

Stone, Belt, Paper, Film and Compound Grit Comparison

Description	ANSI/CAMI (USA)	FEPA (Europe)	JIS	JIS	Shapton Hones	Norton Stones	DMT Diamond Plates	Trizact	Grit size in microns
			Old	New					
	8								2210
	10								1854
		P12							1764
	12								1600
		P16							1322
	16								1092
		P20							984
	20								940
	24								686
		P24							740
		P30							622
	30								559
		P36							524
	36								483
		P40							412
	46								356
									351
		P50							326
	54								305
									268
		P60							260
	60								254
	70								203
		P80						A300	195
	80								165
		P100							156
	90								145
		P120						A160	127
					Pro 120 Grit	Coarse Crystolon(^)			122.5
	100								122
							Extra-Extra Coarse		120
100 micron belt	120								102
									100
		P150				Coarse India(#)		A130	97
80 Micron belt	150								89
									80
		P180	180			Medium Crystolon(^)		A110	78
	180								76
3M 74 micron diamond stone									74
					Pro & Glass 220 Grit				66.82
		P220	220			220 Grit Water Stone		A90	65
	220								63
					240 Grit				61.25
60 Micron belt			240				Extra Coarse		60
		P240						A80	58
				240					57
						Medium India(#)			53.5
		F230, P280						A65	53
			280		280 Grit				52.5
	240								50
				280					48
		P320	320					A60	46
					Pro 320 Grit				45.94
		F240				Fine Crystolon(^)	Coarse		45
					360 Grit				40.83
3M 40 micron diamond stone & belt		P360	360	320					40
	280								39
					400 Grit				36.75
Medium diamond		F280				360 Grit Water Stone			36
35 Micron belt		P400		360		Fine India(#)		A45	35
			400						34
	320								31
30 Micron belt		P500		400				A40	30
					Glass 500 Grit				29.4
		F320							29
			500						28
		P600						A30	25.8
				500			Fine		25
					600 Grit				24.5
			600						24
		F360							23
Extra Fine India(#), 22 Micron belt	400	P800				600 Grit Water Stone			22
			700		700 Grit				21
20 Micron belt, 3M 20 micron stone				600					20
	500								19
					800 Grit				18.38
18 Micron belt		P1000	800					A20	18
		F400		700					17
	600					800 Grit Water Stone			16
			1,000						15.5
15 Micron belt, 15 micron SiC paper		P1200						A16	15
					Pro & Glass 1,000 Grit				14.7
Medium Ceramic	700			800		1,000 Grit Water Stone			14

			1,200					13
		P1500						12.6
					1,200 Grit			12.25
12 micron belt	800							12
				1,000				11.5
						1,200 Grit Water Stone		11
								10.8
			1,500					10.5
		P2000						10.3
3M 10 micron diamond stone								10
					Pro 1,500 Grit			9.8
				1,200				9.5
		F600				1,500 Grit Water Stone		9.2
9 micron belt	900						Extra-Fine	9
			2,000					8.5
		P2500						8.4
				1,500				8
						2,000 Grit Water Stone		7.5
					Pro & Glass 2,000 Grit			7.35
	1,000		2,500				Ceramic	7
			2,000					6.7
		F800						6.5
6 Micron belt						4,000 Grit Water Stone		6
					2,500 Grit			5.88
			3,000					5.7
			2,500					5.5
5 micron SiC paper	1,200	F1000						5
					3,000 Grit			4.9
				3,000				4
					Glass 4,000 Grit			3.68
Green Rouge, 3 Micron belt, Tormek compd(~)	1,500	F1200	4,000			8,000 Grit Water Stone	Extra-Extra-Fine	3
						Pro 5,000 Grit		2.94
						6,000 Grit		2.45
		F1500	6,000					2
					Pro & Glass 8,000 Grit			1.84
					10,000 Grit			1.47
		F2000	8,000		Pro 12,000 Grit			1.2
1 Micron belt, Linde C(\$)	2,000							1
					Pro 15,000 Grit			0.98
					Glass 16,000 Grit			0.92
					20,000 Grit			0.74
Linde B(\$)						15,000 Grit Water Stone		0.5
					Pro & Glass 30,000 Grit			0.49
Linde A(\$)								0.3
					60,000 Grit			0.25
					100,000 Grit			0.15
					200,000 Grit			0.07

25.4 Microns = 1 Thousandth of a US Inch (0.001") - 1 Micron = 3.9 Hundred Thousandths of a US Inch (0.000393700787") - 0.254 Microns = 1 Millionth of a US Inch (0.000001")

It is impossible to make exact comparisons between all the different abrasives because different standards are used for average, minimum and maximum size, the percentage allowed outside those limits, and the distribution of sizes within those limits, but this list is the closest comparison available since all entries are compared to microns by their respective manufacturers.

~ Tormek compound contains a variety of grains of various size, the smallest down to 0.7 micron. The average effective size is 3 micron.
^ Crystolon is Norton Abrasives tm for Silicon Carbide stones
India is Norton Abrasives tm for Aluminum Oxide stones
\$ Raybrite and Linde compounds are aluminum oxide powders
Old JIS standard is measured via sedimentation tube - Used until 1973
New JIS standard measured via electrical resistance - Used since 1973
Shapton sizes are from their web site www.shaptonstones.com
DMT sizes from their web site www.dmtsharp.com
All Norton sizes taken from "Norton Abrasives Grit Table"
Trizact Numbers from "3M Superabrasive & Microfinishing Product Application Guide"
ANSI Numbers from Washington Mills "ANSI GRIT SIZE CONVERSION CHART" in average Microns
FEPA Numbers from LECO Corporation grit comparison "Sheet 15"
FEPA Variance is based on a published variance rate of 75% at listed size with 25% variance within specified limits.
FEPA & Old JIS Variance Numbers from Schmitz Metallographiebedarf "Korngrößenvergleich" - Thanks to Olivia of SRP Forums!
New Japanese Industrial Standard Variance Chart from Naniwa High-purity abrasive powders Comparison Sheet - Thanks to JimR of SRP Forums!

FEPA Coated Abrasives Variance Chart (Microns)	P series
P240	58.5±2.0
P280	52.2±2.0
P320	46.2±1.5
P360	40.5±1.5
P400	35.0±1.5
P500	30.2±1.5
P600	25.8±1.0
P800	21.8±1.0
P1000	18.3±1.0
P1200	15.3±1.0
P1500	12.6±1.0
P2000	10.3±0.8
P2500	8.4±0.5

FEPA Bonded Abrasives Variance Chart (Microns)	F series
F230	55.7±3.0
F240	47.5±2.0
F280	39.9±1.5
F320	32.8±1.5
F360	26.7±1.5
F400	21.4±1.0
F500	17.1±1.0
F600	13.7±1.0
F800	11.0±1.0
F1000	9.1±0.8
F1200	7.6±0.5
F1500	2.0±0.4
F2000	1.2±0.3

Old Japanese Industrial Standard Variance Chart	Microns
240	60±4
280	52±3
320	46±2.5
360	40±2
400	34±2
500	28±2
600	24±1.5
700	21±1.3
800	18±1
1000	15.5±1
1200	13±1
1500	10.5±1
2000	8.5±0.7
2500	7±0.7
3000	5.7±0.5

Some Japanese Water Stone Related Kanji:
六十型 = Type 60
キング = King brand
砥石 = Toishi whetstone
スエヒロ = Suehiro brand
天然砥石 = Natural Whetstone
最高級品 = High grade product
ベスタ = Besuta / Bester brand
京都特産 = Kyoto special product
酔拳 = Suishin Brand "Drunken Heart"
北山 = Kitayama / North Mountain brand
嵐山 = Arashiyama / Storm Mountain brand
ナニワ = Naniwa Kenma brand (エビ = ebi / shrimp trademark)
シャプトン = Shaputon / Shapton brand (刃の黒幕 = kuromaku / professional grade)

Compiled by Smokintbird with help from Olivia and JimR of SRP Forums and Yuzuha of Knifeforums

New Japanese Industrial Standard Variance Chart	Max Size	3% Max	50% Average	94% Minimum
240	127	103	57±3	40
280	112	87	48±3	33
320	98	74	40±2.5	27
360	86	66	35±2	23
400	75	58	30±2	20
500	63	50	25±2	16
600	53	43	20±1.5	13
700	45	37	17±1.3	11
800	38	31	14±1	9
1000	32	27	11.5±1	7
1200	27	23	9.5±0.8	5.5
1500	23	20	8±0.6	4.5
2000	19	17	6.7±0.6	4
2500	16	14	5.5±0.5	3
3000	13	11	4±0.5	2
4000	11	8	3±0.4	1.3
6000	8	5	2±0.4	0.8
8000	6	3.5	1.2±0.3	0.6 (75% Minimum)