ASSOCIATION CONNECTING
ELECTRONICS INDUSTRIES

IPC-A-142

Specification for Finished Fabric Woven from Aramid for Printed Boards

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Specification for Finished Fabric Woven from Aramid for Printed Boards

1.0 SCOPE

This specification covers finished fabrics woven from aramid yarns that are intended as a reinforcing material in laminated plastics for electrical and electronic use. All fabrics covered by this specification are plain weave.

1.2 Purpose This specification determines the nomenclature, definitions, general requirements, and physical requirements for finished woven aramid fiber fabrics.

1.3 Classification This standard provides two classes of tolerances on physical characteristics of the fabric which are useful for identifying degrees of precision needed to meet design/performance requirements of the printed wiring board.

In the event of conflict between design requirements and classes, as defined in this specification, design requirements take precedence.

2.0 APPLICABLE DOCUMENTS

2.1 IPC

IPC-T-50 Terms and Definitions for Interconnecting and Packaging Electronic Circuits

IPC-TM-650 Test Methods Manual, 2.6.2.4, Physical Test Method for Water Extractables

2.2 Military

MIL-STD-105 Sampling Procedures and Tables for Inspection by Attributes

MIL-STD-202 Test Methods for Electronic and Electrical Component Parts

MIL-STD-414 Sampling Procedures and Tables for Inspection of Variables for Percent Definition

MIL-STD-45662 Calibration System Requirements

3.0 REQUIREMENTS

3.1 Terms And Definitions The definition of terms shall be in accordance with IPC-T-50 and the following:

AQL Maximum number of defects per hundred units that can be considered satisfactory as a process average.

Aramid See "**Para-aramid**."

Bias Filling yarns are off-square to the warp ends.

Bow Filling yarns lie in an arc across the width of the fabric.

Broken Pick A filling yarn missing from a portion of the width of the fabric.

Creases A mark in the fabric caused by a fold or wrinkle being placed under pressure.

Defect Per Hundred Units

$$= \frac{\text{Number of defects}}{\text{Number of units inspected}} \times 100$$

Defects A substandard area in a fabric.

Denier Weight in grams of 9000 meters of yarn.

End Missing A very small portion of the warp in the fabric which may have been broken in pick-out of waste.

Feather Length Length of distance from last warp end to the end of the pick.

Heavy Mark A filling defect extending across the fabric containing in excess of two picks/inch from nominal.

Leno End Out Missing wrapper warp end from the edge of the fabric.

Light Mark A filling defect extending across the width of the fabric containing less than two picks/inch from nominal.

Lot or Batch Size A collection of units produced in one continuous, uninterrupted run from which a sample is drawn and inspected or tested to determine conformance with the acceptability criteria.

Major Defect A defect that is likely to reduce materially the usability of the unit of product for its intended purpose.

Mark Heavy or light area in fabric due to excessive or less filling yarns.

Minor Defect A defect that is not likely to reduce materially the usability of the unit of product for its intended purpose.

Mis-Picks Break in the pattern of cloth from selvage to selvage caused by a missing filling yarn.

Para-aramid The generic name granted by the Federal Trade Commission to describe fibers made from wholly aromatic polyamides, amide polymers in which at least 85% of the amide linkages are attached directly to two