



Customer Acceptance Standard

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FIBERGLASS CONTINUOUS FILAMENT YARN FOR THE WEAVING INDUSTRY

I. DESCRIPTION

Fiberglass yarn is a natural, lustrous, white, continuous filament yarn, which is evenly twisted on supply packages. The yarns are smooth, non-cellular and generally cylindrical in form. The yarns are made of glass of high stability and durability and are with the exception of sizing ingredients, inorganic, incombustible and will neither expand nor contract with moisture changes. The glass composition meets the certification for "E" glass as defined by ASTM's D 578-00 Standards Specification for Glass Fiber Strands. The individual glass fibers do not tend to absorb moisture and are extremely flexible. The sizing may be burned off the yarn under certain conditions. Weathering tests have indicated comparatively unlimited stability under repeated cycles of heat, cold, sunlight, dampness and drying.

II. USE

These yarns are used for further fabrication typically: warping, weaving for glass fabrics and tapes.

III. YARN NOMENCLATURE

		Example Product Name	
(US Customary System)		(SI System)	
<u>ECD450 1/0 1.0Z</u>		<u>EC5-11 1X0 Z40</u>	
E-	Electrical glass formulation	E-	Electrical glass formulation
C-	Continuous filaments	C-	Continuous filaments
D-	Filament diameter (See Table 1)	5-	Filament diameter (See Table 1)
450-	Yards per pound divided by 100	11-	grams per 1000 meters of yarn
1/0-	Single yarn end	1X0-	Single yarn end
1.0Z-	One turn per inch (TPI)	Z40-	Twists per meter (TPM)

Throughout history, the actual yardage or Tex of yarn products has often been shifted from the actual yield provided in the product name. Therefore, the yarn name is only used as a descriptor. The table in section V. must be utilized to obtain the actual bare glass yield of a yarn product.



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IV. GENERAL INFORMATION

Reference Textiles Fibers For Industry for more information

Filament Designation US Units	Filament Designation SI Units	Range for Average Filament Diameter			
		Minimum Inches	Maximum Inches	Minimum μm	Maximum μm
BC	4.0	0.000145	0.000174	3.68	4.44
C	4.5	0.000168	0.000202	4.26	4.81
D	5.0	0.00019	0.000229	4.83	5.83
DE	6.0	0.00023	0.000269	5.84	6.85
E	7.0	0.00025	0.000299	6.35	7.61
G	9.0	0.00035	0.000399	8.89	10.15
H	11	0.00040	0.000449	10.16	11.42

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V. AVAILABLE PRODUCTS AND BARE GLASS YIELD PROPERTIES

Product Name*	Product Name (SI) *	Sizing	Bare Glass Yield						Typical Cv**
			Nominal Yds/ lb	Minimum Yds/ lb	Maximum Yds/ lb	Nominal Tex	Minimum Tex	Maximum Tex	
ECBC150 1/0 1.0Z	EC4-33 1X0 Z40	636	14900	13100	16700	33.3	29.7	37.9	2.1
ECBC150 1/0 3.0Z	EC4-33 1X0 Z120	636	14900	13100	16700	33.3	29.7	37.9	2.1
ECBC150 2/0 3.0Z	EC4-33 2X0 Z120	636	7450	7250	7650	66.6	64.8	68.4	2.1
ECBC150 4/0 3.0Z	EC4-33 4X0 Z120	636	3700	3630	3770	134.1	131.6	136.7	2.1
ECBC1500 1/0 1.0Z	EC4-3.3 1X0 Z40	622	149925	131235	168660	3.3	2.9	3.8	2.1
ECC1200 1/0 1.0Z	EC4.5-4.11X0 Z40	622	119940	104990	134930	4.1	3.7	4.8	2.1
ECD450 1/0 1.0Z	EC5-11 1X0 Z40	620-1	44940	41790	48090	11.0	10.3	11.6	1.2
ECD450 1/0 1.0Z	EC5-11 1X0 Z40	622	44940	41790	48090	11.0	10.3	11.6	1.2
ECD900 1/0 1.0Z MM	EC5-5.5 1X0 Z40	620-1	89900	82400	97400	5.5	5.1	6.0	1.4
ECD900 1/0 1.0Z MM	EC5-5.5 1X0 Z40	622	89900	82400	97400	5.5	5.1	6.0	1.4
ECD900 1/0 1.0Z	EC5-5.5 1X0 Z40	620-1	89900	82400	97400	5.5	5.1	6.0	1.4
ECD1800 1/0 1.0Z	EC5-2.8 1X0 Z40	620-1	179900	157370	202430	2.8	2.5	3.2	2.1
ECDE37 1/0 1.0Z	EC6-136 1X0 Z40	636	3700	3441	3959	134.1	125.3	144.1	2.3
ECDE75 1/0 0.7Z	EC6-66 1X0 Z28	620	7500	6975	8025	66.1	61.8	71.1	2.3
ECDE100 1/0 0.7Z	EC6-50 1X0 Z28	636	10000	9400	10600	49.6	46.8	52.8	2.0
ECDE150 1/0 0.7Z	EC6-34 1X0 Z28	620	15000	14100	15900	33.1	31.2	35.2	2.0
ECDE300 1/0 1.0Z	EC6-17 1X0 Z40	620-1	30000	28232	31768	16.5	15.6	17.6	2.0
ECE110 1/0 1.0Z	EC7-45 1X0 Z40	620-1	11000	10442	11578	45	42.8	47.5	2.0
ECE225 1/0 1.0Z	EC7-22 1X0 Z40	620-1	22500	21174	23826	22.0	20.8	23.4	2.0
ECE225 2/0 4.0Z	EC7-22 2X0 Z160	620-1	11250	10575	11925	44.1	41.6	46.9	2.0
ECG37 1/0 0.5Z	EC9-134 1X0 Z20	620	3700	3427	3973	134.1	124.9	144.7	2.5
ECG37 1/0 3.0Z	EC9-134 1X0 Z120	620	3700	3427	3973	134.1	124.9	144.7	2.5
ECG37 1/0 0.7Z	EC9- 136 1X0 Z28	620-1	3650	3313	3987	135.9	124.4	149.7	3.0
ECG37 2/0 0.7Z	EC9-134 2X0 Z28	620	1850	1713	1987	134.1	124.9	144.7	2.5
ECG75 1/0 0.7Z	EC9-68 1X0 Z28	620	7300	6884	7716	68.0	64.3	72.1	2.0
ECG75 1/0 3.0Z	EC9-68 1X0 Z120	620	7300	6884	7716	68.0	64.3	72.1	2.0
ECG75 2/0 3.0Z	EC9-68 2X0 Z120	620	3700	3354	4056	134.1	122.3	147.9	2.5
ECG146 1/0 0.7Z	EC9-34 1X0 Z28	636	14600	13627	15573	34.0	31.9	36.4	2.2
ECG150 1/0 0.7Z	EC9-33 1X0 Z28	620	15000	14000	16000	33.1	31.0	35.4	2.5
ECG150 1/0 0.7Z	EC9-33 1X0 Z28	636	15000	14000	16000	33.1	31.0	35.4	2.5
ECG150 3/0 3.0Z	EC9-33 3X0 Z120	636	5000	4666	5334	99.2	93.0	106.3	2.2
ECH18 1/0 0.7Z	EC11-276 1X0 Z28	620	1800	1668	1932	275.6	256.8	297.4	2.4
ECH25 1/0 0.7Z	EC11-198 1X0 Z28	620	2500	2312	2688	198.4	184.5	214.6	2.5

NOTE: See Section VIII for bobbin selections

*- Nomenclature used for identification purposes only. Nomenclature may not indicate true yield.

**- Cv provided as a reference only. This is not a specified product property.

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VI. AVAILABLE PRODUCTS AND ADDITIONAL PHYSICAL PROPERTIES

Product Name	Tex Designation	Sizing	Strand Solids			Minimum Tensile	
			Percent Strand Solids	Minimum Percent Strand Solids	Maximum Percent Strand Solids	Lbs	Newtons
ECBC150 1/0 1.0Z	EC4-33 1X0 Z40	636	1.45	1.20	1.70	4.0	17.8
ECBC150 1/0 3.0Z	EC4-33 1X0 Z120	636	1.45	1.20	1.70	4.0	17.8
ECBC150 2/0 3.0Z	EC4-33 2X0 Z120	636	1.45	1.20	1.70	8.0	35.6
ECBC150 4/0 3.0Z	EC4-33 4X0 Z120	636	1.45	1.20	1.70	16.0	71.2
ECBC1500 1/0 1.0Z	EC4-3.3 1X0 Z40	622	1.95	1.65	2.25	0.3	1.4
ECC1200 1/0 1.0Z	EC4.5-4.11X0 Z40	622	1.70	1.30	2.10	0.4	1.8
ECD450 1/0 1.0Z	EC5-11 1X0 Z40	620-1	1.75	1.5	2.0	1.3	5.8
ECD450 1/0 1.0Z	EC5-11 1X0 Z40	622	1.62	1.32	1.92	1.3	5.8
ECD900 1/0 1.0Z MM	EC5-5.5 1X0 Z40	620-1	2.00	1.70	2.30	0.6	2.7
ECD900 1/0 1.0Z MM	EC5-5.5 1X0 Z40	622	1.60	1.30	1.90	0.6	2.7
ECD900 1/0 1.0Z	EC5-5.5 1X0 Z40	620-1	1.93	1.63	2.23	0.6	2.7
ECD1800 1/0 1.0Z	EC5-2.8 1X0 Z40	620-1	2.45	1.85	3.05	0.3	1.3
ECDE37 1/0 1.0Z	EC6-136 1X0 Z40	636	1.32	1.02	1.62	11.2	49.8
ECDE75 1/0 0.7Z	EC6-66 1X0 Z28	620	1.42	1.25	1.60	5.7	25.4
ECDE100 1/0 0.7Z	EC6-50 1X0 Z28	636	1.33	1.06	1.60	4.3	19.1
ECDE150 1/0 0.7Z	EC6-34 1X0 Z28	620	1.50	1.25	1.75	3.5	15.6
ECDE300 1/0 1.0Z	EC6-17 1X0 Z40	620-1	1.61	1.34	1.88	2.0	8.9
ECE110 1/0 1.0Z	EC7-45 1X0 Z40	620-1	1.42	1.15	1.69	4.8	21.4
ECE225 1/0 1.0Z	EC7-22 1X0 Z40	620-1	1.53	1.26	1.80	2.4	10.7
ECE225 2/0 4.0Z	EC7-22 2X0 Z160	620-1	1.53	1.26	1.80	4.8	21.4
ECG37 1/0 0.5Z	EC9-134 1X0 Z20	620	1.20	0.94	1.46	10.0	44.5
ECG37 1/0 3.0Z	EC9-134 1X0 Z120	620	1.20	0.94	1.46	10.0	44.5
ECG37 1/0 0.7Z	EC9- 136 1X0 Z28	620-1	1.33	1.08	1.58	10.0	44.5
ECG37 2/0 0.7Z	EC9-134 2X0 Z28	620	1.20	0.94	1.46	10.0	44.5
ECG75 1/0 0.7Z	EC9-68 1X0 Z28	620	1.27	1.09	1.45	5.7	25.4
ECG75 1/0 3.0Z	EC9-68 1X0 Z120	620	1.28	1.02	1.54	5.7	25.4
ECG75 2/0 3.0Z	EC9-68 2X0 Z120	620	1.28	1.02	1.54	11.4	50.7
ECG146 1/0 0.7Z	EC9-34 1X0 Z28	636	1.47	1.14	1.80	3.3	14.6
ECG150 1/0 0.7Z	EC9-33 1X0 Z28	620	1.38	1.13	1.63	3.2	14.2
ECG150 1/0 0.7Z	EC9-33 1X0 Z28	636	1.27	1.06	1.60	3.2	14.2
ECG150 3/0 3.0Z	EC9-33 3X0 Z120	636	1.11	0.94	1.28	9.6	42.7
ECH18 1/0 0.7Z	EC11-276 1X0 Z28	620	1.25	0.99	1.51	18.0	80.1
ECH25 1/0 0.7Z	EC11-198 1X0 Z28	620	1.0	0.80	1.20	15.0	66.7

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A. REMARKS:

- Strand solids limits are for “as produced”. Monthly charts available from producing plant on request.
- Breaking Strength – The strength is expressed in pounds (newtons) per end. The minimum strengths will be the average of five breaks per package.
- Diameter – Filament diameter is listed for reference purposes only, and is not a cause for rejection.
- Moisture – The maximum moisture for individual packages is 0.75%.

B. TEST METHODS FOR PHYSICAL PROPERTIES

The physical properties as listed in this specification shall be tested according to the methods as specified in the reference listed below:

1. Yards per Pound (Linear Density – TEX) – W-07Ea-T*
2. Ignition Loss – W-07Ea-T*
3. Filament Diameter – D-02C and D-02Ca-T*
4. Breaking Strength – S-01Fm-T**
5. Twist per Inch (per Meter) – D-15A-T*.

(Physical test methods will soon be changed to ASTM Methods where applicable.)

* AGY Test Methods. Copies available upon request.

** AGY Test Methods for fine yarns (450s (11 TEX) or finer glass)



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VII. AVAILABLE PRODUCTS AND VISUAL PROPERTIES

Product Name	Tex Designation	Sizing	Maximum Average Broken Filaments (360° Count)	Filament Count*	Approximate Yarn Diameter		Twist Tolerance	
					Inches	mm	TPI	TPM
ECBC150 1/0 1.0Z	EC4-33 1X0 Z40	636	110	988	0.0080	0.203	± 0.30	± 12
ECBC150 1/0 3.0Z	EC4-33 1X0 Z120	636	110	988	0.0080	0.203	± 0.60	± 24
ECBC150 2/0 3.0Z	EC4-33 2X0 Z120	636	110	2128	0.0097	0.246	± 0.60	± 24
ECBC150 4/0 3.0Z	EC4-33 4X0 Z120	636	110	4256	0.0137	0.348	± 0.60	± 24
ECBC1500 1/0 1.0Z	EC4-3.3 1X0 Z40	622	10	102	0.0024	0.061	± 0.60	± 24
ECC1200 1/0 1.0Z	EC4.5-4.11X0 Z40	622	10	102	0.0030	0.076	± 0.30	± 12
ECD450 1/0 1.0Z	EC5-11 1X0 Z40	620-1	10	204	0.0048	0.122	± 0.30	± 12
ECD450 1/0 1.0Z	EC5-11 1X0 Z40	622	10	204	0.0048	0.122	± 0.30	± 12
ECD900 1/0 1.0Z MM	EC5-5.5 1X0 Z40	620-1	10	102	0.0033	0.085	± 0.30	± 12
ECD900 1/0 1.0Z MM	EC5-5.5 1X0 Z40	622	10	102	0.0033	0.085	± 0.30	± 12
ECD900 1/0 1.0Z	EC5-5.5 1X0 Z40	620-1	10	102	0.0033	0.085	± 0.30	± 12
ECD1800 1/0 1.0Z	EC5-2.8 1X0 Z40	620-1	10	51	0.0026	0.066	± 0.30	± 12
ECDE37 1/0 1.0Z	EC6-136 1X0 Z40	636	10	1632	0.0156	0.0396	± 0.30	± 12
ECDE75 1/0 0.7Z	EC6-66 1X0 Z28	620	10	816	0.0106	0.269	± 0.21	± 8
ECDE100 1/0 0.7Z	EC6-50 1X0 Z28	636	10	600	0.0098	0.249	± 0.21	± 8
ECDE150 1/0 0.7Z	EC6-34 1X0 Z28	620	10	408	0.0080	0.203	± 0.21	± 8
ECDE300 1/0 1.0Z	EC6-17 1X0 Z40	620-1	10	204	0.0054	0.179	± 0.30	± 12
ECE110 1/0 1.0Z	EC7-45 1X0 Z40	620-1	10	408	0.0095	0.241	± 0.3	± 12
ECE225 1/0 1.0Z	EC7-22 1X0 Z40	620-1	10	204	0.0065	0.165	± 0.30	± 12
ECE225 2/0 4.0Z	EC7-22 2X0 Z160	620-1	10	408	0.0079	0.201	± 0.60	± 24
ECG37 1/0 0.5Z	EC9-134 1X0 Z20	620	10	816	0.0156	0.396	± 0.15	± 6
ECG37 1/0 3.0Z	EC9-134 1X0 Z120	620	10	816	0.0156	0.396	± 0.60	± 24
ECG37 1/0 0.7Z	EC9-136 1X0 Z28	620-1	10	816	0.0156	0.396	± 0.21	± 8
ECG37 2/0 0.7Z	EC9-134 2X0 Z28	620	10	816	0.0156	0.396	± 0.21	± 8
ECG75 1/0 0.7Z	EC9-68 1X0 Z28	620	10	408	0.0106	0.269	± 0.21	± 8
ECG75 1/0 3.0Z	EC9-68 1X0 Z120	620	10	408	0.0106	0.269	± 0.60	± 24
ECG75 2/0 3.0Z	EC9-68 2X0 Z120	620	10	816	0.0149	0.378	± 0.60	± 24
ECG146 1/0 0.7Z	EC9-34 1X0 Z28	636	10	204	0.0100	0.254	± 0.21	± 8
ECG150 1/0 0.7Z	EC9-33 1X0 Z28	620	10	204	0.0080	0.203	± 0.21	± 8
ECG150 1/0 0.7Z	EC9-33 1X0 Z28	636	10	204	0.0080	0.203	± 0.21	± 8
ECG150 3/0 3.0Z	EC9-33 3X0 Z120	636	15	612	0.0119	0.302	± 0.60	± 24
ECH18 1/0 0.7Z	EC11-276 1X0 Z28	620	15	1118	0.0206	0.523	± 0.21	± 8
ECH25 1/0 0.7Z	EC11-198 1X0 Z28	620	15	816	0.0148	0.376	± 0.21	± 8

* The number of filaments and nominal filament diameter is for reference purposes only. Yarns are controlled according to yards per pound (linear density-TEX).

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A. The product shall be free of the following internal or external (depending where found) characteristics.

Entrapped Waste	Dirt, Grease or Oil
Ends Out	Mixed Yarns**
Damaged Yarn*	Cut Tubes
Unbalanced Yarn	Cracked Tubes
Sloughed Yarn*	Protruding Ends (start up)
Bad Builds	Loops
Water Spots	Broken Filaments (fuzz)

* AGY accepts no responsibility for any damaged or sloughed material that is contained in a carton that shows any evidence of physical abuse. Any carton showing evidence of having been opened from the bottom will be considered as having been mishandled by the customer. Such damage or questions of damage is the responsibility of the carrier as, according to AGY terms of sale, delivery to the carrier constitutes delivery to the customer. Advanced Glassfiber Yarns accepts no responsibility for any damage occurring in a customer's plant.

** In the event that AGY or the customer has reason to suspect that a shipment may contain MIXED YARN, the party first suspecting such condition will notify the other, and AGY assumes responsibility for initiating appropriate action. The use of the suspect material should be discontinued pending an investigation of the facts.

B. Visual Tolerance

1. Protruding Ends and Loops
A protruding end or loop resting on the base of the bobbin is permissible.
2. Bad Builds
The build shall not extend beyond the edge of the bobbin base and undercuts shall not exceed 1/8" (3mm) for D450 on 8542 bobbins and 3/16" (5mm) for all other products on 8542 and for 8571 bobbins.



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VIII. PACKAGING WEIGHT AND METERING DATA

Average package weight is for information only.
 All packages are completely splice-free.
 Metered and non-metered material is packaged separately.

Product Name	Tex Designation	Sizing	Bobbin Type	Average Package Wt		Shipment Makeup*		Comments
				Lbs.	Kg	Ratio	Description	
ECBC150 1/0 1.0Z	EC4.0-33 1X0 Z40	636	7636	3.88	1.76	70%	Full Connected	
						30%	2.0 lbs (0.91 kg) to full	
ECBC150 1/0 3.0Z	EC4.0-33 1X0 Z120	636	9228	3.88	1.76	70%	Full Connected	7636 on special order
						30%	2.0 lbs (0.91 kg) to full	
ECBC150 2/0 3.0Z	EC 4.0-33 2X0 Z120	636	9228	7.95	3.61	70%	Full Connected	
						30%	2.0 lbs (0.91 kg) to full	
ECBC150 4/0 3.0Z	EC 4.0-33 4X0 Z120	636	9228	7.95	3.61	70%	Full Connected	
						30%	2.0 lbs (0.91 kg) to full	
ECBC1500 1/0 1.0Z	EC4.0-3.3 1X0 Z40	622	7636	2.00	0.91	70%	Mtd 292,000 yds (267,000m)	
				1.60	0.73	30%	0.25 lbs. (0.11 kg) to full	
ECC1200 1/0 1.0Z	EC4.5-4.11X0 Z40	622	7636	2.00	0.91	50%	Mtd 230,000 yds (210,300m)	
				1.60	0.73	50%	0.25 lbs (0.11 kg) to full	
ECD450 1/0 1.0Z	EC 5-11 1X0 Z40	620-1	7636	4.00	1.8	80%	Mtd 175,000 yds (160,000m)	Note 1
				3.30	1.5	20%	2.0 lbs (0.91 kg) to full	
ECD450 1/0 1.0Z	EC 5-11 1X0 Z40	622	7636	4.00	1.8	80%	Mtd 175,000 yds (160,000m)	Note 1
				3.30	1.5	20%	2.0 lbs (0.91 kg) to full	
ECD450 1/0 1.0Z	EC5-11 1X0 Z40	620-1	8542	4.00	1.8	80%	Mtd 175,000 (160,000 m)	Note 5 for mtd
						20%	2.0# (0.91 kg) to full	
ECD450 1/0 1.0Z	EC5-11 1X0 Z40	622	8542	4.00	1.8	80%	Mtd 175,000 yds (160,000 m)	Note 5 for mtd
						20%	2.0# (0.91 kg) to full	
ECD900 1/0 1.0Z MM	EC 5-5.5 1X0 Z40	620-1	7636	3.10	1.41	80%	Mtd 260,000 yds (237,740m)	Note 2
				2.40	1.1	20%	1.0 lbs (0.45 kg) to full	
ECD900 1/0 1.0Z MM	EC 5-5.5 1X0 Z40	622	7636	3.10	1.41	80%	Mtd 260,000 yds (237,740m)	Note 2
				2.40	1.1	20%	1.0 lbs (0.45 kg) to full	
ECD900 1/0 1.0Z	EC 5-5.5 1X0 Z40	620-1	7636	3.10	1.41	80%	Mtd 260,000yds (237,740m)	Note 2
				2.40	1.1	20%	1.0 lbs (0.45 kg) to full	
ECD1800 1/0 1.0Z	EC 5-2.8 1X0 Z40	620-1	7636	2.00	0.91	50%	Mtd 350,000yds (320,040m)	
				1.60	0.73	50%	0.25 lbs (0.11 kg) to full	
ECDE37 1/0 1.0Z	EC6-136 1X0 Z40	636	8542	7.3	3.3	80%	Mtd 27,000 yds (24,689m)	Note 3,5
				6.4	2.9	20%	2.0 lbs (0.91 kg) to full	
ECDE75 1/0 0.7Z	EC6-66 1X0 Z28	620	8542	8.0	3.6	75%	Mtd 60,000 yds (54,864m)	Note 5,6
				6.1	2.8	25%	2.0 lbs (0.91 kg) to full	
ECDE75 1/0 0.7Z	EC6-66 1X0 Z28	620	8571	16.4	7.4	75%	Mtd 121,578 yds (111,171m)	Note 5,6
				10.0	4.5	25%	2.0 lbs (0.91 kg) to full	

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VIII. PACKAGING WEIGHT AND METERING DATA – cont'd

ECDE100 1/0 0.7Z	EC6-50 1X0 Z28	636	8542	8.1	3.7	70%	Mtd 81,000yds (74,066m)	Note 3,5
				6.1	2.8	30%	2.0 lbs (0.91 kg) to full	
ECDE150 1/0 0.7Z	EC 6-34 1X0 Z28	620	8542	6.8	3.1	50%	Mtd 99,700 yds (91,166m)	Note 5
				5.2	2.3	50%	2.0 lbs (0.91 kg) to full	
ECDE300 1/0 1.0Z	EC6-17 1X0 Z40	620-1	8542	6.75	3.06	70%	Mtd 197,240yds (180,356m)	Note 5
				5.4	2.45	30%	2.0 lbs (0.91 kg) to full	
ECE110 1/0 1.0Z	EC7-45 1X0 Z40	620-1	8542	8.2	3.72	70%	Mtd 86,350 yds (78,958m)	Note 5
				5.0	2.27	30%	2.0 lbs (0.91 kg) to full	
ECE225 1/0 1.0Z	EC7-22 1X0 Z40	620-1	8542	9.0	4.0	70%	Mtd 197,240 yds (180,356m)	Note 5
				6.1	2.7	30%	2.0 lbs (0.91 kg) to full	
ECE225 2/0 4.0Z	EC7-22 2X0 Z160	620-1	9225	5.0	2.3	70%	Mtd 53350 yds (48762m)	Note 3,4,5
				4.1	1.8	30%	2.0 lbs (0.91 kg) to full	
ECG37 1/0 0.5Z	EC9-134 1X0 Z20	620	8542	8.1	3.7	80%	Mtd 29,300 yds (26,792m)	Note 3,4,5
				6.3	2.8	20%	2.0 lbs (0.91 kg) to full	
ECG37 1/0 0.5Z	EC9-134 1X0 Z20	620	8571	19.0	8.6	80%	Mtd 68,750 yds (62,865m)	Note 3,4,5
				13.6	6.2	20%	6.0 lbs (2.72 kg) to full	
ECG37 1/0 3.0Z	EC9-134 1X0 Z120	620	9225	5.0	2.3	80%	Mtd 17,760yds (16,239m)	Note 5
				3.8	1.7	20%	2.0 lbs (0.91 kg) to full	
ECG37 1/0 0.7Z	EC9- 136 1X0 Z28	620-1	8571	19.0	8.6	80%	Mtd 68,200 yds (62,362m)	Note 3,4,5
				13.6	6.2	20%	5.0 lbs (2.26 kg) to full	
ECG37 2/0 0.7Z	EC9-134 2X0 Z28	620	8542	8.1	3.7	80%	Mtd 14,650 yds (13,396m)	Note 3,4,5
				6.3	2.8	20%	2.0 lbs (0.91 kg) to full	
ECG75 1/0 0.7Z	EC9-68 1X0 Z28	620	8571	19.4	8.8	70%	Mtd 141,100yds (129,000m)	Note 3,5
				15.6	7.1	30%	5.0 lbs (2.26 kg) to full	
			8542	9.6	4.3	70%	Mtd 68,800yds (62,911m)	Note 3,4,5
				7.7	3.5	30%	2.0 lbs (0.91 kg) to full	
ECG75 1/0 3.0Z	EC9-68 1X0 Z120	620	9225	4.9	2.2	80%	Mtd 36,735yds (33,590m)	Note 5
				3.5	1.6	20%	2.0 lbs (0.91 kg) to full	
ECG75 2/0 3.0Z	EC9-68 2X0 Z120	620	9225	4.9	2.2	80%	Mtd 18,000yds (16,459m)	Note 5
				3.5	1.6	20%	2.0 lbs (0.91 kg) to full	
ECG146 1/0 0.7Z	EC9-34 1X0 Z28	636	8542	9.2	4.0	70%	Mtd 130,138yds (119,000m)	Note 5
				6.4	2.9	30%	2.0 lbs (0.91 kg) to full	
ECG150 1/0 0.7Z	EC9-33 1X0 Z28	620	8542	9.2	4.2	70%	Mtd 136,500yds (124,815m)	Note 5
				6.4	2.9	30%	2.0 lbs (0.91 kg) to full	
ECG150 1/0 0.7Z	EC9-33 1X0 Z28	636	8542	9.2	4.2	70%	Mtd 136,500yds (124,815m)	Note 5
				6.4	2.9	30%	2.0 lbs (0.91 kg) to full	
ECG150 3/0 3.0Z	EC9-33 3X0 Z120	636	9225	4.9	2.2	70%	Mtd 25,333yds (23,164m)	Note 5
				3.8	1.7	30%	2.0 lbs (0.91 kg) to full	
ECH18 1/0 0.7Z	EC11-276 1X0 Z28	620	8571	19.2	8.7	80%	Mtd 33,000yds (30,175m)	Note 3,4,5
				15.0	6.8	20%	4.0 yds (1.81kg) to full	
ECH18 1/0 0.7Z	EC11-276 1X0 Z28	620	8542	8.5	3.9	80%	Mtd 15,300yds (13,990m)	Note3,4,5
				6.5	2.9	20%	1.0 lbs (0.91 kg) to full	

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VIII. PACKAGING WEIGHT AND METERING DATA – cont'd

ECH25 1/0 0.7Z	EC11-198 1X0 Z28	620	8542	8.1	3.6	80%	Mtd 19,200yds (17,556m)	Note 3,4,5
				6.3	2.8	20%	2.0 lbs (0.91 kg) to full	

*Shipment makeup ratio of percent metered may be decreased with beam orders of the same product.

PACKAGING WEIGHT AND METERING DATA Notes:

1. D450 metering tolerance \pm 2600 yds (\pm 2400 m), Tails available
2. D900 metering tolerance \pm 2600 yds (\pm 2400 m)
3. Available with transfer tails only
4. Available with treatment only
5. Metering tolerance for all other yarns is plus 3%.
6. Transfer tails available upon request.

IX. PACKAGE DESCRIPTION

See AGY document AGY - PD 1 for more information.

X. PREPARATION FOR SHIPMENT

- A. Package Identification
 - ⇒ An identification disc will identify each package.
 - ⇒ The discs for the various yarn constructions will be per the system of identification set up by AGY.
- B. The packages shall be packed in a container suitable to insure adequate protection in transit and stores.
- C. A content label shall adequately identify each carton.

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Document History

Date	Description of Change	Author
12/15/10	Changed G75 620 1/0 0.7Z 8542, average package weight from 7.7 to 7.2 lbs, 3.5 to 3.2 kg and description from 6.0 lbs (2.72 kg) to full to 2.0 lbs (0.91 kg) to full.	Aston
4/8/11	Changed D900 620-1DM solids spec limits; minimum from 1.53 to 1.63, target from 1.83 to 1.93 and maximum from 2.13 to 2.23.	Thomson
4/21/11	<u>Tables V, VI, VII, VIII</u> Deleted – D450 620-1 and 622 marble melt, D1800 622, "DM" descriptor for direct melt D450 and D900 Added – "MM" descriptor for marble melt D900, ECBC1500 (new product) <u>Table VIII</u> D900 (all products) changed minimum packing weight for non-metered from the original 2.0-lb to 1.0-lb	Hamman
6/27/11	Changed the kilogram weights from 0.91 kg to 0.45 kg on the D900 products, page 8.	Hamman
9/5/11	In Section VI - ECC1200 1/0 1.0Z 622-strand solids spec changed nominal from 1.80 to 1.70 and minimum from 1.50 to 1.30. ECD1800 1/0 1.0Z 620-1 strand solids spec changed nominal from 2.24 to 2.60 and minimum from 1.28 to 2.00.	Hamman
1/23/12	Changed minimum strengths from four breaks to show actual of five breaks per package in Breaking Strength, Section VI and strand solids for EC D1800 changed from 2.60-2.00-3.20 to 2.45-1.85-3.05. Changed G37 1/0 0.5Z 620 8571 metered yards from 69,800 (63,825m) to 68,750 (62,865m).	Hamman/ Ogilvie

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