



UnitedWire

THE UK'S LEADING WIRE WEAVER



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WIRE CLOTH REFERENCE DATA

Plain Weave Standard Square Mesh Specifications

T = Twill ● = Tensile Bolting Cloth

mesh	wire dia. (mm)	nominal aperture (mm)	% open area	approx. kg/m ² (for Stainless Steel)	mesh	wire dia. (mm)	nominal aperture (mm)	% open area	approx. kg/m ² (for Stainless Steel)
2	2.000	10.700	71%	3.97	10	0.710	1.830	52%	2.50
2	1.600	11.100	76%	2.54	10	0.600	1.940	58%	1.79
3	2.000	6.467	58%	5.96	10	0.560	1.980	61%	1.56
3	1.600	6.867	66%	3.82	10	0.500	2.040	65%	1.24
3	1.400	7.067	70%	2.92	12	0.800	1.317	39%	3.82
4	2.000	4.350	47%	7.95	12	0.600	1.517	51%	2.15
4	1.600	4.750	56%	5.09	12	0.560	1.557	54%	1.87
4	1.200	5.150	66%	2.86	12	0.450	1.667	62%	1.21
5	1.600	3.480	47%	6.36	14	0.600	1.214	45%	2.50
5	1.200	3.880	58%	3.58	14	0.500	1.314	52%	1.74
5	1.000	4.080	65%	2.48	14	0.450	1.364	57%	1.41
6	1.600	2.633	39%	7.63	14	0.315	1.499	68%	0.69
6	1.200	3.033	51%	4.29	16	0.630	0.958	36%	3.15
6	1.000	3.233	58%	2.98	16	0.560	1.028	42%	2.49
6	0.900	3.333	62%	2.41	16	0.450	1.138	51%	1.61
6	0.710	3.523	69%	1.50	16	0.400	1.188	56%	1.27
7	0.900	2.729	57%	2.82	16	0.355	1.233	60%	1.00
7	0.800	2.829	61%	2.23	16	0.236	1.352	72%	0.44 ●
7	0.710	2.919	65%	1.75	18	0.500	0.911	42%	2.24
8	1.600	1.575	22%	10.17	18	0.400	1.011	51%	1.43
8	1.200	1.975	39%	5.72	18	0.236	1.175	69%	0.50
8	0.710	2.465	60%	2.00	18	0.229	1.182	70%	0.47 ●
8	0.630	2.545	64%	1.58	20	0.560	0.710	31%	3.12
10	0.900	1.640	42%	4.02	20	0.450	0.820	42%	2.01

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3	1.400	7.067	70%	2.92	12	0.800	1.317	39%	3.82
4	2.000	4.350	47%	7.95	12	0.600	1.517	51%	2.15
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5	1.200	3.880	58%	3.58	14	0.500	1.314	52%	1.74
5	1.000	4.080	65%	2.48	14	0.450	1.364	57%	1.41
6	1.600	2.633	39%	7.63	14	0.315	1.499	68%	0.69
6	1.200	3.033	51%	4.29	16	0.630	0.958	36%	3.15
6	1.000	3.233	58%	2.98	16	0.560	1.028	42%	2.49
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7	0.800	2.829	61%	2.23	16	0.236	1.352	72%	0.44 ●
7	0.710	2.919	65%	1.75	18	0.500	0.911	42%	2.24
8	1.600	1.575	22%	10.17	18	0.400	1.011	51%	1.43
8	1.200	1.975	39%	5.72	18	0.236	1.175	69%	0.50
8	0.710	2.465	60%	2.00	18	0.229	1.182	70%	0.47 ●
8	0.630	2.545	64%	1.58	20	0.560	0.710	31%	3.12
10	0.900	1.640	42%	4.02	20	0.450	0.820	42%	2.01

WIRE CLOTH REFERENCE DATA

Twill Weave Standard Square Mesh Specifications

Description

Technical

mesh	warp	nominal aperture (mm)	% open area	approx. kg/m ² (for Stainless Steel)
250	0.040	0.062	37%	0.20
270	0.040	0.054	33%	0.21
300	0.040	0.045	28%	0.24
300	0.036	0.049	33%	0.19
325	0.036	0.042	29%	0.21
400	0.025	0.039	37%	0.12
400	0.030	0.034	28%	0.18
500	0.025	0.026	26%	0.16

Plain Dutch Weave Specifications

mesh	k-up	warp	weft	nominal	absolute range	porosity %	kg/m ²
12	64	0.580	0.400	300	260-280	62%	3.64
12	72	0.400	0.380	300	260-280	62%	3.50
16	80	0.430	0.340	200	210-230	57%	3.05
24	110	0.355	0.250	120	112-125	60%	2.70
30	150	0.230	0.180	90	90-105	60%	1.60
40	200	0.180	0.140	70	70-75	59%	1.30
50	250	0.140	0.114	60	56-63	59%	1.00
80	400	0.125	0.071	40	40-45	55%	0.81

WIRE CLOTH REFERENCE DATA

Twill Dutch Weave Specifications

mesh	k-up	warp	weft	nominal	absolute range	porosity %	kg/m2
80	700	0.100	0.077	25	34-36	40%	1.20
165	800	0.100	0.077	15	24-28	47%	0.71
165	1400	0.068	0.040	10	15-18	37%	0.72
200	1400	0.068	0.040	5	11-13	33%	0.75
325	2300	0.036	0.025	2	7-8	34%	0.47

Reverse Plain Dutch Weave Specifications

mesh	k-up	warp	weft	nominal	absolute range	porosity %	kg/m2
128	36	0.202	0.400	80	95-105	55%	2.70
170	50	0.150	0.300	60	82-90	54%	2.05
290	75	0.090	0.200	40	50-55	53%	1.31
625	124	0.040	0.130	17	25-32	55%	0.80

WIRE CLOTH REFERENCE DATA

Reverse Twill Dutch Weave Specifications

mesh	k-up	warp	weft	nominal	absolute range	porosity %	kg/m ²
132	16	0.355	0.457	250	210-260	45%	4.90
260	40	0.15	0.22	125	80-95	53%	1.95
325	40	0.150	0.300	55	45-75	43%	2.70
400	120	0.065	0.100	60	60-70	61%	0.70

5 Shed Twill Weave Specifications

mesh	k-up	warp	weft	Aperture (mm)	Open Area %	kg/m ²
108	59	0.16	0.16	0.075x0.271	210-260	1.05
55	35	0.3	0.3	0.162x0.426	80-95	2.00
46	18	0.5	0.5	0.052x0.911	45-75	3.97
30	18	0.500	0.500	0.347x0.911	60-70	2.98

DEFINITIONS AND FORMULAE

Aperture (w)	Space between adjacent parallel wires, in mm. $(25.4 / n) - d$
Wire Diameter (d)	Diameter of wire before weaving, in mm.
Mesh Count (n)	Number of apertures per lineal inch measured from the centre of one wire to a point 1 inch (25.4 mm) distant. $25.4 / (w + d)$
Pitch (p)	Distance between the centres of two adjacent wires in mm. $w + d$ or $25.4 / n$
Warp	Wires running lengthwise in the cloth as woven.
Weft	Wires running crosswise in the cloth as woven.
Open Area %	The fractional open surface area of the wirecloth in the flow direction $(w^2) / (w + d)^2 * 100$ (applicable for square meshes only).
Porosity	The fractional void volume of the mesh.



HOW TO ORDER

When defining a wirecloth specification it is usual to use the mesh count as a standard measurement. This equates to the number of wires or apertures per lineal inch (25.4mm). Mesh counts may also be specified per cm, per cm², per French Inch, or also commonly expressed as the size of the aperture. For different applications, the strength of the wirecloth in comparison to the wire diameter and/or the open area of the cloth are critical factors, so it is therefore usual to supplement the mesh count measurement with either a required wire diameter, aperture size, open area percentage, or a combination of these measurements.

When ordering or enquiring please provide the following information:

- Mesh count or aperture size (and/or open area)
- Wire diameter(s)
- Type and weave of cloth
- Alloy type
- Number and size of rolls or pieces
- Application if relevant
- Any tolerances, drawings and/or special instructions
- Shipping, packing and documentation requirements

USEFUL CONVERSIONS

1 inch= 25.4mm	1 foot= 305mm	1 metre= 3.281 feet	1 metre = 1000mm
1 cm= 10mm	1mm= 0.001 metres	1 micron= 0.001mm	1 square metre= 10.764 sq. feet

From Melt to Mesh

United Wire has developed strong working relationships with audited and approved manufacturers of wire, including fully vertically integrated businesses, providing access to an extensive range of weavable alloys precision drawn to the highest standards.

From standard stainless steels to advanced performance Nickel Chrome alloys, we have the experience and the expertise to provide wirecloth tailored to a customer's unique requirements.

Our manufacturing programme is focussed on the production of customized technical weaves in specialized materials, and although the mechanical properties of any metal or alloy may restrict the option of weaving the full range of wirecloth specifications, we will investigate all possibilities, including special melts and one-off manufacturing, in our commitment to meeting and surpassing the expectations of our customers.

The list provided is a general guide to commonly woven materials and is not intended to be a comprehensive directory - please ask for more information. All wire woven by UW is purchased in accordance with strict quality specifications developed by metallurgical experts.

Materials for Woven Wirecloth

Typical Composition (%) - Key Elements, nominal values

For general guidance only, actual compositions will vary within standard norms

300 Series Stainless Steels - for high performance in general commercial and industrial applications

	Ni	Cr	Cu	Mo	Other	Werkstoff no. (trade name)	Similar UNS	Density kg/m ³
304	8-12	17-20				1.4301	S30400 X5CrNi 18-10	7800
304L	8-12	17-20			C 0.030 max	1.4306	S30403 X2CrNi 19-11	7800
316	10-14	16-18.5		2-3		1.4401	S31600 X5CrNiMo 17-12-2	7800
316L	8-12	17-20			C 0.030 max	1.4404	S31603 X2CrNiMo 17-12-2	7800
321	9-12	17-19			Ti	1.4541	S32100 X10CrNiTi 18-10	7800

Specialized Stainless Steels and Nickel Based Alloys - for advanced performance in high integrity applications

	Ni	Cr	Cu	Mo	Other	Werkstoff no. (trade name)	Similar UNS	Density kg/m ³
310/314	19-22	24-26				1.4841	S31400/S31000 X15CrNiSi 25-20	7800
904L	24-26	19-21	1.2-2	4-5		1.4539	N08904 X1NiCrMoCu 25-20-5	7800
Alloy 20	32-34	19-21	3-4	2-3	Nb+Ta	2.4660 (20 CB-3***)	N08020 NiCr20CuMo	8055
Alloy 400	63		28-34			2.4360 (Monel 400*)	N04400 NiCu30Fe	8880
Alloy 600	72	14-17				2.4816 (Inconel 600*)	N06600 NiCr15Fe	8470
Alloy 601	58-63	21-25			Al 1.0-1.7	2.4851 (Inconel 601*)	N06601 NiCr23Fe	8470
Alloy 625	58	20-23			Al, Ti, Co, Nb	2.4856 (Inconel 625*)	N06625 NiCr22Mo9Nb	8470
Alloy 800	30-35	19-23	0.75		Ti, Al	1.4876 (Incoloy 800*)	N08800 X10NiCrAlTi32-20	7940
Alloy 825	38-46	19.5-23.5	1.5-3	2.5-3.5	Ti 0.6-1.2	2.4858 (Incoloy 825*)	N08825 NiCr21Mo	8140
Alloy C22	56	20-22		12.5-14.5	Co, W, V	2.4602 (Hastelloy C22**)	N06022 NiCr21Mo14W	8690
Alloy C276	55	14.5-16.5		15-17	Co, W, V	2.4819 (Hastelloy C276**)	N10276 NiMo16Cr15W	8740
Alloy DS	34-37	15-17				1.4864 (Incoloy DS*)	N08330 X12NiCrSi36-16	7970
Fecral		21			Al 4.5, Fe	1.4765	CrAl25-5	7300

Nickel & Non-Ferrous

	Ni	Cr	Cu	Mo	Other	Werkstoff no. (trade name)	Similar UNS	Density kg/m ³
Nickel	99					2.4060/2.4066 (Nickel 200*)	N02200	8940
High Grade Nickel	99.9					(Nickel 270*)	N02270	8940
Bronze 94/6			Bal		Sn 6-6.5	CW452K	C51980 CuSn 6	8860
Brass 67/37			62-65		Zn bal	CW508L	C27400 CuZn 37	8480
Brass 70/30			69-70		Zn bal	CW505L	C26000 CuZn 30	8480
Copper			+99			2.0065	C11000 E-Cu	8960

* Trade name of Special Metals

** Trade Name of Haynes Alloys

*** Carpenter Specialty Alloys