

SEMI D12-95 (Reapproved 0703) SPECIFICATION FOR EDGE CONDITION OF FLAT PANEL DISPLAY (FPD) SUBSTRATES

This specification was technically approved by the Global Flat Panel Display Committee and is the direct responsibility of the Japanese FPD Materials and Components Committee. Current edition approved by the Japanese Regional Standards Committee on April 28, 2003. Initially available at www.semi.org June 2003 to be published July 2003. Originally published in 1995.

1 Purpose

1.1 This document defines various aspects of the edges of a flat panel display substrate and describes their relationships. It assumes the existence of terminology described in other SEMI flat panel display documents. It applies to substrates whose nominal thickness specification is 1.1 mm.

2 Scope

2.1 *Significance* — The edges of a flat panel display substrate are important in both the specifications for and uses of the material. They effect the means for producing, handling, storing, and processing substrates. Defining the terminology and the geometric properties of these edges will assist both the producers and users of substrates and processing/inspection equipment.

NOTICE: This standard does not purport to address safety issues, if any, associated with its use. It is the responsibility of the users of this standard to establish appropriate safety and health practices and determine the applicability of regulatory or other limitations prior to use.

3 Referenced Standards

3.1 SEMI Standards

SEMI D3 — Quality Area Specification for Flat Panel Display Substrates

NOTICE: Unless otherwise indicated, all documents cited shall be the latest published versions.

4 Terminology

4.1 Definitions

4.1.1 *corner* — of a substrate, any corner other than the orientation corner.

4.1.2 *edge length* — of a substrate, the nominal length of an edge, including that portion at the edge corner(s) from which material may have been removed for finishing purposes. It is "... defined by two dimensions X and Y, with nominal and tolerance values for each."

4.1.3 *orientation convention* — a means for denoting the rotational orientation of a substrate.

4.1.4 *orientation corner* — the corner of a substrate which identifies the pattern surface and rotational orientation.

5 Edge Condition

5.1 All edges shall be treated for purposes of operator safety and to minimize particulate generation. Edges shall be chamfered per Figure 1; other edge treatments are being developed as outlined in Related Information 1.

5.2 Other edge-related parameters shall be per Table 1.

6 Corner Condition

6.1 The orientation corner is asymmetrical for all substrates, with dimensions per Figure 2.

6.2 The edge condition within all corner areas shall meet the criteria of Section 5.

Table 1

Parameter	Nominal	Tolerance
Length	< 400 mm ≥ 400 mm	± 0.2 mm ± 0.3 mm
Squareness	≤ ± 1/1000 of longer edge for chamfered edge	

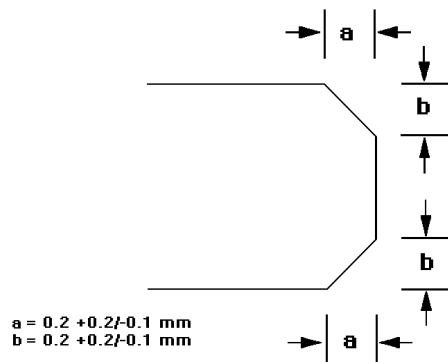


Figure 1
Chamfered Edge

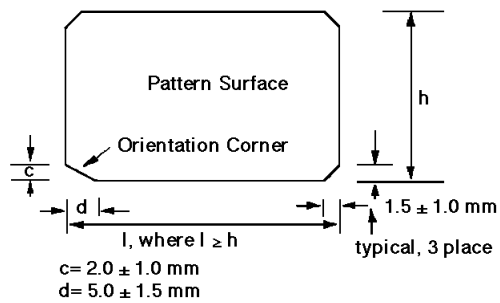


Figure 2
Substrate Corner Dimensions
(shown in 0,0 orientation)

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