



A&E APPAREL THREAD SIZE COMPARISON CHART

Technical Bulletin

Version 01.19

Thread Construction and A&E Brand	Application	Tex Size	Denier	Metric	Far East	D-Tex	Cotton Count	Avg.* Strength (lbs.)	Avg.* Strength (kgs.)	Avg.* Strength (cN)	Ndl Size** Min. Size	
<b>D-Core®</b> 100% Short Staple Cotton  <b>Design-A-Core®</b> Matte Two Tone	Light Weight	24	216	120	M120	240	46/2	2.23	1.01	992	75 / 11	
		35	315	80	M80	350	33/2	3.01	1.37	1,339	80 / 12	
	Medium Weight	40	360	75	M75	400	29/2	3.63	1.65	1,615	90 / 14	
		50	450	60	M60	500	20/2	6.64	3.01	2,953	100 / 16	
	Heavy Weight	60	540	50	M50	600	18/2	6.87	3.12	3,056	110 / 18	
		80	720	36	M36	800	15/2	7.56	3.43	3,363	120 / 19	
		105	945	27	M27	1050	12/2	8.13	3.69	3,616	125 / 20	
	Ex-Heavy Weight	120	1080	25	M25	1200	15/3	10.70	4.85	4,759	130 / 21	
		135	1215	20	M20	1350	12/3	12.50	5.67	5,560	140 / 22	
		150	1350	18	M18	1500	15/4	14.75	6.69	6,561	160 / 23	
		180	1620	15	M15	1800	12/4	16.43	7.45	7,308	180 / 24	
		210	1890	13	M13	2100	5/2	26.45	12.00	11,765	180 / 24	
		240	2160	12	M12	2400	12/5	19.25	8.73	8,562	200 / 25	
	<b>D-Core® RFD</b> 100% Long Staple Cotton  Ready for garment dyeing	Heavy Weight	60	540	50	M50	600	29/3	3.37	1.53	1,499	110 / 18
80			720	36	M36	800	20/3	4.47	2.03	1,988	120 / 19	
105			945	27	M27	1050	17/3	5.13	2.33	2,282	125 / 20	
Ex-Heavy Weight		120	1080	25	M25	1200	15/3	5.99	2.72	2,664	130 / 21	
<b>Perma Core® Ultimate</b> Poly-Wrapped Poly-Core  Shirting / Tailored Clothing		Ex-Light Weight	16	144	180	M180	160	66/2	1.74	0.79	774	60 / 8
			18	162	160	M160	180	59/2	1.85	0.84	823	65 / 9
		Light Weight	21	189	140	M140	210	53/2	2.50	1.13	1,027	70 / 10
	24		216	120	M120	240	45/2	2.60	1.18	1,156	70 / 10	
	Medium Weight	40	360	75	M75	400	29/2	4.51	2.05	2,006	80 / 12	
Ex-Light Weight	18	162	160	M160	180	59/2	2.04	0.93	907	70 / 10		
<b>Perma Core®</b> Poly-Wrapped Poly-Core	Light Weight	24	216	120	M120	240	45/2	2.77	1.26	1,232	75 / 11	
		30	270	90	M90	300	35/2	3.60	1.63	1,601	80 / 12	
	Medium Weight	40	360	75	M75	400	29/2	4.55	2.06	2,024	90 / 14	
		50	450	60	M60	500	20/2	6.69	3.03	2,976	100 / 16	
	Heavy Weight	60	540	50	M50	600	18/2	7.10	3.22	3,158	110 / 18	
		80	720	36	M36	800	15/2	9.21	4.18	4,097	120 / 19	
Ex-Heavy Weight	105	945	27	M27	1050	12/2	10.80	4.90	4,804	125 / 20		
	120	1080	25	M25	1200	15/3	13.68	6.21	6,085	130 / 21		
	210	1890	13	M13	2100	5/2	26.70	12.11	11,876	180 / 24		
	240	2160	12	M12	2400	10/4	24.75	11.23	11,009	200 / 25		
Ex-Heavy Weight	300	2700	8	M8	3000	7/4	28.13	12.76	12,512	230 / 26		

Notes:\*SEB - Single End Break (lbs.) All strengths are for comparative purposes and should not be used as minimum requirements.  
 \*\*Minimum recommended needle sizes. Includes both the newer Metric needle size designation and the older Singer needle size designation.



A&E APPAREL THREAD SIZE COMPARISON CHART

Thread Construction and A&E Brand	Application	Tex Size	Denier	Metric	Far East	D-Tex	Cotton Count	Avg.* Strength (lbs.)	Avg.* Strength (kgs.)	Avg.* Strength (cN)	Ndl Size** Min. Size
<b>Anecot®</b> 100% Short Staple Cotton		27	243	100	M100	270	42/2	1.15	0.52	512	75 / 11
	Light Weight	30	270	90	M90	300	35/2	1.26	0.57	560	80 / 12
		40	360	75	M75	400	29/2	1.59	0.72	707	90 / 14
	Medium Weight	50	450	60	M60	500	35/3	2.02	0.92	898	100 / 16
		60	540	50	M50	600	29/3	2.52	1.14	1121	110 / 18
		70	630	40	M40	700	25/3	2.97	1.35	1321	110 / 18
	Heavy Weight	80	720	36	M36	800	29/4	3.39	1.54	1508	120 / 19
		90	810	30	M30	900	25/4	4.00	1.81	1779	120 / 19
		105	945	27	M27	1050	16/3	5.36	2.43	2384	125 / 20
		150	1350	18	M18	1500	16/4	6.61	3.00	2940	160 / 23
	Ex - Heavy Weight	270	2430	10	M10	2700	9/4	11.26	5.11	5008	200 / 25
		350	3150	8	M8	3500	9/5	15.53	7.04	6908	230 / 26
450		4050	7	M7	4500	9/6	17.92	8.13	7971	250 / 27	
<b>Anecot® Plus</b> 100% Long Staple Cotton		21	189	140	M140	210	52/2	1.21	0.55	538.208	70 / 10
	Light Weight	30	270	90	M90	300	37/2	1.78	0.81	792	80 / 12
		35	315	80	M80	350	30/2	2.28	1.03	1014	80 / 12
	Medium Weight	40	360	75	M75	400	44/3	2.42	1.10	1076	90 / 14
		105	945	60	M60	1050	35/3	2.93	1.33	1303	100 / 16
60		540	50	M50	600	30/3	3.51	1.59	1561	110 / 18	
<b>Perma Core® Ultimate</b> Poly-Wrapped Poly-Core		70	630	40	M40	700	25/3	4.31	1.96	1917	110 / 18
	Heavy Weight	80	720	36	M36	800	30/4	4.99	2.26	2220	120 / 19
		90	810	30	M30	900	25/4	5.95	2.70	2646.56	120 / 19
		105	945	27	M27	1050	16/3	6.55	2.97	2913	125 / 20
		120	1080	25	M25	1200	10.5/2	6.63	3.01	2949	130 / 21
<b>Perma Core®</b>	Ex - Heavy Weight	135	1215	20	M20	1350	18/4	8.24	3.74	3665	140 / 22
		240	2160	12	M12	2400	10/4	14.52	6.59	6458	200 / 25
		270	2430	10	M10	2700	8/4	14.61	6.63	6499	230 / 26
		300	2700	8	M8	3000	10/5	18.09	8.21	8046	230 / 26
		450	4050	7	M7	4500	8/6	26.51	12.02	11792	250 / 27
	Medium Weight	60	540	50	M50	600	30/3	3.69	1.67	1641	110 / 18
	Medium/Heavy Weight	80	720	36	M36	800	30/4	4.53	2.05	2015	120 / 19
	Heavy Weight	105	945	27	M27	1050	16/3	6.55	2.97	2913	125 / 20



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Thread Construction and A&E Brand	Application	Tex Size	Denier	Metric	Far East	D-Tex	Cotton Count	Avg.* Strength (lbs.)	Avg.* Strength (kgs.)	Avg.* Strength (cN)	Ndl Size** Min. Size
Perma Spun® Global Brand Spun Poly  Excell® NAFTA / CAFTA Spun Poly  Spun Kool® Spun Poly- FR Finish  100% Spun Polyester	Ex-Light Weight	16	144	180		160	70/2	1.23	0.56	547	65 / 9
		18	162	160	602	180	60/2	1.50	0.68	667	70 / 10
		21	189	140	803	210	80/3	1.73	0.78	770	70 / 10
	Light Weight	21	189	140	502	210	53/2	1.71	0.78	761	70 / 10
		27	243	100		270	43/2	2.18	0.99	970	75 / 11
	Medium Weight	27	243	100	603	270	60/3	2.31	1.05	1,027	75 / 11
		30	270	90		300	53/3	2.61	1.18	1,161	80 / 12
		40	360	75		400	29/2	3.79	1.72	1,686	90 / 14
	Heavy Weight	45	405	60	403	450	39/3	3.66	1.66	1,628	100 / 16
		60	540	50		600	19/2	4.91	2.23	2,184	110 / 18
		60	540	50	604	600	29/3	4.80	2.18	2,135	110 / 18
		70	630	40		700	16/2	6.39	2.90	2,842	110 / 18
	Ex-Heavy Weight	80	720	36		800	14/2	7.09	3.22	3,154	120 / 19
		90	810	30	606/203	900	19/3	7.80	3.54	3,469	120 / 19
		105	945	27		1050	16/3	9.76	4.43	4,341	125 / 20
		120	1080	25	204	1200	20/4	10.67	4.84	4,746	130 / 21
Magic® Air-Entangled Polyester	Light Weight	135	1215	20	T22	1350	12/3	13.21	5.99	5,876	140 / 22
		210	1890	13		2100	8/3	19.42	8.81	8,638	200 / 25
	Medium Weight	240	2160	12		2400	12/5	19.80	8.98	8,807	200 / 25
		270	2430	10	Gimp	2700	20/9		-	-	NA
Signature Plus® Air Entangled Trilobal Polyester	Light Weight	21	189	140	M140	210		1.30	0.59	578	70 / 10
		27	243	100	M100	270		2.65	1.20	1,179	75 / 11
	Medium Weight	40	360	75	M75	400		3.89	1.76	1,730	90 / 14
		45	405	60	M60	450		4.93	2.24	2,193	100 / 16
	Heavy Weight	60	540	50	M50	600		7.24	3.28	3,220	110 / 18
		90	810	30	M30	900		9.50	4.31	4,226	120 / 20
Wildcat Plus® and Wildcat® Textured polyester	Medium Weight	135	1215	20	M20	1350		14.16	6.42	6,298	140 / 22
		60	540	50	M50	600		7.24	3.28	3,220	110 / 18
	Heavy Weight	90	810	30	M30	900		9.67	4.39	4,301	125 / 20
		120	1080	25	M25	1200		12.23	5.55	5,440	130 / 21
Wildcat Plus® and Wildcat® Textured polyester	Light Weight	240	2160	12	M12	2400		24.30	11.02	10,809	200 / 25
		18	162	160	M160	180		1.60	0.73	712	65 / 9
	Medium Weight	24	216	120	M120	240		2.02	0.92	898	75 / 11
		35	315	80	M80	350		3.28	1.49	1,459	80 / 12
Heavy Weight	50	450	60	M60	500		5.02	2.28	2,233	90 / 14	
	70	630	40	M40	700		5.88	2.67	2,615	110 / 18	
		105	945	27	M27	1050		8.92	4.05	3,968	125 / 20

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Thread Construction and A&E Brand	Application	Tex Size	Denier	Metric	Far East	D-Tex	Cotton Count	Avg.* Strength (lbs.)	Avg.* Strength (kgs.)	Avg.* Strength (cN)	Ndl Size** Min. Size
Anesoft™ Ultra Soft Microdenier Textured polyester	Light Weight	18	162	160	M160	180		1.47	0.67	654	65 / 9
		24	216	120	M120	240		2.15	0.98	956	75 / 11
	Medium Weight	30	270	90	M90	300		3.04	1.38	1,352	80 / 12
		35	315	80	M80	350		3.10	1.41	1,379	80 / 12
Wildcat® using Repreve® 100% PC Recycled Textured polyester	Light Weight	18	162	160	M160	1800		1.47	0.67	654	70 / 10
		24	216	120	M120	2400		1.90	0.86	845	75 / 11
	Medium Weight	35	315	80	M80	350		2.90	1.32	1,290	80 / 12
Best Stretch® Textured nylon	Light Weight	16	144	180	M180	160		1.56	0.71	694	65 / 9
		24	216	120	M120	240		2.19	0.99	974	75 / 11
	Medium Weight	30	270	90	M90	300		3.23	1.47	1,437	80 / 12
		45	405	60	M60	450		4.20	1.91	1,868	90 / 14
	Heavy Weight	60	540	50	M50	600		6.30	2.86	2,802	110 / 18
Aneflex™ High Extension PBT Filament	Light Weight	27	243	100	M100	270		1.89	0.86	841	70 / 10
	Medium Weight	60	540	50	M50	600		4.51	2.05	2,006	110 / 18
	Heavy Weight	105	945	25	M25	1050		8.15	3.70	3,625	125 / 20
Anesafe® using Nomex® Spun Meta-Aramid	Light Weight	27	243	100	M100	270	43/2	1.62	0.73	721	75 / 11
		Medium Weight	40	360	75	M75	400	43/3	2.57	1.17	1,143
	60		540	50	M50	600	29/3	3.90	1.77	1,735	110 / 18
	Heavy Weight	80	720	36	M36	800	29/4	5.29	2.40	2,353	120 / 19
		90	810	30	M30	900	24/4	6.49	2.94	2,887	125 / 20
Aneguard™ using Kevlar® Spun Para-Aramid	Medium Weight	40	360	75	M75	4000	29/2	6.06	2.75	2,695	100 / 16
		60	540	50	M50	6000	29/3	10.14	4.60	4,510	110 / 18
	Heavy Weight	80	720	36	M36	8000	29/4	14.00	6.35	6,227	120 / 19
		90	810	30	M30	9000	29/5	18.03	8.18	8,020	125 / 20
	X- Heavy Weight	105	945	27	M27	1050	19/4	21.50	9.75	9,563	130 / 21
Embroidery Threads	Application	TKT or Tex Size	Yarn Construction	Denier	D-Tex	Tex Size	Avg.* Strength (lbs)	Avg.* Strength (kgs.)	Avg.* Strength (cN)	Ndl Sz.** Min. Sz.	
Super Strength Rayon®	Light to Med. Wt.	Tkt 40	120d x 2	240	267	27	1.49	0.68	663	65 / 9	
		Tkt 35	150d x 2	300	333	30	1.81	0.82	805	70 / 10	
Super Brite Polyester®	Light to Med. Wt.	Tkt 40	120d x 2	240	267	27	2.65	1.20	1,179	65 / 9	
J Metallic™	Light to Med. Wt.	Tkt 40	240d x 1	240	267	27	1.72	0.78	765	70 / 10	
Signature® Fine* Signature®	Light Weight	Tkt 60*		167	186	16	1.27	0.58	565	60 / 8	
	Medium Weight	Tkt 40		237	263	21	1.83	0.83	814	65 / 9	
		Tkt 30		392	436	35	3.44	1.56	1,530	75 / 11	
	Heavy Weight	Tkt 20		570	633	50	4.48	2.03	1,993	100 / 16	
X-Heavy Weight	Tkt 10		740	822	60	6.45	2.93	2,869	110 / 18		
Moonglow®	Light to Med. Wt.	Tkt 40	120d x 2	240	267	27	1.40	0.64	623	70 / 10	
Super Safe™	Light to Med. Wt.	Tex 27	40 / 2	243	270	27	1.48	0.67	658	70 / 10	

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 \*\*Minimum recommended needle sizes. Includes both the newer Metric needle size designation and the older Singer needle size designation.



### A&E FILAMENT THREAD SIZE COMPARISON CHART

Thread Construction and A&E Brand	Finish Type:	Tex Size	Denier	Metric	Dtex	Old Tkt Size	Cotton Count	Avg.* Strength (lbs.)	Avg.* Strength (kgs.)	Avg.* Strength (cN)	Ndl Size** Min. Size
	BT - Bonded SST - Soft & Stretch STX - Not Stretched										
<b>Anefil Nylon®</b> CF Twisted Multifilament Nylon	SST	14	126	220	140			1.70	0.77	756	60 / 8
	BT, SST, STX	16	144	180	160			2.20	1.00	979	65 / 9
	BT, SST, STX	21	189	140	210			3.41	1.55	1,517	70 / 10
	BT, SST, STX	30	270	90	300	33		4.88	2.21	2,171	75 / 11
	BT, SST, STX	45	405	60	450	46		7.40	3.36	3,292	90 / 14
	BT, SST, STX	70	630	40	700	69		11.31	5.13	5,031	110 / 18
	BT, SST, STX	90	810	30	900	92		15.16	6.88	6,743	125 / 20
	BT	105	945	27	1050			21.50	9.75	9,563	125 / 20
	BT, SST, STX	135	1215	20	1350	138		23.80	10.80	10,586	140 / 22
	BT, SST	210	1890	13	2100	207		35.00	15.88	15,568	180 / 24
	BT, SST	270	2430	10	2700	277		49.00	22.23	21,795	200 / 25
	BT, SST	350	3150	8	3500	346		53.00	24.04	23,574	230 / 26
	BT, SST	400	3600	7	4000	415		75.00	34.02	33,360	250 / 27
	BT, SST	500	4500	6	5000	456		76.00	34.47	33,805	280 / 28
	BT, SST	600	5400	5	6000	554		95.00	43.09	42,256	280 / 28
BT, SST	700	6300	4	7000	693		106.00	48.08	47,149	300 / 29	
<b>Anecord Nylon®</b> CF Monocord Nylon	BMX	16	144	180	160			1.70	0.77	756	65 / 9
	BMX	18	162	160	180			2.50	1.13	1,112	70 / 10
	BMX	30	270	90	300	30		4.80	2.18	2,135	75 / 11
	BMX	35	315	80	350			5.00	2.27	2,224	80 / 12
	BMX	45	405	60	450	46		7.40	3.36	3,292	90 / 14
	BMX	70	630	40	700	63		11.30	5.13	5,026	110 / 18
	BMX	90	810	30	900			15.20	6.89	6,761	125 / 20
	BMX	105	945	27	1050			16.30	7.39	7,250	125 / 20
	BMX	120	1080	20	1200			18.54	8.41	8,247	130 / 21
	BMX	135	1215	20	1350			23.80	10.80	10,586	140 / 22
	BMX	150	1350	18	1500			27.99	12.70	12,450	160 / 23
	BMX	180	1620	15	1800			35.96	16.31	15,995	180 / 24
	BMX	350	3150	8	3500			53.10	24.09	23,619	230 / 26

Notes:\*SEB - Single End Break (lbs.) All strengths are for comparative purposes and should not be used as minimum requirements. SEB data for filament products is based on BT (Bonded Thread) unless BT is not available.

\*\*Minimum recommended needle sizes. Includes both the newer Metric needle size designation and the older Singer needle size designation.



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Thread Construction and A&E Brand	Finish Type: BT - Bonded SST - Soft & Stretch STX - Not Stretched	Tex Size	Denier	Metric	Dtex	Old Tkt Size	Cotton Count	Avg.*	Avg.*	Avg.*	Ndl Size** Min. Size
								Strength (lbs.)	Strength (kgs.)	Strength (cN)	
Anefil Poly® CF Twisted Multifilament Polyester	STX	16	144	180	160			1.80	0.82	801	65 / 9
	SST, STX	21	189	140	210			3.40	1.54	1,512	70 / 10
	BT, SST, STX	30	270	90	300	33		4.70	2.13	2,091	75 / 11
	STX	35	315	80	350			5.20	2.36	2,313	80 / 12
	BT, SST, STX	45	405	60	450	46		6.70	3.04	2,980	90 / 14
	STX	50	450	60	500	60		6.00	2.72	2,669	100 / 16
	BT, SST, STX	70	630	40	700	69		10.40	4.72	4,626	110 / 18
	BT, SST, STX	90	810	30	900	92		13.31	6.04	5,920	125 / 20
	BT, SST, STX	135	1215	20	1350	138		22.00	9.98	9,786	140 / 22
	BT, SST	210	1890	13	2100	207		31.00	14.06	13,789	180 / 24
	BT, SST	270	2430	10	2700	277		41.00	18.60	18,237	200 / 25
	BT, SST, STX	350	3150	8	3500	346		57.00	25.86	25,354	230 / 26
	BT, STX	400	3600	7	4000	415		66.00	29.94	29,357	250 / 27
	BT, SST	600	5400	5	6000	554		84.00	38.10	37,363	280 / 28
BT, SST	700	6300	4	7000	693		105.00	47.63	46,704	300 / 29	
Anecord Poly® CF Monocord Polyester	BMX	14	126	220	140			1.90	0.86	845	60 / 8
	BMX	45	405	60	450	46		7.20	3.27	3,203	100 / 16
	BMX	70	630	40	700	63		10.40	4.72	4,626	110 / 18
	BMX	90	810	30	900			14.00	6.35	6,227	125 / 20
	BMX	105	945	27	1050			16.80	7.62	7,473	125 / 20
	BMX	120	1080	25	1200			20.00	9.07	8,896	130 / 21
	BMX	135	1215	20	1350			22.70	10.30	10,097	140 / 22
	BMX	180	1620	15	1800			34.00	15.42	15,123	180 / 24
	BMX	210	1890	13	2100			37.00	16.78	16,458	200 / 25
Anefil® using Kevlar® Twisted Multifilament Para-Aramid	BT, STX	45	405	60	450			15.90	7.21	7,072	100 / 16
		60	540	50	600			29.20	13.25	12,988	110 / 18
	BT, STX	90	810	30	900			40.00	18.14	17,792	125 / 20
		135	1215	20	1350			48.60	22.04	21,617	140 / 22
		210	1890	13	2100			81.60	37.01	36,296	180 / 24
	BT, STX	350	3150	8	3500			129.50	58.74	57,602	230 / 26
		400	3600	7	4000			153.50	69.63	68,277	250 / 27
		500	4500	6	5000			171.00	77.57	76,061	280 / 28
	600	5400	5	6000			228.00	103.42	101,414	280 / 28	
Anefil® using Nomex® Twisted Multifilament Para-Aramid	BT, SST, STX	40	360	75	400			3.76	1.71	1,672	90 / 14
		60	540	50	600			6.88	3.12	3,060	110 / 18
	BT, SST, STX	90	810	30	900			9.37	4.25	4,168	125 / 20
		135	1215	20	1350			13.02	5.91	5,791	140 / 22
	BT, SST, STX	210	1890	13	2100			20.21	9.17	8,989	180 / 24

Notes:\*SEB - Single End Break (lbs.) All strengths are for comparative purposes and should not be used as minimum requirements. SEB data for filament products is based on BT (Bonded Thread) unless BT is not available.

\*\*Minimum recommended needle sizes. Includes both the newer Metric needle size designation and the older Singer needle size designation.