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Mesh (scale)

From Wikipedia, the free encyclopedia

Mesh is often used in determining the [particle-size distribution](#) of a [granular material](#) . For example, a sample from a truckload of peanuts may be placed atop a **mesh** with 5 mm openings. When the mesh is shaken, small broken pieces and dust pass through the mesh while whole peanuts are retained on the mesh. A commercial peanut buyer might use a test like this to determine if a batch of peanuts has too many broken pieces. This type of test is common in some industries, and, to facilitate uniform testing methods, several **standardized mesh series** have been established.

Metal surfaces [mechanically polished](#) are designated as having a [mechanical finish](#) related to the abrasive used.

Commercial Sieve Mesh Dimensions

Sieve size	Opening		Standard Mesh		Tensile Bolting Cloth			Mill Grade			Market Grade			
	(mm)	(in)	(µm)	US	Tyler	Mesh	Opening	Wire	Mesh	Opening	Wire	Mesh	Opening	Wire
5.60	0.22	5600	3.5	-	-	-	-	-	-	-	-	-	-	-
4.75	0.187	4750	4	-	-	-	-	-	-	-	-	-	-	-
4.00	0.157	4000	5	-	-	-	-	-	-	-	-	-	-	-
3.35	0.132	3350	6	-	-	-	-	-	-	-	-	-	-	-
2.80	0.110	2800	7	-	-	-	-	-	-	-	-	-	-	-
2.36	0.093	2360	8	-	-	-	-	-	-	-	-	-	-	-
2.00	0.079	2000	10	-	-	-	-	-	-	-	-	-	-	-
1.70	0.0661	1700	12	10	14	0.062	0.009	12	0.065	0.018	12	0.0603	0.023	
1.40	0.0555	-	14	12	16	0.0535	0.009	14	0.054	0.017	14	0.051	0.0204	
1.18	0.0469	-	16	14	18	0.0466	0.009	16	0.0465	0.016	16	0.0445	0.0181	
1.00	0.0394	-	18	16	22	0.0380	0.0075	18	0.0406	0.015	18	0.0386	0.0173	
0.85	0.0331	850	20	20	24	0.0342	0.0075	20	0.0360	0.014	20	0.034	0.0162	
0.71	0.0278	710	25	24	28	0.0282	0.0075	24	0.0287	0.013	24	0.0277	0.014	
0.60	0.0232	600	30	28	34	0.0229	0.0065	30	0.0238	0.0095	-	-	-	
0.50	0.0197	500	35	32	38	0.0198	0.0065	34	0.0204	0.009	30	0.0203	0.0128	
0.47	-	-	-	-	40	0.0185	0.0065	36	0.0188	0.009	-	-	-	
0.465	-	-	-	-	42	0.0183	0.0055	38	0.0178	0.0085	-	-	-	
0.437	-	-	-	-	44	0.0172	0.0055	-	-	-	35	0.0176	0.0118	
0.425	0.0165	425	40	35	46	0.0162	0.0055	40	0.0165	0.0085	-	-	-	
0.389	-	-	-	-	48	0.0153	0.0055	-	-	-	40	0.0150	0.0104	
0.368	-	-	-	-	50	0.0145	0.0055	-	-	-	-	-	-	
0.355	0.0139	355	45	42	52	0.0137	0.0055	45	0.0142	0.008	-	-	-	
0.310	-	-	-	-	60	0.0122	0.0045	50	0.0125	0.0075	-	-	-	
0.300	0.0117	300	50	48	62	0.0116	0.0045	55	0.0112	0.007	-	-	-	
0.282	-	-	-	-	64	0.0111	0.0045	-	-	-	50	0.0110	0.0090	
0.270	-	-	-	-	70	0.0106	0.0037	-	-	-	-	-	-	

0.260	-	-	-	-	72	0.0102	0.0037	-	-	-	-	-	-
0.250	0.0098	250	60	60	74	0.0098	0.0037	60	0.0102	0.0065	-	-	-
0.241	-	-	-	-	76	0.0095	0.0037	-	-	-	-	-	-
0.231	-	-	-	-	78	0.0091	0.0037	-	-	-	60	0.0092	0.0075
0.212	0.0083	212	70	65	84	0.0084	0.0035	-	-	-	-	-	-
0.193	-	-	-	-	90	0.0076	0.0035	-	-	-	-	-	-
0.180	0.0070	180	80	80	94	0.0071	0.0035	-	-	-	80	0.0070	0.0055
0.165	-	-	-	-	105	0.0065	0.0030	-	-	-	-	-	-
0.150	0.0059	150	100	100	120	0.0058	0.0025	-	-	-	100	0.0055	0.0045
0.125	0.0049	125	120	115	145	0.0047	0.0022	-	-	-	120	0.0046	0.0037
0.105	0.0041	105	140	150	165	0.0042	0.0019	-	-	-	150	0.0041	0.0026
0.090	0.0035	90	170	170	200	0.0034	0.0016	-	-	-	180	0.0033	0.0023
0.074	0.0029	74	200	200	230	0.0029	0.0014	-	-	-	200	0.0029	0.0021
0.063	0.0024	63	230	250	-	-	-	-	-	-	250	0.0024	0.0016
0.053	0.0021	53	270	270	300	0.0021	0.0012	-	-	-	270	0.0021	0.0016
0.044	0.0017	44	325	325	-	-	-	-	-	-	325	0.0017	0.0014
0.037	0.0015	37	400	400	-	-	-	-	-	-	400	0.0015	0.0010
0.025	0.0010	25	500	-	-	-	-	-	-	-	500	0.0010	0.0010

Further information on equivalent mesh sizes from 5 μm to 25.4 mm is available.^{[1][2]} Available sieve sizes are usually regulated by standards. Those in common use are ISO 565:1990 and ISO 3310-1:2000 (international), EN 933-1(European) and ASTM E11:01 (US). EN standards are available with national 'badging' so appear as BS EN, FR EN, DE, etc.

Although such information contains long lists of sieve sizes, in practice sieves are normally used in series in which each member sieve is selected to pass particles approximately $1/\sqrt{2}$ or 1/2 smaller in size than the previous sieve. For example the series 80mm, 63, 40, 31.5, 20, 16, 14, 10, 8, 6.3, 4, 2.8, 2 mm is routinely available in many European countries or the series with the larger steps 63, 31.5, 16, 8, 4, 2, 1 mm, 500 μm , 250, 125, 63 μm is commonly used to grade aggregates in the construction industry. Such series are somewhat derived from the principles originally established by Renard and now known as **Renard series** . Some users replace some of those indicated above with 45, 22.4, 12.5, 11.2 and 5.6 mm sieves, mostly because of historical usage of such sizes in their country or industry.

References [edit]

- ↑ *Equivalent mesh sizes from 5microns to 25.4mm* [?], retrieved 2009-05-19
- ↑ *Particle Size Conversion* [?], retrieved 2012-01-24

External links [edit]

- A comparison of widely used sieve size specifications

Categories: Customary units of measurement | Systems of units

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