



Cold
water

GWF

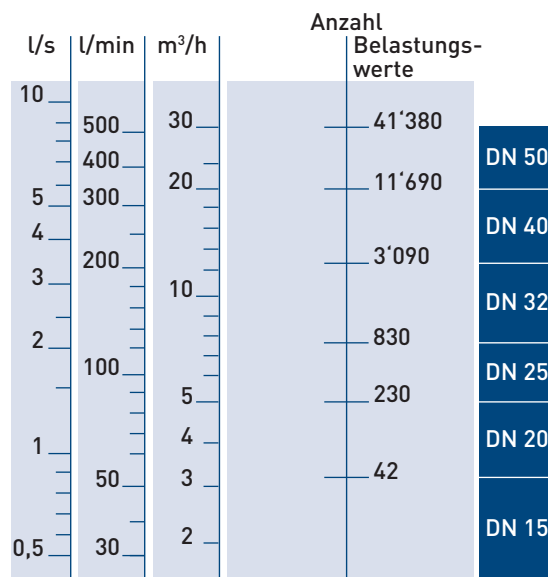
Reference values for determining water meters

Loading units (LU) of fittings and instruments (according to SVGW W3d 2013)

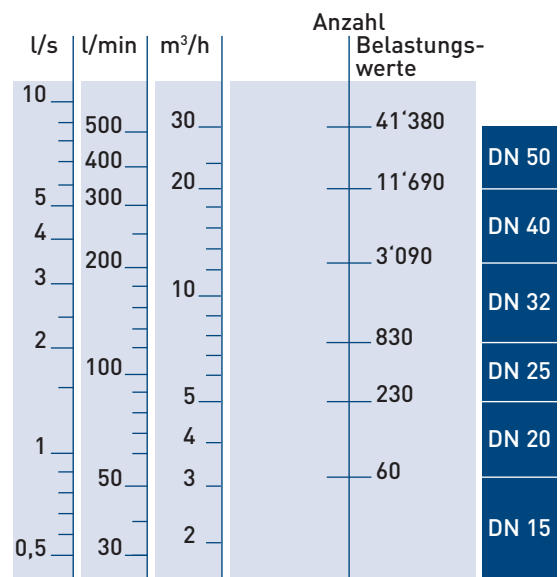
Intended use: Connections DN 15 (½")	Tap fitting flow Q_A per connection		No. of loading units	
	Cold l/s	Hot l/s	Cold LU	Hot LU
WC cistern, drinks machine, household dishwasher	0,1	-	1	-
Wash basin, wash trough, bidet, hairdressing wash basin	0,1	0,1	1	1
Household washing machine, tap fitting for balconies	0,2	-	2	-
Shower, sink, large wash basin, cleaners sink, standing and wall-hung basin	0,2	0,2	2	2
Automatic urinal flushing	0,3	-	3	-
Bath tub	0,3	0,3	3	3
Tap fitting for gardens and garages	0,5	-	5	-

Normal installation

Residential construction
Largest tap connection 5 LU



Residential construction
Largest tap connection 3 LU



Reference values for determining water meters

Pt. 1: Determination of the total flow Q_T

	Loading units (LU)			Building data	
	Cold	Hot	Total A	No. of connections B	Total (A × B)
WC cistern	1	-	1		
Drinks machine	1	-	1		
Household dishwasher	1	-	1		
Wash basin	1	1	2		
Wash trough	1	1	2		
Bidet	1	1	2		
Hairdressing wash basin	1	1	2		
Household washing machine	2	-	2		
Tap fitting for balconies	2	-	2		
Shower	2	2	4		
Sink	2	2	4		
Large wash basin	2	2	4		
Cleaners sink	2	2	4		
Standing and wall-hung basin	2	2	4		
Automatic urinal flushing	3	-	3		
Bath tub	3	3	6		
Tap fitting for gardens and garages	5	-	5		
Total loading units (LU)					
Total flow $Q_T = LU \times 0,1$ l/s					

Pkt. 2: Determining the peak flow in Q_D in m^3/h

Pkt. 3: Determining the meter size based on the peak flow Q_D in m^3/h and the Q_4 -value of the water meter ($Q_D \leq Q_4$)

Pkt. 4: Checking whether the pressure loss is ≥ 30 kPa (0,3 bar) based on the manufacturer's specifications (pressure loss diagram)

Loading units	Total flow Q_T	Peak flow Q_D	Peak flow Q_D	Pressure losses in [bar]									
				Permissible application range									
				MTK / MTKcoder® MP						sonico® NANO			
				DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 15	DN 20	DN 20	
[LU]	[l/s]	[l/s]	[m³/h]	Q_4	Q_4	Q_4	Q_4	Q_4	Q_4	Q_4	Q_4	Q_4	Q_4
				3,125 m³/h	5 m³/h	7,875 m³/h	12,5 m³/h	20 m³/h	31,25 m³/h	3,125 m³/h	3,125 m³/h	5 m³/h	
42	4.2	0.86	3.11	0.40	0.40					0.21	0.15	0.15	
50	5	0.90	3.26		0.44	0.12							0.16
75	7.5	1.00	3.61		0.51	0.14							0.20
100	10	1.08	3.89		0.60	0.16							0.23
150	15	1.20	4.32		0.75	0.20	0.12						0.28
200	20	1.32	4.76		0.82	0.23	0.13						0.34
230	23	1.39	5.00		0.99	0.25	0.16						0.38
250	25	1.43	5.15			0.28	0.17						
400	40	1.69	6.08			0.37	0.22	0.08					
500	50	1.83	6.57			0.42	0.25	0.09					
600	60	1.95	7.01			0.50	0.29	0.11					
830	83	2.18	7.86			0.62	0.37	0.14					
900	90	2.25	8.09				0.40	0.15					
1200	120	2.49	8.96				0.49	0.19					
1400	140	2.63	9.46				0.55	0.21	0.09				
1800	180	2.87	10.33				0.68	0.25	0.12				
2000	200	2.98	10.72				0.76	0.29	0.14				
3090	309	3.47	12.50				0.99	0.37	0.18				
11690	1169	5.56	20.00					0.94	0.44				

Pkt. 5: Checking the planned pressure

Building description:			
Supply pressure		[bar]	+
Difference reservoir level + Δp supply line		[bar]	- 0.4 ¹⁾
Max. Δp house connection line (external + internal)		[bar]	- 0.4
Δp water meter		[bar]	-
Δp geodetical height (1m = 0,1bar)		[bar]	-
Δp pipelines (max. 50m)		[bar]	- 1.5
Minimum flow pressure		[bar]	- 1
Total (> 0 bar --> i.O. / < 0 bar --> optimisation of pressure losses in the house-connection line by means of calculation)		[bar]	

¹⁾ Assumption, exact details according to network operator