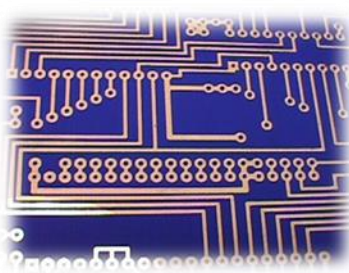


Y-120 – S-3 HDI® Yarns



S-3 HDI® glass fiber yarns are typically used for the manufacture of high-performance glass fiber fabrics. The fabrics are designed to meet the technical requirements of high-density interconnect (HDI) technology in PCBs – especially integrated circuit (IC) package substrates.

General Product Specifications

Product Information

| Product | SCE225 | SCD450 | SCC1200 | SCBC1500 | SCBC3000 | SCBC3200 | SCBC3750 |
|-------------------------------|---------|---------|---------|----------|----------|----------|----------|
| Glass Type | S-3 HDI | S-3 HDI | S-3 HDI | S-3 HDI | S-3 HDI | S-3 HDI | S-3 HDI |
| Filament Diameter - micron | 7 | 5 | 4.5 | 4 | 4 | 4 | 4 |
| Binder | 622 | 622 | 620-1 | 620-1 | 620-1 | 620-1 | 620-1 |
| Bobbin | 7636 | 7636 | 7636 | 7636 | 7636 | 7636 | 7636 |
| Plies | 1/0 | 1/0 | 1/0 | 1/0 | 1/0 | 1/0 | 1/0 |
| Nominal Yield - yd/lb | 22,500 | 44,940 | 120,000 | 150,000 | 300,000 | 319,850 | 375,000 |
| Tex - g/1000 m | 22.05 | 11.04 | 4.14 | 3.31 | 1.65 | 1.55 | 1.32 |
| Tex tolerance +/- | 1.76 | 0.88 | 0.33 | 0.26 | 0.13 | 0.12 | 0.11 |
| Nominal Solids % | 1.4 | 1.4 | 2.7 | 2.8 | 2.8 | 2.6 | 3.35 |
| Solids Tolerance +/- | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 |
| Nominal Twist TPI (TPM) | 1.0Z | 1.0Z | 1.0Z | 1.0Z | 0.2Z | 0.2Z | 0.7Z |
| | (Z40) | (Z40) | (Z40) | (Z40) | (Z8) | (Z8) | (Z28) |
| Twist Tolerance +/- TPI (TPM) | 0.3 | 0.3 | 0.3 | 0.3 | 0.06 | 0.06 | 0.21 |
| | (12) | (12) | (12) | (12) | (4) | (4) | (4) |
| Max. Broken Filaments* | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Minimum Tensile - lb (N) | 2.40 | 1.30 | 0.40 | 0.30 | 0.15 | 0.15 | 0.15 |
| Average of 5 tests | (10.7) | (5.8) | (1.8) | (1.4) | (1.3) | (1.3) | (1.3) |

*broken filaments based on average 360° check.

Nominal Product Characteristics (For reference only, not specified or controlled)

| | | | | | | | |
|------------------------------------|-------------------|-------------------|------------------|-------------------|-------------------|-------------------|-------------------|
| Average Bare Glass Tensile-lb (N)* | 3.8 (16.9) | TBD | TBD | 0.79 (3.5) | TBD | TBD | TBD |
| Approximate Yarn Diameter-in (mm) | 0.0065 (0.165) | 0.0048 (0.122) | 0.003 (0.076) | 0.0024 (0.061) | 0.0011 (0.028) | 0.0011 (0.028) | 0.0011 (0.028) |

*Reflects average tensile per bobbin

Packaging Information

| | | | | | | | |
|--------------------------------|--------------------|--------------------|----------------------|----------------------|---------------------|----------------------|----------------------|
| Bobbin | 7636 | 7636 | 7636 | 7636 | 7636 | 7636 | 7636 |
| Package Weight - lb (kg) | 3.0 (1.36) | 1.1 (0.49) | 1.0 (0.45) | 1.0 (0.45) | 1.0 (0.45) | 1.0 (0.45) | 1.0 (0.45) |
| Min bobbin Weight - lb (kg) | 0.5 (0.23) | 0.25 (0.11) | 0.25 (0.11) | 0.25 (0.11) | 0.25 (0.11) | 0.25 (0.11) | 0.25 (0.11) |
| Metered Bobbin Length - yd (m) | 64,100 (68,600) | 46,200 (42,200) | 115,000 (105,150) | 150,000 (137,160) | 105,000 (96,012) | 320,000 (292,600) | 131,250 (120,015) |
| Metered Ratio | 70% | 70% | 50% | 50% | 50% | 50% | 50% |

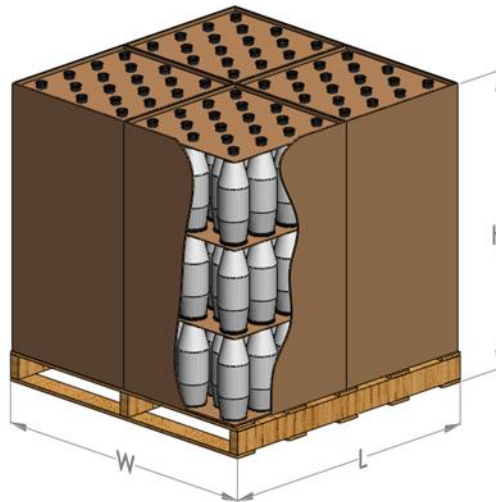
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Nominal Packaging Dimensions

| Bobbin | Packaging | Bobbins / Layer | Layers / Carton | Cartons / Pallet | Bobbins / Pallet | L-in (cm) | W-in (cm) | H-in (cm) |
|--------|-----------|-----------------|-----------------|------------------|------------------|-----------------|-----------------|---------------|
| 7636 | Wood | 18 | 3 | 4 | 216 | 45.5 (115.6) | 45.5 (115.6) | 45 (114.3) |

WOOD



Storage, Shelf Life and Handling

Storage and Shelf Life:

AGY recommends storing the materials in accordance with appropriate safety considerations, away from exposure to the elements and at 65-80F (18-27C) and 50-70% humidity. If the materials are stored under these conditions, they are stable, non reactive and will not degrade or exhibit negative characteristics for at least 3 years from the date of manufacture. Unused, unopened product older than this is likely still in good condition, however careful evaluation is recommended. Prior to use, pallets should be placed in the production area and any plastic wrap removed for a minimum of 24 hours to allow the material to acclimate to the processing environment. Special care should be given to pallets being moved from a cold environment into a warm, humid area as condensation may occur and this additional moisture can negatively impact the runability of the material, however, once the material has acclimated, this will no longer be an issue.

For product traceability reasons, the pallet label should be recorded or retained.

Handling:

Fiberglass products process best if temperature and humidity are controlled, primarily because this will help to control the buildup of static electricity, fuzz and fly. AGY recommends that the material be run at 70 +/- 5 degrees F and 60 +/- 5% RH.

Test Methods and Documentation

A copy of test methods and or a certificate of conformity may be issued upon request.

Packages will be firmly and evenly wound on the bobbin, and free from defects in workmanship. AGY accepts no responsibility for damaged material that shows any signs of physical abuse.

For additional product information, refer to PTS M-710

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