



**TEMPORARY
CUSTOMER
ACCEPTANCE
STANDARD**

No.: TP-T100
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Supersedes: Original
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E GLASS YARN FOR RUBBER REINFORCEMENT

I. DESCRIPTION

Fiberglass yarn is a natural, lustrous, white, continuous filament yarn which may be wound on various 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 as reinforcement in the manufacture of rubber based compounds.

III. YARN NOMENCLATURE

Example Product Name

(SI System)

EC 9-134 1X0 Z20

E- Electrical glass formulation
C- Continuous filaments
9- Filament diameter (See Table 1)
134- grams per 1000 meters of yarn
1X0- Single yarn end
Z20- Twists per meter (TPM)

(US Customary System)

ECG 37 1/0 0.5Z

E- Electrical glass formulation
C- Continuous filaments
G- Filament diameter (See Table 1)
37- Yards per pound divided by 100
1/0- Single yarn end
0.5Z- One-half turn per inch (TPI)

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		Range for Filament Diameter Average			
US Units (letter)	SI Units (microns)	Minimum (inches)	Maximum (inches)	Minimum (microns)	Maximum (microns)
G	9.0	0.00035	0.000399	8.89	10.15

- Filament diameter is for reference purposes. Yarns are controlled according to yield/tex.

V. AVAILABLE PRODUCTS AND BARE GLASS PROPERTIES

Product Nomenclature*		Sizing	Bare Glass Yield**					
US Customary System	Tex/Metric System (SI)		yd./lb.			TEX		
			Min	Nominal	Max	Min	Nominal	Max
ECG 35.5 1/0 untwisted	EC9-140 1x0 untwisted	762	3375	3550	3725	133	140	147
ECG 46 1/0 untwisted	EC9-108 1x0 untwisted	762	4390	4600	4810	103	108	113

- *- Nomenclature used for identification purposes only. Nomenclature may not indicate true yield.
- **- Maximum and minimum yardage/tex limits based on ± 3 times the typical standard deviation.

VI. AVAILABLE PRODUCTS AND ADDITIONAL PHYSICAL PROPERTIES

Product Nomenclature*		Sizing	Strand Solids (%)		
US Customary System	Metric System (SI)		Min	Nominal	Max
ECG 35.5 1/0 untwisted	EC9-140 1x0 untwisted	762	0.25	0.35	0.45
ECG 46 1/0 untwisted	EC9-108 1x0 untwisted	762	0.25	0.35	0.45

- Small brown or gold streaks are sometimes found in the 762 yarns. These defects are cosmetic in nature and are not cause for rejection.
- Moisture - The maximum moisture for individual packages is 0.10%.

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.	Strand Solids	W-07Ea-T*
3.	Filament Diameter	D-02C and D-02Ca-T*

* Owens Corning Test Methods. Copies available upon request.



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VII. AVAILABLE PRODUCTS AND VISUAL PROPERTIES

Product Nomenclature		Sizing	Filament Count*	Approx. Yarn Diameter		Twist Tolerance	
US Customary System	Metric System (SI)			in.	mm	TPI	TPM
ECG 35.5 1/0 untwisted	EC9-140 1x0 untwisted	762	816	0.0159	0.404	NA	NA
ECG 46 1/0 untwisted	EC9-108 1x0 untwisted	762	612	0.0125	0.317	NA	NA

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

The product shall be free of the following internal or external (depending where found and depending on the yarn support) characteristics.

Entrapped Waste	Dirt, Grease or Oil	Ends Out
Damaged Yarn ⁽¹⁾	Mixed Yarns ⁽²⁾	Broken Filaments (fuzz)
Sloughed Yarn ⁽¹⁾	Cut Tubes	
Loops	Water Spots	

⁽¹⁾ Advanced Glassfiber Yarns 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 Advanced Glassfiber Yarns 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.

⁽²⁾ In the event that Advanced Glassfiber Yarns 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 Advanced Glassfiber Yarns assumes responsibility for initiating appropriate action. The use of the suspect material should be discontinued pending an investigation of the facts.

VIII. PACKAGING WEIGHT AND METERING DATA

Average package weight is for information only. All packages are completely splice-free.

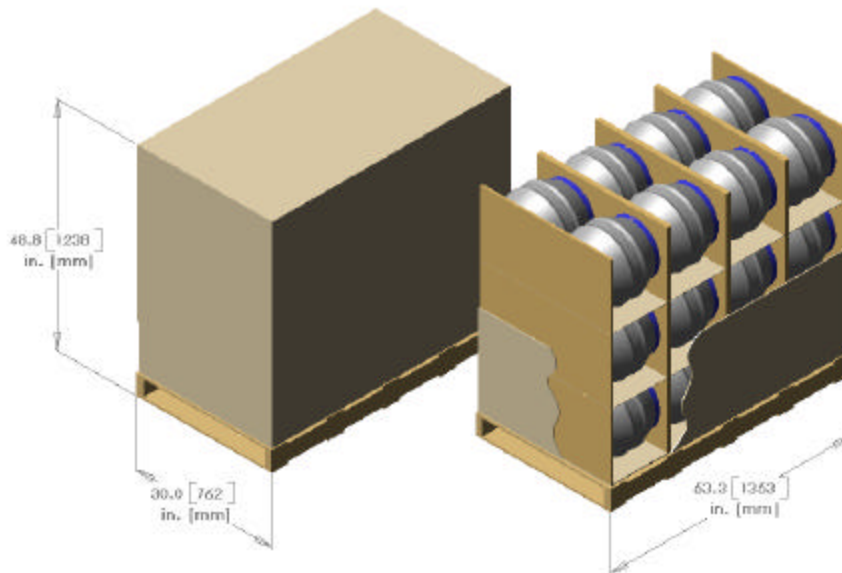
Product Nomenclature		Sizing	Package Type	Avg. Pkg. Weight		Shipment Makeup		Comments
US Customary System	Metric System (SI)			Lb.	Kg	Ratio	Description	
ECG 35.5 1/0 untwisted	EC9-140 1x0 untwisted	762	4001	22	10	70/30	5.0 lbs.(2.27 kg) to full.	Note 1, 2
ECG 46 1/0 untwisted	EC9-108 1x0 untwisted	762	4001	22	10	70/30	5.0 lbs.(2.27 kg) to full.	Note 1, 2

Notes:

1. Metered/non-metered (or full connected/not-full) mix ratio is always run-of-mill.
2. Package 4001 is a forming package, not bobbin yarn, and is packed mixed.

IX. PACKAGING.

1. The packages shall be packed in a container suitable to insure adequate protection in transit and stores.
2. Each pallet is made of three layers of eight untwisted yarn packages. The pallets can be stacked two high.
3. Each carton shall be adequately identified by a content label.



X. STORAGE CONDITIONS AND SHELF LIFE

- Unless otherwise specified, it is recommended to store glass fiber products in a cool dry area. Glass fiber products must remain in packing material until just prior to its use.
- The packaging system is designed to allow stacking of two pallets. When stacking two high, care should be taken to place correctly and smoothly the top pallet. AGY is not responsible for any damage resulting from stacking pallets higher than two high.
- Assuming that the material is stored as recommended the product shelf life is one year from the date of manufacture.