0.30
1.0	household dishwasher	DN 15	-	-	0.15
1.0	household washing machine	DN 15	-	-	0.25
1.0	mixer for showers	DN 15	0.15	0.15	-
1.0	bath tubs	DN 15	0.15	0.15	-
1.0	kitchen sinks	DN 15	0.07	0.07	-
1.0	wash-stands	DN 15	0.07	0.07	-
1.0	bidet	DN 15	0.07	0.07	-
1.0	mixer	DN 20	0.30	0.30	-
0.5	flushing box acc.to DIN 19542	DN 15	-	-	0.13
1.0	heater for drinking water for supply of service point (incl. fitting for mixed outlet) electric water boiler	DN 15	-	-	0.10*
1.1**	electric hot water tank and boiler with nominal contents 5 – 15 l	DN 15	-	-	0.10
1.2**	with nominal contents 30 – 150 l	DN 15	-	-	0.20
1.5	electric flow water heater with hydraulic test, without flow limitation nominal capacity	12 kW	-	-	0.06
1.9		18 kW	-	-	0.08
2.1		21 kW	-	-	0.09
2.4		24 kW	-	-	0.10
1.0	gas flow water heater	12 kW	-	-	0.10

* with fully opened throttle valve ** values under unfavourable conditions (shower)

Note: Service points which are not included in the table and devices of similar kind with larger flow of fittings than indicated are to be taken into account according to the recommendations of the producer as far as determination of pipe diameter is concerned