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ELECTRONICS INDUSTRIES

IPC-QF-143

Specification for Finished Fabric Woven from Quartz (Pure Fused Silica) for Printed Boards

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Table of Contents

Tables

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1.0 SCOPE

This specification covers finished fabrics woven from quartz fiber, yarns that are intended as a reinforcing material in laminated plastics for electrical and electronic use.

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

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

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

2.0 APPLICABLE DOCUMENTS

2.1 IPC[1]

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

IPC-EG-140 Specification for Finished Fabric Woven from ''E'' Glass for Printed Boards

IPC-PC-90 General Requirements for Implementation of Statistical Process Control

IPC-TM-650 Test Methods Manual

2.2 Military[2]

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 Defective

MIL-STD-45662 Calibration System Requirements

2.3 ASTM[3]

ASTM-D-578 Glass Fiber Yarns

3.0 REQUIREMENTS

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

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

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

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

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

3.1.5 Defects A substandard area in a fabric.

3.1.5.1 Major Defect A defect that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.

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

3.1.5.3 Defect per Hundred Units

$$\frac{\text{(Number of Defects)}}{\text{(Number of Units Inspected)}} \times 100$$

3.1.6 End Missing A very small portion of the warp in the fabric which may have been broken in the picking out of waste, or during the weaving process.

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

3.1.8 Finished Fabric Treatment of fabric to aid in compatibility with resins.

3.1.9 Fish Eye A prepreg defect in which a small area of fabric resists resin wetting. This defect can be caused by the resin system, fabric and/or treating.

1. Publications are available from the IPC, 2215 Sanders Road, Northbrook, IL 60062-6135
2. To obtain documents, write: Naval Publications and Forms Center, 5801 Tabor Road, Philadelphia, PA 19120
3. Application for test copies should be addressed to: American Society for Testing Materials, 1916 Race St., Philadelphia, PA 19103