



SAKARYA ÜNİVERSİTESİ VAKFI
YAYIN NO: 3

HİDROLİK TABLOLAR

Hazırlayanlar
Prof. Lütfi SALTABAŞ
Yük. Müh. Mustafa ŞAŞAL

SAKARYA ÜNİVERSİTESİ BASIMEVİ - 1995

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SUYUN FİZİKSEL ÖZELLİKLERİ

(SI Birim Sisteminde)

SICAKLIK (°C)	ÖZGÜL AĞIRLIK γ (N/m^3)	YOĞUNLUK ρ (kg/m^3)	DİNAMİK VİSKOZİTE, μ (Pa s)	KİNEMATİK VİSKOZİTE, ν (m^2/s), $10^{-6} \nu_v$	YÜZEY GERİLMİ, σ (N/m)	BUHARLAŞMA BASINCI, p_v (kPa)	HİCRESSEL ELASTİSİTE MODÜLÜ, K (GPa)
0	9805	999.9	1.792	1.792	762	0.6	2.04
5	9806	1000.0	1.519	1.519	751	0.9	2.06
10	9803	999.7	1.308	1.308	748	1.2	2.11
15	9798	999.1	1.140	1.141	741	1.7	2.14
20	9789	998.2	1.005	1.007	736	2.5	2.20
25	9779	997.1	0.894	0.897	726	3.2	2.22
30	9767	995.7	0.801	0.804	718	4.3	2.23
35	9752	994.1	0.713	0.727	710	5.7	2.24
40	9737	992.2	0.656	0.661	701	7.5	2.27
45	9720	990.2	0.599	0.605	692	9.6	2.29
50	9697	988.1	0.549	0.556	682	12.4	2.30
55	9679	985.7	0.506	0.513	674	15.8	2.31
60	9658	983.2	0.469	0.477	668	19.9	2.28
65	9635	980.6	0.436	0.444	658	25.1	2.26
70	9600	977.8	0.406	0.415	650	31.4	2.25
75	9589	974.9	0.380	0.390	640	38.8	2.23
80	9557	971.8	0.357	0.367	630	47.7	2.21
85	9529	968.6	0.336	0.347	620	58.1	2.17
90	9499	965.3	0.317	0.328	612	70.4	2.16
95	9469	961.9	0.299	0.311	602	84.5	2.11
100	9438	958.4	0.284	0.296	594	101.3	2.07

ATMOSFER BASINCI ALTINDA HAVANIN FİZİKSEL ÖZELLİKLERİ

(SI Birim Sisteminde)

SICAKLIK (°C)	YOĞUNLUK ρ (kg/m^3)	DİNAMİK VİSKOZİTE, μ (Pa s), $10^{-3} \mu_v$	KİNEMATİK VİSKOZİTE, ν (m^2/s), $10^{-6} \nu_v$
-18	1.382	1.57	1.171
-7	1.326	1.68	1.263
4.4	1.274	1.73	1.356
16	1.222	1.79	1.468
20	1.202	1.80	1.486
27	1.176	1.84	1.570
38	1.135	1.90	1.672
50	1.109	1.95	1.756

SI BİRİM SİSTEMİNDE ÖNİKLER

CARPAN	ÖNEK	SEMBOLE
10^{18}	exa	E
10^{15}	peta	P
10^{12}	tera	T
10^9	giga	G
10^6	mega	M
10^3	kilo	k
10^2	hecto	h
10^1	deka	da

CARPAN	ÖNEK	SEMBOLE
10^{-1}	desi	d
10^{-2}	santi	c
10^{-3}	mili	m
10^{-6}	mikro	μ
10^{-9}	nano	n
10^{-12}	pico	p
10^{-15}	femto	f
10^{-18}	atto	a

BİRİMLER ARASI ÇEVİRME FAKTÖRLERİ

ÇEVİRİLECEK	İLE ÇARP	ELDE EDİLECEK	ÇEVİRİLECEK	İLE ÇARP	ELDE EDİLECEK
acre	4047	m ²	kg	2 2046	pound
atmosfer	10333	kg/m ²	kg	35 274	ounce
atmosfer	76	cm Cıva sütunu	kg-m	9 81	joule
atmosfer	14 7	pound/ inc ²	kg-m	2.723x10 ⁻⁵	kwatt-saat
bar	0 981	atmosfer	kg/m ²	9.878x10 ⁻⁵	atmosfer
bar	1.02x10 ⁴	kg/m ²	kg/m ²	9.81x10 ⁻⁵	bar
bar	14 5	pound/ inc ⁻	kg/m ²	0.2048	pound/feet ²
centilitre	1.0x10 ⁻²	litre	kg/m ³	6.243x10 ⁻²	pound/feet ³
centipoise	1.0x10 ⁻²	gr/cm-sn	km	0.6214	mil(kara)
centipoise	6.72x10 ⁻⁴	pound/feet-sn	km	0.5396	mil(deniz)
centipoise	2 4	pound/feet-saat	kwatt	1.36	BB
cm ³	3.531x10 ⁻⁵	feet ³	kwatt-saat	3.6x10 ⁶	joule
cm ³	6.102x10 ⁻²	inc ³	litre	1.0x10 ³	cm ³
cm ³	1.0x10 ⁶	m ³	litre	0.03531	feet ³
cm ³	1.0x10 ⁻³	litre	litre	61.02	inch ³
cm/sn	3.281x10 ⁻²	feet/sn	litre	1.0x10 ⁻³	m ³
cm/sn	3.6x10 ⁻²	km/saat	litre	0.2642	galon
cm	0.03281	feet	m	1.0x10 ¹⁰	angstrom
cm	0.3937	inc	m	3.281	feet
derece(Açı)	1.745x10 ⁻²	radyan	m	39.37	inch
derece(Açı)	3.6x10 ³	sn	m	1.094	yard
derece/sn	1.667x10 ⁻¹	devir/dak	m/dak	5.468x10 ⁻²	feet/sn
devir	360	derece	m/sn	3.6	km/saat
devir	6.283	radyan	mililitre	1.0x10 ⁻³	litre
dyne	1.0x10 ⁻⁵	joule/m (N)	mil(deniz)	1.852	km
erg	1.0x10 ⁻⁷	joule	mil(kara)	1.609	km
erg	1.0x10 ⁻⁸	kg/m	newton	1.0x10 ⁵	dyne
erg/sn	1.0x10 ⁻¹⁰	kwatt	ounce	28.349	gram
feet	30.48	cm	pound	0.4536	kg
feet/dak	5.080x10 ⁻¹	cm/sn	pound/feet ³	16.02	kg/m ³
feet/sn	1.097	km/saat	pound/feet ²	4.725x10 ⁻⁴	atmosfer
galon	3785	cm ³	pound/feet ²	4.882	kg/m ²
galon	1.337x10 ⁻³	feet ³	pound/inc ²	7.03x10 ⁻²	kg/cm ²
galon	3.785	litre	radyan	57.296	derece
gün	8.64x10 ⁴	sn	radyan/sn	9.549	devir/dak
gün	1.44x10 ³	dak	slug	14.59	kg
hektar	2.471	acre			
hektar	1.076x10 ⁵	feet ²			
ışık yılı	9.46091x10 ¹²	km			
inc	2.540	cm			
inc	2.778x10 ⁻²	yard			
joule	0.102	kg-m			
inc	2.776x10 ⁻³	watt-saat			
kg	9.81	N (joule/m)			

Hız

$$1 \text{ mil/saat} = 1.467 \text{ ft/sn} = 0.447 \text{ m/sn}$$

HACİM

$$1 \text{ gal} = 0.0037854 \text{ m}^3$$

$$1 \text{ gal} = 231 \text{ inc}^3$$

$$1 \text{ gal/dak} = 0.06309 \text{ L/sn} = 0.002228 \text{ ft}^3/\text{sn}$$

KÜTLE

$$1 \text{ lbm} = 0.454 \text{ kg}$$

$$1 \text{ slug} = 14.594 \text{ kg}$$

SICAKLIK

$$^{\circ}\text{C} = 5^{\circ}(\text{^{\circ}\text{F}} - 32)/9$$

$$\text{K} = ^{\circ}\text{C} + 273.16^{\circ}$$

$$^{\circ}\text{R} = ^{\circ}\text{F} + 459.67^{\circ}$$

ÖZGÜL AĞIRLIK

$$1 \text{ lbf/ft}^3 = 157.09 \text{ N/m}^3$$

BASINÇ

$$1 \text{ lb/in}^2 = 6895 \text{ Pa} = 6.895 \text{ kPa}$$

$$1 \text{ lb/ft}^2 = 47.88 \text{ Pa}$$

$$1 \text{ atm} = 101.325 \text{ kPa} = 2116 \text{ lb/ft}^2$$

KUVVET

$$1 \text{ lbf} = 4.448 \text{ N}$$

$$1 \text{ kN} = 224.8 \text{ lbf}$$

4 °C VE 760 mm CİVA BASINCI ALTINDA

$$\gamma_w = 9806 \text{ N / m}^3 = 62.43 \text{ lb / ft}^3$$

$$\rho_w = 1.938 \text{ slug / ft}^3 = 1000 \text{ kg / m}^3$$

WILLIAMS - HAZEN FORMÜLÜ

$$Q = 0.85 C R^{0.63} J^{0.54} A$$

veya

$$J = \left(\frac{(4)^{1.63}}{0.85 \cdot \pi \cdot C} \right)^{1.85} \frac{Q^{1.85}}{D^{4.87}}$$

ve $h_f = J L$ yazılabilir

Burada,

Q : Debi (m³/sn)

C : Williams - Hazen katsayısı

R : Hidrolik yarıçap (m)

J : Hidrolik eğim (-)

A : Kesit alanı (m²)

D : Boru çapı (m)

 h_f : Yük kaybı (m)

L : Boru uzunluğu (m)

Çeşitli Borular için C katsayısı

Boru Türü	C
Mükemmel pürüzsüz düz borular	140
Yeni, pürüzsüz beton ve font borular	130
Yeni kaynaklı çelik	120
Perçinli çelik ve normal durumdaki font borular	110
Eski perçinli çelik borular	100
Kullanılmış font borular	95
Kötü durumdaki eski borular	80

DARCY - WEISBACH FORMÜLÜ

$$J = \frac{f V^2}{D 2g}$$

Burada,

f : Darcy - Weisbach pürüzlülük katsayısı (-)

V : Ortalama akım hızı (m/sn)

g : Yerçekimi ivmesi (m²/sn)

f değeri aşağıdaki aralıklar için verilen formülle bulunabilir.

$$10^6 \leq \epsilon/D \leq 10^2 \text{ ve } 5000 \leq Re \leq 10^8$$

$$f = \frac{1.325}{\left[\ln(\epsilon / 3.7D + 5.74 / Re^{0.9}) \right]^2}$$

 ϵ : Pürüzlülük yüksekliği (mm)

Re : REYNOLD sayısı (-)

 ϵ/D : Rölatif pürüzlülük (-)Çeşitli borular için ϵ değerleri

Boru Türü	ϵ (mm)
Pirinç borular	0.0015
Bakır borular	0.0015
Çimento kaplamalı font borular	0.0024
Bitüm kaplamalı font borular	0.0024
Çekilmiş demir borular	0.061
Kaynaklı çelik borular	0.061
Asfalta batırılmış font borular	0.12
Galvanizli demir borular	0.15
Astarsız font borular	0.24
Ahşap borular	0.61
Beton borular	1.2
Perçinli çelik borular	1.83

WILLIAMS - HAZEN FORMÜLÜNDE HİDROLİK EĞİM, (J)
 $Q = C \sqrt{A} V$, A=Akım alanı, V=Ortalama akım hızı, C=Williams-Hazen katsayısı, D=Boru çapı, J=Hidrolik eğim

$$Q = 0.85 \cdot C \cdot R^{1.49} \cdot J^{0.63} \cdot A^{0.54}$$

D=60 mm		J						
Q(l/sn)	V(m/sn)	C=80	C=95	C=100	C=110	C=120	C=130	C=140
0.25	0.088	0.000607	0.000442	0.000402	0.000337	0.000286	0.000247	0.000215
0.50	0.177	0.002191	0.001594	0.001449	0.001215	0.001034	0.000892	0.000777
0.75	0.265	0.004843	0.003377	0.003071	0.002574	0.002191	0.001889	0.001647
1.00	0.354	0.007909	0.005753	0.005232	0.004385	0.003733	0.003219	0.002806
1.25	0.442	0.011956	0.008697	0.007909	0.006629	0.005643	0.004865	0.004241
1.50	0.530	0.016758	0.012190	0.011085	0.009292	0.007909	0.006819	0.005945
1.75	0.619	0.022294	0.016217	0.014748	0.012362	0.010522	0.009072	0.007909
2.00	0.707	0.028549	0.020767	0.018885	0.015830	0.013474	0.011618	0.010128
2.25	0.795	0.035507	0.025829	0.023488	0.019688	0.016758	0.014449	0.012596
2.50	0.884	0.043157	0.031393	0.028549	0.023929	0.020368	0.017562	0.015310
2.75	0.972	0.051488	0.037453	0.034060	0.028549	0.024300	0.020952	0.018266
3.00	1.061	0.060490	0.044002	0.040015	0.033540	0.028549	0.024616	0.021459
3.25	1.149	0.070154	0.051032	0.046408	0.038899	0.033110	0.028549	0.024888
3.50	1.237	0.080474	0.058539	0.053235	0.044621	0.037981	0.032748	0.028549
3.75	1.326	0.091442	0.066517	0.060490	0.050702	0.043157	0.037211	0.032439
4.00	1.414	0.103050	0.074962	0.068169	0.057139	0.048636	0.041936	0.036558
4.25	1.503	0.115294	0.083868	0.076268	0.063928	0.054414	0.046918	0.040901
4.50	1.591	0.128167	0.093232	0.084784	0.071066	0.060490	0.052158	0.045468
4.75	1.679	0.141684	0.103050	0.093712	0.078549	0.066860	0.057649	0.050256
5.00	1.768	0.155780	0.113319	0.103050	0.086377	0.073522	0.063393	0.055264
5.25	1.856	0.170511	0.124034	0.112795	0.094544	0.080474	0.069388	0.060490
5.50	1.944	0.185851	0.135193	0.122943	0.103050	0.087714	0.075630	0.065932
5.75	2.033	0.201797	0.146793	0.133491	0.111892	0.095240	0.082119	0.071589
6.00	2.121	0.218345	0.158830	0.144438	0.121068	0.103050	0.088854	0.077459
6.25	2.210	0.235491	0.171303	0.155780	0.130575	0.111142	0.095831	0.083542
6.50	2.298	0.253232	0.184208	0.167516	0.140411	0.119515	0.103050	0.089835
6.75	2.386	0.271563	0.197542	0.179642	0.150576	0.128167	0.110510	0.096339
7.00	2.475	0.290482	0.211305	0.192157	0.161066	0.137096	0.118209	0.103050
7.25	2.563	0.309986	0.225492	0.205059	0.171880	0.146301	0.126146	0.109989
7.50	2.652	0.330071	0.240102	0.218345	0.183017	0.155780	0.134319	0.117094
7.75	2.740	0.350734	0.255134	0.232014	0.194474	0.165532	0.142728	0.124425
8.00	2.828	0.371973	0.270584	0.246084	0.206251	0.175657	0.151371	0.131960
8.25	2.917	0.393786	0.286450	0.260494	0.218345	0.185851	0.160247	0.139698
8.50	3.005	0.416168	0.302732	0.275300	0.230756	0.196415	0.169356	0.147638
8.75	3.093	0.439119	0.319427	0.290482	0.243482	0.207247	0.178695	0.155780
9.00	3.182	0.462635	0.336534	0.306038	0.256521	0.218345	0.188265	0.164123
9.25	3.270	0.486715	0.354050	0.321967	0.269872	0.229710	0.198084	0.172665
9.50	3.359	0.511355	0.371973	0.338267	0.283535	0.241339	0.208091	0.181406
9.75	3.447	0.536554	0.390304	0.354906	0.297507	0.253232	0.218345	0.190345
10.00	3.536	0.562309	0.409039	0.371973	0.311788	0.265387	0.228826	0.199482

WILLIAMS - HAZEN FORMÜLÜNDE HİDROLİK EĞİM, (J)

$$Q = 0.85 \cdot C \cdot R^{0.63} \cdot J^{0.54} \cdot A$$

Q=Debi, A=Akım alanı, V=Ortalama akım hızı, C=Williams-Hazen katsayısı, D=Boru çapı, J=Hidrolik eğim

D=75 mm		J						
Q(l/sn)	V(m/sn)	C=80	C=95	C=100	C=110	C=120	C=130	C=140
0.25	0.057	0.000205	0.000149	0.000135	0.000114	0.000097	0.000083	0.000073
0.50	0.113	0.000739	0.000536	0.000489	0.000410	0.000346	0.000301	0.000262
0.75	0.170	0.001566	0.001136	0.001036	0.000868	0.000736	0.000637	0.000556
1.00	0.226	0.002668	0.001941	0.001785	0.001479	0.001256	0.001086	0.000946
1.25	0.283	0.004033	0.002934	0.002688	0.002236	0.001903	0.001641	0.001431
1.50	0.339	0.005652	0.004112	0.003739	0.003134	0.002688	0.002300	0.002005
1.75	0.396	0.007520	0.005470	0.004974	0.004170	0.003548	0.003060	0.002668
2.00	0.453	0.009629	0.007005	0.006370	0.005338	0.004545	0.003919	0.003418
2.25	0.509	0.011978	0.008712	0.007923	0.006641	0.005652	0.004874	0.004249
2.50	0.566	0.014557	0.010589	0.009629	0.008071	0.006870	0.005924	0.005164
2.75	0.622	0.017387	0.012633	0.011488	0.009629	0.008196	0.007067	0.006161
3.00	0.678	0.020403	0.014842	0.013487	0.011313	0.009629	0.008303	0.007238
3.25	0.735	0.023683	0.017213	0.015653	0.013121	0.011168	0.009629	0.008395
3.50	0.792	0.027144	0.019745	0.017956	0.015051	0.012811	0.011046	0.009629
3.75	0.848	0.030843	0.022436	0.020403	0.017102	0.014557	0.012551	0.010942
4.00	0.905	0.034759	0.025284	0.022993	0.019273	0.016405	0.014145	0.012331
4.25	0.962	0.038868	0.028288	0.025725	0.021563	0.018354	0.015825	0.013798
4.50	1.018	0.043230	0.031447	0.028597	0.023970	0.020403	0.017582	0.015336
4.75	1.075	0.047783	0.034759	0.031609	0.026494	0.022552	0.019445	0.016951
5.00	1.131	0.052544	0.038222	0.034759	0.029135	0.024799	0.021382	0.018640
5.25	1.189	0.057513	0.041836	0.038045	0.031899	0.027144	0.023404	0.020403
5.50	1.244	0.062687	0.045600	0.041468	0.034759	0.029586	0.025510	0.022239
5.75	1.301	0.068066	0.049513	0.045026	0.037741	0.032124	0.027699	0.024147
6.00	1.358	0.073647	0.053573	0.048718	0.040836	0.034759	0.029970	0.026127
6.25	1.414	0.079430	0.057780	0.052544	0.044042	0.037498	0.032323	0.028178
6.50	1.471	0.085414	0.062133	0.056502	0.047360	0.040312	0.034759	0.030301
6.75	1.527	0.091597	0.066630	0.060593	0.050789	0.043230	0.037275	0.032495
7.00	1.584	0.097979	0.071272	0.064814	0.054327	0.046242	0.039871	0.034759
7.25	1.640	0.104557	0.076058	0.069166	0.057975	0.049347	0.042549	0.037092
7.50	1.697	0.111332	0.080986	0.073647	0.061731	0.052544	0.045305	0.039496
7.75	1.754	0.118302	0.086058	0.078258	0.065596	0.055834	0.048142	0.041968
8.00	1.810	0.125465	0.091267	0.082997	0.069568	0.059215	0.051057	0.044510
8.25	1.867	0.132823	0.096619	0.087864	0.073647	0.062687	0.054051	0.047120
8.50	1.923	0.140372	0.102111	0.092858	0.077833	0.066250	0.057123	0.049798
8.75	1.980	0.148114	0.107742	0.097979	0.082128	0.069904	0.060273	0.052544
9.00	2.036	0.156045	0.113512	0.103226	0.086524	0.073647	0.063501	0.055358
9.25	2.093	0.164167	0.119420	0.108598	0.091027	0.077480	0.066808	0.058239
9.50	2.149	0.172478	0.125465	0.114098	0.095635	0.081403	0.070188	0.061188
9.75	2.206	0.180978	0.131648	0.119719	0.100348	0.085414	0.073647	0.064203
10.00	2.263	0.189665	0.137988	0.125465	0.105185	0.089514	0.077182	0.067285

WILLIAMS - HAZEN FORMÜLÜNDE HIDROLİK EĞİM, (J)

$$Q = 0.85 \cdot C \cdot R^{0.63} \cdot J^{0.54} \cdot A$$

C=Çabı, A=Akım alanı, V=Ortalama akım hızı, C=Williams-Hazen katsayısı, D=Boru çapı, J=Hidrolik eğim

D=80 mm		J						
Q(l/sn)	V(m/sn)	C=80	C=95	C=100	C=110	C=120	C=130	C=140
0.50	0.089	0.000540	0.000393	0.000357	0.000299	0.000255	0.000220	0.000191
0.75	0.149	0.001144	0.000832	0.000756	0.000634	0.000540	0.000465	0.000406
1.00	0.199	0.001948	0.001417	0.001289	0.001080	0.000919	0.000793	0.000691
1.25	0.249	0.002945	0.002142	0.001948	0.001633	0.001390	0.001198	0.001045
1.50	0.298	0.004128	0.003003	0.002731	0.002289	0.001948	0.001680	0.001464
1.75	0.348	0.005492	0.003985	0.003633	0.003045	0.002592	0.002235	0.001948
2.00	0.398	0.007032	0.005115	0.004652	0.003899	0.003319	0.002862	0.002485
2.25	0.447	0.008746	0.006362	0.005788	0.004850	0.004128	0.003559	0.003103
2.50	0.497	0.010630	0.007733	0.007032	0.005894	0.005017	0.004326	0.003771
2.75	0.547	0.012682	0.009226	0.008390	0.007032	0.005986	0.005181	0.004489
3.00	0.597	0.014900	0.010839	0.009856	0.008262	0.007032	0.006063	0.005286
3.25	0.646	0.017281	0.012570	0.011431	0.009582	0.008156	0.007032	0.006130
3.50	0.696	0.019823	0.014419	0.013113	0.010991	0.009355	0.008067	0.007032
3.75	0.746	0.022524	0.016385	0.014900	0.012489	0.010630	0.009168	0.007991
4.00	0.795	0.025383	0.018465	0.016791	0.014075	0.011980	0.010330	0.009005
4.25	0.845	0.028399	0.020658	0.018786	0.015747	0.013403	0.011557	0.010075
4.50	0.895	0.031570	0.022965	0.020884	0.017505	0.014900	0.012847	0.011200
4.75	0.945	0.034895	0.025383	0.023083	0.019348	0.016489	0.014200	0.012379
5.00	0.994	0.038372	0.027913	0.025383	0.021276	0.018110	0.015615	0.013613
5.25	1.044	0.042000	0.030552	0.027784	0.023288	0.019823	0.017092	0.014900
5.50	1.094	0.045779	0.033301	0.030283	0.025383	0.021606	0.018629	0.016240
5.75	1.143	0.049707	0.036158	0.032882	0.027561	0.023480	0.020228	0.017634
6.00	1.193	0.053783	0.039123	0.035578	0.029622	0.025383	0.021887	0.019080
6.25	1.243	0.058007	0.042198	0.038372	0.032163	0.027377	0.023605	0.020578
6.50	1.293	0.062376	0.045374	0.041263	0.034586	0.029439	0.025383	0.022128
6.75	1.342	0.066892	0.048659	0.044250	0.037090	0.031570	0.027221	0.023730
7.00	1.392	0.071562	0.052049	0.047332	0.039674	0.033770	0.029117	0.025383
7.25	1.442	0.076366	0.055544	0.050510	0.042338	0.036037	0.031072	0.027088
7.50	1.491	0.081303	0.059142	0.053783	0.045081	0.038372	0.033086	0.028843
7.75	1.541	0.086393	0.062845	0.057150	0.047903	0.040774	0.035157	0.030649
8.00	1.591	0.091625	0.066651	0.060611	0.050804	0.043243	0.037286	0.032505
8.25	1.641	0.096998	0.070559	0.064165	0.053783	0.045779	0.039472	0.034411
8.50	1.690	0.102511	0.074589	0.067812	0.056840	0.048381	0.041718	0.036366
8.75	1.740	0.108164	0.078682	0.071552	0.059975	0.051049	0.044016	0.038372
9.00	1.790	0.113957	0.082895	0.075384	0.063187	0.053783	0.046374	0.040427
9.25	1.839	0.119888	0.087210	0.079307	0.066475	0.056582	0.048787	0.042531
9.50	1.889	0.125958	0.091625	0.083322	0.069841	0.059447	0.051257	0.044684
9.75	1.939	0.132165	0.096140	0.087428	0.073282	0.062376	0.053783	0.046886
10.00	1.989	0.138509	0.100755	0.091625	0.076800	0.065371	0.056365	0.049137
10.50	2.088	0.151606	0.110282	0.100289	0.084062	0.071552	0.061695	0.053783
11.00	2.188	0.165246	0.120204	0.109312	0.091625	0.077989	0.067245	0.058622
11.50	2.287	0.179424	0.130618	0.118691	0.099487	0.084681	0.073015	0.063652
12.00	2.386	0.194137	0.141221	0.128424	0.107645	0.091625	0.079002	0.068871
12.50	2.486	0.209382	0.152310	0.138509	0.116098	0.098820	0.085206	0.074280
13.00	2.585	0.225156	0.163784	0.148943	0.124844	0.106265	0.091625	0.079875
13.50	2.685	0.241455	0.175641	0.159725	0.133881	0.113957	0.098258	0.085657
14.00	2.784	0.258276	0.187877	0.170853	0.143208	0.121896	0.105103	0.091625
14.50	2.884	0.275617	0.200492	0.182324	0.152824	0.130080	0.112160	0.097777
15.00	2.983	0.293476	0.213482	0.194137	0.162726	0.138509	0.119427	0.104112

WILLIAMS - HAZEN FORMÜLÜNDE HİDROLİK EĞİM, (J)

$Q=0.85 \cdot C \cdot R^{1.49} \cdot J^{0.54} \cdot A$

Q=Debi, A=Akım alanı, V=Ortalama akım hızı, C=Williams-Hazen katsayısı, D=Boru çapı, J=Hidrolik eğim

D=100 mm		J						
Q(l/sn)	V(m/sn)	C=80	C=95	C=100	C=110	C=120	C=130	C=140
1.00	0.127	0.000657	0.000478	0.000436	0.000364	0.000310	0.000267	0.000233
1.25	0.159	0.000993	0.000723	0.000657	0.000551	0.000469	0.000404	0.000352
1.50	0.191	0.001392	0.001013	0.000921	0.000772	0.000657	0.000567	0.000494
1.75	0.223	0.001852	0.001347	0.001225	0.001027	0.000874	0.000754	0.000657
2.00	0.255	0.002372	0.001725	0.001569	0.001315	0.001119	0.000965	0.000841
2.25	0.286	0.002950	0.002146	0.001951	0.001636	0.001392	0.001200	0.001047
2.50	0.318	0.003686	0.002608	0.002372	0.001988	0.001692	0.001459	0.001272
2.75	0.350	0.004278	0.003112	0.002830	0.002372	0.002019	0.001741	0.001518
3.00	0.382	0.005026	0.003658	0.003325	0.002787	0.002372	0.002045	0.001783
3.25	0.414	0.005829	0.004240	0.003856	0.003232	0.002751	0.002372	0.002068
3.50	0.445	0.006686	0.004864	0.004423	0.003707	0.003156	0.002721	0.002372
3.75	0.477	0.007597	0.005526	0.005026	0.004213	0.003586	0.003092	0.002685
4.00	0.508	0.008562	0.006228	0.005684	0.004747	0.004041	0.003484	0.003037
4.25	0.541	0.009579	0.006968	0.006337	0.005311	0.004521	0.003898	0.003398
4.50	0.573	0.010649	0.007746	0.007044	0.005904	0.005026	0.004339	0.003778
4.75	0.605	0.011770	0.008562	0.007786	0.006526	0.005555	0.004790	0.004175
5.00	0.636	0.012943	0.009415	0.008562	0.007176	0.006108	0.005267	0.004592
5.25	0.668	0.014167	0.010305	0.009371	0.007855	0.006686	0.005765	0.005026
5.50	0.700	0.015441	0.011232	0.010214	0.008562	0.007288	0.006284	0.005478
5.75	0.732	0.016768	0.012198	0.011091	0.009298	0.007913	0.006823	0.005948
6.00	0.764	0.018141	0.013198	0.012000	0.010059	0.008562	0.007382	0.006436
6.25	0.796	0.019565	0.014232	0.012943	0.010849	0.009234	0.007962	0.006941
6.50	0.827	0.021039	0.015305	0.013918	0.011666	0.009930	0.008562	0.007464
6.75	0.859	0.022562	0.016413	0.014925	0.012510	0.010649	0.009182	0.008004
7.00	0.891	0.024134	0.017556	0.015965	0.013382	0.011390	0.009821	0.008562
7.25	0.923	0.025755	0.018735	0.017037	0.014280	0.012155	0.010481	0.009137
7.50	0.955	0.027423	0.019949	0.018141	0.015206	0.012943	0.011160	0.009729
7.75	0.986	0.029140	0.021197	0.019277	0.016158	0.013753	0.011858	0.010338
8.00	1.018	0.030905	0.022481	0.020444	0.017136	0.014586	0.012576	0.010964
8.25	1.050	0.032717	0.023799	0.021643	0.018141	0.015441	0.013314	0.011607
8.50	1.082	0.034577	0.025152	0.022873	0.019172	0.016319	0.014071	0.012266
8.75	1.114	0.036484	0.026539	0.024134	0.020229	0.017219	0.014847	0.012943
9.00	1.145	0.038437	0.027960	0.025427	0.021313	0.018141	0.015642	0.013638
9.25	1.177	0.040438	0.029416	0.026750	0.022422	0.019085	0.016458	0.014346
9.50	1.209	0.042485	0.030905	0.028104	0.023557	0.020051	0.017289	0.015072
9.75	1.241	0.044579	0.032428	0.029489	0.024718	0.021039	0.018141	0.015815
10.00	1.273	0.046719	0.033984	0.030905	0.025904	0.022049	0.019012	0.016574
11.00	1.400	0.055737	0.040545	0.036871	0.030905	0.026306	0.022682	0.019773
12.00	1.527	0.065482	0.047633	0.043317	0.036308	0.030905	0.026647	0.023230
13.00	1.655	0.075944	0.055244	0.050238	0.042109	0.036843	0.030905	0.026942
14.00	1.782	0.087116	0.063370	0.057628	0.048304	0.041115	0.035451	0.030905
15.00	1.909	0.098988	0.072007	0.065482	0.054887	0.046719	0.040282	0.035117
16.00	2.036	0.111555	0.081148	0.073795	0.061855	0.052650	0.045396	0.039675
17.00	2.164	0.124809	0.090790	0.082563	0.069204	0.058905	0.050790	0.044277
18.00	2.291	0.138745	0.100927	0.091781	0.076931	0.065482	0.056461	0.049220
19.00	2.418	0.153356	0.111555	0.101446	0.085032	0.072378	0.062407	0.054404
20.00	2.545	0.168637	0.122671	0.111555	0.093505	0.078590	0.068625	0.059825

WILLIAMS - HAZEN FORMÜLÜNDE HİDROLİK EĞİM, (J)

$Q=0.85 \cdot C \cdot R^{0.63} \cdot J^{0.54} \cdot A$

Q = Akım (l/sn), V = Ortalama akım hızı, C = Williams-Hazen katsayısı, D = Boru çapı, J = Hidrolik eğim

D=125 mm		J							
Q(l/sn)	V(m/sn)	C=80	C=95	C=100	C=110	C=120	C=130	C=140	
2.00	0.163	0.000800	0.000582	0.000529	0.000444	0.000378	0.000328	0.000284	
2.25	0.183	0.000866	0.000724	0.000658	0.000552	0.000470	0.000405	0.000353	
2.50	0.204	0.001209	0.000880	0.000800	0.000671	0.000571	0.000492	0.000429	
2.75	0.224	0.001443	0.001050	0.000954	0.000800	0.000681	0.000587	0.000512	
3.00	0.244	0.001695	0.001233	0.001121	0.000940	0.000800	0.000690	0.000601	
3.25	0.265	0.001968	0.001430	0.001301	0.001090	0.000928	0.000800	0.000697	
3.50	0.285	0.002255	0.001640	0.001492	0.001250	0.001064	0.000918	0.000800	
3.75	0.305	0.002563	0.001864	0.001695	0.001421	0.001209	0.001043	0.000909	
4.00	0.326	0.002888	0.002101	0.001910	0.001601	0.001363	0.001175	0.001024	
4.25	0.346	0.003231	0.002350	0.002137	0.001792	0.001525	0.001315	0.001146	
4.50	0.367	0.003592	0.002613	0.002378	0.001992	0.001695	0.001462	0.001274	
4.75	0.387	0.003970	0.002888	0.002626	0.002201	0.001874	0.001616	0.001408	
5.00	0.407	0.004366	0.003178	0.002888	0.002421	0.002060	0.001777	0.001549	
5.25	0.428	0.004778	0.003476	0.003161	0.002649	0.002255	0.001945	0.001685	
5.50	0.448	0.005208	0.003789	0.003445	0.002888	0.002458	0.002119	0.001848	
5.75	0.468	0.005655	0.004114	0.003741	0.003136	0.002669	0.002301	0.002006	
6.00	0.489	0.006119	0.004451	0.004048	0.003393	0.002888	0.002490	0.002171	
6.25	0.509	0.006599	0.004801	0.004366	0.003659	0.003115	0.002686	0.002341	
6.50	0.529	0.007097	0.005162	0.004694	0.003935	0.003349	0.002888	0.002518	
6.75	0.550	0.007610	0.005536	0.005034	0.004220	0.003592	0.003097	0.002700	
7.00	0.570	0.008140	0.005922	0.005385	0.004514	0.003842	0.003313	0.002888	
7.25	0.591	0.008687	0.006319	0.005747	0.004817	0.004100	0.003535	0.003082	
7.50	0.611	0.009250	0.006729	0.006119	0.005129	0.004386	0.003764	0.003281	
7.75	0.631	0.009829	0.007150	0.006502	0.005450	0.004639	0.004000	0.003487	
8.00	0.652	0.010424	0.007583	0.006896	0.005780	0.004920	0.004242	0.003698	
8.25	0.672	0.011035	0.008027	0.007300	0.006119	0.005208	0.004491	0.003915	
8.50	0.692	0.011663	0.008484	0.007715	0.006467	0.005504	0.004746	0.004137	
8.75	0.713	0.012306	0.008952	0.008140	0.006823	0.005808	0.005008	0.004366	
9.00	0.733	0.012965	0.009431	0.008576	0.007189	0.006119	0.005276	0.004599	
9.25	0.753	0.013640	0.009922	0.009023	0.007563	0.006437	0.005550	0.004839	
9.50	0.774	0.014330	0.010424	0.009480	0.007946	0.006763	0.005831	0.005084	
9.75	0.794	0.015036	0.010936	0.009947	0.008337	0.007097	0.006119	0.005334	
10.00	0.815	0.015758	0.011463	0.010424	0.008737	0.007437	0.006413	0.005590	
10.50	0.855	0.017248	0.012547	0.011410	0.009584	0.008140	0.007019	0.006119	
11.00	0.896	0.018800	0.013676	0.012436	0.010424	0.008873	0.007650	0.006669	
11.50	0.937	0.020413	0.014849	0.013503	0.011319	0.009634	0.008307	0.007242	
12.00	0.977	0.022087	0.016067	0.014611	0.012247	0.010424	0.008988	0.007835	
12.50	1.018	0.023821	0.017328	0.015758	0.013208	0.011243	0.009694	0.008451	
13.00	1.059	0.025616	0.018634	0.016945	0.014203	0.012090	0.010424	0.009087	
13.50	1.100	0.027470	0.019983	0.018172	0.015232	0.012965	0.011179	0.009745	
14.00	1.140	0.029384	0.021375	0.019438	0.016293	0.013868	0.011957	0.010424	
14.50	1.181	0.031357	0.022810	0.020743	0.017367	0.014799	0.012760	0.011124	
15.00	1.222	0.033388	0.024288	0.022087	0.018513	0.015758	0.013587	0.011845	
15.50	1.263	0.035479	0.025808	0.023470	0.019672	0.016745	0.014438	0.012586	
16.00	1.303	0.037627	0.027371	0.024891	0.020863	0.017759	0.015312	0.013348	
16.50	1.344	0.039834	0.028976	0.026350	0.022087	0.018800	0.016210	0.014131	
17.00	1.385	0.042098	0.030623	0.027848	0.023342	0.019868	0.017131	0.014934	
17.50	1.425	0.044419	0.032312	0.029384	0.024630	0.020964	0.018076	0.015758	
18.00	1.466	0.046798	0.034042	0.030957	0.025949	0.022087	0.019044	0.016602	
18.50	1.507	0.049234	0.035814	0.032566	0.027299	0.023236	0.020035	0.017466	
19.00	1.548	0.051726	0.037627	0.034218	0.028681	0.024413	0.021050	0.018350	
19.50	1.588	0.054275	0.039481	0.035904	0.030094	0.025616	0.022087	0.019255	
20.00	1.629	0.056881	0.041377	0.037627	0.031539	0.026845	0.023147	0.020179	
20.50	1.670	0.059542	0.043312	0.039388	0.033015	0.028101	0.024230	0.021123	
21.00	1.711	0.062259	0.045289	0.041185	0.034521	0.029386	0.025336	0.022087	
21.50	1.751	0.065032	0.047306	0.043020	0.036059	0.030693	0.026464	0.023071	
22.00	1.792	0.067861	0.049364	0.044891	0.037627	0.032027	0.027615	0.024074	
22.50	1.833	0.070744	0.051461	0.046796	0.039226	0.033386	0.028789	0.025097	
23.00	1.873	0.073683	0.053599	0.048742	0.040856	0.034775	0.029985	0.026140	
23.50	1.914	0.076677	0.055777	0.050723	0.042516	0.036188	0.031208	0.027202	
24.00	1.955	0.079725	0.057994	0.052739	0.044206	0.037627	0.032443	0.028283	
24.50	1.996	0.082825	0.060252	0.054792	0.045927	0.039092	0.033706	0.029384	
25.00	2.036	0.085986	0.062549	0.056881	0.047677	0.040582	0.034991	0.030504	
25.50	2.077	0.089198	0.064885	0.059005	0.049458	0.042098	0.036298	0.031643	
26.00	2.118	0.092464	0.067261	0.061166	0.051269	0.043639	0.037627	0.032802	

WILLIAMS - HAZEN FORMÜLÜNDE HIDROLİK EĞİM (J)

$Q=0.85 \cdot C \cdot R^{4/3} \cdot J^{0.54} \cdot A$

Q=Debi, A=Akım alanı, V=Ortalama akım hızı, C=Williams-Hazen katsayısı, D= Boru çapı, J=Hidrolik eğim

D=150 mm								
Q(R/sn)	V(m/sn)	C=80	C=95	C=100	C=110	C=120	C=130	C=140
3.00	0.170	0.000698	0.000607	0.000481	0.000387	0.000329	0.000284	0.000247
3.25	0.184	0.000809	0.000688	0.000536	0.000449	0.000382	0.000329	0.000287
3.50	0.198	0.000928	0.000675	0.000614	0.000515	0.000438	0.000378	0.000329
3.75	0.212	0.001054	0.000787	0.000696	0.000585	0.000498	0.000429	0.000374
4.00	0.226	0.001186	0.000864	0.000786	0.000659	0.000561	0.000484	0.000422
4.25	0.240	0.001330	0.000967	0.000879	0.000737	0.000627	0.000541	0.000472
4.50	0.255	0.001478	0.001075	0.000978	0.000819	0.000698	0.000601	0.000524
4.75	0.269	0.001634	0.001188	0.001081	0.000906	0.000771	0.000665	0.000580
5.00	0.283	0.001796	0.001307	0.001188	0.000996	0.000848	0.000731	0.000637
5.25	0.297	0.001965	0.001430	0.001301	0.001090	0.000928	0.000800	0.000698
5.50	0.311	0.002143	0.001559	0.001418	0.001188	0.001011	0.000872	0.000760
5.75	0.325	0.002327	0.001693	0.001538	0.001290	0.001098	0.000947	0.000826
6.00	0.339	0.002518	0.001832	0.001656	0.001396	0.001188	0.001025	0.000893
6.25	0.354	0.002716	0.001975	0.001796	0.001506	0.001282	0.001105	0.000963
6.50	0.368	0.002920	0.002124	0.001932	0.001619	0.001378	0.001188	0.001036
6.75	0.382	0.003132	0.002278	0.002072	0.001738	0.001478	0.001274	0.001111
7.00	0.396	0.003350	0.002437	0.002216	0.001857	0.001581	0.001363	0.001188
7.25	0.410	0.003575	0.002600	0.002365	0.001982	0.001687	0.001455	0.001268
7.50	0.424	0.003808	0.002769	0.002518	0.002110	0.001798	0.001549	0.001350
7.75	0.438	0.004044	0.002942	0.002675	0.002243	0.001909	0.001646	0.001435
8.00	0.453	0.004293	0.003120	0.002837	0.002378	0.002024	0.001746	0.001522
8.25	0.467	0.004541	0.003303	0.003004	0.002518	0.002143	0.001848	0.001611
8.50	0.481	0.004799	0.003491	0.003175	0.002661	0.002265	0.001953	0.001702
8.75	0.495	0.005058	0.003683	0.003350	0.002809	0.002390	0.002061	0.001798
9.00	0.509	0.005335	0.003881	0.003529	0.002958	0.002516	0.002171	0.001893
9.25	0.523	0.005613	0.004083	0.003713	0.003112	0.002643	0.002284	0.001991
9.50	0.537	0.005897	0.004289	0.003901	0.003270	0.002783	0.002400	0.002092
9.75	0.552	0.006187	0.004501	0.004093	0.003431	0.002920	0.002518	0.002195
10.00	0.566	0.006484	0.004717	0.004289	0.003595	0.003060	0.002639	0.002300
10.50	0.594	0.007097	0.005163	0.004685	0.003935	0.003350	0.002888	0.002518
11.00	0.622	0.007736	0.005627	0.005117	0.004289	0.003661	0.003148	0.002744
11.50	0.651	0.008400	0.006110	0.005556	0.004657	0.003984	0.003418	0.002980
12.00	0.679	0.009088	0.006611	0.006021	0.005039	0.004289	0.003688	0.003224
12.50	0.707	0.009802	0.007130	0.006484	0.005435	0.004626	0.003989	0.003477
13.00	0.735	0.010541	0.007668	0.006973	0.005846	0.004975	0.004289	0.003739
13.50	0.764	0.011304	0.008223	0.007477	0.006268	0.005335	0.004600	0.004010
14.00	0.792	0.012091	0.008795	0.007998	0.006704	0.005707	0.004920	0.004289
14.50	0.820	0.012903	0.009386	0.008535	0.007154	0.006090	0.005251	0.004577
15.00	0.848	0.013739	0.009994	0.009098	0.007618	0.006484	0.005591	0.004874
16.00	0.905	0.015483	0.011263	0.010242	0.008595	0.007307	0.006301	0.005493
17.00	0.962	0.017323	0.012601	0.011459	0.009605	0.008178	0.007049	0.006145
18.00	1.018	0.019257	0.014008	0.012739	0.010678	0.009088	0.007835	0.006831
19.00	1.075	0.021285	0.015483	0.014080	0.011802	0.010046	0.008662	0.007551
20.00	1.131	0.023406	0.017026	0.015483	0.012978	0.011047	0.009525	0.008303
21.00	1.188	0.025619	0.018636	0.016947	0.014205	0.012091	0.010425	0.009088
22.00	1.244	0.027924	0.020313	0.018472	0.015483	0.013179	0.011363	0.009906
23.00	1.301	0.030320	0.022055	0.020057	0.016812	0.014310	0.012338	0.010756
24.00	1.358	0.032806	0.023864	0.021702	0.018190	0.015483	0.013350	0.011638
25.00	1.414	0.035382	0.025738	0.023406	0.019619	0.016699	0.014398	0.012552
26.00	1.471	0.038048	0.027677	0.025169	0.021097	0.017957	0.015483	0.013498
27.00	1.527	0.040802	0.029680	0.026991	0.022624	0.019257	0.016604	0.014475
28.00	1.584	0.043645	0.031748	0.028871	0.024200	0.020598	0.017761	0.015483
29.00	1.640	0.046575	0.033880	0.030810	0.025825	0.021982	0.018953	0.016523
30.00	1.697	0.049593	0.036075	0.032806	0.027498	0.023406	0.020181	0.017593
31.00	1.754	0.052697	0.038333	0.034860	0.029219	0.024871	0.021445	0.018695
32.00	1.810	0.055889	0.040655	0.036971	0.030999	0.026377	0.022743	0.019827
33.00	1.867	0.059166	0.043039	0.039139	0.032806	0.027924	0.024077	0.020989
34.00	1.923	0.062529	0.045485	0.041363	0.034671	0.029511	0.025445	0.022182
35.00	1.980	0.065977	0.047994	0.043645	0.036583	0.031139	0.026849	0.023406
36.00	2.036	0.069510	0.050564	0.045982	0.038542	0.032806	0.028287	0.024659
37.00	2.093	0.073128	0.053195	0.048375	0.040548	0.034514	0.029759	0.025943
38.00	2.149	0.076830	0.055889	0.050824	0.042601	0.036261	0.031265	0.027256
39.00	2.206	0.080616	0.058643	0.053329	0.044700	0.038048	0.032806	0.028599
40.00	2.263	0.084486	0.061458	0.055889	0.046846	0.039874	0.034381	0.029972
41.00	2.319	0.088439	0.064333	0.058503	0.049038	0.041740	0.035989	0.031374
42.00	2.378	0.092475	0.067289	0.061173	0.051275	0.043645	0.037632	0.032806

WILLIAMS - HAZEN FORMÜLÜNDE HİDROLİK EĞİM, (J)

$$Q = 0.85 \cdot C \cdot R^{0.63} \cdot J^{0.54} \cdot A$$

Q=Debi, A=Akım alanı, V=Ortalama akım hızı, C=Williams-Hazen katsayısı, D= Boru çapı, J=Hidrolik eğim

D=200 mm		J						
Q(l/sn)	V(m/sn)	C=80	C=95	C=100	C=110	C=120	C=130	C=140
5.00	0.159	0.000442	0.000322	0.000293	0.000245	0.000209	0.000180	0.000157
5.50	0.175	0.000528	0.000384	0.000349	0.000293	0.000249	0.000215	0.000187
6.00	0.191	0.000620	0.000451	0.000410	0.000344	0.000293	0.000252	0.000220
6.50	0.207	0.000719	0.000523	0.000478	0.000399	0.000339	0.000293	0.000255
7.00	0.223	0.000825	0.000600	0.000546	0.000457	0.000389	0.000336	0.000293
7.50	0.239	0.000938	0.000682	0.000620	0.000520	0.000442	0.000382	0.000333
8.00	0.255	0.001057	0.000789	0.000699	0.000596	0.000499	0.000430	0.000375
8.50	0.270	0.001182	0.000860	0.000782	0.000655	0.000558	0.000481	0.000419
9.00	0.286	0.001314	0.000958	0.000869	0.000729	0.000620	0.000535	0.000466
9.50	0.302	0.001452	0.001057	0.000961	0.000805	0.000686	0.000591	0.000515
10.00	0.318	0.001597	0.001162	0.001057	0.000886	0.000754	0.000650	0.000567
10.50	0.334	0.001748	0.001272	0.001158	0.000969	0.000825	0.000711	0.000620
11.00	0.350	0.001906	0.001386	0.001261	0.001057	0.000899	0.000775	0.000676
11.50	0.366	0.002089	0.001505	0.001369	0.001147	0.000976	0.000842	0.000734
12.00	0.382	0.002239	0.001628	0.001481	0.001241	0.001057	0.000911	0.000794
12.50	0.398	0.002414	0.001758	0.001597	0.001339	0.001140	0.000983	0.000857
13.00	0.414	0.002596	0.001899	0.001718	0.001440	0.001225	0.001057	0.000921
13.50	0.430	0.002784	0.002025	0.001842	0.001544	0.001314	0.001133	0.000988
14.00	0.445	0.002978	0.002167	0.001970	0.001651	0.001406	0.001212	0.001057
14.50	0.461	0.003178	0.002312	0.002102	0.001762	0.001500	0.001293	0.001128
15.00	0.477	0.003384	0.002462	0.002239	0.001876	0.001597	0.001377	0.001201
16.00	0.509	0.003814	0.002774	0.002523	0.002115	0.001800	0.001552	0.001363
17.00	0.541	0.004267	0.003104	0.002823	0.002368	0.002014	0.001738	0.001514
18.00	0.573	0.004743	0.003460	0.003138	0.002630	0.002239	0.001830	0.001683
19.00	0.605	0.005243	0.003814	0.003468	0.002907	0.002474	0.002134	0.001860
20.00	0.636	0.005765	0.004194	0.003814	0.003197	0.002721	0.002346	0.002045
21.00	0.668	0.006311	0.004590	0.004174	0.003499	0.002978	0.002568	0.002239
22.00	0.700	0.006878	0.005003	0.004550	0.003814	0.003246	0.002799	0.002440
23.00	0.732	0.007468	0.005433	0.004940	0.004141	0.003525	0.003039	0.002649
24.00	0.764	0.008081	0.005878	0.005346	0.004481	0.003814	0.003288	0.002867
25.00	0.795	0.008715	0.006340	0.005765	0.004832	0.004113	0.003547	0.003092
26.00	0.827	0.009372	0.006817	0.006200	0.005197	0.004423	0.003814	0.003325
27.00	0.859	0.010050	0.007311	0.006648	0.005573	0.004743	0.004090	0.003565
28.00	0.891	0.010751	0.007820	0.007112	0.005961	0.005074	0.004375	0.003814
29.00	0.923	0.011472	0.008345	0.007589	0.006361	0.005415	0.004669	0.004070
30.00	0.955	0.012216	0.008886	0.008081	0.006773	0.005765	0.004971	0.004334
31.00	0.986	0.012980	0.009442	0.008587	0.007197	0.006126	0.005282	0.004605
32.00	1.018	0.013767	0.010014	0.009107	0.007633	0.006497	0.005602	0.004884
33.00	1.050	0.014574	0.010601	0.009641	0.008081	0.006878	0.005931	0.005170
34.00	1.082	0.015402	0.011204	0.010189	0.008540	0.007269	0.006268	0.005464
35.00	1.114	0.016252	0.011822	0.010751	0.009011	0.007670	0.006613	0.005765
36.00	1.145	0.017122	0.012455	0.011328	0.009494	0.008081	0.006968	0.006074
37.00	1.177	0.018013	0.013103	0.011916	0.009988	0.008501	0.007330	0.006390
38.00	1.209	0.018925	0.013787	0.012519	0.010493	0.008932	0.007701	0.006714
39.00	1.241	0.019858	0.014445	0.013136	0.011011	0.009372	0.008081	0.007045
40.00	1.273	0.020811	0.015138	0.013767	0.011539	0.009822	0.008466	0.007383
41.00	1.305	0.021784	0.015847	0.014411	0.012079	0.010281	0.008865	0.007728
42.00	1.336	0.022779	0.016570	0.015088	0.012630	0.010751	0.009270	0.008081
43.00	1.368	0.023793	0.017308	0.015739	0.013193	0.011229	0.009682	0.008441
44.00	1.400	0.024828	0.018061	0.016424	0.013767	0.011718	0.010103	0.008808
45.00	1.432	0.025883	0.018828	0.017122	0.014352	0.012216	0.010533	0.009182
46.00	1.464	0.026958	0.019610	0.017833	0.014948	0.012723	0.010970	0.009564
47.00	1.495	0.028054	0.020407	0.018558	0.015555	0.013240	0.011416	0.009952
48.00	1.527	0.029169	0.021218	0.019298	0.016173	0.013767	0.011870	0.010346
49.00	1.559	0.030304	0.022044	0.020047	0.016803	0.014302	0.012332	0.010751
50.00	1.591	0.031459	0.022884	0.020811	0.017444	0.014848	0.012802	0.011180
51.00	1.623	0.032634	0.023739	0.021588	0.018095	0.015402	0.013280	0.011577
52.00	1.655	0.033829	0.024608	0.022378	0.018758	0.015966	0.013767	0.012001
53.00	1.686	0.035044	0.025492	0.023182	0.019431	0.016539	0.014261	0.012432
54.00	1.718	0.036278	0.026390	0.023998	0.020115	0.017122	0.014763	0.012870
55.00	1.750	0.037532	0.027302	0.024828	0.020811	0.017714	0.015273	0.013315
56.00	1.782	0.038808	0.028226	0.025670	0.021517	0.018315	0.015792	0.013767
57.00	1.814	0.040099	0.029169	0.026526	0.022234	0.018925	0.016318	0.014225
58.00	1.845	0.041411	0.030124	0.027394	0.022962	0.019544	0.016852	0.014691
59.00	1.877	0.042743	0.031092	0.028275	0.023700	0.020173	0.017394	0.015163
60.00	1.908	0.044094	0.032075	0.029169	0.024448	0.020811	0.017944	0.015643

WILLIAMS - HAZEN FORMÜLÜNDE HIDROLİK EĞİM, (J)

$Q=0.85 \cdot C \cdot R^{0.63} \cdot J^{0.54} \cdot A$

Q=Debi, A=Akım alanı, V=Ortalama akım hızı, C=Williams-Hazen katsayısı, D=Boru çapı, J=Hidrolik eğim

D=250 mm		J							
Q(l/sn)	V(m/sn)	C=80	C=95	C=100	C=110	C=120	C=130	C=140	
6.00	0.122	0.000209	0.000152	0.000138	0.000116	0.000099	0.000085	0.000074	
6.50	0.132	0.000243	0.000176	0.000160	0.000135	0.000115	0.000099	0.000086	
7.00	0.143	0.000278	0.000202	0.000184	0.000154	0.000131	0.000113	0.000099	
7.50	0.153	0.000316	0.000230	0.000209	0.000175	0.000149	0.000129	0.000112	
8.00	0.163	0.000356	0.000259	0.000236	0.000198	0.000168	0.000145	0.000126	
8.50	0.173	0.000399	0.000290	0.000264	0.000221	0.000188	0.000162	0.000141	
9.00	0.183	0.000443	0.000322	0.000293	0.000246	0.000209	0.000180	0.000157	
9.50	0.193	0.000490	0.000356	0.000324	0.000272	0.000231	0.000199	0.000174	
10.00	0.204	0.000539	0.000392	0.000356	0.000299	0.000254	0.000219	0.000191	
10.50	0.214	0.000590	0.000429	0.000390	0.000327	0.000278	0.000240	0.000209	
11.00	0.224	0.000643	0.000468	0.000425	0.000356	0.000303	0.000262	0.000228	
11.50	0.234	0.000698	0.000508	0.000462	0.000387	0.000329	0.000284	0.000248	
12.00	0.244	0.000755	0.000549	0.000500	0.000419	0.000358	0.000307	0.000268	
12.50	0.255	0.000814	0.000592	0.000539	0.000452	0.000384	0.000331	0.000289	
13.00	0.265	0.000878	0.000637	0.000579	0.000486	0.000413	0.000356	0.000311	
13.50	0.275	0.000939	0.000683	0.000621	0.000521	0.000443	0.000382	0.000333	
14.00	0.285	0.001005	0.000731	0.000665	0.000557	0.000474	0.000409	0.000356	
14.50	0.295	0.001072	0.000780	0.000709	0.000594	0.000506	0.000436	0.000380	
15.00	0.305	0.001141	0.000830	0.000755	0.000633	0.000539	0.000465	0.000405	
16.00	0.326	0.001286	0.000933	0.000851	0.000713	0.000607	0.000523	0.000456	
17.00	0.346	0.001439	0.001047	0.000952	0.000798	0.000679	0.000588	0.000511	
18.00	0.367	0.001600	0.001164	0.001058	0.000887	0.000755	0.000651	0.000568	
19.00	0.387	0.001768	0.001286	0.001170	0.000981	0.000835	0.000720	0.000627	
20.00	0.407	0.001945	0.001415	0.001286	0.001078	0.000918	0.000791	0.000690	
21.00	0.428	0.002129	0.001548	0.001408	0.001180	0.001005	0.000866	0.000755	
22.00	0.448	0.002320	0.001688	0.001535	0.001286	0.001095	0.000944	0.000823	
23.00	0.468	0.002519	0.001832	0.001666	0.001397	0.001189	0.001025	0.000894	
24.00	0.489	0.002726	0.001983	0.001803	0.001511	0.001286	0.001109	0.000967	
25.00	0.509	0.002940	0.002138	0.001945	0.001630	0.001387	0.001196	0.001043	
26.00	0.529	0.003161	0.002299	0.002091	0.001753	0.001492	0.001288	0.001121	
27.00	0.550	0.003390	0.002468	0.002243	0.001880	0.001600	0.001380	0.001203	
28.00	0.570	0.003626	0.002638	0.002399	0.002011	0.001711	0.001476	0.001286	
29.00	0.591	0.003870	0.002815	0.002560	0.002146	0.001826	0.001575	0.001373	
30.00	0.611	0.004120	0.002997	0.002726	0.002285	0.001945	0.001677	0.001462	
31.00	0.631	0.004378	0.003185	0.002896	0.002428	0.002066	0.001782	0.001553	
32.00	0.652	0.004643	0.003378	0.003072	0.002575	0.002192	0.001890	0.001647	
33.00	0.672	0.004916	0.003576	0.003252	0.002726	0.002320	0.002000	0.001744	
34.00	0.692	0.005195	0.003779	0.003437	0.002881	0.002452	0.002114	0.001843	
35.00	0.713	0.005482	0.003987	0.003626	0.003039	0.002587	0.002231	0.001945	
36.00	0.733	0.005775	0.004201	0.003820	0.003202	0.002726	0.002350	0.002049	
37.00	0.753	0.006076	0.004420	0.004019	0.003369	0.002868	0.002472	0.002155	
38.00	0.774	0.006383	0.004643	0.004223	0.003539	0.003013	0.002598	0.002265	
39.00	0.794	0.006698	0.004872	0.004431	0.003714	0.003161	0.002726	0.002376	
40.00	0.815	0.007019	0.005106	0.004643	0.003892	0.003313	0.002856	0.002490	
41.00	0.835	0.007348	0.005345	0.004861	0.004074	0.003468	0.002990	0.002607	
42.00	0.855	0.007683	0.005589	0.005082	0.004260	0.003626	0.003127	0.002726	
43.00	0.876	0.008025	0.005838	0.005309	0.004450	0.003788	0.003266	0.002847	
44.00	0.896	0.008374	0.006092	0.005540	0.004643	0.003952	0.003408	0.002971	
45.00	0.916	0.008730	0.006351	0.005775	0.004841	0.004120	0.003553	0.003097	
46.00	0.937	0.009093	0.006614	0.006015	0.005042	0.004291	0.003700	0.003226	
47.00	0.957	0.009462	0.006883	0.006259	0.005247	0.004466	0.003851	0.003357	
48.00	0.977	0.009839	0.007157	0.006508	0.005455	0.004643	0.004004	0.003490	
49.00	0.998	0.010222	0.007435	0.006762	0.005668	0.004824	0.004160	0.003626	
50.00	1.018	0.010611	0.007719	0.007019	0.005884	0.005008	0.004318	0.003764	
51.00	1.039	0.011008	0.008007	0.007282	0.006103	0.005195	0.004479	0.003905	
52.00	1.059	0.011411	0.008300	0.007548	0.006327	0.005385	0.004643	0.004048	
53.00	1.079	0.011820	0.008598	0.007819	0.006554	0.005579	0.004810	0.004193	
54.00	1.100	0.012237	0.008901	0.008085	0.006785	0.005775	0.004980	0.004341	
55.00	1.120	0.012659	0.009209	0.008374	0.007019	0.005975	0.005152	0.004491	
56.00	1.140	0.013089	0.009521	0.008659	0.007258	0.006177	0.005328	0.004643	
57.00	1.161	0.013525	0.009839	0.008947	0.007499	0.006383	0.005504	0.004798	
58.00	1.181	0.013968	0.010161	0.009240	0.007745	0.006592	0.005684	0.004955	
59.00	1.201	0.014417	0.010487	0.009537	0.007994	0.006804	0.005867	0.005115	
60.00	1.222	0.014873	0.010819	0.009839	0.008247	0.007019	0.006052	0.005276	
61.00	1.242	0.015335	0.011155	0.010144	0.008503	0.007238	0.006241	0.005440	
62.00	1.263	0.015804	0.011495	0.010454	0.008763	0.007459	0.006431	0.005607	

WILLIAMS - HAZEN FORMÜLÜNDE HIDROLİK EĞİM, (J)

$$Q=0.85 \cdot C \cdot R^{0.63} \cdot J^{0.54} \cdot A$$

Q=Debi, A=Akım alanı, V=Ortalama akım hızı, C=Williams-Hazen katsayısı, D=Boru çapı, J=Hidrolik eğim

D=300 mm		J						
Q(l/sn)	V(m/sn)	C=80	C=85	C=100	C=110	C=120	C=130	C=140
15.00	0.212	0.000470	0.000342	0.000311	0.000260	0.000222	0.000191	0.000167
16.00	0.226	0.000529	0.000385	0.000350	0.000284	0.000250	0.000215	0.000188
17.00	0.240	0.000592	0.000431	0.000392	0.000328	0.000280	0.000241	0.000210
18.00	0.255	0.000658	0.000479	0.000436	0.000365	0.000311	0.000268	0.000234
19.00	0.269	0.000728	0.000529	0.000481	0.000403	0.000343	0.000296	0.000258
20.00	0.283	0.000800	0.000582	0.000529	0.000444	0.000378	0.000326	0.000284
21.00	0.297	0.000876	0.000637	0.000579	0.000486	0.000413	0.000356	0.000311
22.00	0.311	0.000955	0.000694	0.000632	0.000529	0.000451	0.000388	0.000339
23.00	0.325	0.001037	0.000754	0.000686	0.000575	0.000489	0.000422	0.000368
24.00	0.339	0.001122	0.000816	0.000742	0.000622	0.000529	0.000456	0.000398
25.00	0.354	0.001210	0.000880	0.000800	0.000671	0.000571	0.000492	0.000429
26.00	0.368	0.001301	0.000946	0.000860	0.000721	0.000614	0.000529	0.000461
27.00	0.382	0.001395	0.001015	0.000923	0.000773	0.000658	0.000568	0.000495
28.00	0.396	0.001492	0.001085	0.000987	0.000827	0.000704	0.000607	0.000529
29.00	0.410	0.001592	0.001158	0.001053	0.000883	0.000752	0.000648	0.000565
30.00	0.424	0.001695	0.001233	0.001122	0.000940	0.000800	0.000690	0.000601
31.00	0.438	0.001802	0.001311	0.001192	0.000999	0.000850	0.000733	0.000639
32.00	0.453	0.001911	0.001390	0.001264	0.001059	0.000902	0.000778	0.000678
33.00	0.467	0.002023	0.001471	0.001338	0.001122	0.000955	0.000823	0.000718
34.00	0.481	0.002138	0.001555	0.001414	0.001185	0.001009	0.000870	0.000758
35.00	0.495	0.002256	0.001641	0.001492	0.001251	0.001065	0.000918	0.000800
36.00	0.509	0.002378	0.001729	0.001572	0.001318	0.001122	0.000967	0.000843
37.00	0.523	0.002500	0.001819	0.001654	0.001388	0.001180	0.001017	0.000887
38.00	0.537	0.002627	0.001911	0.001738	0.001458	0.001240	0.001069	0.000932
39.00	0.552	0.002758	0.002005	0.001823	0.001528	0.001301	0.001122	0.000978
40.00	0.566	0.002888	0.002101	0.001911	0.001602	0.001363	0.001175	0.001025
41.00	0.580	0.003024	0.002199	0.002000	0.001678	0.001427	0.001230	0.001073
42.00	0.594	0.003162	0.002300	0.002091	0.001753	0.001492	0.001287	0.001122
43.00	0.608	0.003302	0.002402	0.002185	0.001831	0.001559	0.001344	0.001172
44.00	0.622	0.003446	0.002507	0.002280	0.001911	0.001628	0.001402	0.001222
45.00	0.636	0.003592	0.002613	0.002378	0.001992	0.001695	0.001462	0.001274
46.00	0.651	0.003742	0.002722	0.002475	0.002075	0.001766	0.001523	0.001327
47.00	0.665	0.003894	0.002832	0.002576	0.002159	0.001838	0.001584	0.001381
48.00	0.679	0.004048	0.002945	0.002678	0.002245	0.001911	0.001647	0.001436
49.00	0.693	0.004206	0.003060	0.002782	0.002332	0.001985	0.001712	0.001492
50.00	0.707	0.004368	0.003178	0.002888	0.002421	0.002061	0.001777	0.001549
55.00	0.778	0.005209	0.003789	0.003446	0.002888	0.002459	0.002120	0.001848
60.00	0.848	0.006120	0.004452	0.004048	0.003393	0.002888	0.002490	0.002171
65.00	0.919	0.007098	0.005163	0.004685	0.003936	0.003360	0.002888	0.002518
70.00	0.990	0.008142	0.005923	0.005386	0.004515	0.003843	0.003313	0.002888
75.00	1.061	0.009252	0.006730	0.006120	0.005130	0.004366	0.003765	0.003282
80.00	1.131	0.010426	0.007584	0.006897	0.005781	0.004921	0.004243	0.003699
85.00	1.202	0.011685	0.008485	0.007716	0.006468	0.005505	0.004747	0.004138
90.00	1.273	0.012987	0.009433	0.008578	0.007190	0.006120	0.005277	0.004600
95.00	1.343	0.014333	0.010426	0.009481	0.007947	0.006765	0.005833	0.005085
100.00	1.414	0.015761	0.011465	0.010426	0.008739	0.007439	0.006414	0.005591
105.00	1.485	0.017251	0.012549	0.011412	0.009565	0.008142	0.007020	0.006120
110.00	1.558	0.018803	0.013678	0.012439	0.010426	0.008874	0.007652	0.006671
115.00	1.626	0.020417	0.014852	0.013508	0.011321	0.009636	0.008308	0.007243
120.00	1.697	0.022091	0.016070	0.014613	0.012249	0.010426	0.008990	0.007837
125.00	1.768	0.023826	0.017332	0.015761	0.013211	0.011245	0.009696	0.008452
130.00	1.838	0.025621	0.018637	0.016948	0.014206	0.012092	0.010426	0.009089
135.00	1.909	0.027475	0.019986	0.018175	0.015234	0.012967	0.011181	0.009747
140.00	1.980	0.029389	0.021379	0.019441	0.016296	0.013871	0.011960	0.010426
145.00	2.051	0.031363	0.022814	0.020747	0.017390	0.014802	0.012763	0.011126
150.00	2.121	0.033395	0.024292	0.022091	0.018517	0.015781	0.013590	0.011847
155.00	2.192	0.035485	0.025813	0.023474	0.019676	0.016748	0.014440	0.012589
160.00	2.263	0.037634	0.027378	0.024896	0.020867	0.017782	0.015315	0.013351
165.00	2.333	0.039841	0.028982	0.026355	0.022091	0.018803	0.016213	0.014134
170.00	2.404	0.042108	0.030629	0.027853	0.023347	0.019872	0.017135	0.014937
175.00	2.475	0.044428	0.032318	0.029389	0.024634	0.020968	0.018079	0.015761
180.00	2.546	0.046807	0.034049	0.030963	0.025953	0.022091	0.019048	0.016605
185.00	2.618	0.049243	0.035821	0.032575	0.027304	0.023241	0.020039	0.017469
190.00	2.687	0.051736	0.037634	0.034224	0.028687	0.024417	0.021054	0.018354
195.00	2.758	0.054286	0.039489	0.035911	0.030100	0.025621	0.022091	0.019258
200.00	2.828	0.056891	0.041384	0.037634	0.031545	0.026850	0.023151	0.020183

WILLIAMS - HAZEN FORMÜLÜNDE HIDROLİK EĞİM, (J)

$Q=0.85 \cdot C \cdot R^{0.63} \cdot J^{0.54} \cdot A$

Q=Debi, A=Akım alanı, V=Ortalama akım hızı, C=Williams-Hazen katsayısı, D=Boru çapı, J=Hidrolik eğim

D=350 mm		J						
Q(l/sn)	V(m/sn)	C=80	C=85	C=100	C=110	C=120	C=130	C=140
20.00	0.208	0.000378	0.000275	0.000250	0.000209	0.000178	0.000154	0.000134
21.00	0.218	0.000413	0.000301	0.000273	0.000229	0.000195	0.000168	0.000147
22.00	0.229	0.000451	0.000328	0.000298	0.000250	0.000213	0.000183	0.000160
23.00	0.239	0.000489	0.000356	0.000324	0.000271	0.000231	0.000199	0.000174
24.00	0.249	0.000529	0.000385	0.000350	0.000294	0.000250	0.000215	0.000188
25.00	0.260	0.000571	0.000415	0.000378	0.000317	0.000269	0.000232	0.000203
26.00	0.270	0.000614	0.000447	0.000408	0.000340	0.000290	0.000250	0.000218
27.00	0.281	0.000658	0.000479	0.000436	0.000365	0.000311	0.000268	0.000234
28.00	0.291	0.000704	0.000512	0.000466	0.000391	0.000332	0.000287	0.000250
29.00	0.301	0.000752	0.000547	0.000497	0.000417	0.000355	0.000306	0.000267
30.00	0.312	0.000800	0.000582	0.000529	0.000444	0.000378	0.000328	0.000284
31.00	0.322	0.000850	0.000619	0.000563	0.000472	0.000401	0.000346	0.000302
32.00	0.332	0.000902	0.000656	0.000597	0.000500	0.000426	0.000367	0.000320
33.00	0.343	0.000955	0.000695	0.000632	0.000529	0.000451	0.000389	0.000339
34.00	0.353	0.001009	0.000734	0.000667	0.000559	0.000476	0.000411	0.000358
35.00	0.364	0.001065	0.000774	0.000704	0.000590	0.000502	0.000433	0.000378
36.00	0.374	0.001122	0.000816	0.000742	0.000622	0.000529	0.000456	0.000398
37.00	0.384	0.001180	0.000858	0.000781	0.000654	0.000557	0.000480	0.000419
38.00	0.395	0.001240	0.000902	0.000820	0.000687	0.000585	0.000505	0.000440
39.00	0.405	0.001301	0.000946	0.000861	0.000721	0.000614	0.000529	0.000461
40.00	0.416	0.001363	0.000992	0.000902	0.000756	0.000643	0.000555	0.000484
45.00	0.468	0.001666	0.001233	0.001122	0.000940	0.000800	0.000690	0.000602
50.00	0.519	0.002081	0.001492	0.001363	0.001143	0.000973	0.000839	0.000731
55.00	0.571	0.002459	0.001789	0.001627	0.001383	0.001160	0.001001	0.000872
60.00	0.623	0.002899	0.002101	0.001911	0.001602	0.001363	0.001178	0.001025
65.00	0.675	0.003350	0.002437	0.002216	0.001858	0.001581	0.001363	0.001186
70.00	0.727	0.003843	0.002798	0.002542	0.002131	0.001814	0.001564	0.001363
75.00	0.779	0.004367	0.003177	0.002889	0.002421	0.002081	0.001777	0.001546
80.00	0.831	0.004921	0.003580	0.003255	0.002729	0.002323	0.002003	0.001748
85.00	0.883	0.005508	0.004005	0.003642	0.003053	0.002589	0.002241	0.001953
90.00	0.935	0.006121	0.004452	0.004049	0.003394	0.002889	0.002491	0.002171
95.00	0.987	0.006785	0.004921	0.004475	0.003751	0.003193	0.002753	0.002400
100.00	1.039	0.007439	0.005412	0.004921	0.004125	0.003511	0.003027	0.002639
105.00	1.091	0.008143	0.005923	0.005386	0.004515	0.003843	0.003314	0.002889
110.00	1.143	0.008875	0.006456	0.005871	0.004921	0.004189	0.003612	0.003149
115.00	1.195	0.009637	0.007010	0.006375	0.005343	0.004548	0.003922	0.003419
120.00	1.247	0.010427	0.007585	0.006898	0.005782	0.004921	0.004243	0.003699
125.00	1.299	0.011246	0.008181	0.007439	0.006236	0.005308	0.004576	0.003990
130.00	1.351	0.012093	0.008797	0.008000	0.006705	0.005707	0.004921	0.004290
135.00	1.403	0.012968	0.009434	0.008579	0.007191	0.006121	0.005277	0.004601
140.00	1.455	0.013872	0.010091	0.009176	0.007692	0.006547	0.005645	0.004921
145.00	1.506	0.014803	0.010768	0.009793	0.008208	0.006987	0.006024	0.005252
150.00	1.558	0.015762	0.011466	0.010427	0.008740	0.007439	0.006414	0.005592
155.00	1.610	0.016749	0.012184	0.011080	0.009287	0.007905	0.006816	0.005942
160.00	1.662	0.017763	0.012922	0.011751	0.009849	0.008384	0.007229	0.006302
165.00	1.714	0.018805	0.013679	0.012440	0.010427	0.008875	0.007653	0.006671
170.00	1.766	0.019874	0.014457	0.013147	0.011020	0.009380	0.008088	0.007050
175.00	1.818	0.020970	0.015254	0.013872	0.011627	0.009897	0.008534	0.007439
180.00	1.870	0.022093	0.016071	0.014615	0.012250	0.010427	0.008991	0.007838
185.00	1.922	0.023243	0.016908	0.015375	0.012888	0.010970	0.009458	0.008246
190.00	1.974	0.024420	0.017763	0.016154	0.013540	0.011525	0.009937	0.008663
195.00	2.026	0.025623	0.018639	0.016950	0.014207	0.012093	0.010427	0.009090
200.00	2.078	0.026853	0.019534	0.017763	0.014889	0.012673	0.010928	0.009526
205.00	2.130	0.028109	0.020447	0.018595	0.015586	0.013268	0.011439	0.009972
210.00	2.182	0.029392	0.021381	0.019443	0.016297	0.013872	0.011961	0.010427
215.00	2.234	0.030701	0.022339	0.020309	0.017023	0.014490	0.012494	0.010891
220.00	2.286	0.032036	0.023304	0.021192	0.017763	0.015120	0.013037	0.011365
225.00	2.338	0.033398	0.024284	0.022093	0.018518	0.015762	0.013591	0.011848
230.00	2.390	0.034785	0.025304	0.023011	0.019288	0.016417	0.014156	0.012340
235.00	2.442	0.036199	0.026332	0.023946	0.020071	0.017084	0.014731	0.012842
240.00	2.494	0.037638	0.027379	0.024898	0.020869	0.017763	0.015316	0.013352
245.00	2.545	0.039103	0.028444	0.025867	0.021682	0.018455	0.015912	0.013872
250.00	2.597	0.040593	0.029529	0.026853	0.022508	0.019158	0.016519	0.014401
255.00	2.649	0.042110	0.030632	0.027856	0.023349	0.019874	0.017136	0.014939
260.00	2.701	0.043651	0.031753	0.028876	0.024204	0.020602	0.017763	0.015486
265.00	2.753	0.045219	0.032893	0.029913	0.025073	0.021341	0.018401	0.016042

WILLIAMS - HAZEN FORMÜLÜNDE HİDROLİK EĞİM, (J)

$$Q = 0.85 \cdot C \cdot R^{0.63} \cdot J^{0.54} \cdot A$$

Q=Debi, A=Akım alanı, V=Ortalama akım hızı, C=Williams-Hazen katsayısı, D=Boru çapı, J=Hidrolik eğim

D=400 mm		J							
Q (l/sn)	V (m/sn)	C=80	C=95	C=100	C=110	C=120	C=130	C=140	
40.00	0.318	0.000711	0.000518	0.000471	0.000394	0.000336	0.000290	0.000252	
45.00	0.358	0.000885	0.000644	0.000585	0.000491	0.000418	0.000360	0.000314	
50.00	0.398	0.001078	0.000782	0.000711	0.000596	0.000508	0.000438	0.000382	
55.00	0.438	0.001283	0.000933	0.000849	0.000711	0.000606	0.000522	0.000455	
60.00	0.477	0.001507	0.001097	0.000997	0.000836	0.000711	0.000613	0.000535	
65.00	0.517	0.001748	0.001272	0.001157	0.000989	0.000825	0.000711	0.000620	
70.00	0.557	0.002008	0.001469	0.001327	0.001112	0.000947	0.000816	0.000711	
75.00	0.597	0.002279	0.001688	0.001507	0.001284	0.001076	0.000927	0.000808	
80.00	0.636	0.002568	0.001938	0.001699	0.001424	0.001212	0.001045	0.000911	
85.00	0.676	0.002873	0.002209	0.001901	0.001593	0.001356	0.001169	0.001019	
90.00	0.716	0.003194	0.002503	0.002113	0.001771	0.001507	0.001300	0.001139	
95.00	0.756	0.003530	0.002818	0.002335	0.001958	0.001666	0.001437	0.001252	
100.00	0.795	0.003882	0.003154	0.002568	0.002153	0.001832	0.001580	0.001377	
105.00	0.835	0.004249	0.003509	0.002811	0.002356	0.002006	0.001729	0.001507	
110.00	0.875	0.004632	0.003889	0.003064	0.002568	0.002186	0.001885	0.001643	
115.00	0.915	0.005029	0.004288	0.003327	0.002789	0.002374	0.002047	0.001784	
120.00	0.955	0.005441	0.004719	0.003600	0.003017	0.002568	0.002214	0.001930	
125.00	0.994	0.005869	0.005176	0.003882	0.003254	0.002770	0.002388	0.002082	
130.00	1.034	0.006311	0.005669	0.004175	0.003499	0.002978	0.002568	0.002239	
135.00	1.074	0.006768	0.006183	0.004477	0.003753	0.003194	0.002754	0.002401	
140.00	1.114	0.007239	0.006726	0.004789	0.004014	0.003417	0.002946	0.002568	
145.00	1.153	0.007725	0.007295	0.005110	0.004284	0.003646	0.003144	0.002741	
150.00	1.193	0.008228	0.007884	0.005441	0.004561	0.003882	0.003347	0.002918	
155.00	1.233	0.008741	0.008493	0.005782	0.004847	0.004125	0.003557	0.003101	
160.00	1.273	0.009270	0.009133	0.006132	0.005140	0.004375	0.003772	0.003289	
165.00	1.313	0.009814	0.009799	0.006492	0.005441	0.004632	0.003994	0.003481	
170.00	1.352	0.010372	0.010485	0.006861	0.005751	0.004896	0.004221	0.003679	
175.00	1.392	0.010944	0.011133	0.007239	0.006088	0.005165	0.004453	0.003882	
180.00	1.432	0.011530	0.011819	0.007627	0.006393	0.005441	0.004692	0.004090	
185.00	1.472	0.012130	0.012533	0.008024	0.006726	0.005725	0.004936	0.004303	
190.00	1.511	0.012744	0.013154	0.008430	0.007068	0.006015	0.005186	0.004521	
195.00	1.551	0.013372	0.013803	0.008846	0.007414	0.006311	0.005441	0.004744	
200.00	1.591	0.014014	0.014471	0.009270	0.007770	0.006614	0.005703	0.004971	
205.00	1.631	0.014669	0.015154	0.009704	0.008134	0.006923	0.005970	0.005204	
210.00	1.670	0.015339	0.015853	0.010147	0.008505	0.007239	0.006242	0.005441	
215.00	1.710	0.016022	0.016569	0.010599	0.008884	0.007562	0.006520	0.005684	
220.00	1.750	0.016719	0.017291	0.011060	0.009270	0.007891	0.006804	0.005931	
225.00	1.790	0.017429	0.018029	0.011530	0.009664	0.008226	0.007093	0.006183	
230.00	1.830	0.018153	0.018783	0.012009	0.010066	0.008588	0.007387	0.006440	
235.00	1.869	0.018891	0.019553	0.012496	0.010474	0.008916	0.007687	0.006702	
240.00	1.909	0.019642	0.020339	0.012993	0.010891	0.009270	0.007993	0.006968	
245.00	1.949	0.020406	0.021143	0.013499	0.011315	0.009631	0.008304	0.007236	
250.00	1.989	0.021184	0.021963	0.014014	0.011746	0.009998	0.008621	0.007515	
255.00	2.028	0.021975	0.022803	0.014537	0.012185	0.010372	0.008943	0.007796	
260.00	2.068	0.022780	0.023653	0.015069	0.012631	0.010751	0.009270	0.008081	
265.00	2.108	0.023598	0.024523	0.015610	0.013085	0.011137	0.009603	0.008372	
270.00	2.148	0.024429	0.025413	0.016160	0.013545	0.011530	0.009941	0.008666	
275.00	2.188	0.025273	0.026323	0.016719	0.014014	0.011928	0.010285	0.008966	
280.00	2.227	0.026131	0.027253	0.017286	0.014499	0.012333	0.010634	0.009270	
285.00	2.267	0.027002	0.028203	0.017862	0.014989	0.012744	0.010988	0.009579	
290.00	2.307	0.027886	0.029173	0.018447	0.015482	0.013161	0.011348	0.009893	
295.00	2.347	0.028782	0.030163	0.019040	0.015989	0.013584	0.011713	0.010211	
300.00	2.386	0.029692	0.031173	0.019642	0.016494	0.014014	0.012083	0.010534	
305.00	2.426	0.030615	0.032203	0.020252	0.016975	0.014449	0.012469	0.010861	
310.00	2.466	0.031551	0.033253	0.020871	0.017494	0.014891	0.012839	0.011193	
315.00	2.506	0.032500	0.034323	0.021499	0.018021	0.015339	0.013226	0.011530	
320.00	2.545	0.033462	0.035413	0.022135	0.018554	0.015793	0.013617	0.011871	
325.00	2.585	0.034436	0.036523	0.022780	0.019094	0.016253	0.014014	0.012217	
330.00	2.625	0.035424	0.037653	0.023433	0.019642	0.016719	0.014415	0.012567	
335.00	2.665	0.036424	0.038803	0.024095	0.020196	0.017191	0.014823	0.012922	
340.00	2.705	0.037437	0.039973	0.024765	0.020758	0.017669	0.015235	0.013281	
345.00	2.744	0.038463	0.041163	0.025444	0.021327	0.018153	0.015652	0.013645	
350.00	2.784	0.039502	0.042373	0.026131	0.021903	0.018643	0.016075	0.014014	
355.00	2.824	0.041817	0.043603	0.026823	0.022476	0.019142	0.016503	0.014388	
360.00	2.864	0.043132	0.044853	0.027523	0.023056	0.019642	0.016936	0.014764	
370.00	2.943	0.043784	0.046123	0.028233	0.023642	0.020142	0.017373	0.015142	
380.00	3.023	0.046000	0.047413	0.028943	0.024233	0.020642	0.017817	0.015523	

Q=Debi, A=Akım alanı, V=Ortalama akım hızı, C=Williams-Hazen katsayısı, D=Boru çapı, J=Hidrolik eğim

D=450 mm		J						
Q(l/sn)	V(m/sn)	C=80	C=95	C=100	C=110	C=120	C=130	C=140
50.00	0.314	0.000806	0.000441	0.000401	0.000336	0.000286	0.000247	0.000215
55.00	0.346	0.000723	0.000526	0.000478	0.000401	0.000341	0.000294	0.000256
60.00	0.377	0.000646	0.000618	0.000562	0.000471	0.000401	0.000346	0.000301
65.00	0.408	0.000585	0.000717	0.000652	0.000548	0.000465	0.000401	0.000349
70.00	0.440	0.001130	0.000822	0.000748	0.000627	0.000533	0.000460	0.000401
75.00	0.471	0.001284	0.000934	0.000849	0.000712	0.000606	0.000523	0.000456
80.00	0.503	0.001447	0.001053	0.000957	0.000802	0.000683	0.000589	0.000513
85.00	0.534	0.001619	0.001178	0.001071	0.000908	0.000764	0.000659	0.000574
90.00	0.566	0.001800	0.001308	0.001191	0.000998	0.000849	0.000732	0.000638
95.00	0.597	0.001989	0.001447	0.001316	0.001103	0.000939	0.000810	0.000706
100.00	0.629	0.002188	0.001591	0.001447	0.001213	0.001032	0.000890	0.000776
105.00	0.660	0.002394	0.001742	0.001584	0.001328	0.001130	0.000974	0.000849
110.00	0.691	0.002610	0.001898	0.001726	0.001447	0.001232	0.001062	0.000926
115.00	0.723	0.002834	0.002081	0.001875	0.001571	0.001337	0.001153	0.001005
120.00	0.754	0.003068	0.002230	0.002028	0.001700	0.001447	0.001248	0.001088
125.00	0.786	0.003307	0.002408	0.002188	0.001834	0.001561	0.001346	0.001173
130.00	0.817	0.003556	0.002587	0.002352	0.001972	0.001678	0.001447	0.001262
135.00	0.848	0.003813	0.002774	0.002523	0.002114	0.001800	0.001552	0.001353
140.00	0.880	0.004079	0.002967	0.002698	0.002262	0.001925	0.001660	0.001447
145.00	0.911	0.004353	0.003166	0.002880	0.002414	0.002054	0.001771	0.001544
150.00	0.943	0.004635	0.003372	0.003066	0.002570	0.002188	0.001886	0.001644
155.00	0.974	0.004925	0.003583	0.003258	0.002731	0.002324	0.002004	0.001747
160.00	1.006	0.005223	0.003800	0.003455	0.002896	0.002465	0.002126	0.001853
165.00	1.037	0.005530	0.004022	0.003658	0.003066	0.002610	0.002250	0.001962
170.00	1.068	0.005844	0.004251	0.003866	0.003240	0.002758	0.002378	0.002073
175.00	1.100	0.006166	0.004486	0.004079	0.003419	0.002910	0.002509	0.002188
180.00	1.131	0.006497	0.004726	0.004298	0.003602	0.003066	0.002644	0.002305
185.00	1.163	0.006835	0.004972	0.004521	0.003790	0.003226	0.002781	0.002425
190.00	1.194	0.007181	0.005223	0.004750	0.003982	0.003389	0.002922	0.002547
195.00	1.226	0.007535	0.005481	0.004994	0.004178	0.003556	0.003068	0.002673
200.00	1.257	0.007898	0.005744	0.005223	0.004378	0.003727	0.003213	0.002801
205.00	1.288	0.008266	0.006013	0.005468	0.004583	0.003891	0.003364	0.002932
210.00	1.320	0.008643	0.006287	0.005717	0.004792	0.004079	0.003517	0.003066
215.00	1.351	0.009028	0.006567	0.005972	0.005006	0.004261	0.003674	0.003203
220.00	1.383	0.009420	0.006853	0.006232	0.005223	0.004446	0.003834	0.003342
225.00	1.414	0.009821	0.007144	0.006497	0.005445	0.004635	0.003996	0.003484
230.00	1.446	0.010229	0.007441	0.006766	0.005672	0.004828	0.004162	0.003629
235.00	1.477	0.010644	0.007743	0.007041	0.005902	0.005024	0.004332	0.003776
240.00	1.508	0.011067	0.008051	0.007321	0.006137	0.005223	0.004504	0.003926
245.00	1.540	0.011498	0.008364	0.007608	0.006375	0.005427	0.004679	0.004079
250.00	1.571	0.011937	0.008683	0.007898	0.006619	0.005634	0.004857	0.004235
255.00	1.603	0.012382	0.009007	0.008191	0.006868	0.005844	0.005039	0.004393
260.00	1.634	0.012836	0.009337	0.008491	0.007117	0.006058	0.005223	0.004554
265.00	1.666	0.013297	0.009672	0.008798	0.007373	0.006275	0.005411	0.004717
270.00	1.697	0.013765	0.010013	0.009108	0.007632	0.006497	0.005602	0.004883
275.00	1.728	0.014241	0.010359	0.009420	0.007896	0.006721	0.005795	0.005052
280.00	1.760	0.014724	0.010711	0.009740	0.008164	0.006949	0.005992	0.005223
285.00	1.791	0.015215	0.011067	0.010065	0.008436	0.007181	0.006191	0.005397
290.00	1.823	0.015713	0.011430	0.010394	0.008712	0.007416	0.006394	0.005574
295.00	1.854	0.016218	0.011797	0.010728	0.008992	0.007654	0.006600	0.005753
300.00	1.886	0.016731	0.012170	0.011087	0.009277	0.007896	0.006808	0.005935
310.00	1.948	0.017778	0.012932	0.011760	0.009658	0.008391	0.007235	0.006307
320.00	2.011	0.018855	0.013715	0.012473	0.010454	0.008899	0.007673	0.006689
330.00	2.074	0.019960	0.014520	0.013204	0.011067	0.009420	0.008123	0.007081
340.00	2.137	0.021085	0.015345	0.013854	0.011697	0.009956	0.008584	0.007483
350.00	2.200	0.022258	0.016191	0.014724	0.012342	0.010505	0.009058	0.007896
360.00	2.263	0.023450	0.017058	0.015512	0.013003	0.011067	0.009543	0.008319
370.00	2.325	0.024671	0.017946	0.016320	0.013679	0.011644	0.010039	0.008752
380.00	2.388	0.025920	0.018855	0.017146	0.014372	0.012233	0.010548	0.009195
390.00	2.451	0.027197	0.019784	0.017991	0.015080	0.012836	0.011067	0.009648
400.00	2.514	0.028502	0.020733	0.018855	0.015804	0.013452	0.011599	0.010111
410.00	2.577	0.029836	0.021703	0.019737	0.016543	0.014081	0.012141	0.010584
420.00	2.640	0.031197	0.022694	0.020637	0.017298	0.014724	0.012696	0.011067
430.00	2.703	0.032587	0.023705	0.021557	0.018069	0.015380	0.013261	0.011580
440.00	2.765	0.034004	0.024736	0.022494	0.018855	0.016049	0.013838	0.012063
450.00	2.828	0.035449	0.025787	0.023450	0.019658	0.016731	0.014426	0.012576

WILLIAMS - HAZEN FORMÜLÜNDE HIDROLİK EĞİM, (J)

$$Q = 0.85 \cdot C \cdot R^A \cdot (0.63)^J \cdot A^{0.54} \cdot A$$

Q=Debi, A=Akım alanı, V=Ortalama akım hızı, C=Williams-Hazen katsayısı, D=Boru çapı, J=Hidrolik eğim

D=500 mm		J						
Q(l/san)	V(m/san)	C=80	C=95	C=100	C=110	C=120	C=130	C=140
70.00	0.356	0.000876	0.000492	0.000447	0.000375	0.000319	0.000275	0.000240
75.00	0.362	0.000789	0.000559	0.000508	0.000426	0.000363	0.000313	0.000273
80.00	0.407	0.000866	0.000630	0.000573	0.000480	0.000409	0.000353	0.000307
85.00	0.433	0.000989	0.000705	0.000641	0.000537	0.000457	0.000394	0.000344
90.00	0.458	0.001077	0.000784	0.000713	0.000597	0.000508	0.000438	0.000382
95.00	0.484	0.001191	0.000866	0.000788	0.000680	0.000562	0.000485	0.000422
100.00	0.509	0.001309	0.000953	0.000866	0.000726	0.000618	0.000533	0.000465
105.00	0.535	0.001433	0.001043	0.000948	0.000795	0.000676	0.000583	0.000508
110.00	0.560	0.001562	0.001136	0.001033	0.000866	0.000737	0.000636	0.000554
115.00	0.585	0.001698	0.001234	0.001122	0.000941	0.000801	0.000690	0.000602
120.00	0.611	0.001836	0.001336	0.001214	0.001018	0.000866	0.000747	0.000651
125.00	0.636	0.001980	0.001440	0.001309	0.001098	0.000934	0.000806	0.000702
130.00	0.662	0.002129	0.001548	0.001408	0.001180	0.001005	0.000866	0.000756
135.00	0.687	0.002283	0.001661	0.001510	0.001266	0.001077	0.000929	0.000810
140.00	0.713	0.002442	0.001776	0.001615	0.001354	0.001152	0.000994	0.000866
145.00	0.738	0.002606	0.001895	0.001724	0.001445	0.001230	0.001060	0.000924
150.00	0.764	0.002775	0.002018	0.001835	0.001538	0.001309	0.001129	0.000984
155.00	0.789	0.002948	0.002145	0.001950	0.001635	0.001391	0.001200	0.001046
160.00	0.815	0.003127	0.002275	0.002068	0.001734	0.001476	0.001272	0.001109
165.00	0.840	0.003310	0.002408	0.002190	0.001835	0.001562	0.001347	0.001174
170.00	0.865	0.003498	0.002545	0.002314	0.001940	0.001651	0.001424	0.001241
175.00	0.891	0.003691	0.002685	0.002442	0.002047	0.001742	0.001502	0.001309
180.00	0.916	0.003889	0.002829	0.002573	0.002156	0.001835	0.001583	0.001380
185.00	0.942	0.004091	0.002976	0.002708	0.002269	0.001931	0.001665	0.001451
190.00	0.967	0.004298	0.003127	0.002843	0.002383	0.002029	0.001749	0.001525
195.00	0.993	0.004510	0.003281	0.002984	0.002501	0.002129	0.001835	0.001600
200.00	1.018	0.004727	0.003438	0.003127	0.002621	0.002231	0.001923	0.001677
205.00	1.044	0.004948	0.003599	0.003273	0.002743	0.002335	0.002013	0.001755
210.00	1.069	0.005174	0.003763	0.003422	0.002869	0.002442	0.002105	0.001835
215.00	1.095	0.005404	0.003931	0.003575	0.002996	0.002551	0.002199	0.001917
220.00	1.120	0.005639	0.004102	0.003730	0.003127	0.002661	0.002295	0.002001
225.00	1.145	0.005879	0.004278	0.003889	0.003260	0.002775	0.002392	0.002086
230.00	1.171	0.006123	0.004454	0.004050	0.003395	0.002890	0.002492	0.002172
235.00	1.198	0.006372	0.004635	0.004215	0.003533	0.003007	0.002593	0.002260
240.00	1.222	0.006625	0.004819	0.004383	0.003673	0.003127	0.002696	0.002350
245.00	1.247	0.006883	0.005007	0.004553	0.003816	0.003248	0.002801	0.002442
250.00	1.273	0.007145	0.005198	0.004727	0.003962	0.003372	0.002908	0.002536
255.00	1.298	0.007412	0.005392	0.004903	0.004110	0.003498	0.003016	0.002630
260.00	1.324	0.007684	0.005589	0.005083	0.004260	0.003626	0.003127	0.002726
265.00	1.349	0.007960	0.005790	0.005265	0.004413	0.003757	0.003239	0.002824
270.00	1.375	0.008240	0.005994	0.005451	0.004569	0.003889	0.003353	0.002923
275.00	1.400	0.008525	0.006201	0.005639	0.004727	0.004023	0.003469	0.003024
280.00	1.425	0.008814	0.006411	0.005831	0.004887	0.004180	0.003587	0.003127
285.00	1.451	0.009108	0.006625	0.006025	0.005050	0.004298	0.003706	0.003231
290.00	1.476	0.009406	0.006842	0.006222	0.005215	0.004439	0.003828	0.003337
295.00	1.502	0.009708	0.007062	0.006422	0.005383	0.004582	0.003951	0.003444
300.00	1.527	0.010015	0.007285	0.006625	0.005553	0.004727	0.004076	0.003553
310.00	1.578	0.010642	0.007741	0.007040	0.005901	0.005023	0.004331	0.003775
320.00	1.629	0.011287	0.008210	0.007466	0.006258	0.005327	0.004593	0.004004
330.00	1.680	0.011948	0.008692	0.007904	0.006625	0.005639	0.004862	0.004239
340.00	1.731	0.012628	0.009186	0.008353	0.007002	0.005980	0.005139	0.004480
350.00	1.782	0.013324	0.009692	0.008814	0.007388	0.006288	0.005422	0.004727
360.00	1.833	0.014037	0.010211	0.009298	0.007783	0.006625	0.005712	0.004980
370.00	1.884	0.014768	0.010743	0.009789	0.008189	0.006970	0.006010	0.005239
380.00	1.935	0.015516	0.011287	0.010264	0.008603	0.007323	0.006314	0.005504
390.00	1.985	0.016280	0.011843	0.010770	0.009027	0.007684	0.006625	0.005776
400.00	2.036	0.017062	0.012411	0.011287	0.009460	0.008052	0.006943	0.006053
410.00	2.087	0.017860	0.012992	0.011815	0.009903	0.008429	0.007268	0.006336
420.00	2.138	0.018675	0.013585	0.012354	0.010355	0.008814	0.007600	0.006625
430.00	2.189	0.019507	0.014190	0.012904	0.010816	0.009206	0.007938	0.006920
440.00	2.240	0.020355	0.014807	0.013465	0.011287	0.009607	0.008283	0.007221
450.00	2.291	0.021220	0.015436	0.014037	0.011766	0.010015	0.008635	0.007528
460.00	2.342	0.022102	0.016077	0.014621	0.012255	0.010431	0.008994	0.007841
470.00	2.393	0.023000	0.016731	0.015215	0.012753	0.010855	0.009360	0.008159
480.00	2.444	0.023914	0.017398	0.015820	0.013260	0.011287	0.009732	0.008484
490.00	2.495	0.024845	0.018073	0.016435	0.013778	0.011728	0.010110	0.008814

WILLIAMS - HAZEN FORMÜLÜNDE HİDROLİK EĞİM, (J)

$Q=0.85 \cdot C \cdot R^{0.63} \cdot J^{0.54} \cdot A$

Q=Debi, A=Alınır alanı, V=Ortalama akım hızı, C=Williams-Hazen katsayısı, D= Boru çapı, J=Hidrolik eğim

D=550 mm		J						
Q(l/sn)	V(m/sn)	C=80	C=95	C=100	C=110	C=120	C=130	C=140
100.00	0.421	0.000823	0.000699	0.000545	0.000456	0.000389	0.000335	0.000292
105.00	0.442	0.000901	0.000765	0.000596	0.000500	0.000425	0.000367	0.000320
110.00	0.463	0.000982	0.000714	0.000650	0.000545	0.000464	0.000400	0.000348
115.00	0.484	0.001066	0.000776	0.000705	0.000591	0.000503	0.000434	0.000378
120.00	0.505	0.001154	0.000839	0.000763	0.000640	0.000545	0.000470	0.000409
125.00	0.526	0.001244	0.000905	0.000823	0.000690	0.000587	0.000506	0.000441
130.00	0.547	0.001338	0.000973	0.000885	0.000742	0.000632	0.000545	0.000475
135.00	0.568	0.001435	0.001044	0.000949	0.000796	0.000677	0.000584	0.000509
140.00	0.589	0.001535	0.001117	0.001015	0.000851	0.000724	0.000625	0.000545
145.00	0.610	0.001638	0.001192	0.001084	0.000908	0.000773	0.000667	0.000581
150.00	0.631	0.001744	0.001269	0.001154	0.000967	0.000823	0.000710	0.000619
155.00	0.652	0.001853	0.001348	0.001226	0.001028	0.000875	0.000754	0.000658
160.00	0.673	0.001966	0.001430	0.001300	0.001090	0.000928	0.000800	0.000697
165.00	0.694	0.002081	0.001514	0.001377	0.001154	0.000982	0.000847	0.000738
170.00	0.715	0.002199	0.001600	0.001455	0.001219	0.001038	0.000895	0.000780
175.00	0.736	0.002320	0.001688	0.001535	0.001287	0.001095	0.000944	0.000823
180.00	0.757	0.002445	0.001778	0.001617	0.001356	0.001154	0.000995	0.000867
185.00	0.778	0.002572	0.001871	0.001701	0.001426	0.001214	0.001047	0.000912
190.00	0.799	0.002702	0.001968	0.001788	0.001498	0.001275	0.001100	0.000959
195.00	0.820	0.002835	0.002062	0.001876	0.001572	0.001338	0.001154	0.001006
200.00	0.841	0.002971	0.002161	0.001966	0.001648	0.001402	0.001209	0.001054
205.00	0.863	0.003110	0.002263	0.002058	0.001725	0.001468	0.001266	0.001103
210.00	0.884	0.003252	0.002366	0.002151	0.001803	0.001535	0.001324	0.001154
215.00	0.905	0.003397	0.002471	0.002247	0.001884	0.001603	0.001382	0.001205
220.00	0.926	0.003545	0.002579	0.002345	0.001966	0.001673	0.001443	0.001258
225.00	0.947	0.003696	0.002688	0.002445	0.002049	0.001744	0.001504	0.001311
230.00	0.968	0.003849	0.002800	0.002546	0.002134	0.001817	0.001566	0.001366
235.00	0.989	0.004006	0.002914	0.002650	0.002221	0.001890	0.001630	0.001421
240.00	1.010	0.004165	0.003030	0.002755	0.002309	0.001968	0.001695	0.001477
245.00	1.031	0.004327	0.003148	0.002862	0.002399	0.002042	0.001761	0.001535
250.00	1.052	0.004492	0.003268	0.002971	0.002491	0.002120	0.001828	0.001594
255.00	1.073	0.004660	0.003390	0.003082	0.002584	0.002199	0.001896	0.001653
260.00	1.094	0.004830	0.003514	0.003195	0.002678	0.002280	0.001966	0.001714
265.00	1.115	0.005004	0.003640	0.003310	0.002774	0.002362	0.002038	0.001775
270.00	1.136	0.005180	0.003768	0.003427	0.002872	0.002445	0.002108	0.001838
275.00	1.157	0.005359	0.003898	0.003545	0.002971	0.002529	0.002181	0.001901
280.00	1.178	0.005541	0.004031	0.003665	0.003072	0.002615	0.002255	0.001966
285.00	1.199	0.005725	0.004165	0.003787	0.003175	0.002702	0.002330	0.002031
290.00	1.220	0.005913	0.004301	0.003911	0.003279	0.002791	0.002406	0.002098
295.00	1.241	0.006103	0.004439	0.004037	0.003384	0.002880	0.002484	0.002165
300.00	1.262	0.006296	0.004580	0.004165	0.003491	0.002971	0.002562	0.002234
310.00	1.304	0.006890	0.004867	0.004426	0.003709	0.003157	0.002722	0.002373
320.00	1.346	0.007095	0.005161	0.004694	0.003934	0.003349	0.002887	0.002517
330.00	1.388	0.007511	0.005464	0.004969	0.004165	0.003545	0.003057	0.002665
340.00	1.431	0.007938	0.005774	0.005251	0.004402	0.003747	0.003230	0.002816
350.00	1.473	0.008378	0.006093	0.005541	0.004644	0.003953	0.003409	0.002971
360.00	1.515	0.008825	0.006419	0.005838	0.004893	0.004165	0.003591	0.003131
370.00	1.557	0.009284	0.006753	0.006141	0.005148	0.004382	0.003778	0.003293
380.00	1.599	0.009754	0.007095	0.006452	0.005408	0.004603	0.003969	0.003460
390.00	1.641	0.010234	0.007445	0.006770	0.005675	0.004830	0.004165	0.003631
400.00	1.683	0.010726	0.007802	0.007085	0.005947	0.005062	0.004365	0.003805
410.00	1.725	0.011228	0.008167	0.007427	0.006225	0.005299	0.004569	0.003983
420.00	1.767	0.011740	0.008540	0.007766	0.006510	0.005541	0.004777	0.004165
430.00	1.809	0.012263	0.008920	0.008112	0.006799	0.005788	0.004980	0.004350
440.00	1.851	0.012796	0.009308	0.008465	0.007095	0.006039	0.005207	0.004540
450.00	1.893	0.013340	0.009704	0.008825	0.007397	0.006296	0.005429	0.004732
460.00	1.935	0.013894	0.010107	0.009191	0.007704	0.006557	0.005654	0.004929
470.00	1.977	0.014459	0.010518	0.009565	0.008017	0.006824	0.005884	0.005129
480.00	2.020	0.015033	0.010936	0.009945	0.008336	0.007095	0.006118	0.005333
490.00	2.062	0.015619	0.011361	0.010332	0.008660	0.007371	0.006358	0.005541
500.00	2.104	0.016214	0.011794	0.010728	0.008990	0.007652	0.006598	0.005752
510.00	2.146	0.016820	0.012235	0.011126	0.009328	0.007938	0.006845	0.005967
520.00	2.188	0.017435	0.012683	0.011534	0.009668	0.008229	0.007095	0.006185
530.00	2.230	0.018061	0.013138	0.011948	0.010015	0.008524	0.007350	0.006407
540.00	2.272	0.018698	0.013601	0.012369	0.010367	0.008825	0.007609	0.006633
550.00	2.314	0.019344	0.014071	0.012795	0.010728	0.009130	0.007872	0.006862

D=600 mm		J						
Q(l/sn)	V(m/sn)	C=80	C=95	C=100	C=110	C=120	C=130	C=140
100.00	0.354	0.000539	0.000392	0.000358	0.000299	0.000254	0.000219	0.000191
105.00	0.371	0.000590	0.000429	0.000390	0.000327	0.000278	0.000240	0.000209
110.00	0.389	0.000643	0.000468	0.000425	0.000356	0.000303	0.000262	0.000228
115.00	0.407	0.000698	0.000508	0.000462	0.000387	0.000329	0.000284	0.000248
120.00	0.424	0.000755	0.000549	0.000500	0.000419	0.000356	0.000307	0.000268
125.00	0.442	0.000815	0.000593	0.000539	0.000452	0.000384	0.000331	0.000289
130.00	0.460	0.000876	0.000637	0.000579	0.000486	0.000413	0.000356	0.000311
135.00	0.477	0.000939	0.000683	0.000621	0.000521	0.000443	0.000382	0.000333
140.00	0.495	0.001005	0.000731	0.000665	0.000557	0.000474	0.000409	0.000356
145.00	0.513	0.001072	0.000780	0.000709	0.000595	0.000508	0.000436	0.000380
150.00	0.530	0.001142	0.000831	0.000755	0.000633	0.000539	0.000465	0.000405
155.00	0.548	0.001213	0.000882	0.000803	0.000673	0.000573	0.000494	0.000430
160.00	0.566	0.001287	0.000936	0.000851	0.000713	0.000607	0.000524	0.000456
165.00	0.583	0.001362	0.000991	0.000901	0.000755	0.000643	0.000554	0.000483
170.00	0.601	0.001440	0.001047	0.000952	0.000798	0.000679	0.000586	0.000511
175.00	0.619	0.001519	0.001105	0.001005	0.000842	0.000717	0.000618	0.000539
180.00	0.638	0.001600	0.001164	0.001059	0.000887	0.000755	0.000651	0.000568
185.00	0.654	0.001684	0.001225	0.001114	0.000933	0.000795	0.000685	0.000597
190.00	0.672	0.001769	0.001287	0.001170	0.000981	0.000835	0.000720	0.000627
195.00	0.689	0.001856	0.001350	0.001228	0.001029	0.000876	0.000755	0.000658
200.00	0.707	0.001945	0.001415	0.001287	0.001078	0.000918	0.000791	0.000690
205.00	0.725	0.002036	0.001481	0.001347	0.001129	0.000961	0.000829	0.000722
210.00	0.742	0.002129	0.001549	0.001408	0.001180	0.001005	0.000866	0.000755
215.00	0.760	0.002224	0.001618	0.001471	0.001233	0.001050	0.000905	0.000789
220.00	0.778	0.002320	0.001688	0.001535	0.001287	0.001095	0.000944	0.000823
225.00	0.795	0.002419	0.001760	0.001600	0.001341	0.001142	0.000984	0.000858
230.00	0.813	0.002520	0.001833	0.001667	0.001397	0.001189	0.001025	0.000894
235.00	0.831	0.002622	0.001907	0.001734	0.001454	0.001237	0.001067	0.000930
240.00	0.848	0.002726	0.001983	0.001803	0.001512	0.001287	0.001109	0.000967
245.00	0.866	0.002832	0.002060	0.001874	0.001570	0.001337	0.001153	0.001005
250.00	0.884	0.002940	0.002139	0.001945	0.001630	0.001388	0.001197	0.001043
255.00	0.919	0.003162	0.002300	0.002092	0.001753	0.001492	0.001287	0.001122
270.00	0.955	0.003391	0.002466	0.002243	0.001880	0.001600	0.001380	0.001203
280.00	0.990	0.003627	0.002638	0.002399	0.002011	0.001712	0.001476	0.001287
290.00	1.025	0.003870	0.002815	0.002560	0.002146	0.001827	0.001575	0.001373
300.00	1.061	0.004121	0.002998	0.002728	0.002285	0.001945	0.001677	0.001462
310.00	1.096	0.004379	0.003185	0.002897	0.002428	0.002067	0.001782	0.001554
320.00	1.131	0.004644	0.003378	0.003072	0.002575	0.002192	0.001890	0.001648
330.00	1.167	0.004917	0.003576	0.003252	0.002726	0.002320	0.002001	0.001744
340.00	1.202	0.005196	0.003780	0.003437	0.002881	0.002452	0.002114	0.001843
350.00	1.237	0.005483	0.003988	0.003627	0.003040	0.002588	0.002231	0.001945
360.00	1.273	0.005776	0.004202	0.003821	0.003203	0.002726	0.002351	0.002049
370.00	1.308	0.006077	0.004420	0.004020	0.003370	0.002868	0.002473	0.002156
380.00	1.343	0.006385	0.004644	0.004223	0.003540	0.003013	0.002598	0.002265
390.00	1.379	0.006699	0.004873	0.004432	0.003715	0.003162	0.002728	0.002377
400.00	1.414	0.007021	0.005107	0.004644	0.003893	0.003314	0.002857	0.002491
410.00	1.449	0.007349	0.005346	0.004862	0.004075	0.003469	0.002991	0.002607
420.00	1.485	0.007685	0.005590	0.005083	0.004261	0.003627	0.003127	0.002726
430.00	1.520	0.008027	0.005839	0.005310	0.004451	0.003788	0.003268	0.002848
440.00	1.556	0.008376	0.006093	0.005541	0.004644	0.003953	0.003409	0.002971
450.00	1.591	0.008732	0.006352	0.005776	0.004842	0.004121	0.003553	0.003098
460.00	1.626	0.009095	0.006616	0.006018	0.005043	0.004292	0.003701	0.003226
470.00	1.662	0.009464	0.006884	0.006261	0.005248	0.004467	0.003851	0.003357
480.00	1.697	0.009840	0.007158	0.006510	0.005456	0.004644	0.004004	0.003491
490.00	1.732	0.010223	0.007437	0.006763	0.005669	0.004825	0.004160	0.003627
500.00	1.768	0.010613	0.007720	0.007021	0.005885	0.005009	0.004319	0.003765
510.00	1.803	0.011010	0.008009	0.007283	0.006105	0.005196	0.004480	0.003906
520.00	1.838	0.011413	0.008302	0.007550	0.006328	0.005388	0.004644	0.004049
530.00	1.874	0.011822	0.008600	0.007821	0.006555	0.005580	0.004811	0.004194
540.00	1.909	0.012239	0.008903	0.008096	0.006786	0.005776	0.004980	0.004342
550.00	1.944	0.012662	0.009211	0.008376	0.007021	0.005978	0.005153	0.004492
560.00	1.980	0.013092	0.009523	0.008660	0.007259	0.006179	0.005327	0.004644
570.00	2.015	0.013528	0.009840	0.008949	0.007501	0.006385	0.005505	0.004799
580.00	2.051	0.013970	0.010163	0.009242	0.007746	0.006594	0.005685	0.004956
590.00	2.086	0.014420	0.010489	0.009539	0.007995	0.006806	0.005868	0.005116
600.00	2.121	0.014878	0.010821	0.009840	0.008248	0.007021	0.006054	0.005277

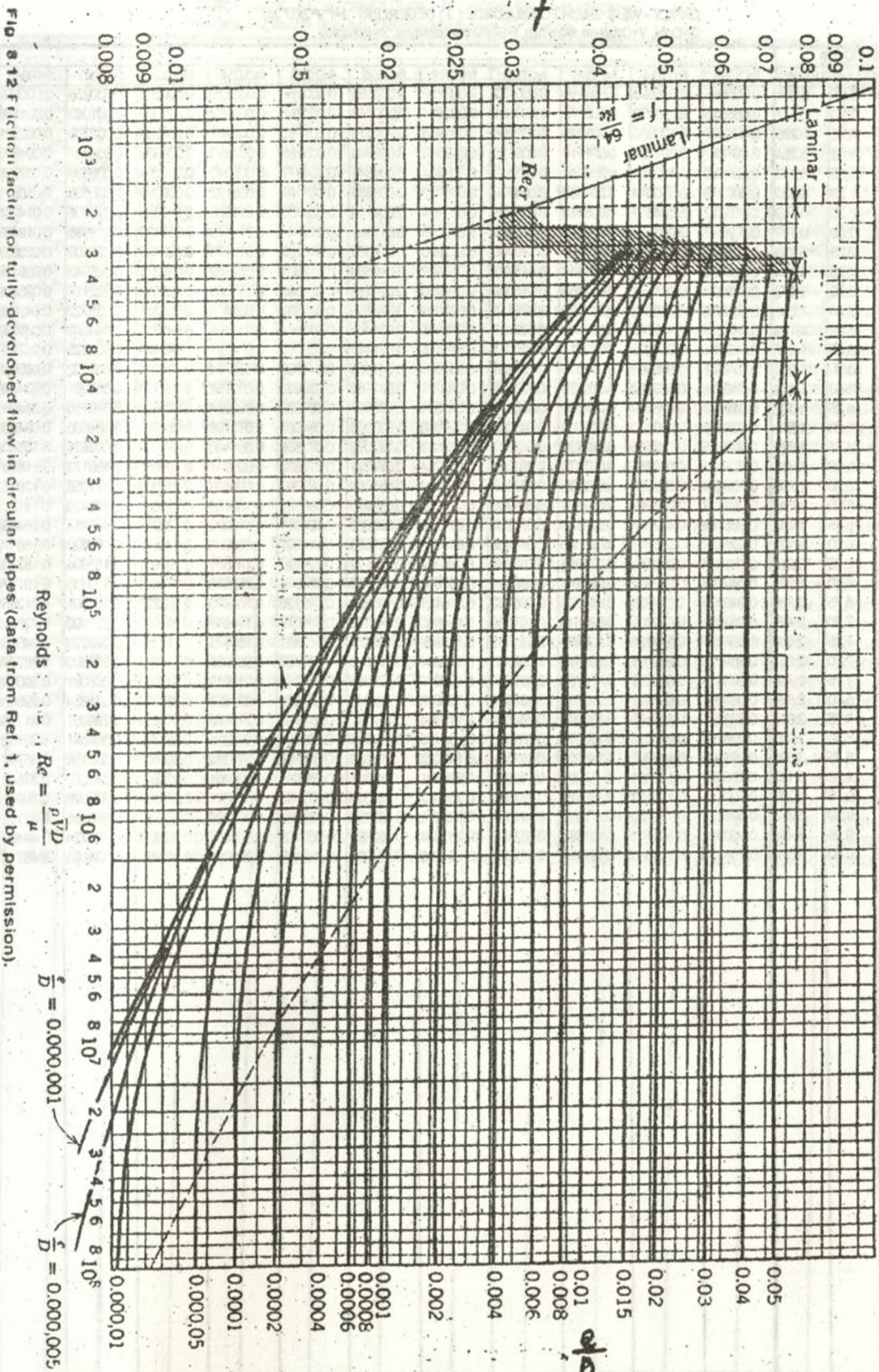


Fig. 8.12 Friction factor for fully-developed flow in circular pipes (data from Ref. 1, used by permission).

DARCY - WEIS BACH FORMÜLÜNDE (J) DEĞERLERİ $J = f \cdot V^2 / (D^5 \cdot g)$
 Q=Debi, V=Ortalama akım hızı, f=Sürtünme katsayısı, D=Boruçapı

D=80 mm		J										
Q(l/san)	V(m/san)	f=0.010	f=0.014	f=0.018	f=0.020	f=0.024	f=0.028	f=0.030	f=0.034	f=0.038	f=0.040	f=0.044
0.25	0.081	0.000066	0.000099	0.000138	0.000183	0.000234	0.000291	0.000354	0.000423	0.000498	0.000579	0.000666
0.50	0.177	0.000265	0.000372	0.000478	0.000531	0.000637	0.000743	0.000796	0.000902	0.001008	0.001062	0.001168
0.75	0.265	0.000597	0.000836	0.001075	0.001194	0.001433	0.001672	0.001792	0.002031	0.002270	0.002389	0.002628
1.00	0.354	0.001062	0.001486	0.001911	0.002129	0.002548	0.002973	0.003185	0.003610	0.004035	0.004247	0.004672
1.25	0.442	0.001658	0.002329	0.003000	0.003318	0.003981	0.004645	0.004977	0.005640	0.006304	0.006536	0.007299
1.50	0.530	0.002389	0.003344	0.004300	0.004778	0.005733	0.006688	0.007167	0.008122	0.009078	0.009556	0.010511
1.75	0.619	0.003252	0.004562	0.005863	0.006503	0.007804	0.009104	0.009755	0.011055	0.012356	0.013006	0.014307
2.00	0.707	0.004247	0.005846	0.007445	0.008189	0.010182	0.011881	0.012741	0.014440	0.016139	0.016888	0.018687
2.25	0.795	0.005375	0.007325	0.009275	0.010750	0.012900	0.015050	0.016125	0.018275	0.020425	0.021500	0.023650
2.50	0.884	0.006636	0.009090	0.011544	0.013272	0.015926	0.018580	0.019907	0.022562	0.025216	0.026543	0.029198
2.75	0.972	0.008029	0.011241	0.014453	0.016599	0.019770	0.022482	0.024098	0.027300	0.030512	0.032117	0.035329
3.00	1.061	0.009556	0.013378	0.017200	0.019111	0.022933	0.026755	0.028667	0.032489	0.036311	0.038222	0.042045
3.25	1.149	0.011215	0.015700	0.020185	0.022429	0.026915	0.031401	0.033844	0.038129	0.042615	0.044858	0.049344
3.50	1.237	0.013006	0.018209	0.023411	0.026012	0.031215	0.036417	0.039019	0.044221	0.049424	0.052025	0.057227
3.75	1.325	0.014931	0.020300	0.026578	0.029861	0.036133	0.041806	0.044792	0.050764	0.056736	0.059722	0.065698
4.00	1.414	0.016999	0.023789	0.030578	0.033975	0.040771	0.047568	0.050963	0.057758	0.064553	0.067951	0.074746
4.25	1.503	0.019178	0.026849	0.034520	0.038335	0.046026	0.053897	0.057533	0.065204	0.072875	0.076710	0.084381
4.50	1.591	0.021500	0.030100	0.038700	0.043000	0.051800	0.060200	0.064500	0.073100	0.081700	0.086000	0.094600
4.75	1.679	0.023956	0.033536	0.043120	0.047911	0.057493	0.067075	0.071866	0.081448	0.091030	0.095821	0.105404
5.00	1.768	0.026549	0.037181	0.047770	0.053087	0.063704	0.074321	0.079630	0.090247	0.100865	0.106173	0.116791
5.25	1.857	0.029264	0.040970	0.052675	0.058528	0.070234	0.081938	0.087792	0.099498	0.111203	0.117056	0.128762
5.50	1.946	0.032117	0.044984	0.057811	0.064236	0.077082	0.089929	0.096352	0.109199	0.122046	0.128470	0.141317
5.75	2.035	0.035104	0.049146	0.063186	0.070207	0.084246	0.098285	0.105311	0.119352	0.133393	0.140414	0.154456
6.00	2.121	0.038222	0.053511	0.068900	0.076445	0.091734	0.107023	0.114667	0.129956	0.145245	0.152890	0.168179
6.25	2.210	0.041474	0.058064	0.074653	0.082946	0.099537	0.116127	0.124422	0.141011	0.157601	0.165896	0.182485
6.50	2.298	0.044856	0.062802	0.080745	0.089716	0.107660	0.125603	0.134575	0.152518	0.170461	0.179433	0.197376
6.75	2.387	0.048375	0.067725	0.087075	0.096750	0.116101	0.135451	0.145126	0.164476	0.183826	0.193501	0.212851
7.00	2.475	0.052025	0.072836	0.093846	0.104050	0.124960	0.145870	0.156075	0.176885	0.197695	0.208100	0.228910
7.25	2.563	0.055807	0.078130	0.100453	0.111615	0.133939	0.155261	0.167422	0.189745	0.212068	0.223229	0.245552
7.50	2.652	0.059722	0.083611	0.107500	0.119445	0.143334	0.167223	0.179167	0.203056	0.226945	0.238890	0.262779
7.75	2.740	0.063770	0.089275	0.114781	0.127541	0.153049	0.178577	0.191311	0.216819	0.242327	0.255081	0.280590
8.00	2.828	0.067951	0.095131	0.122312	0.136902	0.163982	0.190263	0.203653	0.231033	0.258214	0.271804	0.298884
8.25	2.917	0.072264	0.101170	0.130075	0.146528	0.173434	0.202340	0.216793	0.245698	0.274604	0.289057	0.317963
8.50	3.005	0.076710	0.107394	0.138078	0.153420	0.184105	0.214789	0.230131	0.260815	0.291499	0.306841	0.337525
8.75	3.093	0.081289	0.113805	0.146320	0.162578	0.195089	0.227809	0.243867	0.276382	0.308898	0.325158	0.357671
9.00	3.182	0.086000	0.120401	0.154801	0.172001	0.206401	0.240801	0.258001	0.292401	0.326802	0.344002	0.378402
9.25	3.270	0.090845	0.127182	0.163520	0.181689	0.218027	0.254365	0.272534	0.308871	0.345209	0.363378	0.399716
9.50	3.358	0.095821	0.134150	0.172479	0.191643	0.229971	0.268300	0.287464	0.325793	0.364121	0.383286	0.421614
9.75	3.447	0.100931	0.141303	0.181878	0.201862	0.242234	0.282607	0.302793	0.343165	0.383538	0.403724	0.444097
10.00	3.535	0.106173	0.148643	0.191112	0.212347	0.254816	0.297285	0.318520	0.360889	0.403459	0.424693	0.467163

DARCY - WEIS BACH FORMULÜNDE (J) DEGERLERI $J = PV^2/(D^5g)$
 $Q = \text{Debi}$, $V = \text{Ortalama akım hızı}$, $f = \text{Sürtünme katsayısı}$, $D = \text{Boruçapı}$

D=75 mm		J											
Q(l/sn)	V(m/sn)	f=0.010	f=0.014	f=0.018	f=0.020	f=0.024	f=0.028	f=0.030	f=0.034	f=0.038	f=0.040	f=0.044	
0.25	0.057	0.000222	0.000090	0.000099	0.000040	0.000052	0.000061	0.000065	0.000074	0.000083	0.000087	0.000096	
0.50	0.113	0.000087	0.000122	0.000157	0.000174	0.000209	0.000244	0.000261	0.000296	0.000331	0.000348	0.000383	
0.75	0.170	0.000196	0.000274	0.000352	0.000391	0.000470	0.000548	0.000587	0.000666	0.000744	0.000783	0.000861	
1.00	0.226	0.000343	0.000487	0.000626	0.000696	0.000835	0.000974	0.001044	0.001183	0.001322	0.001392	0.001531	
1.25	0.283	0.000544	0.000761	0.000978	0.001087	0.001305	0.001522	0.001631	0.001848	0.002066	0.002174	0.002392	
1.50	0.339	0.000783	0.001096	0.001409	0.001591	0.001879	0.002192	0.002349	0.002662	0.002975	0.003131	0.003444	
1.75	0.396	0.001065	0.001462	0.001919	0.002131	0.002557	0.002983	0.003196	0.003622	0.004048	0.004262	0.004688	
2.00	0.453	0.001382	0.001948	0.002505	0.002783	0.003340	0.003897	0.004175	0.004732	0.005289	0.005567	0.006123	
2.25	0.509	0.001761	0.002466	0.003170	0.003523	0.004227	0.004832	0.005284	0.005888	0.006493	0.006770	0.007375	
2.50	0.566	0.002174	0.003044	0.003914	0.004346	0.005216	0.006086	0.006528	0.007398	0.008268	0.008545	0.009150	
2.75	0.622	0.002631	0.003693	0.004731	0.005282	0.006319	0.007357	0.007799	0.008836	0.009873	0.010524	0.011577	
3.00	0.679	0.003131	0.004384	0.005631	0.006262	0.007515	0.008767	0.009394	0.010646	0.011898	0.012525	0.013777	
3.25	0.735	0.003675	0.005141	0.006615	0.007350	0.008819	0.010289	0.011024	0.012494	0.013964	0.014591	0.016169	
3.50	0.792	0.004262	0.005957	0.007671	0.008524	0.010228	0.011933	0.012768	0.014460	0.016152	0.016779	0.018471	
3.75	0.849	0.004892	0.006840	0.008804	0.009786	0.011742	0.013698	0.014577	0.016533	0.018489	0.019150	0.021222	
4.00	0.905	0.005567	0.007730	0.010020	0.011130	0.013360	0.015586	0.016700	0.018926	0.021152	0.022266	0.024483	
4.25	0.962	0.006284	0.008730	0.011311	0.012566	0.015082	0.017598	0.018852	0.021368	0.023884	0.025138	0.027654	
4.50	1.018	0.007046	0.009863	0.012681	0.014080	0.016906	0.019722	0.021136	0.023954	0.026772	0.028181	0.030999	
4.75	1.075	0.007850	0.010960	0.014129	0.015696	0.018830	0.021975	0.023549	0.026892	0.029825	0.031396	0.034639	
5.00	1.131	0.008698	0.012177	0.015656	0.017396	0.020875	0.024354	0.026030	0.029572	0.033051	0.034791	0.038270	
5.25	1.188	0.009599	0.013425	0.017261	0.019176	0.023014	0.026852	0.028788	0.032626	0.036463	0.038357	0.042195	
5.50	1.244	0.010524	0.014734	0.018944	0.021048	0.025256	0.029468	0.031573	0.035782	0.039992	0.042097	0.046307	
5.75	1.301	0.011500	0.016104	0.020705	0.023005	0.027607	0.032208	0.034508	0.039109	0.043710	0.046011	0.050612	
6.00	1.358	0.012525	0.017536	0.022544	0.025046	0.030069	0.035088	0.037574	0.042584	0.047594	0.050099	0.055109	
6.25	1.414	0.013590	0.019028	0.024482	0.027180	0.032616	0.038053	0.040771	0.046207	0.051643	0.054361	0.059797	
6.50	1.471	0.014698	0.020579	0.026458	0.029398	0.035278	0.041158	0.044097	0.049977	0.055857	0.058797	0.064767	
6.75	1.527	0.015852	0.022192	0.028533	0.031703	0.038044	0.044384	0.047595	0.053895	0.060236	0.063406	0.069747	
7.00	1.584	0.017048	0.023867	0.030686	0.034095	0.040914	0.047733	0.051143	0.057962	0.064781	0.068190	0.075009	
7.25	1.640	0.018287	0.025602	0.032917	0.036574	0.043896	0.051203	0.054961	0.062176	0.069490	0.073148	0.080463	
7.50	1.697	0.019570	0.027398	0.035226	0.039140	0.046868	0.054796	0.058710	0.066538	0.074366	0.078279	0.086107	
7.75	1.754	0.020896	0.029255	0.037813	0.041793	0.050151	0.058510	0.062899	0.071047	0.079406	0.083585	0.091944	
8.00	1.810	0.022266	0.031173	0.040079	0.044532	0.053438	0.062345	0.066798	0.075705	0.084611	0.089065	0.097971	
8.25	1.867	0.023680	0.033151	0.042623	0.047399	0.056831	0.066303	0.071039	0.080510	0.089982	0.094718	0.104190	
8.50	1.923	0.025136	0.035191	0.045246	0.050273	0.060327	0.070382	0.075409	0.085464	0.095518	0.100546	0.110600	
8.75	1.980	0.026637	0.037291	0.047946	0.053274	0.063928	0.074583	0.079910	0.090565	0.101220	0.106547	0.117202	
9.00	2.036	0.028181	0.039453	0.050725	0.056361	0.067633	0.078908	0.084542	0.095814	0.107086	0.112722	0.123895	
9.25	2.093	0.029768	0.041675	0.053682	0.059536	0.071443	0.083350	0.089304	0.101211	0.113118	0.119072	0.130979	
9.50	2.149	0.031399	0.043958	0.056518	0.062798	0.075357	0.087917	0.094196	0.107556	0.119915	0.125885	0.138155	
9.75	2.206	0.033073	0.046302	0.059632	0.066146	0.079375	0.092605	0.099219	0.112448	0.125678	0.132292	0.145522	
10.00	2.263	0.034791	0.048707	0.062624	0.069382	0.083498	0.097414	0.104373	0.118289	0.132205	0.139164	0.153080	

DARCY - WEIS BACH FORMULUNDE (J) DEGERLERI $J = f \cdot V^2 / (D^5 \cdot g)$
 Q=Debi, V=Ortalama akım hızı, f=Sürtünme katsayısı, D=Boruçapı

D=80 mm		J										
Q(l/s)	V(m/s)	f=0.010	f=0.014	f=0.018	f=0.020	f=0.024	f=0.028	f=0.030	f=0.034	f=0.038	f=0.040	f=0.044
0.50	0.069	0.000083	0.000088	0.000113	0.000126	0.000151	0.000176	0.000189	0.000214	0.000239	0.000252	0.000271
0.75	0.149	0.000142	0.000198	0.000255	0.000283	0.000340	0.000397	0.000425	0.000482	0.000539	0.000567	0.000624
1.00	0.199	0.000252	0.000353	0.000454	0.000504	0.000605	0.000705	0.000756	0.000857	0.000957	0.001008	0.001109
1.25	0.246	0.000394	0.000551	0.000709	0.000787	0.000945	0.001102	0.001181	0.001339	0.001496	0.001575	0.001732
1.50	0.299	0.000567	0.000794	0.001020	0.001134	0.001361	0.001587	0.001701	0.001927	0.002154	0.002268	0.002494
1.75	0.348	0.000772	0.001080	0.001389	0.001543	0.001852	0.002161	0.002315	0.002623	0.002932	0.003086	0.003395
2.00	0.398	0.001038	0.001411	0.001814	0.002018	0.002419	0.002822	0.003023	0.003427	0.003830	0.004031	0.004434
2.25	0.447	0.001278	0.001786	0.002298	0.002551	0.003061	0.003571	0.003823	0.004337	0.004847	0.005102	0.005612
2.50	0.497	0.001575	0.002205	0.002834	0.003149	0.003779	0.004409	0.004724	0.005354	0.005984	0.006299	0.006929
2.75	0.547	0.001905	0.002688	0.003430	0.003811	0.004573	0.005335	0.005716	0.006478	0.007241	0.007622	0.008384
3.00	0.597	0.002288	0.003175	0.004082	0.004535	0.005442	0.006349	0.006803	0.007710	0.008617	0.009070	0.009977
3.25	0.646	0.002661	0.003728	0.004790	0.005323	0.006387	0.007452	0.007904	0.008948	0.010113	0.010645	0.011710
3.50	0.696	0.003086	0.004321	0.005556	0.006173	0.007407	0.008642	0.009259	0.010494	0.011728	0.012346	0.013580
3.75	0.746	0.003543	0.004980	0.006378	0.007086	0.008503	0.009921	0.010829	0.012047	0.013464	0.014172	0.015590
4.00	0.795	0.004031	0.005644	0.007256	0.008063	0.009675	0.011288	0.012094	0.013708	0.015319	0.016125	0.017738
4.25	0.845	0.004551	0.006371	0.008192	0.009102	0.010922	0.012743	0.013653	0.015473	0.017294	0.018204	0.020024
4.50	0.895	0.005102	0.007143	0.009184	0.010204	0.012245	0.014286	0.015306	0.017347	0.019388	0.020408	0.022449
4.75	0.945	0.005685	0.007989	0.010232	0.011389	0.013643	0.015917	0.017054	0.019328	0.021602	0.022739	0.025013
5.00	0.994	0.006299	0.008818	0.011338	0.012598	0.015117	0.017637	0.018897	0.021416	0.023836	0.025195	0.027715
5.25	1.044	0.006944	0.009722	0.012500	0.013899	0.016967	0.019446	0.020833	0.023611	0.026389	0.027778	0.030556
5.50	1.094	0.007622	0.010870	0.013719	0.015243	0.018292	0.021341	0.022865	0.025913	0.028962	0.030486	0.033635
5.75	1.143	0.008330	0.011862	0.014994	0.016680	0.019993	0.023325	0.024991	0.028323	0.031655	0.033231	0.036853
6.00	1.193	0.009070	0.012898	0.016327	0.018141	0.021789	0.025387	0.027211	0.030839	0.034467	0.036281	0.039910
6.25	1.243	0.009842	0.013779	0.017716	0.019684	0.023821	0.027558	0.029626	0.033463	0.037399	0.039388	0.043305
6.50	1.293	0.010646	0.014603	0.019161	0.021290	0.025548	0.029806	0.031935	0.036193	0.040451	0.042580	0.046838
6.75	1.342	0.011480	0.015472	0.020263	0.022599	0.027551	0.032143	0.034409	0.039301	0.043623	0.045919	0.050511
7.00	1.392	0.012346	0.016284	0.021222	0.024882	0.029830	0.034588	0.037037	0.041976	0.046914	0.049383	0.054321
7.25	1.442	0.013243	0.017243	0.022386	0.026487	0.031784	0.037081	0.039730	0.045027	0.050325	0.052973	0.058271
7.50	1.491	0.014172	0.018241	0.023510	0.028345	0.034014	0.039883	0.042517	0.048186	0.053855	0.056690	0.062358
7.75	1.541	0.015133	0.021186	0.024729	0.030288	0.036319	0.042372	0.045399	0.051452	0.057505	0.060532	0.066596
8.00	1.591	0.016125	0.022575	0.028025	0.032250	0.038700	0.045150	0.048375	0.054825	0.061275	0.064500	0.070890
8.25	1.641	0.017149	0.024006	0.030888	0.034297	0.041157	0.048016	0.051446	0.058305	0.065165	0.068595	0.075454
8.50	1.690	0.018204	0.025485	0.032787	0.036407	0.043889	0.050970	0.054611	0.061893	0.069174	0.072815	0.080086
8.75	1.740	0.019289	0.027006	0.034722	0.038681	0.046297	0.054013	0.057871	0.065587	0.073303	0.077161	0.084877
9.00	1.790	0.020408	0.028572	0.036735	0.040817	0.048980	0.057143	0.061225	0.069388	0.077552	0.081633	0.089797
9.25	1.839	0.021558	0.030181	0.038804	0.043116	0.051739	0.060362	0.064674	0.073297	0.081920	0.086231	0.094845
9.50	1.889	0.022739	0.031834	0.040930	0.045478	0.054573	0.063699	0.068217	0.077312	0.086408	0.090955	0.100051
9.75	1.939	0.023951	0.033532	0.043113	0.047903	0.057483	0.067064	0.071854	0.081435	0.091015	0.095806	0.105396
10.00	1.989	0.025195	0.035274	0.045352	0.050391	0.060489	0.070547	0.075596	0.085664	0.095743	0.100782	0.110980
10.50	2.088	0.027778	0.038889	0.050000	0.055556	0.066887	0.077778	0.083334	0.094445	0.105556	0.111112	0.122223
11.00	2.188	0.030486	0.042881	0.054876	0.060973	0.073188	0.085392	0.091459	0.103654	0.115849	0.121946	0.134140
11.50	2.287	0.033321	0.046849	0.058978	0.066442	0.078970	0.093299	0.099663	0.112921	0.126220	0.132524	0.146812
12.00	2.386	0.036281	0.050794	0.063307	0.072583	0.087075	0.101588	0.108844	0.123357	0.137869	0.145126	0.159636
12.50	2.486	0.039368	0.055115	0.070662	0.078736	0.094483	0.110230	0.118104	0.133851	0.149598	0.157471	0.173219
13.00	2.585	0.042580	0.059612	0.078644	0.085181	0.102193	0.119225	0.127741	0.144773	0.161805	0.170321	0.187353
13.50	2.685	0.045919	0.064286	0.082654	0.091837	0.110205	0.129572	0.137756	0.156123	0.174491	0.183675	0.202042
14.00	2.784	0.049383	0.069136	0.088889	0.098766	0.118519	0.138273	0.148149	0.167902	0.187656	0.197532	0.217285
14.50	2.884	0.052973	0.074163	0.095352	0.105947	0.127136	0.148325	0.158920	0.180110	0.201299	0.211894	0.233083
15.00	2.983	0.056690	0.079366	0.102041	0.113379	0.138055	0.159731	0.170099	0.192746	0.215421	0.226759	0.248435

DARCY - WEIS BACH FORMÜLÜNDE (J) DEĞERLERİ $J = f \cdot V^2 / (D^5 \rho)$
 Q=Debi, V=Ortalama akım hızı, f=Sürtünme katsayısı, D=Boruçapı

D=100 mm		J										
Q(l/san)	V(m/san)	f=0.010	f=0.014	f=0.018	f=0.020	f=0.024	f=0.028	f=0.030	f=0.034	f=0.038	f=0.040	f=0.044
1.00	0.127	0.000083	0.000116	0.000149	0.000185	0.000198	0.000231	0.000248	0.000281	0.000314	0.000330	0.000363
1.25	0.159	0.000129	0.000181	0.000232	0.000258	0.000310	0.000381	0.000387	0.000439	0.000480	0.000518	0.000568
1.50	0.191	0.000186	0.000260	0.000334	0.000372	0.000446	0.000520	0.000557	0.000632	0.000706	0.000743	0.000817
1.75	0.223	0.000253	0.000354	0.000455	0.000506	0.000607	0.000708	0.000759	0.000860	0.000961	0.001011	0.001113
2.00	0.255	0.000330	0.000462	0.000594	0.000660	0.000793	0.000925	0.000991	0.001123	0.001255	0.001321	0.001453
2.25	0.286	0.000418	0.000585	0.000752	0.000836	0.001003	0.001170	0.001254	0.001421	0.001588	0.001672	0.001839
2.50	0.318	0.000518	0.000722	0.000929	0.001032	0.001238	0.001445	0.001548	0.001754	0.001961	0.002064	0.002270
2.75	0.350	0.000624	0.000874	0.001124	0.001249	0.001498	0.001748	0.001873	0.002123	0.002373	0.002497	0.002747
3.00	0.382	0.000743	0.001040	0.001337	0.001486	0.001783	0.002081	0.002229	0.002526	0.002824	0.002972	0.003269
3.25	0.414	0.000872	0.001221	0.001570	0.001744	0.002093	0.002442	0.002616	0.002965	0.003314	0.003468	0.003837
3.50	0.445	0.001011	0.001416	0.001820	0.002023	0.002427	0.002832	0.003034	0.003439	0.003843	0.004045	0.004450
3.75	0.477	0.001161	0.001625	0.002090	0.002322	0.002776	0.003251	0.003483	0.003947	0.004412	0.004644	0.005098
4.00	0.509	0.001321	0.001832	0.002378	0.002642	0.003170	0.003699	0.003963	0.004491	0.005020	0.005284	0.005812
4.25	0.541	0.001491	0.002088	0.002684	0.002982	0.003579	0.004175	0.004474	0.005070	0.005667	0.005965	0.006561
4.50	0.573	0.001672	0.002341	0.003009	0.003344	0.004012	0.004681	0.005016	0.005684	0.006353	0.006687	0.007356
4.75	0.605	0.001863	0.002608	0.003353	0.003726	0.004471	0.005216	0.005598	0.006333	0.007079	0.007451	0.008196
5.00	0.636	0.002064	0.002880	0.003715	0.004128	0.004954	0.005779	0.006192	0.007018	0.007843	0.008256	0.009082
5.25	0.668	0.002278	0.003186	0.004096	0.004551	0.005461	0.006372	0.006827	0.007737	0.008647	0.009102	0.010013
5.50	0.700	0.002497	0.003466	0.004496	0.004994	0.005994	0.006993	0.007492	0.008491	0.009490	0.009990	0.010989
5.75	0.732	0.002730	0.003822	0.004913	0.005459	0.006551	0.007643	0.008189	0.009281	0.010373	0.010919	0.012010
6.00	0.764	0.002972	0.004161	0.005360	0.005944	0.007133	0.008322	0.008917	0.010105	0.011294	0.011889	0.013078
6.25	0.795	0.003225	0.004515	0.005805	0.006450	0.007740	0.008930	0.009575	0.010865	0.012255	0.012900	0.014190
6.50	0.827	0.003488	0.004883	0.006279	0.006976	0.008372	0.009578	0.010273	0.011660	0.013255	0.013953	0.015348
6.75	0.859	0.003757	0.005268	0.006771	0.007523	0.009028	0.010533	0.011285	0.012790	0.014494	0.015247	0.016651
7.00	0.891	0.004045	0.005684	0.007282	0.008091	0.009709	0.011327	0.012136	0.013755	0.015573	0.016382	0.017800
7.25	0.923	0.004340	0.006075	0.007811	0.008679	0.010415	0.012151	0.013019	0.014755	0.016680	0.017588	0.019094
7.50	0.955	0.004644	0.006502	0.008359	0.009288	0.011146	0.013003	0.013932	0.015790	0.017847	0.018876	0.020434
7.75	0.986	0.004959	0.006942	0.008928	0.009918	0.011901	0.013885	0.014878	0.016860	0.019043	0.019935	0.021819
8.00	1.018	0.005284	0.007397	0.009511	0.010568	0.012681	0.014795	0.015852	0.017965	0.020279	0.021135	0.023249
8.25	1.050	0.005619	0.007867	0.010115	0.011239	0.013486	0.015734	0.016859	0.019108	0.021353	0.022477	0.024725
8.50	1.082	0.005968	0.008351	0.010737	0.011930	0.014316	0.016702	0.017856	0.020281	0.022657	0.023960	0.026434
8.75	1.114	0.006321	0.008849	0.011378	0.012642	0.015170	0.017699	0.018963	0.021491	0.024020	0.025284	0.027813
9.00	1.145	0.006687	0.009362	0.012037	0.013375	0.016050	0.018725	0.020082	0.022717	0.025412	0.026750	0.029425
9.25	1.177	0.007064	0.009890	0.012715	0.014128	0.016954	0.019779	0.021192	0.024318	0.027143	0.028526	0.031882
9.50	1.209	0.007451	0.010432	0.013412	0.014902	0.017983	0.020963	0.022353	0.025534	0.028314	0.029804	0.033785
9.75	1.241	0.007848	0.010988	0.014127	0.015607	0.018836	0.021978	0.023545	0.026885	0.029824	0.031394	0.034533
10.00	1.273	0.008256	0.011559	0.014861	0.016512	0.019814	0.023117	0.024768	0.028071	0.031373	0.033024	0.036327
10.50	1.336	0.009102	0.012743	0.016384	0.018205	0.021845	0.025486	0.027307	0.030948	0.034589	0.036409	0.040050
11.00	1.400	0.009990	0.013986	0.017982	0.019980	0.023978	0.027971	0.029969	0.033965	0.037961	0.039959	0.043955
11.50	1.464	0.010819	0.015286	0.019653	0.021837	0.026205	0.030572	0.032756	0.037123	0.041491	0.043674	0.048042
12.00	1.527	0.011689	0.016644	0.021400	0.023777	0.028533	0.033288	0.035686	0.040422	0.045177	0.047555	0.052310
12.50	1.591	0.012600	0.018060	0.023220	0.025800	0.030980	0.036120	0.038700	0.043600	0.048500	0.051800	0.056780
13.00	1.655	0.013563	0.019534	0.025115	0.027905	0.033486	0.039088	0.041858	0.047439	0.053020	0.055811	0.061392
13.50	1.718	0.014547	0.021065	0.027084	0.030093	0.036112	0.042131	0.045140	0.051159	0.057177	0.060187	0.066205
14.00	1.782	0.016182	0.022855	0.029127	0.032364	0.038936	0.045309	0.048546	0.055018	0.061491	0.064727	0.071200
14.50	1.845	0.017368	0.024302	0.031245	0.034717	0.041880	0.048803	0.052075	0.059018	0.065962	0.069433	0.076377
15.00	1.909	0.018576	0.026007	0.033437	0.037152	0.044683	0.052013	0.055728	0.063159	0.070589	0.074304	0.081735
15.50	1.973	0.019835	0.027789	0.035703	0.039870	0.047804	0.055638	0.059805	0.067439	0.075374	0.079341	0.087275
16.00	2.038	0.021135	0.029690	0.038044	0.042271	0.050725	0.059179	0.063406	0.071861	0.080315	0.084542	0.092986
16.50	2.100	0.022477	0.031488	0.040459	0.044854	0.053945	0.062836	0.067431	0.076422	0.085413	0.089808	0.098898
17.00	2.164	0.023860	0.033404	0.042948	0.047720	0.057264	0.066808	0.071580	0.081124	0.090688	0.095440	0.104984
17.50	2.227	0.025284	0.035388	0.045511	0.050588	0.060682	0.070796	0.075852	0.085988	0.096080	0.101138	0.111250
18.00	2.291	0.026750	0.037449	0.048140	0.053498	0.064199	0.074899	0.080249	0.090949	0.101648	0.106998	0.117688
18.50	2.355	0.028258	0.039559	0.050861	0.056513	0.067815	0.079118	0.084769	0.096479	0.107374	0.113025	0.124328
19.00	2.418	0.029804	0.041726	0.053648	0.059609	0.071530	0.083452	0.089413	0.101335	0.112256	0.118217	0.130138
19.50	2.482	0.031394	0.043851	0.056508	0.062787	0.075345	0.087802	0.094181	0.106738	0.118298	0.125574	0.138132
20.00	2.545	0.033024	0.046234	0.059443	0.066048	0.079258	0.092468	0.099072	0.112282	0.125482	0.132997	0.146306

DARCY - WEIS BACH FORMÜLÜNDE (J) DEĞERLERİ $J=f \cdot V^2 / (D^5 \cdot g)$
 Q=Debi, V=Ortalama akım hızı, f=Sürtünme katsayısı, D=Boruçapı

D=125 mm		J													
Q(l/sn)	V(m/sn)	f=0.010	f=0.014	f=0.018	f=0.020	f=0.024	f=0.028	f=0.030	f=0.034	f=0.038	f=0.040	f=0.043	f=0.046	f=0.048	
2.00	0.163	0.000108	0.000151	0.000195	0.000216	0.000260	0.000303	0.000325	0.000369	0.000411	0.000433	0.000476	0.000519	0.000563	
2.25	0.183	0.000137	0.000192	0.000247	0.000274	0.000325	0.000363	0.000411	0.000466	0.000520	0.000548	0.000591	0.000634	0.000678	
2.50	0.204	0.000169	0.000237	0.000304	0.000336	0.000408	0.000473	0.000507	0.000575	0.000643	0.000676	0.000744	0.000812	0.000880	
2.75	0.224	0.000205	0.000286	0.000368	0.000405	0.000491	0.000573	0.000614	0.000696	0.000777	0.000818	0.000900	0.000981	0.001063	
3.00	0.244	0.000243	0.000341	0.000436	0.000482	0.000584	0.000682	0.000730	0.000828	0.000925	0.000974	0.001071	0.001168	0.001265	
3.25	0.265	0.000286	0.000400	0.000514	0.000571	0.000688	0.000800	0.000857	0.000972	0.001085	0.001143	0.001257	0.001370	0.001483	
3.50	0.285	0.000331	0.000464	0.000597	0.000663	0.000795	0.000928	0.000994	0.001127	0.001258	0.001326	0.001458	0.001590	0.001722	
3.75	0.305	0.000380	0.000533	0.000685	0.000761	0.000931	0.001085	0.001141	0.001293	0.001446	0.001522	0.001674	0.001826	0.001978	
4.00	0.326	0.000433	0.000606	0.000775	0.000866	0.001059	0.001212	0.001269	0.001466	0.001619	0.001705	0.001857	0.002009	0.002161	
4.25	0.348	0.000491	0.000684	0.000880	0.000997	0.001173	0.001368	0.001427	0.001661	0.001815	0.001901	0.002053	0.002205	0.002357	
4.50	0.367	0.000548	0.000767	0.000986	0.001096	0.001315	0.001534	0.001594	0.001863	0.002018	0.002104	0.002256	0.002408	0.002560	
4.75	0.387	0.000610	0.000855	0.001099	0.001221	0.001465	0.001705	0.001765	0.002075	0.002231	0.002317	0.002469	0.002621	0.002773	
5.00	0.407	0.000678	0.000947	0.001217	0.001353	0.001623	0.001894	0.001954	0.002309	0.002475	0.002561	0.002713	0.002865	0.003017	
5.25	0.428	0.000746	0.001044	0.001342	0.001491	0.001790	0.002088	0.002148	0.002535	0.002711	0.002807	0.002959	0.003111	0.003263	
5.50	0.448	0.000818	0.001148	0.001473	0.001637	0.001984	0.002291	0.002351	0.002768	0.002954	0.003050	0.003202	0.003354	0.003506	
5.75	0.468	0.000894	0.001252	0.001610	0.001789	0.002147	0.002504	0.002564	0.003011	0.003207	0.003303	0.003455	0.003607	0.003759	
6.00	0.486	0.000974	0.001363	0.001753	0.001948	0.002337	0.002727	0.002787	0.003273	0.003479	0.003575	0.003727	0.003879	0.004031	
6.25	0.505	0.001057	0.001479	0.001902	0.002114	0.002536	0.002966	0.003026	0.003541	0.003757	0.003853	0.004005	0.004157	0.004309	
6.50	0.525	0.001143	0.001600	0.002057	0.002286	0.002742	0.003200	0.003260	0.003806	0.004031	0.004127	0.004279	0.004431	0.004583	
6.75	0.540	0.001233	0.001728	0.002219	0.002465	0.002968	0.003461	0.003521	0.004097	0.004331	0.004427	0.004579	0.004731	0.004883	
7.00	0.570	0.001326	0.001856	0.002398	0.002651	0.003181	0.003712	0.003772	0.004377	0.004621	0.004717	0.004869	0.005021	0.005173	
7.25	0.591	0.001420	0.001991	0.002590	0.002844	0.003413	0.003982	0.004042	0.004665	0.004909	0.005005	0.005157	0.005309	0.005461	
7.50	0.611	0.001522	0.002130	0.002736	0.003044	0.003652	0.004261	0.004321	0.004965	0.005209	0.005305	0.005457	0.005609	0.005761	
7.75	0.631	0.001625	0.002275	0.002925	0.003255	0.003900	0.004550	0.004610	0.005273	0.005517	0.005613	0.005765	0.005917	0.006069	
8.00	0.652	0.001731	0.002424	0.003117	0.003463	0.004155	0.004848	0.004908	0.005611	0.005855	0.005951	0.006103	0.006255	0.006407	
8.25	0.672	0.001841	0.002578	0.003314	0.003683	0.004419	0.005156	0.005216	0.005939	0.006183	0.006279	0.006431	0.006583	0.006735	
8.50	0.692	0.001955	0.002736	0.003518	0.003906	0.004691	0.005473	0.005533	0.006276	0.006520	0.006616	0.006768	0.006920	0.007072	
8.75	0.713	0.002071	0.002900	0.003728	0.004143	0.004971	0.005800	0.005860	0.006623	0.006867	0.006963	0.007115	0.007267	0.007419	
9.00	0.733	0.002191	0.003068	0.003944	0.004393	0.005259	0.006138	0.006208	0.007001	0.007245	0.007341	0.007493	0.007645	0.007797	
9.25	0.753	0.002315	0.003241	0.004167	0.004630	0.005535	0.006461	0.006531	0.007354	0.007608	0.007704	0.007856	0.008008	0.008160	
9.50	0.774	0.002442	0.003418	0.004395	0.004883	0.005800	0.006836	0.006906	0.007759	0.008013	0.008109	0.008261	0.008413	0.008565	
9.75	0.794	0.002572	0.003600	0.004629	0.005144	0.006112	0.007201	0.007271	0.008144	0.008408	0.008504	0.008656	0.008808	0.008960	
10.00	0.815	0.002705	0.003787	0.004870	0.005411	0.006493	0.007575	0.007645	0.008548	0.008812	0.008908	0.009060	0.009212	0.009364	
10.50	0.855	0.002983	0.004176	0.005369	0.005965	0.007158	0.008351	0.008421	0.009344	0.009608	0.009704	0.009856	0.010008	0.010160	
11.00	0.896	0.003273	0.004583	0.005892	0.006547	0.007856	0.009168	0.009238	0.010181	0.010445	0.010541	0.010693	0.010845	0.010997	
11.50	0.937	0.003578	0.005009	0.006440	0.007156	0.008587	0.010018	0.010088	0.011061	0.011325	0.011421	0.011573	0.011725	0.011877	
12.00	0.977	0.003896	0.005454	0.007012	0.007791	0.009350	0.010908	0.010978	0.011971	0.012235	0.012331	0.012483	0.012635	0.012787	
12.50	1.018	0.004227	0.005918	0.007609	0.008454	0.010145	0.011836	0.011906	0.012919	0.013183	0.013279	0.013431	0.013583	0.013735	
13.00	1.059	0.004572	0.006401	0.008230	0.009144	0.010973	0.012802	0.012872	0.013905	0.014169	0.014265	0.014417	0.014569	0.014721	
13.50	1.100	0.004930	0.006903	0.008875	0.009861	0.011833	0.013805	0.013875	0.014928	0.015192	0.015288	0.015440	0.015592	0.015744	
14.00	1.140	0.005302	0.007423	0.009544	0.010605	0.012726	0.014847	0.014917	0.016080	0.016344	0.016440	0.016592	0.016744	0.016896	
14.50	1.181	0.005688	0.007963	0.010238	0.011376	0.013651	0.015826	0.015896	0.017079	0.017343	0.017439	0.017591	0.017743	0.017895	
15.00	1.222	0.006087	0.008522	0.010857	0.012174	0.014609	0.017044	0.017114	0.018317	0.018581	0.018677	0.018829	0.018981	0.019133	
15.50	1.263	0.006500	0.009099	0.011689	0.012999	0.015599	0.018199	0.018269	0.019492	0.019756	0.019852	0.019994	0.020136	0.020278	
16.00	1.303	0.006926	0.009696	0.012498	0.013851	0.016622	0.019382	0.019452	0.020695	0.020959	0.021055	0.021207	0.021359	0.021511	
16.50	1.344	0.007365	0.010311	0.013259	0.014731	0.017677	0.020623	0.020693	0.021956	0.022220	0.022316	0.022468	0.022620	0.022772	
17.00	1.385	0.007818	0.010946	0.014073	0.015637	0.018784	0.021982	0.022052	0.023335	0.023609	0.023705	0.023857	0.024009	0.024161	
17.50	1.425	0.008285	0.011599	0.014913	0.016570	0.019984	0.023198	0.023268	0.024571	0.024845	0.024941	0.025093	0.025245	0.025397	
18.00	1.468	0.008765	0.012271	0.015778	0.017531	0.021037	0.024453	0.024523	0.025846	0.026120	0.026216	0.026368	0.026520	0.026672	
18.50	1.507	0.009259	0.012963	0.016688	0.018518	0.022222	0.025825	0.025895	0.027228	0.027502	0.027598	0.027750	0.027902	0.028054	
19.00	1.548	0.009768	0.013673	0.017579	0.019533	0.023436	0.027348	0.027418	0.028761	0.029035	0.029131	0.029283	0.029435	0.029587	
19.50	1.588	0.010287	0.014402	0.018517	0.020574	0.024689	0.028804	0.028874	0.030227	0.030501	0.030597	0.030749	0.030901	0.031053	
20.00	1.629	0.010821	0.015150	0.019478	0.021643	0.025971	0.030300	0.030370	0.031723	0.032007	0.032103	0.032255	0.032407	0.032559	
20.50	1.670	0.011369	0.015917	0.020465	0.022738	0.027286	0.031834	0.031904	0.033257	0.033541	0.033637	0.033789	0.033941	0.034093	
21.00	1.711	0.011931	0.016703	0.021450	0.023811	0.028633	0.033406	0.033476	0.034829	0.035113	0.035209	0.035361	0.035513	0.035665	
21.50	1.751	0.012505	0.017508	0.022515	0.025011	0.030013	0.035015	0.035085	0.036438	0.036722	0.036818	0.036970	0.037122	0.037274	
22.00	1.792	0.013094	0.018331	0.023569	0.026188	0.031425	0.036663	0.036733	0.038086	0.038370	0.038466	0.038618	0.038770	0.038922	
22.50	1.833	0.013696	0.019174	0.024652	0.027392	0.032870	0.038348	0.038418	0.039771	0.040055	0.040151	0.040303	0.040455	0.040607	
23.00	1.873	0.014311	0.020036	0.025780	0.028622	0.034347	0.040071	0.040141	0.041494	0.041778	0.041874	0.042026	0.042178	0.042330	
23.50	1.914	0.014940	0.020916	0.026892	0.029880	0.035857	0.041833	0.041903	0.043256	0.043540	0.043636	0.043788	0.043940	0.044092	
24.00	1.955	0.015583	0.021816	0.028049	0.031186	0.037389	0.043332	0.043402	0.044755	0.045039	0.045135	0.045287	0.045439	0.045591	
24.50	1.996	0.016239	0.022734	0.029230	0.032478	0.038973	0.044969	0.045039	0.046392	0.046676	0.046772	0.046924	0.047076	0.047228	
25.00	2.036														

DARCY - WEIS BACH FORMÜLÜNDE (J) DEĞERLERİ $J = F \cdot V^2 / (D^2g)$
 $Q = \text{Debi}$, $V = \text{Ortalama akım hızı}$, $f = \text{Sürtünme katsayısı}$, $D = \text{Boruçapı}$

D=150 mm		J											
Q(l/san)	V(m/san)	f=0.010	f=0.014	f=0.018	f=0.020	f=0.024	f=0.028	f=0.030	f=0.034	f=0.038	f=0.040	f=0.044	
3.00	0.170	0.000098	0.000137	0.000175	0.000196	0.000235	0.000274	0.000294	0.000333	0.000372	0.000391	0.000431	
3.25	0.184	0.000115	0.000161	0.000207	0.000230	0.000276	0.000322	0.000346	0.000390	0.000430	0.000459	0.000505	
3.50	0.198	0.000133	0.000186	0.000240	0.000266	0.000320	0.000378	0.000400	0.000453	0.000506	0.000532	0.000586	
3.75	0.212	0.000153	0.000214	0.000275	0.000300	0.000367	0.000428	0.000456	0.000520	0.000581	0.000612	0.000673	
4.00	0.226	0.000174	0.000244	0.000313	0.000346	0.000417	0.000487	0.000522	0.000591	0.000661	0.000696	0.000765	
4.25	0.240	0.000196	0.000275	0.000353	0.000390	0.000471	0.000550	0.000586	0.000668	0.000746	0.000786	0.000864	
4.50	0.255	0.000220	0.000308	0.000396	0.000440	0.000528	0.000616	0.000660	0.000746	0.000831	0.000881	0.000969	
4.75	0.269	0.000245	0.000342	0.000440	0.000491	0.000589	0.000687	0.000736	0.000834	0.000932	0.000981	0.001079	
5.00	0.283	0.000272	0.000381	0.000489	0.000544	0.000652	0.000761	0.000815	0.000924	0.001033	0.001087	0.001196	
5.25	0.297	0.000300	0.000420	0.000539	0.000599	0.000719	0.000839	0.000896	0.001019	0.001139	0.001199	0.001319	
5.50	0.311	0.000329	0.000460	0.000589	0.000658	0.000789	0.000921	0.000987	0.001118	0.001250	0.001316	0.001447	
5.75	0.325	0.000359	0.000503	0.000647	0.000719	0.000863	0.001006	0.001078	0.001222	0.001368	0.001436	0.001582	
6.00	0.339	0.000391	0.000548	0.000708	0.000783	0.000939	0.001096	0.001174	0.001331	0.001487	0.001566	0.001722	
6.25	0.354	0.000425	0.000595	0.000784	0.000868	0.001015	0.001186	0.001274	0.001444	0.001614	0.001699	0.001869	
6.50	0.369	0.000459	0.000643	0.000827	0.000919	0.001102	0.001285	0.001378	0.001562	0.001746	0.001837	0.002021	
6.75	0.382	0.000495	0.000694	0.000892	0.000991	0.001189	0.001387	0.001486	0.001684	0.001882	0.001981	0.002180	
7.00	0.396	0.000533	0.000748	0.000965	0.001065	0.001279	0.001492	0.001598	0.001811	0.002024	0.002131	0.002344	
7.25	0.410	0.000571	0.000800	0.001026	0.001143	0.001372	0.001600	0.001714	0.001943	0.002172	0.002286	0.002514	
7.50	0.424	0.000612	0.000856	0.001101	0.001223	0.001469	0.001712	0.001835	0.002079	0.002324	0.002446	0.002691	
7.75	0.438	0.000653	0.000914	0.001175	0.001306	0.001567	0.001828	0.001959	0.002220	0.002481	0.002612	0.002873	
8.00	0.453	0.000698	0.000974	0.001252	0.001392	0.001670	0.001948	0.002087	0.002366	0.002644	0.002783	0.003062	
8.25	0.467	0.000740	0.001036	0.001332	0.001480	0.001776	0.002072	0.002220	0.002516	0.002812	0.002960	0.003256	
8.50	0.481	0.000789	0.001100	0.001414	0.001571	0.001885	0.002199	0.002357	0.002671	0.002985	0.003142	0.003459	
8.75	0.495	0.000832	0.001165	0.001498	0.001665	0.001998	0.002331	0.002497	0.002830	0.003163	0.003330	0.003663	
9.00	0.509	0.000881	0.001233	0.001585	0.001781	0.002114	0.002468	0.002642	0.002994	0.003346	0.003523	0.003875	
9.50	0.537	0.000981	0.001374	0.001766	0.001982	0.002355	0.002747	0.002944	0.003336	0.003729	0.003925	0.004317	
10.00	0.566	0.001087	0.001522	0.001957	0.002174	0.002609	0.003044	0.003262	0.003697	0.004131	0.004349	0.004784	
10.50	0.594	0.001199	0.001678	0.002158	0.002397	0.002877	0.003356	0.003596	0.004075	0.004555	0.004795	0.005274	
11.00	0.622	0.001316	0.001842	0.002398	0.002631	0.003157	0.003683	0.003947	0.004473	0.004959	0.005262	0.005789	
11.50	0.651	0.001438	0.002013	0.002598	0.002878	0.003455	0.004026	0.004314	0.004899	0.005464	0.005751	0.006327	
12.00	0.679	0.001566	0.002192	0.002818	0.003131	0.003757	0.004384	0.004697	0.005323	0.005949	0.006282	0.006899	
12.50	0.707	0.001699	0.002378	0.003058	0.003398	0.004077	0.004757	0.005098	0.005778	0.006455	0.006795	0.007475	
13.00	0.735	0.001837	0.002572	0.003307	0.003675	0.004410	0.005145	0.005512	0.006247	0.006982	0.007350	0.008085	
13.50	0.764	0.001981	0.002774	0.003567	0.003963	0.004755	0.005548	0.005944	0.006737	0.007530	0.007926	0.008718	
14.00	0.792	0.002131	0.002983	0.003836	0.004262	0.005114	0.005967	0.006393	0.007245	0.008098	0.008524	0.009376	
14.50	0.820	0.002286	0.003200	0.004115	0.004572	0.005486	0.006400	0.006858	0.007772	0.008686	0.009143	0.010058	
15.00	0.848	0.002446	0.003425	0.004403	0.004892	0.005871	0.006849	0.007339	0.008317	0.009296	0.009785	0.010763	
16.00	0.905	0.002783	0.003897	0.005010	0.005567	0.006680	0.007793	0.008350	0.009463	0.010578	0.011133	0.012248	
17.00	0.962	0.003142	0.004399	0.005656	0.006284	0.007541	0.008798	0.009428	0.010683	0.011940	0.012568	0.013825	
18.00	1.018	0.003523	0.004932	0.006341	0.007045	0.008454	0.009863	0.010598	0.011977	0.013366	0.014030	0.015499	
19.00	1.075	0.003925	0.005495	0.007065	0.007850	0.009420	0.010990	0.011775	0.013344	0.014914	0.015699	0.017289	
20.00	1.131	0.004349	0.006098	0.007828	0.008698	0.010437	0.012177	0.013047	0.014786	0.016526	0.017395	0.019135	
21.00	1.188	0.004795	0.006712	0.008630	0.009599	0.011507	0.013425	0.014384	0.016302	0.018220	0.019178	0.021096	
22.00	1.244	0.005262	0.007367	0.009472	0.010524	0.012629	0.014734	0.015786	0.017891	0.019996	0.021048	0.023153	
23.00	1.301	0.005751	0.008052	0.010352	0.011503	0.013803	0.016104	0.017254	0.019555	0.021855	0.023005	0.025306	
24.00	1.358	0.006262	0.008767	0.011272	0.012525	0.015030	0.017535	0.018787	0.021292	0.023797	0.025049	0.027554	
25.00	1.414	0.006795	0.009513	0.012231	0.013590	0.016308	0.019026	0.020385	0.023103	0.025821	0.027180	0.029898	
26.00	1.471	0.007350	0.010289	0.013229	0.014699	0.017639	0.020579	0.022049	0.024989	0.027928	0.029398	0.032339	
27.00	1.527	0.007926	0.011096	0.014286	0.015852	0.019022	0.022192	0.023777	0.026946	0.030118	0.031703	0.034874	
28.00	1.584	0.008524	0.011933	0.015343	0.017048	0.020457	0.023867	0.025571	0.028881	0.032390	0.034095	0.037505	
29.00	1.640	0.009143	0.012801	0.016459	0.018287	0.021944	0.025802	0.027430	0.031088	0.034745	0.036574	0.040231	
30.00	1.697	0.009785	0.013699	0.017617	0.019570	0.023484	0.027398	0.029355	0.033269	0.037183	0.039140	0.043054	
31.00	1.754	0.010448	0.014627	0.018807	0.020896	0.024676	0.029255	0.031344	0.035524	0.039703	0.041763	0.045972	
32.00	1.810	0.011133	0.015586	0.020040	0.022286	0.026219	0.031173	0.033399	0.037852	0.042306	0.044532	0.048996	
33.00	1.867	0.011840	0.016576	0.021312	0.023680	0.028415	0.033511	0.035919	0.040255	0.044891	0.047399	0.052095	
34.00	1.923	0.012568	0.017585	0.022623	0.025138	0.030164	0.035191	0.037705	0.042337	0.047179	0.050273	0.055300	
35.00	1.980	0.013318	0.018645	0.023973	0.026637	0.031964	0.037291	0.039955	0.045283	0.050310	0.053274	0.058601	
36.00	2.036	0.014090	0.019726	0.025363	0.028181	0.033817	0.039453	0.042271	0.047907	0.053543	0.056361	0.061997	
37.00	2.093	0.014884	0.020838	0.026791	0.029788	0.035722	0.041675	0.044652	0.050606	0.056559	0.059538	0.065489	
38.00	2.149	0.015699	0.021979	0.028259	0.031399	0.037879	0.043858	0.047098	0.053378	0.059658	0.062799	0.069077	
39.00	2.206	0.016537	0.023151	0.029786	0.033073	0.039988	0.046302	0.049810	0.056224	0.062839	0.066146	0.072761	
40.00	2.263	0.017395	0.024354	0.031312	0.034791	0.041749	0.048707	0.052186	0.059144	0.066103	0.069582	0.076540	
41.00	2.319	0.018276	0.025587	0.032897	0.036552	0.043863	0.051173	0.054828	0.062139	0.069449	0.073104	0.080415	
42.00	2.376	0.019178	0.026850	0.034521	0.038367	0.046208	0.053700	0.057535	0.065207	0.072878	0.076714	0.084385	
43.00	2.432	0.020103	0.028144	0.036185	0.040205	0.048246	0.056287	0.060308	0.068349	0.076390	0.080410	0.088451	
44.00	2.489	0.021048	0.029489	0.037887	0.042097	0.050515	0.058936	0.063145	0.071565	0.079984	0.084194	0.092813	

DARCY - WEIS BACH FORMULUNDE (J) DEGERLERI J=PV²/(D²g)

Q=Debit, V=Ortalama akim hazi, f=Sürtünme katsayısı, D=Bonuçapı

D=300 mm		J										
Q(l/sn)	V(m/sn)	f=0.010	f=0.014	f=0.018	f=0.020	f=0.024	f=0.028	f=0.030	f=0.034	f=0.038	f=0.040	f=0.044
15.00	0.212	0.000075	0.000107	0.000138	0.000153	0.000183	0.000214	0.000229	0.000260	0.000290	0.000306	0.000336
16.00	0.226	0.000087	0.000122	0.000157	0.000174	0.000205	0.000244	0.000261	0.000296	0.000331	0.000348	0.000383
17.00	0.240	0.000098	0.000137	0.000177	0.000196	0.000230	0.000275	0.000295	0.000334	0.000373	0.000393	0.000432
18.00	0.255	0.000110	0.000154	0.000198	0.000220	0.000264	0.000309	0.000330	0.000374	0.000419	0.000440	0.000484
19.00	0.269	0.000123	0.000172	0.000221	0.000245	0.000294	0.000343	0.000368	0.000417	0.000466	0.000491	0.000540
20.00	0.283	0.000135	0.000190	0.000245	0.000272	0.000326	0.000381	0.000408	0.000462	0.000516	0.000544	0.000598
21.00	0.297	0.000150	0.000210	0.000270	0.000300	0.000361	0.000420	0.000448	0.000508	0.000569	0.000599	0.000659
22.00	0.311	0.000164	0.000230	0.000296	0.000328	0.000395	0.000460	0.000489	0.000555	0.000625	0.000658	0.000724
23.00	0.325	0.000180	0.000257	0.000332	0.000368	0.000437	0.000503	0.000533	0.000601	0.000673	0.000709	0.000781
24.00	0.339	0.000198	0.000274	0.000352	0.000391	0.000470	0.000546	0.000577	0.000648	0.000723	0.000761	0.000836
25.00	0.354	0.000212	0.000297	0.000382	0.000425	0.000510	0.000595	0.000627	0.000702	0.000780	0.000819	0.000894
26.00	0.368	0.000230	0.000322	0.000413	0.000459	0.000551	0.000643	0.000676	0.000754	0.000835	0.000876	0.000951
27.00	0.382	0.000248	0.000347	0.000441	0.000490	0.000585	0.000684	0.000718	0.000800	0.000884	0.000926	0.001000
28.00	0.394	0.000266	0.000373	0.000470	0.000520	0.000620	0.000724	0.000759	0.000846	0.000934	0.000977	0.001050
29.00	0.410	0.000286	0.000400	0.000501	0.000554	0.000658	0.000766	0.000803	0.000894	0.000986	0.001030	0.001100
30.00	0.424	0.000308	0.000428	0.000530	0.000586	0.000694	0.000806	0.000845	0.000940	0.001036	0.001081	0.001150
31.00	0.438	0.000327	0.000457	0.000560	0.000618	0.000730	0.000846	0.000887	0.000986	0.001086	0.001132	0.001200
32.00	0.453	0.000348	0.000487	0.000592	0.000652	0.000768	0.000888	0.000930	0.001034	0.001138	0.001185	0.001250
33.00	0.467	0.000370	0.000518	0.000626	0.000688	0.000808	0.000932	0.000976	0.001084	0.001192	0.001240	0.001300
34.00	0.481	0.000393	0.000550	0.000660	0.000724	0.000848	0.000976	0.001022	0.001134	0.001246	0.001295	0.001350
35.00	0.495	0.000418	0.000583	0.000707	0.000774	0.000902	0.001034	0.001082	0.001200	0.001316	0.001366	0.001420
36.00	0.506	0.000440	0.000616	0.000742	0.000812	0.000944	0.001080	0.001130	0.001252	0.001372	0.001423	0.001480
37.00	0.523	0.000465	0.000651	0.000787	0.000860	0.001000	0.001140	0.001192	0.001318	0.001440	0.001492	0.001550
38.00	0.537	0.000491	0.000687	0.000833	0.000910	0.001054	0.001200	0.001254	0.001384	0.001510	0.001563	0.001620
39.00	0.552	0.000517	0.000723	0.000890	0.001034	0.001184	0.001334	0.001390	0.001524	0.001654	0.001708	0.001770
40.00	0.566	0.000544	0.000761	0.000938	0.001087	0.001240	0.001394	0.001452	0.001590	0.001724	0.001779	0.001840
41.00	0.580	0.000571	0.000800	0.001028	0.001142	0.001300	0.001458	0.001518	0.001660	0.001796	0.001852	0.001910
42.00	0.594	0.000599	0.000839	0.001079	0.001199	0.001360	0.001522	0.001584	0.001730	0.001870	0.001927	0.001990
43.00	0.608	0.000628	0.000879	0.001131	0.001256	0.001420	0.001586	0.001650	0.001800	0.001944	0.001999	0.002060
44.00	0.622	0.000658	0.000921	0.001184	0.001316	0.001484	0.001654	0.001720	0.001870	0.002018	0.002075	0.002140
45.00	0.636	0.000688	0.000963	0.001238	0.001378	0.001550	0.001724	0.001792	0.001946	0.002096	0.002154	0.002220
46.00	0.651	0.000719	0.001008	0.001294	0.001438	0.001614	0.001794	0.001864	0.002024	0.002176	0.002235	0.002300
47.00	0.665	0.000751	0.001051	0.001351	0.001501	0.001680	0.001864	0.001936	0.002100	0.002256	0.002316	0.002380
48.00	0.679	0.000783	0.001096	0.001409	0.001568	0.001750	0.001940	0.002014	0.002184	0.002344	0.002405	0.002470
49.00	0.693	0.000816	0.001142	0.001469	0.001632	0.001820	0.002014	0.002090	0.002264	0.002426	0.002488	0.002550
50.00	0.707	0.000849	0.001189	0.001529	0.001699	0.001894	0.002094	0.002172	0.002350	0.002514	0.002577	0.002640
55.00	0.778	0.001028	0.001439	0.001850	0.002056	0.002287	0.002538	0.002618	0.002808	0.002976	0.003041	0.003110
60.00	0.848	0.001223	0.001712	0.002202	0.002446	0.002706	0.003005	0.003098	0.003308	0.003486	0.003552	0.003630
65.00	0.919	0.001435	0.002010	0.002584	0.002871	0.003174	0.003516	0.003614	0.003836	0.004026	0.004094	0.004180
70.00	0.990	0.001665	0.002331	0.002997	0.003330	0.003696	0.004081	0.004184	0.004420	0.004614	0.004684	0.004780
75.00	1.061	0.001911	0.002676	0.003440	0.003822	0.004237	0.004651	0.004760	0.005010	0.005214	0.005286	0.005390
80.00	1.131	0.002174	0.003044	0.003914	0.004349	0.004808	0.005281	0.005396	0.005650	0.005864	0.005938	0.006050
85.00	1.202	0.002455	0.003437	0.004419	0.004909	0.005408	0.005916	0.006036	0.006300	0.006524	0.006600	0.006720
90.00	1.273	0.002752	0.003853	0.004954	0.005504	0.006050	0.006576	0.006700	0.007080	0.007320	0.007400	0.007520
95.00	1.343	0.003066	0.004293	0.005519	0.006133	0.006739	0.007336	0.007464	0.007860	0.008120	0.008200	0.008320
100.00	1.414	0.003398	0.004757	0.006116	0.006785	0.007434	0.008076	0.008210	0.008620	0.008900	0.009000	0.009120
105.00	1.485	0.003746	0.005244	0.006742	0.007462	0.008154	0.008800	0.008940	0.009360	0.009660	0.009760	0.009880
110.00	1.556	0.004111	0.005755	0.007400	0.008222	0.008960	0.009616	0.009760	0.010180	0.010480	0.010580	0.010700
115.00	1.626	0.004493	0.006291	0.008089	0.008987	0.009754	0.010430	0.010580	0.011000	0.011320	0.011420	0.011540
120.00	1.697	0.004892	0.006849	0.008806	0.009785	0.010584	0.011280	0.011430	0.011860	0.012180	0.012280	0.012400
125.00	1.768	0.005309	0.007432	0.009355	0.010371	0.011200	0.011920	0.012080	0.012520	0.012840	0.012940	0.013060
130.00	1.838	0.005742	0.008039	0.010135	0.011194	0.012060	0.012800	0.012960	0.013400	0.013720	0.013820	0.013940
135.00	1.909	0.006192	0.008699	0.011046	0.012164	0.013060	0.013820	0.014000	0.014440	0.014760	0.014860	0.014980
140.00	1.980	0.006659	0.009323	0.011987	0.013168	0.014100	0.014880	0.015060	0.015500	0.015820	0.015920	0.016040
145.00	2.051	0.007143	0.010001	0.012958	0.014194	0.015160	0.016000	0.016180	0.016620	0.016940	0.017040	0.017160
150.00	2.121	0.007644	0.010702	0.013780	0.015089	0.016100	0.016960	0.017140	0.017580	0.017900	0.018000	0.018120
155.00	2.192	0.008163	0.011428	0.014693	0.016025	0.017080	0.017960	0.018140	0.018580	0.018900	0.019000	0.019120
160.00	2.263	0.008698	0.012177	0.015656	0.017595	0.018680	0.019580	0.019760	0.020200	0.020520	0.020620	0.020740
165.00	2.333	0.009250	0.012950	0.016650	0.018600	0.019720	0.020640	0.020820	0.021260	0.021580	0.021680	0.021800
170.00	2.404	0.009819	0.013746	0.017674	0.019636	0.020780	0.021720	0.021900	0.022340	0.022660	0.022760	0.022880
175.00	2.475	0.010405	0.014567	0.018729	0.020810	0.022000	0.022940	0.023120	0.023560	0.023880	0.023980	0.024100
180.00	2.545	0.011008	0.015411	0.019814	0.022016	0.023220	0.024180	0.024360	0.024800	0.025120	0.025220	0.025340
185.00	2.616	0.011628	0.016279	0.020931	0.023256	0.024480	0.025460	0.025640	0.026080	0.026400	0.026500	0.026620
190.00	2.687	0.012265	0.017171	0.022077	0.024530	0.025800	0.026800	0.027000	0.027440	0.027760	0.027860	0.027980
195.00	2.758	0.012919	0.018087	0.023255	0.025838	0.027160	0.028180	0.028380	0.028820	0.029140	0.029240	0.029360
200.00	2.82828	0.013590	0.019026	0.024462	0.027180	0.028540	0.029580	0.029780	0.030220	0.030540	0.030640	0.030760

DARCY - WEIS BACH FORMÜLÜNDE (J) DEĞERLERİ $J = f \cdot V^2 / (D^5 \rho g)$
 Q=Debi, V=Ortalama akım hız, f=Sürtünme katsayısı, D=Boruçapı

D=350 mm		J											
Q(l/sn)	V(m/sn)	f=0.010	f=0.014	f=0.018	f=0.020	f=0.024	f=0.028	f=0.030	f=0.034	f=0.038	f=0.040	f=0.044	
20.00	0.201	0.000068	0.000086	0.000113	0.000128	0.000151	0.000176	0.000186	0.000214	0.000239	0.000252	0.000277	
21.00	0.216	0.000069	0.000097	0.000125	0.000139	0.000166	0.000194	0.000208	0.000236	0.000259	0.000277	0.000305	
22.00	0.228	0.000076	0.000107	0.000137	0.000152	0.000183	0.000213	0.000228	0.000259	0.000289	0.000304	0.000335	
23.00	0.238	0.000083	0.000116	0.000150	0.000166	0.000200	0.000233	0.000246	0.000283	0.000316	0.000333	0.000366	
24.00	0.248	0.000091	0.000127	0.000163	0.000181	0.000217	0.000254	0.000272	0.000308	0.000344	0.000362	0.000398	
25.00	0.260	0.000098	0.000136	0.000177	0.000196	0.000236	0.000275	0.000296	0.000334	0.000373	0.000393	0.000432	
26.00	0.270	0.000106	0.000146	0.000191	0.000213	0.000255	0.000298	0.000319	0.000361	0.000404	0.000425	0.000468	
27.00	0.281	0.000115	0.000160	0.000206	0.000229	0.000275	0.000321	0.000344	0.000390	0.000436	0.000458	0.000504	
28.00	0.291	0.000123	0.000173	0.000222	0.000246	0.000296	0.000346	0.000370	0.000419	0.000468	0.000493	0.000542	
29.00	0.301	0.000132	0.000185	0.000238	0.000264	0.000317	0.000370	0.000397	0.000446	0.000500	0.000529	0.000582	
30.00	0.312	0.000141	0.000196	0.000255	0.000283	0.000340	0.000396	0.000424	0.000481	0.000538	0.000566	0.000622	
31.00	0.322	0.000151	0.000211	0.000272	0.000302	0.000363	0.000423	0.000453	0.000514	0.000574	0.000604	0.000665	
32.00	0.332	0.000161	0.000225	0.000290	0.000322	0.000386	0.000451	0.000483	0.000547	0.000612	0.000644	0.000708	
33.00	0.343	0.000171	0.000240	0.000308	0.000342	0.000411	0.000478	0.000514	0.000582	0.000650	0.000685	0.000753	
34.00	0.353	0.000182	0.000254	0.000327	0.000363	0.000436	0.000509	0.000546	0.000618	0.000689	0.000727	0.000800	
35.00	0.364	0.000193	0.000270	0.000347	0.000385	0.000462	0.000539	0.000578	0.000655	0.000732	0.000770	0.000847	
36.00	0.374	0.000204	0.000285	0.000367	0.000407	0.000486	0.000570	0.000611	0.000693	0.000774	0.000815	0.000896	
37.00	0.384	0.000215	0.000301	0.000387	0.000430	0.000515	0.000600	0.000642	0.000732	0.000818	0.000861	0.000947	
38.00	0.395	0.000227	0.000318	0.000409	0.000454	0.000545	0.000636	0.000681	0.000772	0.000863	0.000909	0.000999	
39.00	0.405	0.000238	0.000335	0.000430	0.000478	0.000574	0.000668	0.000717	0.000813	0.000909	0.000956	0.001052	
40.00	0.416	0.000252	0.000352	0.000453	0.000504	0.000604	0.000704	0.000756	0.000855	0.000956	0.001006	0.001107	
45.00	0.468	0.000318	0.000446	0.000573	0.000637	0.000764	0.000891	0.000955	0.001082	0.001210	0.001273	0.001401	
50.00	0.516	0.000392	0.000550	0.000707	0.000786	0.000943	0.001100	0.001179	0.001336	0.001493	0.001572	0.001729	
55.00	0.571	0.000476	0.000666	0.000856	0.000951	0.001141	0.001331	0.001427	0.001617	0.001807	0.001902	0.002092	
60.00	0.622	0.000568	0.000792	0.001019	0.001132	0.001358	0.001584	0.001688	0.001924	0.002150	0.002264	0.002490	
65.00	0.675	0.000664	0.000930	0.001195	0.001326	0.001594	0.001860	0.001982	0.002258	0.002524	0.002657	0.002922	
70.00	0.727	0.000770	0.001078	0.001386	0.001540	0.001848	0.002157	0.002311	0.002616	0.002927	0.003081	0.003389	
75.00	0.779	0.000884	0.001238	0.001592	0.001768	0.002122	0.002476	0.002653	0.003006	0.003360	0.003537	0.003891	
80.00	0.831	0.001006	0.001408	0.001811	0.002012	0.002414	0.002817	0.003018	0.003421	0.003823	0.004024	0.004427	
85.00	0.883	0.001136	0.001593	0.002044	0.002271	0.002726	0.003180	0.003407	0.003861	0.004316	0.004542	0.004997	
90.00	0.935	0.001273	0.001783	0.002292	0.002547	0.003056	0.003566	0.003820	0.004329	0.004838	0.005093	0.005602	
95.00	0.987	0.001419	0.001986	0.002554	0.002837	0.003406	0.003972	0.004256	0.004823	0.005391	0.005675	0.006242	
100.00	1.039	0.001572	0.002201	0.002829	0.003144	0.003773	0.004401	0.004716	0.005345	0.005973	0.006288	0.006916	
105.00	1.091	0.001733	0.002426	0.003119	0.003466	0.004159	0.004853	0.005196	0.005892	0.006586	0.006932	0.007625	
110.00	1.143	0.001902	0.002683	0.003424	0.003804	0.004566	0.005328	0.005706	0.006467	0.007228	0.007608	0.008369	
115.00	1.195	0.002079	0.002910	0.003742	0.004158	0.004999	0.005821	0.006237	0.007088	0.007900	0.008315	0.009147	
120.00	1.247	0.002264	0.003169	0.004074	0.004527	0.005433	0.006338	0.006791	0.007696	0.008502	0.008954	0.009800	
125.00	1.299	0.002456	0.003439	0.004421	0.004912	0.005896	0.006877	0.007388	0.008351	0.009333	0.009825	0.010807	
130.00	1.351	0.002657	0.003719	0.004782	0.005313	0.006376	0.007438	0.007970	0.009032	0.010095	0.010626	0.011689	
135.00	1.403	0.002865	0.004011	0.005157	0.005730	0.006876	0.008022	0.008594	0.009740	0.010886	0.011459	0.012605	
140.00	1.455	0.003081	0.004313	0.005546	0.006162	0.007394	0.008627	0.009243	0.10475	0.011708	0.012324	0.013556	
145.00	1.506	0.003305	0.004627	0.005949	0.006610	0.007932	0.009254	0.009915	0.011237	0.012559	0.013220	0.014542	
150.00	1.558	0.003537	0.004952	0.006366	0.007074	0.008498	0.009903	0.010610	0.012025	0.013440	0.014147	0.015562	
155.00	1.610	0.003777	0.005287	0.006798	0.007553	0.009064	0.010574	0.011330	0.012840	0.014351	0.015106	0.016617	
160.00	1.662	0.004024	0.005634	0.007243	0.008048	0.009658	0.011268	0.012072	0.013682	0.015292	0.016096	0.017706	
165.00	1.714	0.004280	0.005991	0.007703	0.008559	0.010271	0.011983	0.012839	0.014551	0.016262	0.017118	0.018830	
170.00	1.765	0.004543	0.006360	0.008177	0.009088	0.010903	0.012720	0.013629	0.015446	0.017263	0.018171	0.019989	
175.00	1.818	0.004814	0.006740	0.008665	0.009628	0.011554	0.013479	0.014442	0.016368	0.018293	0.019256	0.021182	
180.00	1.870	0.005093	0.007130	0.009187	0.010186	0.012223	0.014280	0.015279	0.017316	0.019354	0.020372	0.022409	
185.00	1.922	0.005380	0.007532	0.009884	0.010780	0.012912	0.015064	0.016140	0.018292	0.020444	0.021520	0.023672	
190.00	1.974	0.005675	0.007945	0.010214	0.011349	0.013619	0.015889	0.017024	0.019294	0.021564	0.022699	0.024868	
195.00	2.026	0.005977	0.008368	0.010759	0.011954	0.014345	0.016736	0.017932	0.020323	0.022714	0.023909	0.026300	
200.00	2.078	0.006288	0.008803	0.011318	0.012575	0.015000	0.017606	0.018863	0.021378	0.023863	0.025151	0.027666	
205.00	2.130	0.006608	0.009248	0.011891	0.013212	0.015854	0.018497	0.019818	0.022460	0.025103	0.026424	0.029066	
210.00	2.182	0.006932	0.009705	0.012478	0.013884	0.016837	0.019410	0.020779	0.023589	0.026342	0.027729	0.030502	
215.00	2.234	0.007266	0.010173	0.013079	0.014532	0.017439	0.020345	0.021799	0.024705	0.027612	0.029065	0.031971	
220.00	2.286	0.007608	0.010651	0.013685	0.015216	0.018259	0.021303	0.022824	0.025868	0.028911	0.030432	0.033476	
225.00	2.338	0.007958	0.011141	0.014324	0.015916	0.019099	0.022282	0.023874	0.027057	0.030240	0.031831	0.035015	
230.00	2.390	0.008315	0.011642	0.014968	0.016631	0.019857	0.023283	0.024946	0.028273	0.031599	0.033262	0.036588	
235.00	2.442	0.008681	0.012153	0.015626	0.017362	0.020834	0.024307	0.026043	0.029515	0.032988	0.034724	0.038196	
240.00	2.494	0.009054	0.012676	0.016298	0.018109	0.021730	0.025352	0.027163	0.030785	0.034406	0.036217	0.039839	
245.00	2.546	0.009436	0.013210	0.016984	0.018971	0.022645	0.026419	0.028306	0.032081	0.035855	0.037742	0.041516	
250.00	2.597	0.009825	0.013754	0.017684	0.019849	0.023579	0.027509	0.029474	0.033403	0.037333	0.039328	0.043228	
255.00	2.649	0.010221	0.014310	0.018399	0.020443	0.024531	0.028620	0.030654	0.034753	0.038843	0.040866	0.044874	
260.00	2.701	0.010626	0.014877	0.019127	0.021252	0.025503	0.029753	0.031879	0.036129	0.040380	0.042505	0.046755	
265.00	2.753	0.011039	0.015454	0.019870	0.022078	0.026493	0.030909	0.033117	0.037532	0.041948	0.044155	0.048571	

DARCY - WEIS BACH FORMÜLÜNDE (J) DEĞERLERİ $J = F \cdot V^2 / (D^5 \cdot \gamma)$
 Q=Debi, V=Ortalama akım hızı, f=Sürtünme katsayısı, D=Boruçapı

D=400 mm		J											
Q(l/s)	V(m/s)	f=0.010	f=0.014	f=0.018	f=0.020	f=0.024	f=0.028	f=0.030	f=0.034	f=0.038	f=0.040	f=0.044	
40.00	0.318	0.000125	0.000181	0.000232	0.000258	0.000310	0.000361	0.000387	0.000439	0.000490	0.000516	0.000568	
45.00	0.358	0.000163	0.000229	0.000294	0.000327	0.000392	0.000457	0.000480	0.000555	0.000620	0.000650	0.000718	
50.00	0.398	0.000202	0.000282	0.000359	0.000400	0.000484	0.000564	0.000605	0.000685	0.000765	0.000800	0.000887	
55.00	0.438	0.000244	0.000341	0.000438	0.000486	0.000585	0.000683	0.000733	0.000829	0.000927	0.000970	0.001073	
60.00	0.477	0.000289	0.000408	0.000522	0.000578	0.000697	0.000813	0.000871	0.000987	0.001106	0.001151	0.001277	
65.00	0.517	0.000341	0.000477	0.000613	0.000678	0.000818	0.000954	0.001022	0.001151	0.001294	0.001343	0.001489	
70.00	0.557	0.000395	0.000553	0.000711	0.000786	0.000948	0.001106	0.001185	0.001340	0.001501	0.001554	0.001738	
75.00	0.597	0.000454	0.000635	0.000816	0.000907	0.001088	0.001270	0.001361	0.001542	0.001729	0.001787	0.001995	
80.00	0.636	0.000516	0.000722	0.000928	0.001032	0.001238	0.001445	0.001548	0.001754	0.001961	0.002024	0.002270	
85.00	0.676	0.000583	0.000819	0.001049	0.001166	0.001398	0.001631	0.001748	0.001981	0.002214	0.002283	0.002563	
90.00	0.716	0.000653	0.000914	0.001178	0.001308	0.001587	0.001829	0.001958	0.002220	0.002462	0.002536	0.002873	
95.00	0.756	0.000726	0.001019	0.001310	0.001455	0.001746	0.002037	0.002179	0.002474	0.002716	0.002795	0.003202	
100.00	0.795	0.000800	0.001128	0.001451	0.001613	0.001936	0.002258	0.002419	0.002741	0.003004	0.003088	0.003548	
105.00	0.835	0.000886	0.001244	0.001600	0.001778	0.002130	0.002489	0.002667	0.003022	0.003376	0.003465	0.003991	
110.00	0.875	0.000975	0.001368	0.001758	0.001951	0.002341	0.002732	0.002927	0.003317	0.003707	0.003802	0.004392	
115.00	0.915	0.001066	0.001493	0.001919	0.002133	0.002556	0.002986	0.003191	0.003625	0.004052	0.004152	0.004822	
120.00	0.955	0.001161	0.001625	0.002090	0.002322	0.002786	0.003251	0.003483	0.003947	0.004412	0.004516	0.005298	
125.00	0.994	0.001260	0.001764	0.002268	0.002520	0.003023	0.003527	0.003775	0.004283	0.004787	0.004896	0.005743	
130.00	1.034	0.001363	0.001908	0.002453	0.002725	0.003270	0.003815	0.004086	0.004633	0.005178	0.005292	0.006195	
135.00	1.074	0.001466	0.002057	0.002645	0.002939	0.003527	0.004114	0.004408	0.004994	0.005584	0.005703	0.006668	
140.00	1.114	0.001580	0.002212	0.002844	0.003161	0.003793	0.004425	0.004741	0.005373	0.006005	0.006129	0.007153	
145.00	1.153	0.001695	0.002373	0.003051	0.003390	0.004088	0.004748	0.005085	0.005764	0.006442	0.006571	0.007658	
150.00	1.193	0.001814	0.002540	0.003265	0.003628	0.004354	0.005079	0.005442	0.006168	0.006893	0.007026	0.008162	
155.00	1.233	0.001937	0.002712	0.003487	0.003874	0.004648	0.005424	0.005811	0.006586	0.007361	0.007500	0.008682	
160.00	1.273	0.002064	0.002890	0.003715	0.004128	0.004954	0.005778	0.006192	0.007018	0.007843	0.008000	0.009232	
165.00	1.313	0.002195	0.003073	0.003951	0.004390	0.005268	0.006146	0.006585	0.007463	0.008341	0.008500	0.009782	
170.00	1.352	0.002330	0.003262	0.004194	0.004660	0.005592	0.006524	0.006990	0.007922	0.008854	0.009020	0.010342	
175.00	1.392	0.002469	0.003457	0.004444	0.004938	0.005928	0.006914	0.007407	0.008395	0.009383	0.009550	0.010924	
180.00	1.432	0.002612	0.003657	0.004702	0.005225	0.006289	0.007314	0.007837	0.008882	0.009927	0.010100	0.011484	
185.00	1.472	0.002759	0.003863	0.004967	0.005519	0.006623	0.007726	0.008278	0.009382	0.010486	0.010660	0.012101	
190.00	1.511	0.002911	0.004075	0.005239	0.005821	0.006986	0.008150	0.008732	0.009886	0.011080	0.011260	0.012747	
195.00	1.551	0.003066	0.004292	0.005518	0.006132	0.007358	0.008584	0.009197	0.010424	0.011650	0.011830	0.013369	
200.00	1.591	0.003225	0.004515	0.005805	0.006450	0.007740	0.009030	0.009675	0.010965	0.012255	0.012440	0.014000	
205.00	1.631	0.003388	0.004744	0.006099	0.006777	0.008132	0.009487	0.010165	0.011520	0.012875	0.013060	0.014660	
210.00	1.670	0.003556	0.004978	0.006400	0.007111	0.008533	0.009956	0.010667	0.012089	0.013511	0.013700	0.015320	
215.00	1.710	0.003727	0.005218	0.006708	0.007454	0.008945	0.010435	0.011181	0.012671	0.014162	0.014360	0.016000	
220.00	1.750	0.003902	0.005463	0.007024	0.007805	0.009365	0.010926	0.011707	0.013268	0.014829	0.015030	0.016700	
225.00	1.790	0.004082	0.005714	0.007347	0.008163	0.009796	0.011429	0.012245	0.013878	0.015510	0.015720	0.017400	
230.00	1.830	0.004265	0.005971	0.007677	0.008530	0.010236	0.011942	0.012795	0.014501	0.016207	0.016420	0.018100	
235.00	1.869	0.004453	0.006234	0.008015	0.008905	0.010686	0.012467	0.013358	0.015139	0.016920	0.017140	0.018800	
240.00	1.909	0.004644	0.006502	0.008359	0.009288	0.011146	0.013003	0.013932	0.015790	0.017647	0.017870	0.019500	
245.00	1.949	0.004840	0.006775	0.008711	0.009679	0.011615	0.013651	0.014619	0.016545	0.018460	0.018690	0.020300	
250.00	1.989	0.005039	0.007055	0.009070	0.010078	0.012094	0.014108	0.015117	0.017133	0.019149	0.019380	0.021000	
255.00	2.029	0.005243	0.007340	0.009437	0.010485	0.012582	0.014679	0.015728	0.017825	0.019922	0.020160	0.021800	
260.00	2.068	0.005450	0.007630	0.009810	0.010901	0.013081	0.015281	0.016351	0.018531	0.020711	0.021000	0.022600	
265.00	2.108	0.005662	0.007927	0.010191	0.011324	0.013689	0.015953	0.016988	0.019251	0.021515	0.021800	0.023400	
270.00	2.148	0.005878	0.008229	0.010590	0.011755	0.014108	0.016657	0.017733	0.019984	0.022335	0.022600	0.024200	
275.00	2.188	0.006097	0.008538	0.010975	0.012195	0.014634	0.017072	0.018292	0.020731	0.023170	0.023400	0.025000	
280.00	2.227	0.006321	0.008849	0.011378	0.012642	0.015170	0.017899	0.018663	0.021491	0.024020	0.024200	0.025800	
285.00	2.267	0.006549	0.009168	0.011788	0.013098	0.015717	0.018337	0.019446	0.022286	0.024895	0.025000	0.026400	
290.00	2.307	0.006781	0.009493	0.012205	0.013561	0.016273	0.018986	0.020342	0.023054	0.025766	0.025800	0.027000	
295.00	2.347	0.007018	0.009823	0.012630	0.014033	0.016839	0.019848	0.021049	0.023856	0.026682	0.026600	0.028000	
300.00	2.386	0.007258	0.010159	0.013061	0.014513	0.017415	0.020318	0.021789	0.024671	0.027574	0.027400	0.029000	
305.00	2.426	0.007500	0.010500	0.013500	0.015000	0.018000	0.021000	0.022501	0.025501	0.028501	0.028000	0.030000	
310.00	2.466	0.007748	0.010847	0.013947	0.015498	0.018595	0.021605	0.023244	0.026344	0.029443	0.028800	0.030000	
315.00	2.506	0.008000	0.011200	0.014400	0.016000	0.019200	0.022400	0.024000	0.027200	0.030400	0.029800	0.032000	
320.00	2.545	0.008256	0.011558	0.014861	0.016512	0.019814	0.023117	0.024788	0.028071	0.031373	0.030200	0.032000	
325.00	2.585	0.008516	0.011922	0.015329	0.017032	0.020439	0.023845	0.025548	0.028855	0.032381	0.031000	0.034000	
330.00	2.625	0.008780	0.012282	0.015804	0.017580	0.021072	0.024584	0.026340	0.029852	0.033384	0.031800	0.034000	
335.00	2.665	0.009048	0.012667	0.016287	0.018096	0.021716	0.025335	0.027145	0.030764	0.034383	0.032600	0.034000	
340.00	2.705	0.009320	0.013048	0.016777	0.018641	0.022389	0.026097	0.027981	0.031689	0.035417	0.033200	0.041000	
345.00	2.744	0.009596	0.013435	0.017274	0.019193	0.023031	0.026870	0.028789	0.032628	0.036468	0.033800	0.042200	
350.00	2.784	0.009877	0.013827	0.017778	0.019753	0.023704	0.027655	0.029630	0.033580	0.037331	0.034500	0.043500	
355.00	2.824	0.010149	0.014229	0.018280	0.020328	0.024378	0.028457	0.030517	0.034527	0.038706	0.035200	0.044900	
360.00	2.864	0.010438	0.014633	0.018808	0.020928	0.025078	0.029257	0.031347	0.035527	0.039706	0.036000	0.046300	
365.00	2.904	0.010738	0.015043	0.019368	0.021540	0.025760	0.030050	0.032113	0.037528	0.041943	0.037000	0.047800	
370.00	2.943	0.011038	0.015453	0.019968	0.022175	0.026460	0.030805	0.032913	0.038524	0.043441	0.038000	0.049300	
375.00	3.022	0.011642	0.016290	0.020956	0.023285	0.027942	0.032588	0.034627	0.039584	0.044241	0.039000	0.051200	

DARCY - WEIS BACH FORMÜLÜNDE (J) DEGERLERİ $J = f \cdot V^2 / (D^5 \cdot 2g)$
 $Q = \text{Debi}$, $V = \text{Ortalama akım hızı}$, $f = \text{Sürtünme katsayısı}$, $D = \text{Boru çapı}$

D=450 mm		J										
Q (l/s)	V (m/s)	f=0.010	f=0.014	f=0.018	f=0.020	f=0.024	f=0.028	f=0.030	f=0.034	f=0.038	f=0.040	f=0.044
50.00	0.314	0.000112	0.000157	0.000201	0.000224	0.000288	0.000313	0.000338	0.000360	0.000425	0.000447	0.000462
55.00	0.346	0.000135	0.000189	0.000244	0.000271	0.000325	0.000379	0.000403	0.000480	0.000514	0.000541	0.000596
60.00	0.377	0.000161	0.000225	0.000290	0.000322	0.000387	0.000451	0.000468	0.000548	0.000582	0.000611	0.000709
65.00	0.409	0.000189	0.000265	0.000340	0.000378	0.000454	0.000529	0.000567	0.000643	0.000718	0.000758	0.000832
70.00	0.440	0.000219	0.000307	0.000395	0.000438	0.000528	0.000614	0.000659	0.000745	0.000833	0.000877	0.000985
75.00	0.471	0.000252	0.000352	0.000453	0.000503	0.000604	0.000705	0.000755	0.000858	0.000958	0.001007	0.001107
80.00	0.503	0.000286	0.000401	0.000515	0.000573	0.000687	0.000802	0.000859	0.000974	0.001086	0.001145	0.001260
85.00	0.534	0.000323	0.000453	0.000582	0.000647	0.000778	0.000905	0.000970	0.001099	0.001228	0.001293	0.001422
90.00	0.566	0.000362	0.000507	0.000652	0.000725	0.000870	0.001015	0.001087	0.001232	0.001377	0.001450	0.001585
95.00	0.597	0.000404	0.000565	0.000727	0.000808	0.000969	0.001131	0.001211	0.001373	0.001534	0.001615	0.001777
100.00	0.629	0.000447	0.000628	0.000805	0.000895	0.001074	0.001253	0.001342	0.001521	0.001700	0.001790	0.001969
105.00	0.660	0.000493	0.000691	0.000888	0.000987	0.001184	0.001381	0.001480	0.001677	0.001874	0.001973	0.002170
110.00	0.691	0.000541	0.000758	0.000974	0.001083	0.001299	0.001516	0.001624	0.001841	0.002057	0.002165	0.002382
115.00	0.723	0.000592	0.000829	0.001065	0.001183	0.001420	0.001657	0.001775	0.002012	0.002248	0.002367	0.002603
120.00	0.754	0.000644	0.000902	0.001160	0.001289	0.001548	0.001804	0.001933	0.002191	0.002448	0.002577	0.002835
125.00	0.786	0.000699	0.000979	0.001258	0.001398	0.001678	0.001957	0.002097	0.002377	0.002657	0.002796	0.003076
130.00	0.817	0.000756	0.001059	0.001361	0.001512	0.001815	0.002117	0.002268	0.002571	0.002873	0.003025	0.003327
135.00	0.848	0.000815	0.001142	0.001468	0.001631	0.001957	0.002283	0.002446	0.002772	0.003099	0.003262	0.003588
140.00	0.880	0.000877	0.001228	0.001578	0.001754	0.002105	0.002465	0.002631	0.002982	0.003332	0.003508	0.003858
145.00	0.911	0.000941	0.001317	0.001693	0.001881	0.002258	0.002634	0.002822	0.003198	0.003575	0.003763	0.004139
150.00	0.943	0.001007	0.001409	0.001812	0.002013	0.002416	0.002819	0.003020	0.003423	0.003825	0.004027	0.004429
155.00	0.974	0.001075	0.001505	0.001935	0.002150	0.002580	0.003010	0.003225	0.003655	0.004085	0.004300	0.004730
160.00	1.006	0.001145	0.001604	0.002062	0.002291	0.002749	0.003207	0.003436	0.003904	0.004352	0.004582	0.005040
165.00	1.037	0.001218	0.001705	0.002193	0.002436	0.002923	0.003411	0.003654	0.004141	0.004629	0.004872	0.005360
170.00	1.068	0.001293	0.001810	0.002327	0.002588	0.003103	0.003620	0.003879	0.004398	0.004913	0.005172	0.005689
175.00	1.100	0.001370	0.001918	0.002466	0.002740	0.003288	0.003837	0.004111	0.004659	0.005207	0.005481	0.006029
180.00	1.131	0.001450	0.002029	0.002608	0.002899	0.003479	0.004059	0.004349	0.004929	0.005509	0.005798	0.006378
185.00	1.163	0.001531	0.002144	0.002758	0.003063	0.003675	0.004288	0.004594	0.005206	0.005819	0.006125	0.006738
190.00	1.194	0.001615	0.002261	0.002907	0.003230	0.003878	0.004522	0.004845	0.005492	0.006138	0.006461	0.007107
195.00	1.226	0.001701	0.002382	0.003062	0.003403	0.004083	0.004764	0.005104	0.005784	0.006465	0.006805	0.007466
200.00	1.257	0.001790	0.002508	0.003221	0.003579	0.004295	0.005001	0.005389	0.006095	0.006801	0.007159	0.007874
205.00	1.288	0.001880	0.002632	0.003384	0.003761	0.004513	0.005265	0.005641	0.006393	0.007145	0.007521	0.008273
210.00	1.320	0.001973	0.002762	0.003562	0.003946	0.004735	0.005525	0.005919	0.006709	0.007498	0.007892	0.008662
215.00	1.351	0.002068	0.002895	0.003723	0.004138	0.004984	0.005791	0.006205	0.007032	0.007859	0.008273	0.009100
220.00	1.383	0.002165	0.003032	0.003898	0.004331	0.005197	0.006033	0.006466	0.007363	0.008229	0.008662	0.009528
225.00	1.414	0.002265	0.003171	0.004077	0.004530	0.005436	0.006302	0.006756	0.007701	0.008607	0.009080	0.009986
230.00	1.446	0.002367	0.003314	0.004280	0.004734	0.005680	0.006567	0.007010	0.008047	0.008994	0.009467	0.010414
235.00	1.477	0.002471	0.003459	0.004448	0.004912	0.005900	0.006818	0.007243	0.008341	0.009339	0.009863	0.010872
240.00	1.508	0.002577	0.003608	0.004639	0.005114	0.006135	0.007071	0.007531	0.008672	0.009713	0.010308	0.011339
245.00	1.540	0.002686	0.003760	0.004834	0.005321	0.006374	0.007330	0.007817	0.009007	0.010005	0.010642	0.011817
250.00	1.571	0.002796	0.003915	0.005033	0.005533	0.006611	0.007583	0.008099	0.009338	0.010386	0.011085	0.012304
255.00	1.603	0.002909	0.004073	0.005237	0.005749	0.006852	0.007846	0.008382	0.009669	0.010655	0.011407	0.012681
260.00	1.634	0.003025	0.004234	0.005444	0.005969	0.007109	0.008124	0.008680	0.010007	0.011043	0.011848	0.013180
265.00	1.666	0.003142	0.004399	0.005656	0.006204	0.007374	0.008417	0.008992	0.010363	0.011439	0.012293	0.013625
270.00	1.697	0.003262	0.004568	0.005871	0.006433	0.007633	0.008703	0.009297	0.010710	0.011826	0.012724	0.014115
275.00	1.728	0.003384	0.004737	0.006090	0.006677	0.007901	0.009004	0.009618	0.011071	0.012226	0.013163	0.014588
280.00	1.760	0.003508	0.004911	0.006314	0.007015	0.008269	0.009403	0.009997	0.011504	0.012709	0.013694	0.015100
285.00	1.791	0.003634	0.005088	0.006541	0.007268	0.008552	0.010116	0.010702	0.012256	0.013510	0.014536	0.015990
290.00	1.823	0.003763	0.005268	0.006773	0.007525	0.008901	0.010536	0.011128	0.012793	0.014129	0.015185	0.016656
295.00	1.854	0.003894	0.005461	0.007009	0.007777	0.009245	0.010902	0.011511	0.013238	0.014679	0.015774	0.017312
300.00	1.886	0.004027	0.005637	0.007246	0.008053	0.009664	0.011275	0.011900	0.013691	0.015202	0.016307	0.017881
310.00	1.948	0.004300	0.006020	0.007739	0.008599	0.010319	0.012039	0.012699	0.014619	0.016339	0.017499	0.019181
320.00	2.011	0.004582	0.006414	0.008247	0.009163	0.010998	0.012828	0.013545	0.015577	0.017410	0.018626	0.020519
330.00	2.074	0.004872	0.006821	0.008770	0.009745	0.011894	0.013643	0.014417	0.016566	0.018515	0.019899	0.021938
340.00	2.137	0.005172	0.007241	0.009310	0.010344	0.012413	0.014282	0.015116	0.017385	0.019454	0.020968	0.022757
350.00	2.200	0.005481	0.007673	0.009865	0.010962	0.013154	0.015146	0.016034	0.018442	0.020627	0.022312	0.024118
360.00	2.263	0.005798	0.008118	0.010437	0.011597	0.013916	0.016038	0.016975	0.019515	0.021834	0.023659	0.025513
370.00	2.325	0.006125	0.008575	0.011025	0.012250	0.014700	0.016715	0.017705	0.020375	0.022825	0.024750	0.026650
380.00	2.388	0.006461	0.009045	0.011629	0.012621	0.015506	0.018060	0.019102	0.021966	0.024550	0.026543	0.028427
390.00	2.451	0.006805	0.009527	0.012249	0.013610	0.016332	0.019054	0.020145	0.023138	0.025860	0.027921	0.029843
400.00	2.514	0.007159	0.010022	0.012886	0.014317	0.017161	0.020044	0.021176	0.024239	0.027203	0.029434	0.031468
410.00	2.577	0.007521	0.010529	0.013638	0.015042	0.018050	0.021059	0.022253	0.025571	0.028680	0.030984	0.033082
420.00	2.640	0.007892	0.011049	0.014408	0.015985	0.019042	0.022089	0.023327	0.026834	0.029991	0.032369	0.034726
430.00	2.703	0.008273	0.011582	0.015291	0.016941	0.019954	0.023163	0.024418	0.028127	0.031438	0.033891	0.036400
440.00	2.765	0.008662	0.012127	0.016159	0.017924	0.020989	0.024253	0.025596	0.029451	0.032915	0.035468	0.038112
450.00	2.828	0.009060	0.012684	0.017038	0.018820	0.021944	0.025368	0.026718	0.030604	0.034128	0.036740	0.039466

DARCY - WEIS BACH FORMULUNDE (J) DEGERLERI $J = V^2(D^2g)$
 $Q = \text{Debi}$, $V = \text{Ortalama akim hizi}$, $f = \text{Sirtirme katsayisi}$, $D = \text{Boruçapı}$

D=500 mm		J										
Q(l/sn)	V(m/sn)	f=0.010	f=0.014	f=0.018	f=0.020	f=0.024	f=0.028	f=0.030	f=0.034	f=0.038	f=0.040	f=0.044
70.00	0.350	0.000128	0.000181	0.000233	0.000258	0.000311	0.000335	0.000388	0.000440	0.000492	0.000518	0.000570
75.00	0.380	0.000148	0.000208	0.000267	0.000297	0.000357	0.000416	0.000440	0.000505	0.000565	0.000594	0.000654
80.00	0.407	0.000169	0.000237	0.000304	0.000338	0.000408	0.000473	0.000507	0.000575	0.000643	0.000678	0.000744
85.00	0.430	0.000191	0.000267	0.000344	0.000382	0.000458	0.000534	0.000578	0.000646	0.000725	0.000764	0.000840
90.00	0.451	0.000214	0.000300	0.000386	0.000428	0.000514	0.000598	0.000642	0.000726	0.000813	0.000856	0.000942
95.00	0.469	0.000236	0.000334	0.000429	0.000477	0.000572	0.000666	0.000715	0.000811	0.000906	0.000954	0.001045
100.00	0.500	0.000264	0.000370	0.000476	0.000528	0.000634	0.000740	0.000790	0.000896	0.001004	0.001057	0.001155
105.00	0.530	0.000291	0.000409	0.000524	0.000580	0.000696	0.000816	0.000874	0.000990	0.001107	0.001165	0.001262
110.00	0.560	0.000320	0.000448	0.000575	0.000638	0.000767	0.000895	0.000969	0.001087	0.001215	0.001279	0.001407
115.00	0.586	0.000348	0.000486	0.000625	0.000699	0.000836	0.000978	0.001048	0.001188	0.001328	0.001398	0.001537
120.00	0.611	0.000380	0.000533	0.000685	0.000761	0.000913	0.001065	0.001141	0.001293	0.001448	0.001522	0.001674
125.00	0.638	0.000412	0.000578	0.000743	0.000820	0.000991	0.001156	0.001238	0.001404	0.001565	0.001651	0.001816
130.00	0.662	0.000446	0.000625	0.000804	0.000893	0.001072	0.001250	0.001336	0.001518	0.001697	0.001786	0.001965
135.00	0.687	0.000481	0.000674	0.000867	0.000963	0.001156	0.001348	0.001444	0.001637	0.001830	0.001926	0.002119
140.00	0.713	0.000518	0.000725	0.000932	0.001036	0.001243	0.001450	0.001553	0.001751	0.001968	0.002071	0.002278
145.00	0.738	0.000555	0.000778	0.001000	0.001111	0.001339	0.001555	0.001666	0.001869	0.002111	0.002222	0.002444
150.00	0.764	0.000594	0.000832	0.001070	0.001189	0.001427	0.001664	0.001783	0.002021	0.002259	0.002378	0.002616
155.00	0.789	0.000635	0.000889	0.001143	0.001268	0.001523	0.001777	0.001904	0.002158	0.002412	0.002539	0.002793
160.00	0.815	0.000678	0.000947	0.001217	0.001353	0.001623	0.001894	0.002029	0.002300	0.002570	0.002705	0.002978
165.00	0.840	0.000719	0.001007	0.001285	0.001439	0.001726	0.002014	0.002159	0.002446	0.002733	0.002877	0.003165
170.00	0.865	0.000764	0.001069	0.001374	0.001527	0.001832	0.002138	0.002291	0.002596	0.002901	0.003054	0.003359
175.00	0.891	0.000809	0.001133	0.001456	0.001618	0.001942	0.002265	0.002427	0.002751	0.003075	0.003236	0.003560
180.00	0.916	0.000856	0.001198	0.001541	0.001712	0.002054	0.002397	0.002568	0.002910	0.003253	0.003424	0.003765
185.00	0.942	0.000904	0.001266	0.001628	0.001808	0.002170	0.002532	0.002713	0.003077	0.003436	0.003617	0.003978
190.00	0.967	0.000954	0.001335	0.001717	0.001907	0.002289	0.002670	0.002861	0.003243	0.003624	0.003815	0.004196
195.00	0.993	0.001005	0.001408	0.001808	0.002009	0.002411	0.002813	0.003014	0.003416	0.003817	0.004018	0.004420
200.00	1.018	0.001057	0.001479	0.001902	0.002114	0.002536	0.002959	0.003170	0.003593	0.004016	0.004227	0.004650
205.00	1.044	0.001110	0.001554	0.001998	0.002221	0.002665	0.003109	0.003331	0.003775	0.004219	0.004441	0.004885
210.00	1.069	0.001165	0.001631	0.002097	0.002330	0.002796	0.003262	0.003495	0.003961	0.004427	0.004680	0.005126
215.00	1.095	0.001221	0.001710	0.002198	0.002442	0.002931	0.003419	0.003664	0.004152	0.004641	0.004885	0.005373
220.00	1.120	0.001279	0.001790	0.002302	0.002557	0.003069	0.003580	0.003836	0.004348	0.004859	0.005115	0.005626
225.00	1.145	0.001337	0.001872	0.002407	0.002675	0.003210	0.003745	0.004012	0.004547	0.005082	0.005360	0.005885
230.00	1.171	0.001398	0.001957	0.002516	0.002795	0.003354	0.003913	0.004193	0.004752	0.005311	0.005590	0.006149
235.00	1.196	0.001459	0.002043	0.002626	0.002918	0.003502	0.004085	0.004377	0.004961	0.005544	0.005836	0.006420
240.00	1.222	0.001522	0.002130	0.002739	0.003044	0.003652	0.004261	0.004565	0.005174	0.005783	0.006087	0.006696
245.00	1.247	0.001586	0.002220	0.002854	0.003172	0.003808	0.004440	0.004757	0.005392	0.006026	0.006343	0.006978
250.00	1.273	0.001651	0.002312	0.002972	0.003302	0.003963	0.004623	0.004954	0.005614	0.006257	0.006585	0.007265
255.00	1.298	0.001718	0.002405	0.003092	0.003436	0.004123	0.004810	0.005154	0.005841	0.006482	0.006822	0.007559
260.00	1.324	0.001786	0.002500	0.003215	0.003572	0.004286	0.005001	0.005358	0.006072	0.006717	0.007144	0.007858
265.00	1.349	0.001855	0.002597	0.003340	0.003711	0.004453	0.005195	0.005566	0.006308	0.007050	0.007421	0.008163
270.00	1.375	0.001926	0.002698	0.003467	0.003852	0.004622	0.005393	0.005778	0.006548	0.007319	0.007704	0.008471
275.00	1.400	0.001998	0.002797	0.003596	0.003996	0.004795	0.005594	0.005994	0.006793	0.007592	0.007992	0.008794
280.00	1.425	0.002071	0.002900	0.003728	0.004143	0.004971	0.005800	0.006214	0.007042	0.007871	0.008285	0.009114
285.00	1.451	0.002146	0.003004	0.003863	0.004292	0.005150	0.006009	0.006438	0.007296	0.008154	0.008584	0.009442
290.00	1.478	0.002222	0.003111	0.003999	0.004444	0.005332	0.006221	0.006666	0.007554	0.008443	0.008887	0.009776
300.00	1.527	0.002378	0.003329	0.004280	0.004755	0.005707	0.006668	0.007133	0.008084	0.009035	0.009511	0.010462
310.00	1.578	0.002539	0.003554	0.004570	0.005078	0.006083	0.007109	0.007617	0.008632	0.009648	0.010156	0.011171
320.00	1.629	0.002705	0.003787	0.004870	0.005411	0.006493	0.007575	0.008116	0.009198	0.010280	0.010821	0.011903
330.00	1.680	0.002877	0.004028	0.005179	0.005754	0.006880	0.008056	0.008631	0.009782	0.010933	0.011508	0.012659
340.00	1.731	0.003054	0.004276	0.005497	0.006108	0.007330	0.008551	0.009162	0.010384	0.011605	0.012216	0.013438
350.00	1.782	0.003236	0.004531	0.005825	0.006473	0.007767	0.009062	0.009709	0.011004	0.012298	0.012945	0.014240
360.00	1.833	0.003424	0.004794	0.006163	0.006848	0.008217	0.009587	0.010272	0.011641	0.013011	0.013698	0.015065
370.00	1.884	0.003617	0.005064	0.006510	0.007234	0.008680	0.010127	0.010850	0.012297	0.013744	0.014467	0.015914
380.00	1.935	0.003815	0.005341	0.006867	0.007630	0.009156	0.010682	0.011445	0.012971	0.014497	0.015260	0.016786
390.00	1.985	0.004018	0.005626	0.007233	0.008037	0.009644	0.011251	0.012055	0.013682	0.015270	0.016074	0.017681
400.00	2.036	0.004227	0.005918	0.007609	0.008454	0.010145	0.011836	0.012681	0.014372	0.016063	0.016908	0.018599
410.00	2.087	0.004441	0.006218	0.007994	0.008862	0.010769	0.012493	0.013381	0.015100	0.016876	0.017764	0.019541
420.00	2.138	0.004660	0.006525	0.008389	0.009321	0.011185	0.013049	0.013981	0.015845	0.017709	0.018641	0.020506
430.00	2.189	0.004885	0.006839	0.008793	0.009770	0.011724	0.013678	0.014655	0.016609	0.018563	0.019540	0.021494
440.00	2.240	0.005115	0.007161	0.009207	0.010230	0.012275	0.014321	0.015344	0.017390	0.019436	0.020459	0.022505
450.00	2.291	0.005350	0.007480	0.009630	0.010700	0.012840	0.014880	0.016050	0.018190	0.020330	0.021400	0.023540
460.00	2.342	0.005590	0.007828	0.010063	0.011181	0.013417	0.015653	0.016771	0.019007	0.021243	0.022361	0.024597
470.00	2.393	0.005836	0.008170	0.010505	0.011672	0.014206	0.016341	0.017508	0.019842	0.022177	0.023344	0.025679
480.00	2.444	0.006087	0.008522	0.010957	0.012174	0.014809	0.017044	0.018261	0.020896	0.023131	0.024348	0.026783
490.00	2.495	0.006343	0.008881	0.011418	0.012667	0.015324	0.017761	0.019030	0.021587	0.024104	0.025373	0.027910
500.00	2.545	0.006605	0.009247	0.011889	0.013210	0.015852	0.018494	0.019814	0.022456	0.025098	0.026419	0.029061

DARCY - WEIS BACH FORMÜLÜNDE (J) DEGERLERI $J = F \cdot V^2 / (2 \cdot g)$
 $Q = \text{Debi}$, $V = \text{Ortalama akim hiz}$, $f = \text{Sürtünme katsayisi}$, $D = \text{Boruçapı}$

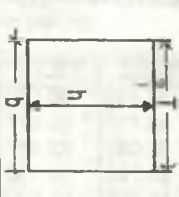
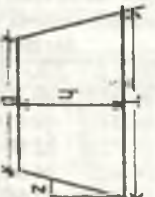
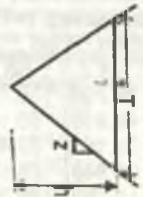

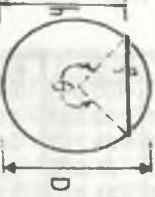
D=550 mm		J										
Q(l/sn)	V(m/sn)	f=0.010	f=0.014	f=0.018	f=0.020	f=0.024	f=0.028	f=0.030	f=0.034	f=0.038	f=0.040	f=0.044
100.00	0.421	0.000164	0.000230	0.000295	0.000328	0.000394	0.000459	0.000492	0.000558	0.000623	0.000656	0.000722
105.00	0.442	0.000181	0.000253	0.000326	0.000362	0.000434	0.000506	0.000543	0.000615	0.000687	0.000723	0.000796
110.00	0.463	0.000198	0.000278	0.000357	0.000397	0.000476	0.000556	0.000595	0.000675	0.000754	0.000794	0.000873
115.00	0.484	0.000217	0.000304	0.000391	0.000434	0.000521	0.000607	0.000651	0.000738	0.000824	0.000868	0.000955
120.00	0.505	0.000236	0.000331	0.000425	0.000472	0.000567	0.000661	0.000709	0.000803	0.000898	0.000945	0.001039
125.00	0.526	0.000256	0.000359	0.000461	0.000513	0.000615	0.000718	0.000769	0.000871	0.000974	0.001025	0.001128
130.00	0.547	0.000277	0.000388	0.000496	0.000554	0.000665	0.000776	0.000832	0.000943	0.001053	0.001109	0.001220
135.00	0.568	0.000298	0.000419	0.000535	0.000598	0.000718	0.000837	0.000897	0.001016	0.001136	0.001196	0.001315
140.00	0.589	0.000322	0.000450	0.000578	0.000647	0.000777	0.000900	0.000965	0.001093	0.001222	0.001286	0.001415
145.00	0.610	0.000346	0.000483	0.000621	0.000690	0.000828	0.000966	0.001035	0.001173	0.001311	0.001380	0.001518
150.00	0.631	0.000369	0.000517	0.000664	0.000738	0.000896	0.001033	0.001107	0.001255	0.001403	0.001478	0.001624
155.00	0.652	0.000394	0.000552	0.000707	0.000788	0.000966	0.001104	0.001182	0.001340	0.001488	0.001576	0.001734
160.00	0.673	0.000420	0.000598	0.000758	0.000840	0.001008	0.001146	0.001220	0.001388	0.001536	0.001630	0.001808
165.00	0.694	0.000447	0.000625	0.000804	0.000892	0.001072	0.001251	0.001340	0.001518	0.001667	0.001766	0.001965
170.00	0.715	0.000474	0.000664	0.000863	0.000964	0.001138	0.001327	0.001422	0.001612	0.001762	0.001866	0.002086
175.00	0.736	0.000502	0.000703	0.000904	0.001005	0.001206	0.001407	0.001507	0.001708	0.001859	0.001969	0.002210
180.00	0.757	0.000531	0.000744	0.000967	0.001068	0.001276	0.001486	0.001594	0.001807	0.001960	0.002072	0.002339
185.00	0.778	0.000561	0.000786	0.001011	0.001122	0.001347	0.001572	0.001684	0.001908	0.002063	0.002176	0.002470
190.00	0.799	0.000592	0.000829	0.001066	0.001184	0.001421	0.001658	0.001777	0.002021	0.002188	0.002303	0.002606
195.00	0.820	0.000624	0.000873	0.001123	0.001248	0.001497	0.001747	0.001871	0.002121	0.002297	0.002415	0.002745
200.00	0.841	0.000656	0.000919	0.001181	0.001312	0.001575	0.001837	0.001968	0.002231	0.002418	0.002542	0.002887
205.00	0.863	0.000689	0.000965	0.001241	0.001375	0.001655	0.001930	0.002068	0.002344	0.002530	0.002658	0.003033
210.00	0.884	0.000723	0.001013	0.001302	0.001447	0.001736	0.002026	0.002170	0.002466	0.002662	0.002794	0.003183
215.00	0.905	0.000758	0.001062	0.001365	0.001517	0.001820	0.002122	0.002275	0.002587	0.002794	0.002933	0.003336
220.00	0.926	0.000794	0.001112	0.001429	0.001598	0.001908	0.002223	0.002382	0.002708	0.002924	0.003071	0.003493
225.00	0.947	0.000830	0.001163	0.001495	0.001681	0.001993	0.002325	0.002491	0.002824	0.003056	0.003212	0.003654
230.00	0.968	0.000868	0.001215	0.001562	0.001736	0.002083	0.002430	0.002603	0.002950	0.003198	0.003361	0.003818
235.00	0.989	0.000908	0.001268	0.001631	0.001814	0.002174	0.002537	0.002718	0.003080	0.003343	0.003514	0.003986
240.00	1.010	0.000946	0.001323	0.001701	0.001900	0.002268	0.002646	0.002835	0.003213	0.003481	0.003658	0.004158
245.00	1.031	0.000985	0.001379	0.001772	0.001988	0.002363	0.002757	0.002954	0.003348	0.003624	0.003806	0.004333
250.00	1.052	0.001025	0.001435	0.001846	0.002051	0.002461	0.002871	0.003076	0.003486	0.003768	0.003954	0.004511
255.00	1.073	0.001067	0.001493	0.001920	0.002133	0.002560	0.002987	0.003200	0.003627	0.003923	0.004127	0.004693
260.00	1.094	0.001109	0.001553	0.001998	0.002218	0.002661	0.003105	0.003327	0.003770	0.004074	0.004283	0.004879
265.00	1.115	0.001152	0.001613	0.002074	0.002304	0.002765	0.003226	0.003458	0.003917	0.004278	0.004493	0.005089
270.00	1.136	0.001196	0.001674	0.002153	0.002382	0.002870	0.003346	0.003588	0.004066	0.004444	0.004663	0.005262
275.00	1.157	0.001241	0.001737	0.002233	0.002461	0.002977	0.003474	0.003722	0.004218	0.004614	0.004832	0.005459
280.00	1.178	0.001286	0.001801	0.002315	0.002552	0.003087	0.003601	0.003858	0.004373	0.004787	0.005014	0.005659
285.00	1.199	0.001332	0.001865	0.002398	0.002636	0.003198	0.003731	0.003997	0.004530	0.004953	0.005186	0.005873
290.00	1.220	0.001380	0.001931	0.002483	0.002719	0.003311	0.003863	0.004139	0.004691	0.005124	0.005361	0.006070
300.00	1.262	0.001476	0.002067	0.002657	0.002953	0.003543	0.004134	0.004429	0.005020	0.005461	0.005706	0.006498
310.00	1.304	0.001578	0.002207	0.002836	0.003153	0.003783	0.004414	0.004729	0.005360	0.005801	0.006056	0.006896
320.00	1.346	0.001680	0.002352	0.003024	0.003360	0.004032	0.004703	0.005039	0.005711	0.006163	0.006429	0.007391
330.00	1.388	0.001786	0.002501	0.003216	0.003573	0.004287	0.005002	0.005359	0.006074	0.006538	0.006804	0.007880
340.00	1.431	0.001896	0.002655	0.003413	0.003793	0.004551	0.005310	0.005689	0.006448	0.006926	0.007196	0.008344
350.00	1.473	0.002010	0.002813	0.003617	0.004019	0.004823	0.005627	0.006029	0.006832	0.007316	0.007593	0.008842
360.00	1.515	0.002126	0.002978	0.003827	0.004252	0.005102	0.005953	0.006378	0.007228	0.007724	0.008004	0.009254
370.00	1.557	0.002246	0.003144	0.004042	0.004492	0.005390	0.006288	0.006737	0.007636	0.008154	0.008438	0.009811
380.00	1.599	0.002369	0.003316	0.004264	0.004738	0.005685	0.006633	0.007106	0.008054	0.008581	0.008867	0.010423
390.00	1.641	0.002495	0.003493	0.004491	0.004980	0.005988	0.006986	0.007485	0.008483	0.009021	0.009309	0.010978
400.00	1.683	0.002625	0.003675	0.004724	0.005249	0.006299	0.007349	0.007874	0.008924	0.009474	0.009764	0.011548
410.00	1.725	0.002758	0.003861	0.004964	0.005515	0.006618	0.007721	0.008273	0.009376	0.010479	0.010773	0.012433
420.00	1.767	0.002894	0.004051	0.005209	0.005787	0.006945	0.008102	0.008681	0.009839	0.010998	0.011296	0.013046
430.00	1.809	0.003033	0.004246	0.005460	0.006068	0.007280	0.008493	0.009099	0.010313	0.011526	0.011823	0.013646
440.00	1.851	0.003178	0.004446	0.005717	0.006352	0.007622	0.008892	0.009528	0.010798	0.012068	0.012364	0.014168
450.00	1.893	0.003322	0.004651	0.005979	0.006644	0.007972	0.009301	0.009966	0.011294	0.012623	0.012917	0.014818
460.00	1.935	0.003471	0.004860	0.006246	0.006942	0.008331	0.009719	0.010413	0.011802	0.013190	0.013485	0.015273
470.00	1.977	0.003624	0.005073	0.006523	0.007247	0.008697	0.010146	0.010871	0.012321	0.013770	0.014065	0.015944
480.00	2.020	0.003780	0.005291	0.006803	0.007559	0.009071	0.010583	0.011339	0.012850	0.014362	0.014657	0.016630
490.00	2.062	0.003939	0.005514	0.007080	0.007877	0.009453	0.011028	0.011816	0.013382	0.014967	0.015262	0.017300
500.00	2.104	0.004101	0.005742	0.007362	0.008202	0.009843	0.011483	0.012303	0.013944	0.015584	0.015884	0.018045
510.00	2.146	0.004267	0.005973	0.007648	0.008534	0.010240	0.011947	0.012800	0.014507	0.016214	0.016514	0.018774
520.00	2.188	0.004436	0.006210	0.007934	0.008871	0.010546	0.012420	0.013307	0.015081	0.016856	0.017156	0.019443
530.00	2.230	0.004608	0.006451	0.008224	0.009216	0.011059	0.012802	0.013724	0.015567	0.017350	0.017650	0.020075
540.00	2.272	0.004783	0.006697	0.008510	0.009567	0.011480	0.013394	0.014350	0.016264	0.018177	0.018477	0.021047
550.00	2.314	0.004962	0.006947	0.008802	0.009825	0.011910	0.013894	0.014887	0.016872	0.018857	0.019157	0.022034
560.00	2.356	0.005144	0.007202	0.009100	0.010289	0.012347	0.014404	0.015433	0.017491	0.019549	0.019849	0.022635

DARCY - WEIS BACH FORMULUNDE (J) DEGERLERI $J = f \cdot V^2 / (D^5 \cdot 2g)$

Q=Debi, V=Ortalama akım hızı, f=Sürtünme katsayısı, D=Boruçapı

D=600 mm		J											
Q(lit/s)	V(m/s)	f=0.010	f=0.014	f=0.018	f=0.022	f=0.026	f=0.028	f=0.030	f=0.034	f=0.038	f=0.040	f=0.044	
100.00	0.354	0.000106	0.000140	0.000191	0.000225	0.000255	0.000287	0.000316	0.000361	0.000403	0.000425	0.000467	
105.00	0.371	0.000117	0.000164	0.000211	0.000238	0.000268	0.000302	0.000331	0.000376	0.000418	0.000440	0.000482	
110.00	0.388	0.000128	0.000180	0.000231	0.000257	0.000288	0.000322	0.000351	0.000396	0.000438	0.000460	0.000502	
115.00	0.407	0.000140	0.000197	0.000253	0.000281	0.000313	0.000347	0.000376	0.000421	0.000463	0.000485	0.000527	
120.00	0.424	0.000153	0.000214	0.000275	0.000303	0.000335	0.000369	0.000398	0.000443	0.000485	0.000507	0.000549	
125.00	0.442	0.000168	0.000232	0.000295	0.000323	0.000355	0.000389	0.000418	0.000463	0.000505	0.000527	0.000569	
130.00	0.460	0.000179	0.000251	0.000322	0.000350	0.000381	0.000415	0.000444	0.000489	0.000531	0.000553	0.000595	
135.00	0.477	0.000194	0.000271	0.000346	0.000374	0.000405	0.000439	0.000468	0.000513	0.000555	0.000577	0.000619	
140.00	0.495	0.000208	0.000291	0.000370	0.000400	0.000431	0.000465	0.000494	0.000539	0.000581	0.000603	0.000645	
145.00	0.513	0.000223	0.000313	0.000402	0.000432	0.000463	0.000497	0.000526	0.000571	0.000613	0.000635	0.000677	
150.00	0.530	0.000238	0.000334	0.000430	0.000460	0.000491	0.000525	0.000554	0.000599	0.000641	0.000663	0.000705	
155.00	0.548	0.000255	0.000357	0.000458	0.000488	0.000519	0.000553	0.000582	0.000627	0.000669	0.000691	0.000733	
160.00	0.566	0.000272	0.000381	0.000486	0.000516	0.000547	0.000581	0.000610	0.000655	0.000697	0.000719	0.000761	
165.00	0.583	0.000289	0.000404	0.000512	0.000542	0.000573	0.000607	0.000636	0.000681	0.000723	0.000745	0.000787	
170.00	0.601	0.000307	0.000430	0.000542	0.000572	0.000603	0.000637	0.000666	0.000711	0.000753	0.000775	0.000817	
175.00	0.619	0.000325	0.000455	0.000570	0.000600	0.000631	0.000665	0.000694	0.000739	0.000781	0.000803	0.000845	
180.00	0.636	0.000344	0.000482	0.000601	0.000631	0.000662	0.000696	0.000725	0.000770	0.000812	0.000834	0.000876	
185.00	0.654	0.000363	0.000509	0.000630	0.000660	0.000691	0.000725	0.000754	0.000799	0.000841	0.000863	0.000905	
190.00	0.672	0.000383	0.000537	0.000660	0.000690	0.000721	0.000755	0.000784	0.000829	0.000871	0.000893	0.000935	
195.00	0.689	0.000404	0.000565	0.000697	0.000727	0.000758	0.000792	0.000821	0.000866	0.000908	0.000930	0.000972	
200.00	0.707	0.000425	0.000585	0.000724	0.000754	0.000785	0.000819	0.000848	0.000893	0.000935	0.000957	0.001000	
205.00	0.725	0.000446	0.000625	0.000768	0.000798	0.000829	0.000863	0.000892	0.000937	0.000979	0.001001	0.001043	
210.00	0.742	0.000468	0.000666	0.000813	0.000843	0.000874	0.000908	0.000937	0.000982	0.001024	0.001046	0.001088	
215.00	0.760	0.000491	0.000707	0.000853	0.000883	0.000914	0.000948	0.000977	0.001022	0.001064	0.001086	0.001128	
220.00	0.778	0.000514	0.000749	0.000898	0.000928	0.000959	0.000993	0.001022	0.001067	0.001109	0.001131	0.001173	
225.00	0.795	0.000538	0.000793	0.000943	0.000973	0.001004	0.001038	0.001067	0.001112	0.001154	0.001176	0.001218	
230.00	0.813	0.000562	0.000838	0.001011	0.001041	0.001072	0.001106	0.001135	0.001180	0.001222	0.001244	0.001286	
235.00	0.831	0.000586	0.000881	0.001075	0.001105	0.001136	0.001170	0.001199	0.001244	0.001286	0.001308	0.001350	
240.00	0.848	0.000612	0.000928	0.001141	0.001171	0.001202	0.001236	0.001265	0.001310	0.001352	0.001374	0.001416	
245.00	0.866	0.000637	0.000982	0.001211	0.001241	0.001272	0.001306	0.001335	0.001380	0.001422	0.001444	0.001486	
250.00	0.884	0.000664	0.001029	0.001281	0.001311	0.001342	0.001376	0.001405	0.001450	0.001492	0.001514	0.001556	
260.00	0.919	0.000718	0.001105	0.001382	0.001412	0.001443	0.001477	0.001506	0.001551	0.001593	0.001615	0.001657	
270.00	0.955	0.000774	0.001184	0.001483	0.001513	0.001544	0.001578	0.001607	0.001652	0.001694	0.001716	0.001758	
280.00	0.990	0.000832	0.001265	0.001586	0.001616	0.001647	0.001681	0.001710	0.001755	0.001797	0.001819	0.001861	
290.00	1.025	0.000893	0.001350	0.001697	0.001727	0.001758	0.001792	0.001821	0.001866	0.001908	0.001930	0.001972	
300.00	1.061	0.000956	0.001438	0.001817	0.001847	0.001878	0.001912	0.001941	0.001986	0.002028	0.002050	0.002092	
310.00	1.098	0.001020	0.001528	0.001938	0.001968	0.001999	0.002033	0.002062	0.002107	0.002149	0.002171	0.002213	
320.00	1.131	0.001087	0.001622	0.002057	0.002087	0.002118	0.002152	0.002181	0.002226	0.002268	0.002290	0.002332	
330.00	1.167	0.001158	0.001719	0.002181	0.002211	0.002242	0.002276	0.002305	0.002350	0.002392	0.002414	0.002456	
340.00	1.202	0.001227	0.001818	0.002310	0.002340	0.002371	0.002405	0.002434	0.002479	0.002521	0.002543	0.002585	
350.00	1.237	0.001301	0.001921	0.002444	0.002474	0.002505	0.002539	0.002568	0.002613	0.002655	0.002677	0.002719	
360.00	1.273	0.001376	0.002028	0.002583	0.002613	0.002644	0.002678	0.002707	0.002752	0.002794	0.002816	0.002858	
370.00	1.308	0.001454	0.002135	0.002726	0.002756	0.002787	0.002821	0.002850	0.002895	0.002937	0.002959	0.003001	
380.00	1.343	0.001533	0.002246	0.002870	0.002900	0.002931	0.002965	0.002994	0.003039	0.003081	0.003103	0.003145	
390.00	1.379	0.001615	0.002361	0.003017	0.003047	0.003078	0.003112	0.003141	0.003186	0.003228	0.003250	0.003292	
400.00	1.414	0.001699	0.002478	0.003168	0.003198	0.003229	0.003263	0.003292	0.003337	0.003379	0.003401	0.003443	
410.00	1.449	0.001785	0.002598	0.003323	0.003353	0.003384	0.003418	0.003447	0.003492	0.003534	0.003556	0.003598	
420.00	1.485	0.001873	0.002722	0.003481	0.003511	0.003542	0.003576	0.003605	0.003650	0.003692	0.003714	0.003756	
430.00	1.520	0.001963	0.002849	0.003642	0.003672	0.003703	0.003737	0.003766	0.003811	0.003853	0.003875	0.003917	
440.00	1.556	0.002056	0.002978	0.003806	0.003836	0.003867	0.003901	0.003930	0.003975	0.004017	0.004039	0.004081	
450.00	1.591	0.002150	0.003110	0.003973	0.004003	0.004034	0.004068	0.004097	0.004142	0.004184	0.004206	0.004248	
460.00	1.626	0.002247	0.003245	0.004143	0.004173	0.004204	0.004238	0.004267	0.004312	0.004354	0.004376	0.004418	
470.00	1.662	0.002345	0.003384	0.004318	0.004348	0.004379	0.004413	0.004442	0.004487	0.004529	0.004551	0.004593	
480.00	1.697	0.002446	0.003525	0.004497	0.004527	0.004558	0.004592	0.004621	0.004666	0.004708	0.004730	0.004772	
490.00	1.732	0.002549	0.003669	0.004680	0.004710	0.004741	0.004775	0.004804	0.004849	0.004891	0.004913	0.004955	
500.00	1.768	0.002654	0.003816	0.004867	0.004897	0.004928	0.004962	0.004991	0.005036	0.005078	0.005100	0.005142	
510.00	1.803	0.002762	0.003966	0.005058	0.005088	0.005119	0.005153	0.005182	0.005227	0.005269	0.005291	0.005333	
520.00	1.838	0.002871	0.004119	0.005253	0.005283	0.005314	0.005348	0.005377	0.005422	0.005464	0.005486	0.005528	
530.00	1.874	0.002982	0.004275	0.005451	0.005481	0.005512	0.005546	0.005575	0.005620	0.005662	0.005684	0.005726	
540.00	1.909	0.003096	0.004434	0.005652	0.005682	0.005713	0.005747	0.005776	0.005821	0.005863	0.005885	0.005927	
550.00	1.944	0.003212	0.004596	0.005856	0.005886	0.005917	0.005951	0.005980	0.006025	0.006067	0.006089	0.006131	
560.00	1.980	0.003330	0.004761	0.006063	0.006093	0.006124	0.006158	0.006187	0.006232	0.006274	0.006296	0.006338	
570.00	2.015	0.003450	0.004929	0.006273	0.006303	0.006334	0.006368	0.006397	0.006442	0.006484	0.006506	0.006548	
580.00	2.051	0.003572	0.005100	0.006486	0.006516	0.006547	0.006581	0.006610	0.006655	0.006697	0.006719	0.006761	
590.00	2.086	0.003696	0.005274	0.006702	0.006732	0.006763	0.006797	0.006826	0.006871	0.006913	0.006935	0.006977	
600.00	2.121	0.003822	0.005451	0.006920	0.006950	0.006981	0.007015	0.007044	0.007089	0.007131	0.007153	0.007195	

KANAL KESİTİ GEOMETRİK VE HİDROLİK ELEMANLARI ($\psi = Q^2 / g$)

KANAL TÜRÜ	ALAN A	ISLUK ÇEVRE P	HİDROLİK YARIÇAP R	SU YÜRÜ GENİŞLİĞİ T	HİDROLİK DERİNLİK HD	KESİT FAKTÖRÜ Z	KATLIK DERİNLİK DENKLEMİ
	bh	$b+2h$	$\frac{bh}{b+2h}$	b	h	$bh^{1.5}$	$\left(\frac{\psi}{b^3}\right)^{\frac{1}{3}}$
	$(b+2h)h$	$b+2h\sqrt{1+z^2}$	$\frac{(b+2h)h}{b+2h\sqrt{1+z^2}}$	$b+2zh$	$\frac{(b+2h)h}{b+2zh}$	$\frac{[(b+2h)h]^{1.5}}{\sqrt{b+2zh}}$	$0.85 \left(\frac{\psi}{2.075 b^{1.25}}\right)^{0.27} - \frac{b}{302}$
	zh^2	$2h\sqrt{1+z^2}$	$\frac{zh}{2\sqrt{1+z^2}}$	$2zh$	$h/2$	$\frac{\sqrt{2}}{2} zh^{2.5}$	$\left(\frac{2\psi}{z^2}\right)^{0.20}$
	$\frac{2}{3}Th$	$T + \frac{8h^2}{3T}$	$\frac{2T^2h}{3T^2+8h^2}$	$\frac{3A}{2h}$	$2h/3$	$\frac{2}{9}\sqrt{6}Th^{1.5}$	$(0.84\psi)^{0.25}$
	$\frac{1}{8}(\theta - \sin\theta)D^3$	$8D/2$	$\frac{1}{4}\left(1 - \frac{\sin\theta}{\theta}\right)D$	$2\sqrt{rD-h}$	$\frac{1}{8}\left(\frac{\theta - \sin\theta}{\sin(\theta/2)}\right)D$	$\frac{\sqrt{2(\theta - \sin\theta)}^{1.5}}{32\sqrt{\sin(\theta/2)}} D^{2.5}$	$\left(\frac{1.01}{D^{0.26}}\right)^{0.25}$

TRAPEZ KESİTLİ KANALLAR İÇİN MANNING FORMULÜNDE (K) DEĞERİ, $Q=K/n h^{2/3} J^{1/2}$

Q=Debi, n=Pürüzlülük katsayısı, h=Akım derinliği, b=Taban genişliği, J=Eğim

Şev eğimi, z=Yatay - Düşey

h/b	Düşey	1/4-1 0	1/2-1 0	3/4-1 0	1 0-1 0	1 5-1 0	2 0-1 0	2 5-1 0	3 0-1 0	4 0-1 0
0.01	98.689	99.080	99.359	99.600	99.799	100.120	100.384	100.621	100.842	101.262
0.02	48.710	49.077	49.375	49.616	49.816	50.142	50.415	50.661	50.893	51.343
0.03	32.063	32.427	32.723	32.964	33.166	33.497	33.776	34.030	34.273	34.746
0.04	23.750	24.110	24.405	24.646	24.848	25.183	25.468	25.730	25.982	26.475
0.05	18.769	19.126	19.419	19.660	19.863	20.202	20.492	20.761	21.020	21.530
0.06	15.454	15.807	16.099	16.340	16.544	16.888	17.181	17.458	17.722	18.246
0.07	13.091	13.441	13.731	13.972	14.177	14.522	14.821	15.101	15.373	15.909
0.08	11.322	11.669	11.958	12.198	12.404	12.752	13.055	13.340	13.617	14.164
0.09	9.950	10.294	10.581	10.821	11.027	11.378	11.685	11.974	12.255	12.811
0.10	8.855	9.196	9.482	9.722	9.928	10.281	10.591	10.884	11.169	11.734
0.11	7.962	8.300	8.584	8.824	9.031	9.385	9.699	9.995	10.283	10.855
0.12	7.220	7.555	7.837	8.077	8.284	8.640	8.956	9.255	9.547	10.126
0.13	6.594	6.926	7.207	7.446	7.654	8.011	8.330	8.632	8.927	9.510
0.14	6.059	6.388	6.668	6.906	7.114	7.474	7.795	8.099	8.396	8.985
0.15	5.597	5.923	6.202	6.440	6.648	7.009	7.332	7.638	7.938	8.531
0.16	5.194	5.517	5.795	6.032	6.241	6.603	6.927	7.236	7.538	8.135
0.17	4.840	5.160	5.437	5.674	5.882	6.245	6.572	6.882	7.186	7.787
0.18	4.526	4.844	5.119	5.356	5.564	5.928	6.256	6.568	6.874	7.478
0.19	4.246	4.562	4.835	5.072	5.280	5.645	5.975	6.288	6.595	7.203
0.20	3.995	4.309	4.581	4.817	5.025	5.391	5.722	6.037	6.346	6.956
0.21	3.769	4.080	4.351	4.586	4.795	5.162	5.494	5.810	6.120	6.733
0.22	3.565	3.873	4.143	4.378	4.586	4.953	5.287	5.604	5.915	6.530
0.23	3.378	3.684	3.953	4.187	4.396	4.764	5.098	5.417	5.729	6.346
0.24	3.208	3.512	3.779	4.013	4.222	4.590	4.925	5.246	5.559	6.178
0.25	3.053	3.354	3.620	3.854	4.062	4.431	4.767	5.088	5.402	6.023
0.26	2.909	3.209	3.474	3.707	3.915	4.284	4.621	4.943	5.258	5.881
0.27	2.777	3.075	3.338	3.571	3.779	4.149	4.486	4.809	5.125	5.749
0.28	2.655	2.950	3.213	3.445	3.653	4.023	4.362	4.685	5.002	5.627
0.29	2.542	2.835	3.097	3.328	3.536	3.907	4.246	4.570	4.887	5.514
0.30	2.437	2.728	2.988	3.219	3.427	3.798	4.137	4.462	4.780	5.408
0.31	2.339	2.628	2.887	3.118	3.325	3.696	4.037	4.362	4.681	5.309
0.32	2.247	2.534	2.793	3.023	3.230	3.602	3.942	4.268	4.587	5.217
0.33	2.161	2.447	2.704	2.933	3.141	3.512	3.853	4.180	4.500	5.131
0.34	2.081	2.365	2.621	2.850	3.057	3.429	3.770	4.097	4.418	5.049
0.35	2.006	2.288	2.543	2.771	2.978	3.350	3.692	4.020	4.340	4.973
0.36	1.935	2.215	2.469	2.697	2.904	3.276	3.618	3.946	4.267	4.901
0.37	1.868	2.146	2.399	2.627	2.833	3.206	3.548	3.877	4.199	4.832
0.38	1.805	2.082	2.334	2.561	2.767	3.140	3.483	3.811	4.133	4.768
0.39	1.746	2.020	2.272	2.498	2.704	3.077	3.420	3.749	4.072	4.707
0.40	1.690	1.963	2.213	2.439	2.645	3.017	3.361	3.690	4.013	4.649
0.41	1.636	1.908	2.157	2.382	2.588	2.961	3.305	3.634	3.957	4.594
0.42	1.586	1.855	2.104	2.329	2.534	2.907	3.251	3.581	3.905	4.541
0.43	1.538	1.806	2.053	2.278	2.483	2.856	3.200	3.531	3.854	4.492
0.44	1.492	1.759	2.005	2.229	2.434	2.807	3.152	3.482	3.806	4.444
0.45	1.449	1.714	1.959	2.183	2.388	2.761	3.105	3.438	3.760	4.399
0.46	1.407	1.671	1.916	2.139	2.344	2.716	3.061	3.392	3.717	4.355
0.47	1.368	1.630	1.874	2.096	2.301	2.674	3.019	3.350	3.675	4.314
0.48	1.330	1.591	1.834	2.056	2.261	2.633	2.978	3.310	3.635	4.274
0.49	1.294	1.553	1.796	2.017	2.222	2.594	2.939	3.271	3.596	4.238
0.50	1.260	1.518	1.759	1.980	2.184	2.557	2.902	3.234	3.559	4.200
0.51	1.227	1.483	1.724	1.945	2.149	2.521	2.867	3.199	3.524	4.165
0.52	1.196	1.451	1.690	1.911	2.114	2.487	2.832	3.165	3.490	4.131
0.53	1.165	1.419	1.658	1.878	2.081	2.454	2.799	3.132	3.458	4.099
0.54	1.136	1.389	1.627	1.847	2.050	2.422	2.768	3.100	3.428	4.068
0.55	1.109	1.360	1.597	1.816	2.019	2.391	2.737	3.070	3.398	4.038
0.56	1.082	1.332	1.568	1.787	1.990	2.362	2.708	3.041	3.367	4.009
0.57	1.056	1.305	1.541	1.759	1.962	2.334	2.680	3.013	3.339	3.981
0.58	1.032	1.279	1.514	1.732	1.934	2.306	2.652	2.985	3.312	3.954
0.59	1.008	1.254	1.488	1.706	1.908	2.280	2.626	2.959	3.286	3.928
0.60	0.985	1.230	1.464	1.681	1.883	2.254	2.601	2.934	3.260	3.903
0.61	0.963	1.207	1.440	1.656	1.858	2.230	2.576	2.909	3.236	3.879
0.62	0.942	1.184	1.417	1.633	1.835	2.206	2.552	2.886	3.212	3.856
0.63	0.922	1.163	1.394	1.610	1.812	2.183	2.529	2.863	3.190	3.833

TRAPEZ KESİTLİ KANALLAR İÇİN MANNING FORMULÜNDE (K) DEĞERİ, $Q=K/n h^{2/3} J^{1/2}$

Q=Debi, n=Pürüzlülük katsayısı, h=Akım derinliği, b=Taban genişliği, J=Eğim

Şev eğimi, z=Yatay - Düşey

h/b	Düşey	1/4-1 0	1/2-1 0	3/4-1 0	1 0-1 0	1 5-1 0	2 0-1 0	2 5-1 0	3 0-1 0	4 0-1 0
0.64	0.902	1.142	1.373	1.588	1.790	2.161	2.507	2.841	3.168	3.811
0.65	0.883	1.122	1.352	1.567	1.768	2.139	2.485	2.819	3.146	3.790
0.66	0.865	1.102	1.332	1.547	1.747	2.118	2.465	2.798	3.126	3.769
0.67	0.847	1.083	1.312	1.527	1.727	2.098	2.444	2.778	3.105	3.749
0.68	0.830	1.065	1.293	1.507	1.708	2.078	2.425	2.759	3.086	3.730
0.69	0.813	1.048	1.275	1.489	1.689	2.059	2.406	2.740	3.067	3.711
0.70	0.797	1.030	1.257	1.470	1.671	2.041	2.387	2.721	3.049	3.693
0.71	0.781	1.014	1.240	1.453	1.653	2.023	2.369	2.704	3.031	3.675
0.72	0.766	0.998	1.223	1.436	1.635	2.006	2.352	2.686	3.014	3.658
0.73	0.752	0.982	1.207	1.419	1.619	1.989	2.335	2.669	2.997	3.641
0.74	0.738	0.967	1.191	1.403	1.602	1.972	2.319	2.653	2.980	3.625
0.75	0.724	0.952	1.176	1.387	1.587	1.956	2.303	2.637	2.965	3.609
0.76	0.711	0.938	1.161	1.372	1.571	1.941	2.287	2.621	2.949	3.594
0.77	0.698	0.924	1.146	1.357	1.556	1.926	2.272	2.606	2.934	3.579
0.78	0.685	0.911	1.132	1.343	1.542	1.911	2.257	2.592	2.919	3.564
0.79	0.673	0.897	1.119	1.329	1.527	1.896	2.243	2.577	2.905	3.550
0.80	0.661	0.885	1.105	1.315	1.513	1.882	2.229	2.563	2.891	3.536
0.81	0.650	0.872	1.092	1.302	1.500	1.869	2.215	2.550	2.878	3.523
0.82	0.638	0.860	1.080	1.289	1.487	1.856	2.202	2.537	2.864	3.510
0.83	0.628	0.848	1.067	1.276	1.474	1.843	2.189	2.524	2.851	3.497
0.84	0.617	0.837	1.055	1.264	1.462	1.830	2.176	2.511	2.839	3.484
0.85	0.607	0.826	1.044	1.252	1.449	1.818	2.164	2.499	2.827	3.472
0.86	0.597	0.815	1.032	1.240	1.438	1.806	2.152	2.487	2.815	3.460
0.87	0.587	0.804	1.021	1.229	1.426	1.794	2.140	2.475	2.803	3.449
0.88	0.578	0.794	1.010	1.218	1.415	1.783	2.129	2.463	2.791	3.437
0.89	0.568	0.784	1.000	1.207	1.404	1.771	2.118	2.452	2.780	3.426
0.90	0.559	0.774	0.990	1.196	1.393	1.760	2.107	2.441	2.769	3.415
0.91	0.551	0.765	0.979	1.186	1.382	1.750	2.096	2.431	2.759	3.405
0.92	0.542	0.755	0.970	1.176	1.372	1.739	2.086	2.420	2.748	3.394
0.93	0.534	0.746	0.960	1.166	1.362	1.729	2.075	2.410	2.738	3.384
0.94	0.526	0.737	0.951	1.156	1.352	1.719	2.065	2.400	2.728	3.374
0.95	0.518	0.729	0.941	1.147	1.342	1.709	2.055	2.390	2.718	3.364
0.96	0.510	0.720	0.932	1.138	1.333	1.700	2.046	2.381	2.709	3.355
0.97	0.502	0.712	0.924	1.128	1.324	1.690	2.037	2.371	2.699	3.346
0.98	0.495	0.704	0.915	1.120	1.315	1.681	2.027	2.362	2.690	3.336
0.99	0.488	0.696	0.907	1.111	1.306	1.672	2.018	2.353	2.681	3.328
1.00	0.481	0.688	0.898	1.102	1.297	1.664	2.010	2.344	2.672	3.319
1.01	0.474	0.680	0.890	1.094	1.289	1.655	2.001	2.336	2.664	3.310
1.02	0.467	0.673	0.882	1.086	1.281	1.647	1.992	2.327	2.655	3.302
1.03	0.461	0.666	0.875	1.078	1.272	1.638	1.984	2.319	2.647	3.294
1.04	0.454	0.659	0.867	1.070	1.264	1.630	1.976	2.311	2.639	3.285
1.05	0.448	0.652	0.860	1.063	1.257	1.622	1.968	2.303	2.631	3.277
1.06	0.442	0.645	0.853	1.055	1.249	1.615	1.960	2.295	2.623	3.270
1.07	0.436	0.638	0.845	1.048	1.242	1.607	1.953	2.287	2.616	3.262
1.08	0.430	0.632	0.839	1.040	1.234	1.599	1.945	2.280	2.608	3.255
1.09	0.424	0.625	0.832	1.033	1.227	1.592	1.938	2.272	2.601	3.247
1.10	0.419	0.619	0.825	1.026	1.220	1.585	1.931	2.265	2.594	3.240
1.11	0.413	0.613	0.818	1.020	1.213	1.578	1.923	2.258	2.586	3.233
1.12	0.408	0.607	0.812	1.013	1.206	1.571	1.916	2.251	2.579	3.226
1.13	0.403	0.601	0.806	1.006	1.199	1.564	1.910	2.244	2.573	3.219
1.14	0.397	0.595	0.800	1.000	1.193	1.557	1.903	2.238	2.566	3.213
1.15	0.392	0.589	0.793	0.994	1.186	1.551	1.896	2.231	2.559	3.206
1.16	0.387	0.584	0.788	0.988	1.180	1.544	1.890	2.224	2.553	3.199
1.17	0.383	0.578	0.782	0.981	1.174	1.538	1.883	2.218	2.546	3.193
1.18	0.378	0.573	0.776	0.976	1.168	1.532	1.877	2.212	2.540	3.187
1.19	0.373	0.568	0.770	0.970	1.162	1.526	1.871	2.206	2.534	3.181
1.20	0.369	0.563	0.765	0.964	1.156	1.520	1.865	2.200	2.528	3.175
1.21	0.364	0.558	0.759	0.958	1.150	1.514	1.859	2.194	2.522	3.169
1.22	0.360	0.553	0.754	0.953	1.144	1.508	1.853	2.188	2.516	3.163
1.23	0.355	0.548	0.749	0.947	1.139	1.502	1.847	2.182	2.510	3.157
1.24	0.351	0.543	0.744	0.942	1.133	1.497	1.842	2.176	2.505	3.152
1.25	0.347	0.538	0.739	0.937	1.128	1.491	1.836	2.171	2.499	3.146
1.26	0.343	0.534	0.734	0.931	1.123	1.486	1.831	2.165	2.494	3.141

TRAPEZ KESİTLİ KANALLAR İÇİN MANNING FORMULÜNDE (K) DEĞERİ, $Q=K/n h^{2/3} J^{1/2}$

Q=Debi, n=Pürüzlülük katsayısı, h=Akım derinliği, b=Taban genişliği, J=Eğim

Şev eğimi, z=Yatay - Düşey

h/b	Düşey	1/4-1.0	1/2-1.0	3/4-1.0	1.0-1.0	1.5-1.0	2.0-1.0	2.5-1.0	3.0-1.0	4.0-1.0
1.27	0.339	0.529	0.729	0.928	1.117	1.480	1.825	2.160	2.488	3.135
1.28	0.335	0.525	0.724	0.921	1.112	1.475	1.820	2.155	2.483	3.130
1.29	0.331	0.520	0.719	0.916	1.107	1.470	1.815	2.149	2.478	3.125
1.30	0.327	0.516	0.714	0.911	1.102	1.465	1.810	2.144	2.473	3.120
1.31	0.324	0.512	0.710	0.907	1.097	1.460	1.805	2.139	2.468	3.114
1.32	0.320	0.507	0.705	0.902	1.093	1.455	1.800	2.134	2.463	3.110
1.33	0.317	0.503	0.701	0.897	1.088	1.450	1.795	2.129	2.458	3.105
1.34	0.313	0.499	0.697	0.893	1.083	1.445	1.790	2.125	2.453	3.100
1.35	0.310	0.495	0.692	0.888	1.079	1.441	1.785	2.120	2.448	3.095
1.36	0.306	0.491	0.688	0.884	1.074	1.438	1.781	2.115	2.443	3.090
1.37	0.303	0.488	0.684	0.880	1.070	1.432	1.776	2.111	2.439	3.086
1.38	0.300	0.484	0.680	0.875	1.065	1.427	1.772	2.106	2.434	3.081
1.39	0.296	0.480	0.676	0.871	1.061	1.423	1.767	2.101	2.430	3.077
1.40	0.293	0.477	0.672	0.867	1.057	1.418	1.763	2.097	2.425	3.072
1.41	0.290	0.473	0.668	0.863	1.052	1.414	1.758	2.093	2.421	3.068
1.42	0.287	0.469	0.664	0.859	1.048	1.410	1.754	2.088	2.417	3.064
1.43	0.284	0.466	0.660	0.855	1.044	1.406	1.750	2.084	2.413	3.060
1.44	0.281	0.462	0.657	0.851	1.040	1.401	1.746	2.080	2.408	3.055
1.45	0.278	0.459	0.653	0.847	1.036	1.397	1.742	2.076	2.404	3.051
1.46	0.276	0.456	0.649	0.843	1.032	1.393	1.738	2.072	2.400	3.047
1.47	0.273	0.453	0.646	0.840	1.028	1.389	1.734	2.068	2.396	3.043
1.48	0.270	0.449	0.642	0.836	1.025	1.386	1.730	2.064	2.392	3.039
1.49	0.267	0.446	0.639	0.832	1.021	1.382	1.726	2.060	2.388	3.035
1.50	0.265	0.443	0.635	0.829	1.017	1.378	1.722	2.056	2.385	3.032
1.51	0.262	0.440	0.632	0.825	1.014	1.374	1.718	2.052	2.381	3.028
1.52	0.259	0.437	0.629	0.822	1.010	1.370	1.715	2.049	2.377	3.024
1.53	0.257	0.434	0.625	0.818	1.007	1.367	1.711	2.045	2.373	3.020
1.54	0.254	0.431	0.622	0.815	1.003	1.363	1.707	2.041	2.370	3.017
1.55	0.252	0.428	0.619	0.811	1.000	1.360	1.704	2.038	2.366	3.013
1.56	0.249	0.425	0.616	0.808	0.996	1.356	1.700	2.034	2.363	3.010
1.57	0.247	0.422	0.613	0.805	0.993	1.353	1.697	2.031	2.359	3.006
1.58	0.245	0.420	0.610	0.802	0.990	1.349	1.693	2.027	2.356	3.003
1.59	0.242	0.417	0.607	0.799	0.986	1.346	1.690	2.024	2.352	2.999
1.60	0.240	0.414	0.604	0.795	0.983	1.343	1.687	2.021	2.349	2.996
1.61	0.238	0.412	0.601	0.792	0.980	1.339	1.683	2.017	2.346	2.993
1.62	0.236	0.409	0.598	0.789	0.977	1.336	1.680	2.014	2.342	2.989
1.63	0.233	0.406	0.595	0.786	0.974	1.333	1.677	2.011	2.339	2.986
1.64	0.231	0.404	0.592	0.783	0.971	1.330	1.674	2.008	2.336	2.983
1.65	0.229	0.401	0.590	0.780	0.968	1.327	1.670	2.005	2.333	2.980
1.66	0.227	0.399	0.587	0.778	0.965	1.324	1.667	2.001	2.330	2.977
1.67	0.225	0.396	0.584	0.775	0.962	1.321	1.664	1.998	2.327	2.974
1.68	0.223	0.394	0.581	0.772	0.959	1.318	1.661	1.995	2.324	2.971
1.69	0.221	0.392	0.579	0.769	0.956	1.315	1.658	1.992	2.321	2.968
1.70	0.219	0.389	0.576	0.766	0.953	1.312	1.655	1.989	2.318	2.965
1.71	0.217	0.387	0.574	0.764	0.950	1.309	1.652	1.986	2.315	2.962
1.72	0.215	0.385	0.571	0.761	0.948	1.306	1.650	1.983	2.312	2.959
1.73	0.213	0.382	0.569	0.758	0.945	1.303	1.647	1.981	2.309	2.956
1.74	0.211	0.380	0.566	0.756	0.942	1.301	1.644	1.978	2.306	2.953
1.75	0.210	0.378	0.564	0.753	0.939	1.298	1.641	1.975	2.303	2.950
1.76	0.208	0.376	0.561	0.751	0.937	1.295	1.638	1.972	2.300	2.947
1.77	0.206	0.374	0.559	0.748	0.934	1.292	1.636	1.970	2.298	2.945
1.78	0.204	0.371	0.557	0.746	0.932	1.290	1.633	1.967	2.295	2.942
1.79	0.203	0.369	0.554	0.743	0.929	1.287	1.630	1.964	2.292	2.939
1.80	0.201	0.367	0.552	0.741	0.927	1.285	1.628	1.962	2.290	2.937
1.81	0.199	0.365	0.550	0.738	0.924	1.282	1.625	1.959	2.287	2.934
1.82	0.198	0.363	0.547	0.736	0.922	1.279	1.622	1.956	2.285	2.931
1.83	0.196	0.361	0.545	0.733	0.919	1.277	1.620	1.954	2.282	2.929
1.84	0.194	0.359	0.543	0.731	0.917	1.274	1.617	1.951	2.279	2.926
1.85	0.193	0.357	0.541	0.729	0.914	1.272	1.615	1.949	2.277	2.924
1.86	0.191	0.355	0.539	0.727	0.912	1.270	1.613	1.946	2.274	2.921
1.87	0.190	0.353	0.537	0.724	0.910	1.267	1.610	1.944	2.272	2.919
1.88	0.188	0.352	0.535	0.722	0.907	1.265	1.608	1.941	2.270	2.917
1.89	0.186	0.350	0.532	0.720	0.905	1.262	1.605	1.939	2.267	2.914

TRAPEZ KESİTLİ KANALLAR İÇİN MANNING FORMULÜNDE (K) DEĞERİ, $Q=K/n h^{2/3} J^{1/2}$

Q=Debi, n=Pürüzlülük katsayısı, h=Akım derinliği, b=Taban genişliği, J=Eğim

Şev eğimi, z=Yatay - Düşey

h/b	Düşey	1/4-1.0	1/2-1.0	3/4-1.0	1.0-1.0	1.5-1.0	2.0-1.0	2.5-1.0	3.0-1.0	4.0-1.0
1.90	0.185	0.348	0.530	0.718	0.903	1.260	1.603	1.937	2.285	2.912
1.91	0.183	0.346	0.528	0.716	0.901	1.258	1.601	1.934	2.263	2.909
1.92	0.182	0.344	0.526	0.714	0.898	1.256	1.598	1.932	2.260	2.907
1.93	0.181	0.343	0.524	0.711	0.896	1.253	1.596	1.930	2.258	2.905
1.94	0.179	0.341	0.522	0.709	0.894	1.251	1.594	1.927	2.256	2.903
1.95	0.178	0.339	0.521	0.707	0.892	1.249	1.592	1.925	2.253	2.900
1.96	0.176	0.337	0.519	0.705	0.890	1.247	1.589	1.923	2.251	2.898
1.97	0.175	0.336	0.517	0.703	0.888	1.245	1.587	1.921	2.249	2.896
1.98	0.174	0.334	0.515	0.701	0.886	1.242	1.585	1.919	2.247	2.894
1.99	0.172	0.332	0.513	0.699	0.884	1.240	1.583	1.917	2.245	2.892
2.00	0.171	0.331	0.511	0.697	0.882	1.238	1.581	1.914	2.242	2.889
2.01	0.170	0.329	0.509	0.695	0.880	1.236	1.579	1.912	2.240	2.887
2.02	0.168	0.327	0.508	0.693	0.878	1.234	1.577	1.910	2.238	2.885
2.03	0.167	0.326	0.506	0.692	0.876	1.232	1.575	1.908	2.236	2.883
2.04	0.166	0.324	0.504	0.690	0.874	1.230	1.573	1.906	2.234	2.881
2.05	0.165	0.323	0.502	0.688	0.872	1.228	1.571	1.904	2.232	2.879
2.06	0.163	0.321	0.501	0.686	0.870	1.226	1.569	1.902	2.230	2.877
2.07	0.162	0.320	0.499	0.684	0.868	1.224	1.567	1.900	2.228	2.875
2.08	0.161	0.318	0.497	0.682	0.866	1.222	1.565	1.898	2.226	2.873
2.09	0.160	0.317	0.496	0.681	0.864	1.220	1.563	1.896	2.224	2.871
2.10	0.159	0.315	0.494	0.679	0.863	1.218	1.561	1.894	2.222	2.869
2.11	0.157	0.314	0.492	0.677	0.861	1.217	1.559	1.892	2.220	2.867
2.12	0.156	0.312	0.491	0.675	0.859	1.215	1.557	1.890	2.218	2.865
2.13	0.155	0.311	0.489	0.674	0.857	1.213	1.555	1.889	2.217	2.863
2.14	0.154	0.310	0.488	0.672	0.856	1.211	1.553	1.887	2.215	2.862
2.15	0.153	0.308	0.486	0.670	0.854	1.209	1.551	1.885	2.213	2.860
2.16	0.152	0.307	0.484	0.669	0.852	1.208	1.550	1.883	2.211	2.858
2.17	0.151	0.306	0.483	0.667	0.850	1.206	1.548	1.881	2.209	2.856
2.18	0.150	0.304	0.481	0.665	0.849	1.204	1.546	1.879	2.207	2.854
2.19	0.149	0.303	0.480	0.664	0.847	1.202	1.544	1.878	2.206	2.853
2.20	0.148	0.302	0.478	0.662	0.845	1.201	1.543	1.876	2.204	2.851
2.21	0.147	0.300	0.477	0.661	0.844	1.199	1.541	1.874	2.202	2.849
2.22	0.146	0.299	0.475	0.659	0.842	1.197	1.539	1.873	2.200	2.847
2.23	0.145	0.298	0.474	0.658	0.840	1.196	1.537	1.871	2.199	2.846
2.24	0.144	0.296	0.473	0.656	0.839	1.194	1.536	1.869	2.197	2.844
2.25	0.143	0.295	0.471	0.655	0.837	1.192	1.534	1.867	2.195	2.842
2.26	0.142	0.294	0.470	0.653	0.836	1.191	1.532	1.866	2.194	2.841
2.27	0.141	0.293	0.468	0.652	0.834	1.189	1.531	1.864	2.192	2.839
2.28	0.140	0.291	0.467	0.650	0.833	1.187	1.529	1.863	2.190	2.837
2.29	0.139	0.290	0.466	0.649	0.831	1.186	1.528	1.861	2.189	2.836
2.30	0.138	0.289	0.464	0.647	0.830	1.184	1.526	1.859	2.187	2.834
2.31	0.137	0.288	0.463	0.646	0.828	1.183	1.524	1.858	2.186	2.832
2.32	0.136	0.287	0.462	0.644	0.827	1.181	1.523	1.856	2.184	2.831
2.33	0.135	0.286	0.460	0.643	0.825	1.180	1.521	1.855	2.183	2.829
2.34	0.134	0.284	0.459	0.641	0.824	1.178	1.520	1.853	2.181	2.828
2.35	0.133	0.283	0.458	0.640	0.822	1.177	1.518	1.851	2.179	2.826
2.36	0.132	0.282	0.456	0.639	0.821	1.175	1.517	1.850	2.178	2.825
2.37	0.132	0.281	0.455	0.637	0.819	1.174	1.515	1.848	2.176	2.823
2.38	0.131	0.280	0.454	0.636	0.818	1.172	1.514	1.847	2.175	2.822
2.39	0.130	0.279	0.453	0.635	0.817	1.171	1.512	1.845	2.173	2.820
2.40	0.129	0.278	0.451	0.633	0.815	1.169	1.511	1.844	2.172	2.819
2.41	0.128	0.277	0.450	0.632	0.814	1.168	1.509	1.843	2.170	2.817
2.42	0.127	0.276	0.449	0.631	0.813	1.166	1.508	1.841	2.169	2.816
2.43	0.127	0.275	0.448	0.629	0.811	1.165	1.507	1.840	2.168	2.814
2.44	0.126	0.274	0.447	0.628	0.810	1.164	1.505	1.838	2.166	2.813
2.45	0.125	0.273	0.445	0.627	0.809	1.162	1.504	1.837	2.165	2.812
2.46	0.124	0.272	0.444	0.626	0.807	1.161	1.502	1.835	2.163	2.810
2.47	0.123	0.271	0.443	0.624	0.806	1.160	1.501	1.834	2.162	2.809
2.48	0.123	0.270	0.442	0.623	0.805	1.158	1.500	1.833	2.161	2.807
2.49	0.122	0.269	0.441	0.622	0.803	1.157	1.498	1.831	2.159	2.806
2.50	0.121	0.268	0.440	0.621	0.802	1.156	1.497	1.830	2.158	2.805
Uçgen	0.000	0.061	0.184	0.336	0.500	0.836	1.170	1.499	1.825	2.469

TRAPEZ KESİTLİ KANALLAR İÇİN MANNING FORMULÜNDE (K') DEĞERİ, $Q=K' n b^{2/3} J^{1/2}$ (0.5)

Q=Debi, n=Pürüzlülük katsayısı, h=Akım derinliği, b=Taban genişliği, J=Eğim

Şev eğimi, z=Yatay - Düşey

n/b	Düşey	1/4-1.0	1/2-1.0	3/4-1.0	1.0-1.0	1.5-1.0	2.0-1.0	2.5-1.0	3.0-1.0	4.0-1.0
0.01	0.00046	0.00046	0.00046	0.00046	0.00046	0.00046	0.00047	0.00047	0.00047	0.00047
0.02	0.0014	0.0014	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
0.03	0.0028	0.0028	0.0028	0.0029	0.0029	0.0029	0.0029	0.0030	0.0030	0.0030
0.04	0.0044	0.0045	0.0046	0.0046	0.0047	0.0047	0.0048	0.0048	0.0049	0.0050
0.05	0.0064	0.0065	0.0066	0.0067	0.0067	0.0069	0.0070	0.0070	0.0071	0.0073
0.06	0.0085	0.0087	0.0089	0.0090	0.0091	0.0093	0.0095	0.0096	0.0098	0.0101
0.07	0.0109	0.0112	0.0114	0.0116	0.0118	0.0121	0.0123	0.0126	0.0128	0.0132
0.08	0.0135	0.0139	0.0142	0.0145	0.0147	0.0152	0.0155	0.0159	0.0162	0.0168
0.09	0.0162	0.0167	0.0172	0.0178	0.0179	0.0185	0.0190	0.0195	0.0199	0.0208
0.10	0.0191	0.0198	0.0204	0.0209	0.0214	0.0221	0.0228	0.0234	0.0241	0.0253
0.11	0.0221	0.0231	0.0238	0.0245	0.0251	0.0261	0.0269	0.0278	0.0286	0.0302
0.12	0.0253	0.0265	0.0275	0.0283	0.0290	0.0303	0.0314	0.0324	0.0334	0.0355
0.13	0.0286	0.0300	0.0313	0.0323	0.0332	0.0347	0.0361	0.0374	0.0387	0.0412
0.14	0.0320	0.0338	0.0352	0.0365	0.0376	0.0395	0.0412	0.0428	0.0444	0.0475
0.15	0.0356	0.0376	0.0394	0.0409	0.0422	0.0445	0.0466	0.0485	0.0504	0.0542
0.16	0.0392	0.0416	0.0437	0.0455	0.0471	0.0498	0.0523	0.0546	0.0569	0.0614
0.17	0.0429	0.0458	0.0482	0.0503	0.0522	0.0554	0.0583	0.0610	0.0637	0.0691
0.18	0.0467	0.0500	0.0529	0.0553	0.0575	0.0612	0.0646	0.0678	0.0710	0.0772
0.19	0.0507	0.0544	0.0577	0.0605	0.0630	0.0674	0.0713	0.0750	0.0787	0.0859
0.20	0.0547	0.0589	0.0627	0.0659	0.0687	0.0737	0.0783	0.0826	0.0868	0.0952
0.21	0.0587	0.0636	0.0678	0.0715	0.0747	0.0804	0.0856	0.0905	0.0954	0.1049
0.22	0.0629	0.0683	0.0731	0.0772	0.0809	0.0874	0.0932	0.0989	0.1043	0.1152
0.23	0.0671	0.0732	0.0785	0.0832	0.0873	0.0946	0.1012	0.1076	0.1138	0.1260
0.24	0.0714	0.0781	0.0841	0.0893	0.0939	0.1021	0.1096	0.1167	0.1237	0.1374
0.25	0.0757	0.0832	0.0898	0.0956	0.1007	0.1099	0.1182	0.1262	0.1340	0.1494
0.26	0.0801	0.0884	0.0957	0.1021	0.1078	0.1180	0.1273	0.1361	0.1448	0.1619
0.27	0.0846	0.0936	0.1017	0.1087	0.1151	0.1264	0.1366	0.1465	0.1561	0.1751
0.28	0.0891	0.0990	0.1078	0.1156	0.1228	0.1350	0.1464	0.1572	0.1678	0.1888
0.29	0.0937	0.1045	0.1141	0.1226	0.1303	0.1439	0.1564	0.1684	0.1801	0.2032
0.30	0.0983	0.1100	0.1205	0.1298	0.1382	0.1532	0.1669	0.1800	0.1928	0.2181
0.31	0.1029	0.1157	0.1271	0.1372	0.1464	0.1627	0.1777	0.1920	0.2060	0.2337
0.32	0.1077	0.1214	0.1338	0.1448	0.1547	0.1725	0.1889	0.2045	0.2198	0.2499
0.33	0.1124	0.1272	0.1406	0.1526	0.1633	0.1827	0.2004	0.2174	0.2340	0.2668
0.34	0.1172	0.1332	0.1476	0.1605	0.1721	0.1931	0.2123	0.2307	0.2488	0.2843
0.35	0.1220	0.1392	0.1547	0.1686	0.1812	0.2038	0.2246	0.2446	0.2641	0.3025
0.36	0.1269	0.1453	0.1619	0.1769	0.1904	0.2149	0.2373	0.2588	0.2799	0.3214
0.37	0.1318	0.1514	0.1693	0.1853	0.1999	0.2262	0.2504	0.2735	0.2962	0.3410
0.38	0.1368	0.1577	0.1768	0.1940	0.2096	0.2378	0.2638	0.2887	0.3131	0.3612
0.39	0.1417	0.1640	0.1844	0.2028	0.2196	0.2498	0.2777	0.3044	0.3306	0.3822
0.40	0.1468	0.1705	0.1922	0.2118	0.2297	0.2621	0.2919	0.3206	0.3486	0.4038
0.41	0.1518	0.1770	0.2001	0.2210	0.2401	0.2747	0.3066	0.3372	0.3671	0.4262
0.42	0.1569	0.1836	0.2081	0.2304	0.2507	0.2876	0.3216	0.3543	0.3863	0.4493
0.43	0.1620	0.1902	0.2163	0.2399	0.2616	0.3008	0.3371	0.3719	0.4060	0.4731
0.44	0.1671	0.1970	0.2246	0.2497	0.2727	0.3144	0.3530	0.3900	0.4263	0.4977
0.45	0.1723	0.2038	0.2330	0.2596	0.2840	0.3283	0.3693	0.4086	0.4472	0.5231
0.46	0.1774	0.2107	0.2415	0.2697	0.2955	0.3425	0.3860	0.4277	0.4686	0.5492
0.47	0.1827	0.2176	0.2502	0.2800	0.3073	0.3570	0.4031	0.4474	0.4907	0.5760
0.48	0.1879	0.2247	0.2590	0.2904	0.3193	0.3719	0.4207	0.4675	0.5134	0.6037
0.49	0.1931	0.2318	0.2680	0.3011	0.3315	0.3871	0.4387	0.4882	0.5367	0.6322
0.50	0.1984	0.2390	0.2770	0.3119	0.3440	0.4027	0.4571	0.5094	0.5606	0.6614
0.51	0.2037	0.2463	0.2862	0.3229	0.3567	0.4186	0.4759	0.5311	0.5851	0.6915
0.52	0.2091	0.2536	0.2955	0.3341	0.3697	0.4348	0.4952	0.5534	0.6103	0.7223
0.53	0.2144	0.2611	0.3050	0.3455	0.3829	0.4514	0.5150	0.5762	0.6361	0.7540
0.54	0.2198	0.2685	0.3146	0.3571	0.3964	0.4683	0.5352	0.5995	0.6625	0.7865
0.55	0.2251	0.2761	0.3243	0.3688	0.4100	0.4856	0.5558	0.6234	0.6896	0.8199
0.56	0.2305	0.2837	0.3341	0.3808	0.4240	0.5032	0.5769	0.6479	0.7173	0.8541
0.57	0.2360	0.2915	0.3441	0.3929	0.4381	0.5212	0.5985	0.6729	0.7457	0.8892
0.58	0.2414	0.2992	0.3542	0.4052	0.4526	0.5395	0.6205	0.6985	0.7748	0.9251
0.59	0.2469	0.3071	0.3644	0.4177	0.4672	0.5582	0.6430	0.7246	0.8046	0.9619
0.60	0.2523	0.3150	0.3748	0.4304	0.4822	0.5773	0.6660	0.7514	0.8350	0.9996
0.61	0.2578	0.3230	0.3853	0.4433	0.4973	0.5967	0.6894	0.7787	0.8661	1.0381
0.62	0.2633	0.3311	0.3959	0.4564	0.5128	0.6165	0.7133	0.8066	0.8979	1.0776
0.63	0.2688	0.3392	0.4067	0.4697	0.5284	0.6367	0.7377	0.8350	0.9304	1.1180

TRAPEZ KESİTLİ KANALLAR İÇİN MANNING FORMULÜNDE (K') DEĞERİ, $Q=K \sqrt{n} b^{4/3} J^{1/2}$ (0.5)

Q=Debi, n=Pürüzlülük katsayısı, h=Akım derinliği, b=Taban genişliği, J=Eğim

Şev eğimi, z=Yatay - Düşey

h/b	Düşey	1/4-1.0	1/2-1.0	3/4-1.0	1.0-1.0	1.5-1.0	2.0-1.0	2.5-1.0	3.0-1.0	4.0-1.0
0.64	0.2744	0.3474	0.4176	0.4832	0.5444	0.6572	0.7626	0.8641	0.9636	1.1593
0.65	0.2799	0.3557	0.4286	0.4968	0.5605	0.6781	0.7880	0.8938	0.9974	1.2015
0.66	0.2855	0.3640	0.4397	0.5107	0.5770	0.6994	0.8138	0.9241	1.0321	1.2446
0.67	0.2911	0.3724	0.4510	0.5247	0.5937	0.7211	0.8402	0.9550	1.0674	1.2887
0.68	0.2968	0.3809	0.4624	0.5390	0.6106	0.7431	0.8670	0.9865	1.1034	1.3337
0.69	0.3022	0.3894	0.4740	0.5534	0.6278	0.7656	0.8944	1.0186	1.1402	1.3787
0.70	0.3079	0.3980	0.4856	0.5681	0.6453	0.7884	0.9222	1.0513	1.1777	1.4266
0.71	0.3135	0.4067	0.4974	0.5829	0.6631	0.8116	0.9506	1.0847	1.2160	1.4745
0.72	0.3191	0.4155	0.5094	0.5979	0.6811	0.8352	0.9795	1.1187	1.2550	1.5234
0.73	0.3248	0.4243	0.5214	0.6132	0.6993	0.8592	1.0089	1.1533	1.2948	1.5733
0.74	0.3304	0.4332	0.5336	0.6286	0.7179	0.8835	1.0388	1.1885	1.3353	1.6241
0.75	0.3361	0.4421	0.5460	0.6442	0.7367	0.9083	1.0692	1.2245	1.3766	1.6760
0.76	0.3418	0.4512	0.5584	0.6601	0.7557	0.9335	1.1002	1.2610	1.4186	1.7288
0.77	0.3475	0.4603	0.5710	0.6761	0.7751	0.9591	1.1317	1.2982	1.4614	1.7827
0.78	0.3532	0.4694	0.5838	0.6923	0.7947	0.9851	1.1637	1.3361	1.5050	1.8376
0.79	0.3589	0.4787	0.5966	0.7088	0.8146	1.0115	1.1962	1.3746	1.5494	1.8935
0.80	0.3646	0.4879	0.6096	0.7254	0.8347	1.0383	1.2293	1.4138	1.5946	1.9505
0.81	0.3703	0.4973	0.6228	0.7423	0.8552	1.0655	1.2630	1.4537	1.6408	2.0085
0.82	0.3761	0.5067	0.6361	0.7594	0.8759	1.0931	1.2972	1.4942	1.6873	2.0675
0.83	0.3818	0.5162	0.6495	0.7766	0.8969	1.1211	1.3319	1.5354	1.7349	2.1276
0.84	0.3876	0.5258	0.6630	0.7941	0.9181	1.1496	1.3672	1.5773	1.7833	2.1888
0.85	0.3934	0.5354	0.6767	0.8118	0.9397	1.1785	1.4030	1.6199	1.8325	2.2511
0.86	0.3991	0.5451	0.6905	0.8297	0.9615	1.2078	1.4394	1.6632	1.8826	2.3144
0.87	0.4049	0.5549	0.7045	0.8478	0.9836	1.2375	1.4764	1.7072	1.9334	2.3788
0.88	0.4107	0.5647	0.7186	0.8661	1.0060	1.2676	1.5139	1.7519	1.9851	2.4444
0.89	0.4165	0.5746	0.7328	0.8846	1.0287	1.2982	1.5520	1.7972	2.0377	2.5110
0.90	0.4223	0.5846	0.7471	0.9033	1.0516	1.3292	1.5907	1.8433	2.0911	2.5787
0.91	0.4281	0.5946	0.7616	0.9223	1.0749	1.3607	1.6299	1.8901	2.1453	2.6476
0.92	0.4339	0.6047	0.7763	0.9414	1.0984	1.3926	1.6697	1.9377	2.2004	2.7178
0.93	0.4398	0.6149	0.7911	0.9608	1.1223	1.4249	1.7101	1.9859	2.2563	2.7887
0.94	0.4456	0.6251	0.8060	0.9804	1.1464	1.4576	1.7511	2.0349	2.3131	2.8609
0.95	0.4514	0.6354	0.8210	1.0002	1.1708	1.4908	1.7927	2.0846	2.3708	2.9343
0.96	0.4573	0.6458	0.8362	1.0202	1.1955	1.5245	1.8349	2.1350	2.4294	3.0089
0.97	0.4631	0.6562	0.8516	1.0404	1.2205	1.5586	1.8776	2.1862	2.4888	3.0846
0.98	0.4690	0.6667	0.8670	1.0609	1.2458	1.5931	1.9210	2.2381	2.5491	3.1615
0.99	0.4749	0.6773	0.8827	1.0815	1.2714	1.6281	1.9650	2.2908	2.6104	3.2395
1.00	0.4807	0.6879	0.8984	1.1024	1.2973	1.6636	2.0095	2.3442	2.6725	3.3187
1.01	0.4866	0.6987	0.9143	1.1235	1.3235	1.6995	2.0547	2.3984	2.7355	3.3992
1.02	0.4925	0.7094	0.9303	1.1449	1.3500	1.7359	2.1005	2.4533	2.7994	3.4808
1.03	0.4984	0.7203	0.9465	1.1664	1.3768	1.7727	2.1489	2.5090	2.8642	3.5636
1.04	0.5043	0.7312	0.9628	1.1882	1.4039	1.8100	2.1939	2.5655	2.9300	3.6477
1.05	0.5102	0.7421	0.9793	1.2102	1.4313	1.8477	2.2416	2.6227	2.9967	3.7329
1.06	0.5161	0.7532	0.9959	1.2324	1.4590	1.8860	2.2898	2.6808	3.0643	3.8194
1.07	0.5220	0.7643	1.0127	1.2549	1.4870	1.9246	2.3387	2.7396	3.1328	3.9071
1.08	0.5279	0.7755	1.0296	1.2775	1.5153	1.9638	2.3882	2.7991	3.2023	3.9960
1.09	0.5339	0.7867	1.0468	1.3004	1.5440	2.0034	2.4384	2.8595	3.2727	4.0862
1.10	0.5398	0.7980	1.0638	1.3235	1.5729	2.0436	2.4892	2.9207	3.3440	4.1777
1.11	0.5457	0.8094	1.0811	1.3469	1.6022	2.0841	2.5406	2.9826	3.4163	4.2704
1.12	0.5517	0.8208	1.0986	1.3705	1.6317	2.1252	2.5927	3.0454	3.4896	4.3643
1.13	0.5576	0.8323	1.1162	1.3943	1.6616	2.1668	2.6454	3.1089	3.5638	4.4596
1.14	0.5635	0.8439	1.1340	1.4183	1.6918	2.2088	2.6987	3.1733	3.6390	4.5561
1.15	0.5695	0.8556	1.1519	1.4426	1.7223	2.2513	2.7528	3.2385	3.7152	4.6539
1.16	0.5754	0.8673	1.1699	1.4671	1.7532	2.2943	2.8074	3.3045	3.7923	4.7530
1.17	0.5814	0.8791	1.1881	1.4918	1.7843	2.3378	2.8628	3.3713	3.8704	4.8534
1.18	0.5874	0.8909	1.2065	1.5168	1.8158	2.3818	2.9187	3.4390	3.9496	4.9551
1.19	0.5933	0.9028	1.2250	1.5420	1.8476	2.4263	2.9754	3.5075	4.0297	5.0581
1.20	0.5993	0.9148	1.2436	1.5674	1.8797	2.4713	3.0327	3.5768	4.1107	5.1624
1.21	0.6053	0.9269	1.2624	1.5931	1.9122	2.5168	3.0907	3.6469	4.1928	5.2681
1.22	0.6113	0.9390	1.2813	1.6190	1.9449	2.5628	3.1494	3.7179	4.2780	5.3750
1.23	0.6172	0.9512	1.3004	1.6451	1.9780	2.6093	3.2087	3.7897	4.3601	5.4834
1.24	0.6232	0.9634	1.3196	1.6715	2.0114	2.6563	3.2687	3.8624	4.4452	5.5930
1.25	0.6292	0.9758	1.3390	1.6981	2.0452	2.7038	3.3294	3.9359	4.5313	5.7041
1.26	0.6352	0.9881	1.3586	1.7250	2.0793	2.7518	3.3908	4.0103	4.6185	5.8164

TRAPEZ KESİTLİ KANALLAR İÇİN MANNING FORMULÜNDE (K') DEĞERİ, $Q=K' n b^{2/3} J^{1/2}$

Q=Debi, n=Pürüzlülük katsayısı, h=Akım derinliği, b=Taban genişliği, J=Eğim

Şev eğimi, z=Yatay - Düşey

h/b	Düşey	1/4-1.0	1/2-1.0	3/4-1.0	1.0-1.0	1.5-1.0	2.0-1.0	2.5-1.0	3.0-1.0	4.0-1.0
1.27	0.84122	1.00081	1.37828	1.75208	2.11369	2.80033	3.45285	4.08558	4.70873	5.93019
1.28	0.8472	1.0131	1.3981	1.7794	2.1484	2.8494	3.5156	4.1617	4.7960	6.0453
1.29	0.8532	1.0257	1.4181	1.8070	2.1835	2.8988	3.5791	4.2387	4.8863	6.1618
1.30	0.8592	1.0384	1.4382	1.8348	2.2189	2.9490	3.6432	4.3165	4.9776	6.2797
1.31	0.8652	1.0511	1.4585	1.8629	2.2547	2.9996	3.7081	4.3953	5.0700	6.3990
1.32	0.8713	1.0639	1.4790	1.8912	2.2908	3.0507	3.7736	4.4749	5.1634	6.5196
1.33	0.8773	1.0768	1.4995	1.9197	2.3272	3.1024	3.8399	4.5554	5.2578	6.6417
1.34	0.8833	1.0898	1.5203	1.9485	2.3640	3.1545	3.9068	4.6367	5.3534	6.7652
1.35	0.8893	1.1028	1.5412	1.9776	2.4011	3.2072	3.9745	4.7190	5.4500	6.8901
1.36	0.8953	1.1158	1.5623	2.0069	2.4385	3.2605	4.0428	4.8022	5.5477	7.0164
1.37	0.7014	1.1290	1.5835	2.0364	2.4763	3.3142	4.1120	4.8862	5.6465	7.1442
1.38	0.7074	1.1422	1.6048	2.0662	2.5144	3.3685	4.1818	4.9712	5.7463	7.2734
1.39	0.7134	1.1555	1.6263	2.0962	2.5529	3.4233	4.2524	5.0571	5.8473	7.4040
1.40	0.7195	1.1688	1.6480	2.1265	2.5917	3.4787	4.3237	5.1439	5.9493	7.5361
1.41	0.7255	1.1823	1.6698	2.1570	2.6309	3.5348	4.3957	5.2315	6.0524	7.6696
1.42	0.7316	1.1958	1.6918	2.1878	2.6704	3.5911	4.4685	5.3202	6.1567	7.8046
1.43	0.7376	1.2093	1.7140	2.2188	2.7103	3.6481	4.5419	5.4097	6.2620	7.9411
1.44	0.7437	1.2229	1.7363	2.2501	2.7505	3.7056	4.6161	5.5002	6.3684	8.0791
1.45	0.7497	1.2366	1.7587	2.2817	2.7911	3.7637	4.6911	5.5915	6.4760	8.2185
1.46	0.7558	1.2504	1.7813	2.3134	2.8320	3.8224	4.7668	5.6839	6.5846	8.3594
1.47	0.7618	1.2643	1.8041	2.3455	2.8733	3.8816	4.8433	5.7771	6.6944	8.5018
1.48	0.7679	1.2782	1.8270	2.3778	2.9149	3.9413	4.9205	5.8713	6.8054	8.6457
1.49	0.7740	1.2921	1.8501	2.4104	2.9569	4.0018	4.9984	5.9665	6.9174	8.7911
1.50	0.7800	1.3062	1.8733	2.4432	2.9993	4.0625	5.0771	6.0626	7.0306	8.9380
1.51	0.7861	1.3203	1.8967	2.4762	3.0420	4.1239	5.1566	6.1596	7.1450	9.0865
1.52	0.7922	1.3345	1.9203	2.5096	3.0851	4.1859	5.2368	6.2576	7.2604	9.2365
1.53	0.7982	1.3488	1.9440	2.5432	3.1285	4.2485	5.3178	6.3566	7.3771	9.3880
1.54	0.8043	1.3631	1.9679	2.5770	3.1723	4.3116	5.3995	6.4565	7.4949	9.5410
1.55	0.8104	1.3775	1.9919	2.6111	3.2165	4.3753	5.4821	6.5574	7.6138	9.6956
1.56	0.8165	1.3920	2.0161	2.6455	3.2610	4.4396	5.5654	6.6592	7.7339	9.8517
1.57	0.8226	1.4065	2.0405	2.6801	3.3059	4.5044	5.6494	6.7620	7.8552	10.0094
1.58	0.8286	1.4211	2.0650	2.7150	3.3512	4.5698	5.7343	6.8658	7.9777	10.1686
1.59	0.8347	1.4358	2.0897	2.7502	3.3968	4.6358	5.8199	6.9706	8.1013	10.3294
1.60	0.8408	1.4506	2.1146	2.7856	3.4428	4.7024	5.9063	7.0764	8.2261	10.4918
1.61	0.8469	1.4654	2.1396	2.8213	3.4891	4.7696	5.9935	7.1832	8.3521	10.6558
1.62	0.8530	1.4803	2.1648	2.8573	3.5359	4.8373	6.0815	7.2909	8.4793	10.8213
1.63	0.8591	1.4952	2.1901	2.8935	3.5830	4.9056	6.1703	7.3997	8.6077	10.9885
1.64	0.8652	1.5103	2.2156	2.9300	3.6305	4.9745	6.2599	7.5094	8.7373	11.1572
1.65	0.8713	1.5254	2.2413	2.9668	3.6783	5.0440	6.3503	7.6201	8.8681	11.3276
1.66	0.8774	1.5406	2.2671	3.0038	3.7266	5.1141	6.4414	7.7319	9.0001	11.4995
1.67	0.8835	1.5558	2.2931	3.0411	3.7752	5.1848	6.5334	7.8447	9.1333	11.6731
1.68	0.8896	1.5712	2.3193	3.0787	3.8242	5.2561	6.6262	7.9584	9.2678	11.8483
1.69	0.8957	1.5865	2.3456	3.1165	3.8736	5.3279	6.7198	8.0732	9.4034	12.0251
1.70	0.9018	1.6020	2.3721	3.1546	3.9233	5.4004	6.8142	8.1890	9.5403	12.2036
1.71	0.9079	1.6176	2.3987	3.1930	3.9735	5.4735	6.9094	8.3059	9.6784	12.3837
1.72	0.9140	1.6332	2.4256	3.2316	4.0240	5.5471	7.0055	8.4238	9.8178	12.5654
1.73	0.9201	1.6488	2.4525	3.2706	4.0749	5.6214	7.1023	8.5426	9.9584	12.7488
1.74	0.9263	1.6646	2.4797	3.3098	4.1262	5.6963	7.2000	8.6626	10.1002	12.9339
1.75	0.9324	1.6804	2.5070	3.3492	4.1778	5.7718	7.2985	8.7836	10.2433	13.1206
1.76	0.9385	1.6963	2.5345	3.3890	4.2299	5.8479	7.3978	8.9056	10.3877	13.3090
1.77	0.9446	1.7123	2.5622	3.4290	4.2824	5.9246	7.4980	9.0286	10.5333	13.4990
1.78	0.9507	1.7283	2.5900	3.4693	4.3352	6.0019	7.5990	9.1527	10.6801	13.6908
1.79	0.9569	1.7445	2.6180	3.5099	4.3884	6.0799	7.7008	9.2779	10.8282	13.8842
1.80	0.9630	1.7606	2.6462	3.5508	4.4421	6.1584	7.8035	9.4041	10.9776	14.0793
1.81	0.9691	1.7769	2.6746	3.5919	4.4961	6.2376	7.9070	9.5314	11.1283	14.2762
1.82	0.9752	1.7932	2.7031	3.6334	4.5505	6.3174	8.0114	9.6597	11.2803	14.4747
1.83	0.9814	1.8096	2.7317	3.6751	4.6053	6.3978	8.1166	9.7891	11.4335	14.6749
1.84	0.9875	1.8261	2.7606	3.7171	4.6605	6.4789	8.2228	9.9196	11.5880	14.8769
1.85	0.9936	1.8427	2.7896	3.7593	4.7161	6.5606	8.3296	10.0512	11.7438	15.0806
1.86	0.9998	1.8593	2.8188	3.8019	4.7721	6.6429	8.4373	10.1838	11.9009	15.2860
1.87	1.0059	1.8760	2.8482	3.8447	4.8285	6.7258	8.5459	10.3175	12.0593	15.4931
1.88	1.0120	1.8928	2.8777	3.8878	4.8853	6.8094	8.6554	10.4523	12.2191	15.7020
1.89	1.0182	1.9096	2.9075	3.9312	4.9425	6.8936	8.7658	10.5882	12.3801	15.9127

TRAPEZ KESİTLİ KANALLAR İÇİN MANNING FORMULÜNDE (K ') DEĞERİ, Q=K 'n b^{4/3} J^{1/2} (0.5)

Q=Debi, n=Portülülük katsayısı, h=Akım derinliği, b=Taban genişliği, J=Eğim

Şev eğimi, z= Yatay - Düşey

h/b	Düşey	1/4-1.0	1/2-1.0	3/4-1.0	1.0-1.0	1.5-1.0	2.0-1.0	2.5-1.0	3.0-1.0	4.0-1.0
1.90	1.02430	1.92654	2.83735	3.97494	5.00009	6.97842	8.87698	10.7251	12.5424	16.1251
1.91	1.0304	1.9435	2.9674	4.0189	5.0581	7.0639	8.9891	10.8632	12.7061	18.3392
1.92	1.0366	1.9606	2.9976	4.0632	5.1165	7.1500	9.1020	11.0024	12.8710	18.5551
1.93	1.0427	1.9777	3.0281	4.1077	5.1753	7.2368	9.2158	11.1426	13.0373	18.7728
1.94	1.0489	1.9950	3.0586	4.1526	5.2345	7.3242	9.3305	11.2840	13.2050	18.9922
1.95	1.0550	2.0122	3.0894	4.1977	5.2942	7.4123	9.4461	11.4265	13.3739	19.2135
1.96	1.0612	2.0296	3.1203	4.2431	5.3542	7.5010	9.5626	11.5701	13.5442	19.4365
1.97	1.0673	2.0471	3.1515	4.2889	5.4147	7.5903	9.6799	11.7148	13.7159	19.6613
1.98	1.0735	2.0646	3.1827	4.3349	5.4755	7.6803	9.7982	11.8606	13.8889	19.8879
1.99	1.0796	2.0821	3.2142	4.3812	5.5368	7.7710	9.9173	12.0075	14.0632	18.1183
2.00	1.0858	2.0998	3.2459	4.4277	5.5985	7.8623	10.0373	12.1556	14.2389	18.3465
2.01	1.0919	2.1175	3.2777	4.4746	5.6606	7.9543	10.1582	12.3048	14.4160	18.5786
2.02	1.0981	2.1354	3.3097	4.5218	5.7231	8.0469	10.2801	12.4551	14.5944	18.8124
2.03	1.1042	2.1532	3.3418	4.5693	5.7861	8.1402	10.4028	12.6066	14.7742	19.0481
2.04	1.1104	2.1712	3.3742	4.6171	5.8494	8.2341	10.5264	12.7592	14.9554	19.2856
2.05	1.1165	2.1892	3.4067	4.6651	5.9132	8.3288	10.6509	12.9130	15.1379	19.5250
2.06	1.1227	2.2073	3.4394	4.7135	5.9774	8.4240	10.7763	13.0678	15.3218	19.7662
2.07	1.1289	2.2255	3.4723	4.7621	6.0420	8.5200	10.9027	13.2239	15.5071	20.0092
2.08	1.1350	2.2438	3.5054	4.8111	6.1071	8.6166	11.0299	13.3811	15.6938	20.2541
2.09	1.1412	2.2621	3.5387	4.8604	6.1725	8.7139	11.1581	13.5394	15.8819	20.5009
2.10	1.1474	2.2805	3.5721	4.9099	6.2384	8.8119	11.2872	13.6990	16.0714	20.7495
2.11	1.1535	2.2990	3.6057	4.9598	6.3047	8.9105	11.4172	13.8596	16.2623	21.0000
2.12	1.1597	2.3176	3.6395	5.0099	6.3715	9.0099	11.5481	14.0215	16.4545	21.2524
2.13	1.1658	2.3362	3.6735	5.0604	6.4386	9.1099	11.6800	14.1845	16.6482	21.5087
2.14	1.1720	2.3549	3.7076	5.1112	6.5062	9.2106	11.8128	14.3487	16.8433	21.7628
2.15	1.1782	2.3737	3.7420	5.1622	6.5743	9.3119	11.9465	14.5140	17.0399	22.0209
2.16	1.1844	2.3926	3.7765	5.2136	6.6427	9.4140	12.0812	14.6806	17.2378	22.2808
2.17	1.1905	2.4115	3.8112	5.2653	6.7116	9.5167	12.2168	14.8483	17.4372	22.5426
2.18	1.1967	2.4306	3.8461	5.3173	6.7809	9.6201	12.3533	15.0172	17.6380	22.8064
2.19	1.2029	2.4497	3.8811	5.3696	6.8507	9.7243	12.4908	15.1873	17.8402	23.0721
2.20	1.2090	2.4688	3.9164	5.4222	6.9209	9.8291	12.6292	15.3586	18.0439	23.3397
2.21	1.2152	2.4881	3.9518	5.4751	6.9915	9.9346	12.7686	15.5311	18.2490	23.6092
2.22	1.2214	2.5074	3.9875	5.5283	7.0626	10.0408	12.9089	15.7047	18.4556	23.8807
2.23	1.2276	2.5268	4.0233	5.5818	7.1341	10.1477	13.0502	15.8796	18.6636	24.1540
2.24	1.2337	2.5463	4.0593	5.6356	7.2060	10.2553	13.1924	16.0557	18.8731	24.4294
2.25	1.2399	2.5658	4.0955	5.6898	7.2784	10.3638	13.3356	16.2330	19.0840	24.7067
2.26	1.2461	2.5855	4.1318	5.7442	7.3512	10.4726	13.4797	16.4115	19.2964	24.9859
2.27	1.2523	2.6052	4.1684	5.7990	7.4245	10.5823	13.6248	16.5913	19.5102	25.2671
2.28	1.2585	2.6250	4.2051	5.8541	7.4982	10.6927	13.7709	16.7722	19.7255	25.5503
2.29	1.2646	2.6448	4.2420	5.9094	7.5723	10.8038	13.9179	16.9544	19.9423	25.8354
2.30	1.2708	2.6648	4.2792	5.9652	7.6469	10.9157	14.0659	17.1378	20.1606	26.1225
2.31	1.2770	2.6848	4.3165	6.0212	7.7220	11.0282	14.2149	17.3224	20.3804	26.4116
2.32	1.2832	2.7049	4.3540	6.0775	7.7975	11.1415	14.3649	17.5083	20.6016	26.7027
2.33	1.2894	2.7251	4.3916	6.1341	7.8734	11.2554	14.5158	17.6954	20.8243	26.9958
2.34	1.2956	2.7453	4.4295	6.1911	7.9498	11.3701	14.6677	17.8837	21.0486	27.2909
2.35	1.3018	2.7656	4.4676	6.2484	8.0267	11.4855	14.8206	18.0733	21.2743	27.5879
2.36	1.3079	2.7861	4.5058	6.3060	8.1039	11.6017	14.9745	18.2641	21.5015	27.8870
2.37	1.3141	2.8065	4.5443	6.3639	8.1817	11.7185	15.1294	18.4562	21.7302	28.1881
2.38	1.3203	2.8271	4.5829	6.4221	8.2599	11.8361	15.2852	18.6495	21.9605	28.4912
2.39	1.3265	2.8478	4.6217	6.4807	8.3385	11.9544	15.4421	18.8441	22.1922	28.7964
2.40	1.3327	2.8685	4.6607	6.5396	8.4177	12.0734	15.5999	19.0399	22.4255	29.1036
2.41	1.3389	2.8893	4.6999	6.5988	8.4972	12.1932	15.7588	19.2370	22.6603	29.4128
2.42	1.3451	2.9102	4.7393	6.6583	8.5773	12.3137	15.9186	19.4354	22.8966	29.7240
2.43	1.3513	2.9311	4.7788	6.7181	8.6577	12.4349	16.0795	19.6350	23.1344	30.0373
2.44	1.3575	2.9522	4.8187	6.7783	8.7387	12.5569	16.2413	19.8359	23.3738	30.3527
2.45	1.3637	2.9733	4.8587	6.8388	8.8201	12.6796	16.4042	20.0380	23.6147	30.6701
2.46	1.3699	2.9945	4.8988	6.8996	8.9020	12.8030	16.5681	20.2415	23.8572	30.9896
2.47	1.3761	3.0157	4.9392	6.9608	8.9843	12.9272	16.7330	20.4462	24.1012	31.3111
2.48	1.3823	3.0371	4.9797	7.0222	9.0671	13.0521	16.8989	20.6522	24.3468	31.6347
2.49	1.3885	3.0585	5.0205	7.0840	9.1503	13.1778	17.0658	20.8595	24.5939	31.9604
2.50	1.3947	3.0800	5.0614	7.1461	9.2341	13.3042	17.2337	21.0681	24.8425	32.2882

DAİRESEL KESİTLİ KANALLARIN GEOMETRİK VE HİDROLİK ELEMANLARI

h=Akım Derinliği, D=Boru çapı, A=Kesit alanı, P=Islak çevre, R=Hidrolik yarıçap
V=Ortalama akım hızı, Q=Debi

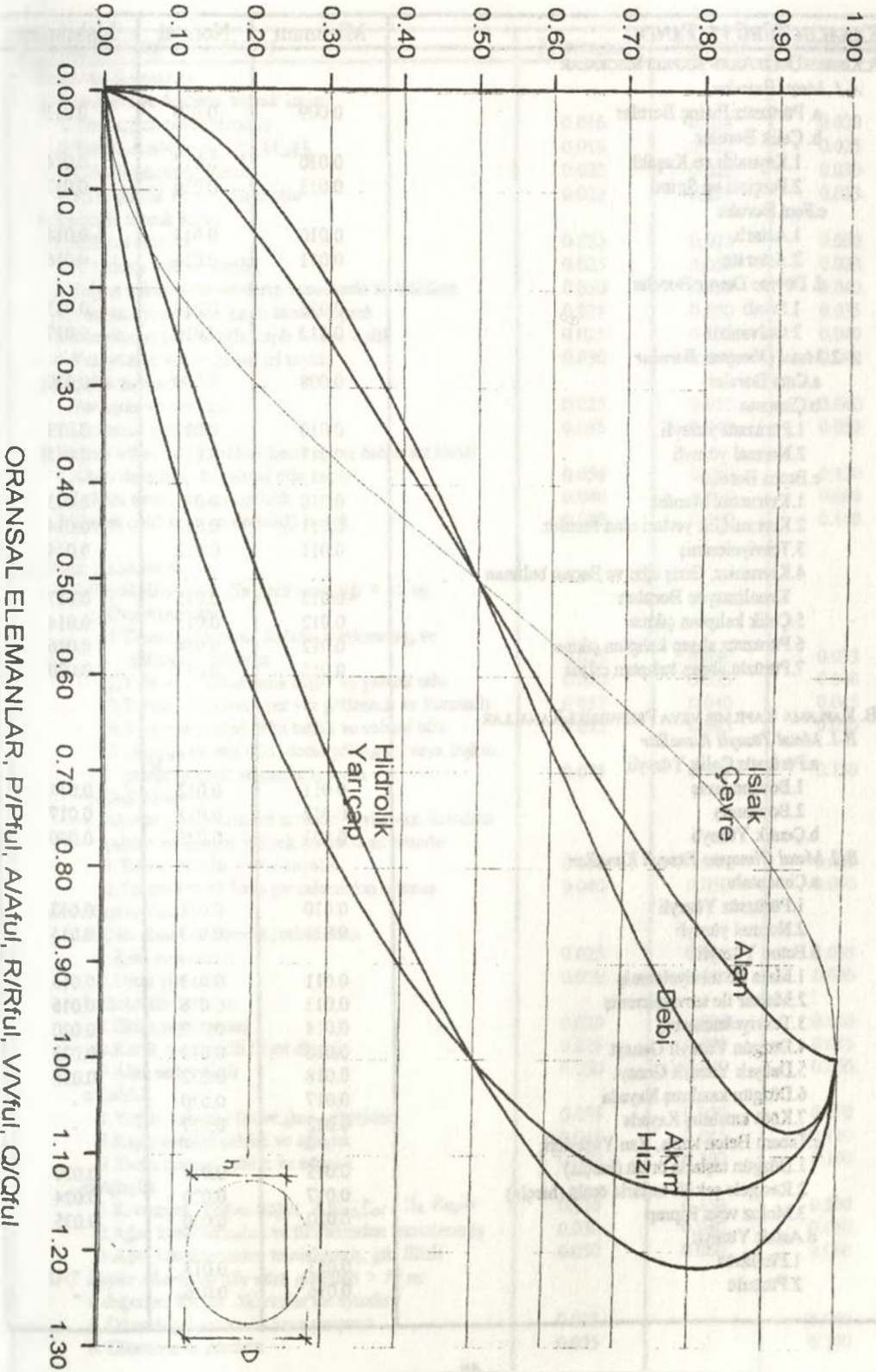
h/D	A/A _{ful}	P/P _{ful}	R/R _{ful}	V/V _{ful}	Q/Q _{ful}
0.01	0.002	0.0637	0.0265	0.089	0.000
0.02	0.005	0.090	0.053	0.141	0.001
0.03	0.009	0.111	0.079	0.184	0.0016
0.04	0.013	0.128	0.105	0.222	0.003
0.05	0.019	0.144	0.130	0.257	0.005
0.06	0.024	0.157	0.155	0.289	0.007
0.07	0.031	0.170	0.181	0.319	0.010
0.08	0.037	0.182	0.205	0.348	0.013
0.09	0.045	0.194	0.230	0.375	0.017
0.10	0.052	0.205	0.254	0.401	0.021
0.11	0.060	0.215	0.278	0.426	0.025
0.12	0.068	0.225	0.302	0.450	0.031
0.13	0.076	0.235	0.325	0.473	0.036
0.14	0.085	0.244	0.349	0.495	0.042
0.15	0.094	0.253	0.372	0.517	0.049
0.16	0.103	0.262	0.394	0.538	0.056
0.17	0.113	0.270	0.417	0.558	0.063
0.18	0.122	0.279	0.439	0.577	0.071
0.19	0.132	0.287	0.461	0.597	0.079
0.20	0.142	0.295	0.482	0.615	0.088
0.21	0.153	0.303	0.504	0.633	0.097
0.22	0.163	0.311	0.525	0.651	0.106
0.23	0.174	0.318	0.546	0.668	0.116
0.24	0.184	0.326	0.568	0.684	0.126
0.25	0.195	0.333	0.587	0.701	0.137
0.26	0.207	0.340	0.607	0.717	0.148
0.27	0.218	0.348	0.626	0.732	0.159
0.28	0.229	0.355	0.646	0.747	0.171
0.29	0.241	0.362	0.665	0.762	0.183
0.30	0.252	0.369	0.684	0.776	0.196
0.31	0.264	0.376	0.702	0.790	0.209
0.32	0.276	0.383	0.721	0.804	0.222
0.33	0.288	0.389	0.739	0.817	0.235
0.34	0.300	0.396	0.757	0.830	0.249
0.35	0.312	0.403	0.774	0.843	0.263
0.36	0.324	0.410	0.791	0.855	0.277
0.37	0.336	0.416	0.808	0.868	0.292
0.38	0.349	0.423	0.825	0.879	0.307
0.39	0.361	0.429	0.841	0.891	0.322
0.40	0.373	0.436	0.857	0.902	0.337
0.41	0.386	0.442	0.873	0.913	0.352
0.42	0.398	0.449	0.888	0.924	0.368
0.43	0.411	0.455	0.903	0.934	0.384
0.44	0.424	0.462	0.918	0.944	0.400
0.45	0.436	0.468	0.932	0.954	0.416
0.46	0.449	0.474	0.947	0.964	0.433
0.47	0.462	0.481	0.960	0.973	0.449
0.48	0.474	0.487	0.974	0.983	0.466
0.49	0.487	0.493	0.987	0.991	0.483
0.50	0.500	0.500	1.000	1.000	0.500

h/D	A/A _{ful}	P/P _{ful}	R/R _{ful}	V/V _{ful}	Q/Q _{ful}
0.51	0.513	0.5062	1.0128	1.0084	0.517
0.52	0.525	0.513	1.025	1.016	0.534
0.53	0.538	0.519	1.037	1.024	0.551
0.54	0.551	0.525	1.048	1.032	0.568
0.55	0.563	0.532	1.060	1.039	0.585
0.56	0.576	0.538	1.070	1.046	0.603
0.57	0.589	0.544	1.081	1.053	0.620
0.58	0.601	0.551	1.091	1.060	0.637
0.59	0.614	0.557	1.101	1.066	0.654
0.60	0.626	0.564	1.111	1.072	0.672
0.61	0.639	0.570	1.120	1.078	0.689
0.62	0.651	0.577	1.128	1.084	0.706
0.63	0.663	0.583	1.137	1.089	0.723
0.64	0.676	0.590	1.145	1.094	0.739
0.65	0.688	0.597	1.153	1.099	0.756
0.66	0.700	0.603	1.160	1.104	0.773
0.67	0.712	0.610	1.167	1.108	0.789
0.68	0.724	0.617	1.173	1.112	0.805
0.69	0.736	0.624	1.179	1.116	0.821
0.70	0.747	0.631	1.185	1.120	0.837
0.71	0.759	0.638	1.190	1.123	0.852
0.72	0.770	0.645	1.195	1.126	0.868
0.73	0.782	0.652	1.199	1.129	0.883
0.74	0.793	0.659	1.203	1.131	0.897
0.75	0.804	0.666	1.207	1.133	0.912
0.76	0.815	0.674	1.210	1.135	0.925
0.77	0.826	0.681	1.212	1.137	0.939
0.78	0.837	0.688	1.214	1.138	0.952
0.79	0.847	0.697	1.216	1.139	0.965
0.80	0.857	0.705	1.217	1.140	0.977
0.81	0.867	0.713	1.217	1.140	0.989
0.82	0.877	0.721	1.217	1.140	1.000
0.83	0.887	0.729	1.216	1.139	1.011
0.84	0.896	0.738	1.215	1.139	1.021
0.85	0.906	0.747	1.213	1.137	1.030
0.86	0.915	0.756	1.210	1.136	1.039
0.87	0.923	0.765	1.207	1.134	1.047
0.88	0.932	0.774	1.203	1.131	1.054
0.89	0.940	0.784	1.198	1.128	1.060
0.90	0.948	0.795	1.192	1.124	1.065
0.91	0.955	0.806	1.185	1.120	1.070
0.92	0.962	0.817	1.177	1.115	1.073
0.93	0.969	0.829	1.168	1.109	1.075
0.94	0.975	0.842	1.158	1.103	1.075
0.95	0.981	0.856	1.146	1.095	1.074
0.96	0.986	0.871	1.132	1.086	1.071
0.97	0.991	0.889	1.115	1.075	1.065
0.98	0.995	0.909	1.094	1.062	1.058
0.99	0.998	0.936	1.066	1.044	1.042
1.00	1.000	1.000	1.000	1.000	1.000

Not : "ful" indeksi büyüklükler TAM DOLU durumdaki akımı göstermektedir.

ORANSAL DERİNLİK, h/D

DAİRESEL KESİTİN GEOMETRİK VE HİDROLİK ELEMANLARI



MANNING PÜRÜZLÜLÜK KATSAYISI, n , DEĞERLERİ

KANALIN TÜRÜ VE TANIMI	Minimum	Normal	Maksimum
A. KISMEN DOLU AKAN KAPALI MECRALAR			
A-1. Metal Borular			
a. Pürüzsüz Pirinç Borular	0.009	0.010	0.013
b. Çelik Borular			
1. Kaynaklı ve Kuşaklı	0.010	0.012	0.014
2. Perçinli ve Spiral	0.013	0.016	0.017
c. Font Borular			
1. Astarlı	0.010	0.013	0.014
2. Astarsız	0.011	0.014	0.016
d. Dövme Demir Borular			
1. Siyah	0.012	0.014	0.015
2. Galvanizli	0.013	0.016	0.017
A-2. Metal Olmayan Borular			
a. Cam Borular	0.008	0.009	0.010
b. Çimento			
1. Pürüzsüz yüzeyli	0.010	0.011	0.013
2. Normal yüzeyli	0.011	0.013	0.015
c. Beton Borular			
1. Kıvrımsız Menfez	0.010	0.011	0.013
2. Kıvrımlı, Ek yerleri olan Menfez	0.011	0.013	0.014
3. Tesviyelenmiş	0.011	0.012	0.014
4. Kıvrımsız, Giriş ağzı ve Bacası bulunan Kanalizasyon Boruları	0.013	0.015	0.017
5. Çelik kalıptan çıkma	0.012	0.013	0.014
6. Pürüzsüz ahşap kalıptan çıkma	0.012	0.014	0.016
7. Pürüzlü ahşap kalıptan çıkma	0.015	0.017	0.020
B. KAPLAMA YAPILMIŞ VEYA PREFABRİKE KANALLAR			
B-1. Metal Yüzeyli Kanallar			
a. Pürüzsüz Çelik Yüzeyli			
1. Boyanmamış	0.011	0.012	0.014
2. Boyanmış	0.012	0.013	0.017
b. Çentik Yüzeyli	0.021	0.025	0.030
B-2. Metal Olmayan Yüzeyli Kanallar			
a. Çimentolu			
1. Pürüzsüz Yüzeyli	0.010	0.011	0.013
2. Normal yüzeyli	0.011	0.013	0.015
b. Beton Yüzeyli			
1. Mala ile tesviyelenmiş	0.011	0.013	0.015
2. Master ile tesviyelenmiş	0.013	0.015	0.016
3. Tesviyelenmemiş	0.014	0.017	0.020
4. Düzgün Yüzeyli Ganayt	0.016	0.019	0.023
5. Dalgalı Yüzeyli Ganayt	0.018	0.022	0.025
6. Düzgün kazılmış Kayada	0.017	0.020	-
7. Kötü kazılmış Kayada	0.022	0.027	-
c. Tabanı Beton kaplı, Yan Yüzeyleri,			
1. Düzgün taşlarla örülü (harçla)	0.015	0.017	0.020
2. Rastgele şekilli taşlarla örülü (harçla)	0.017	0.020	0.024
3. Moloz veya Riprap	0.020	0.030	0.035
d. Asfalt Yüzeyli			
1. Pürüzsüz	0.013	0.013	-
2. Pürüzlü	0.016	0.016	-

MANNING PÜRÜZLÜLÜK KATSAYISI, n , DEĞERLERİ (Devam)

KANALIN TÜRÜ VE TANIMI	Minimum	Normal	Maksimum
C. KAZILMIŞ KANALLAR			
a. Kıvrımsız ve üniform toprak kanal			
1. Temiz, yeni tamamlanmış	0.016	0.018	0.020
2. Temiz, çalılımlı, çakıllı	0.018	0.022	0.025
3. Çakıllı, üniform, temiz	0.022	0.025	0.030
4. Kısa çimlik ve az yabancı otlu	0.022	0.027	0.033
b. Kıvrımlı toprak kanal			
1. Bitkisel örtüsüz	0.023	0.025	0.030
2. Az yabancı otlu ve çimlik	0.025	0.030	0.033
3. Yoğun yabancı otlu ve derin kanallarda su bitkileri	0.030	0.035	0.040
4. Yan yüzeyi molozla kaplı tabanı toprak	0.028	0.030	0.035
5. Yan yüzeyi yabancı otlu kaplı tabanı taşlık	0.025	0.035	0.040
6. Yan yüzeyi temiz tabanı iri taşlık	0.030	0.040	0.050
c. Kayalık zeminde			
1. Pürüzsüz ve üniform	0.025	0.035	0.040
2. Düzensiz, çentikli, ...	0.035	0.040	0.050
d. Yabancı otları ve çalılıkları kestilmemiş bakımsız kanal			
1. Akım derinliğinde yabancı otlu kaplı	0.050	0.080	0.120
2. Tabanı temiz, yanları çalılık	0.040	0.050	0.080
3. Yoğun çalılık, akım derinliği büyük	0.080	0.100	0.140
D. TABİİ AKARSULAR			
<i>D-1. Küçük Akarsular (Su yüzü genişliği < 35 m)</i>			
a. Ova Akarsuları			
1. Temiz, kıvrımsız, kollara ayrılmamış, ve gölleşme olmayan	0.025	0.030	0.033
2.1 ile aynı, fakat daha taşlık ve yabancı otlu	0.030	0.035	0.040
3. Temiz, kıvrımsız, yer yer gölleşmiş ve kumsallı	0.033	0.040	0.045
4.3 ile aynı, fakat daha taşlık ve yabancı otlu	0.035	0.045	0.050
5. Yoğun yabancı otlu, derin gölleşme, veya taşkın yatağı toprak ve çalılarla kaplı	0.075	0.100	0.150
b. Dağ Akarsuları			
Akarsu yatağı bitkisel örtüsüz, şevler dik, kıyıdaki çalılar ve ağaçlar yüksek kotlarda su altında			
1. Tabanı çakıllı ve iri kayalık	0.030	0.040	0.050
2. Tabanı büyük kaya parçalarından oluşmuş	0.040	0.050	0.070
<i>D-2. Taşkın Yatağı</i>			
a. Çalı olmayan çayırılık, otlak alanı			
1. Kısa çimenlik	0.025	0.030	0.035
2. Uzun çimenlik	0.030	0.035	0.050
b. Ekilebilir tarlalar			
1. Ekim yapılmamış	0.020	0.030	0.040
2. Karık usulü ekili (Sıra ekim)	0.025	0.035	0.045
3. Alan usulü ekili	0.030	0.040	0.050
c. Çalılık			
1. Yoğun yabancı otlu ve derin çalılık	0.035	0.050	0.070
2. Kışın normal çalılık ve ağaçlık	0.045	0.045	0.110
3. Yazın normal çalılık ve ağaçlık	0.070	0.100	0.160
d. Ağaçlık			
1. Kıvrımsız, Yoğun Söğüt ağaçlığı ile kaplı	0.110	0.150	0.200
2. Ağaç kütüklerinden ve filizlerinden temizlenmiş	0.030	0.040	0.050
3. Ağaç kütüklerinden temizlenmiş, gümrüklü	0.050	0.060	0.080
<i>D-3. Büyük Akarsular (Su yüzü genişliği > 35 m)</i>			
n değerleri Küçük Akarsular ile aynıdır			
a. Düzenli çalısız ve iri kaya parçasız	0.025	-	0.060
b. Düzensiz ve pürüzlü	0.035	-	0.100