

ANSI/EIA-364-45C-2012 (R2019)

Approved: November 26, 2012

Reaffirmed: April 18, 2019

EIA STANDARD

TP-45C

Firewall Flame Test Procedures for Electrical Connectors

EIA-364-45C

(Revision of EIA-364-45B)

November 2012



Electronic Components Industry Association

EIA-364-45C

NOTICE

EIA Engineering Standards and Publications are designed to serve the public interest through eliminating misunderstandings between manufacturers and purchasers, facilitating interchangeability and improvement of products, and assisting the purchaser in selecting and obtaining with minimum delay the proper product for his particular need. Existence of such Standards and Publications shall not in any respect preclude any member or nonmember of ECIA from manufacturing or selling products not conforming to such Standards and Publications, nor shall the existence of such Standards and Publications preclude their voluntary use by those other than ECIA members, whether the Standard is to be used either domestically or internationally.

NOTE – The user's attention is called to the possibility that compliance with this standard may require use of an invention covered by patent rights.

By publication of this standard, no position is taken with respect to the validity of any such claim(s) or of any patent rights in connection therewith. If a patent holder has filed a statement of willingness to grant a license under these rights on reasonable and nondiscriminatory terms and conditions to applicants desiring to obtain such a license, then details may be obtained from the standards developer

Neither the standards developer nor ANSI is responsible for identifying patents for which a license may be required by an American National Standard or for conducting inquiries into the legal validity or scope of those patents that are brought to their attention.

This EIA Standard is considered to have International Standardization implications, but the International Electrotechnical Commission activity has not progressed to the point where a valid comparison between the EIA Standard and the IEC document can be made.

This Standard does not purport to address all safety problems associated with its use or all applicable regulatory requirements. It is the responsibility of the user of this Standard to establish appropriate safety and health practices and to determine the applicability of regulatory limitations before its use.

(From Standards Proposal No. SP-5422.03, formulated under the cognizance of the EIA CE-2.0 Committee on National Connector and Socket Standards).

Published by

©ELECTRONIC COMPONENTS INDUSTRY ASSOCIATION 2019
Standards & Technology Department
13873 Park Center Road, Suite 315
Herndon, VA 20171

**PLEASE !
DON'T VIOLATE
THE
LAW!**

This document is copyrighted by the ECIA and may not be reproduced without permission.

Organizations may obtain permission to reproduce a limited number of copies through entering into a license agreement. For information, contact:

IHS Markit
15 Inverness Way East
Englewood, CO 80112-5704 or call
USA and Canada (1-877-413-5186), International (303-397-7956)

CONTENTS

Clause	Page
1 Introduction	1
1.1 Scope	1
2 Test resources	1
2.1 Equipment	1
2.2 Material	2
3 Test Specimen	2
3.1 Description	2
3.2 Preparation	2
4 Test Procedure	3
4.1 Mounting	3
4.2 Electrical tests	3
4.3 Temperature monitor	3
4.4 Test conditions	3
4.5 Post test examination	4
5 Details to be specified	5
6 Test documentation	5
Figures	
1 Thermocouple details	6
2 Firewall connector fixture details	7
3 Firewall connector fixture assembly	8
4 Firewall connector test setup example	9
5 Schematic circuit for testing firewall connectors	10
Table	
1 Connector test currents	4

(This page left blank)

TEST PROCEDURE No. 45C
FIREWALL FLAME TEST PROCEDURE
FOR
ELECTRICAL CONNECTORS

(From EIA Standards Proposal No. 5238, formulated under the cognizance EIA CE-2.0 Committee on National Connector Standards, and was previously published in EIA-364-45B.)

1 Introduction

1.1 Scope

This standard establishes a test method to determine the ability of a mated pair of electrical firewall connectors to resist specified flame and vibration conditions during 20 minutes of exposure by preventing flames from breaching the firewall through the connectors and providing specific electrical performance for the first 6 minutes.

NOTE — Do not use this test procedure to describe or appraise the fire hazard or fire risk of the materials, products or assemblies under actual fire conditions. Each application should be assessed for compatibility with electrical and circuit requirements.

CAUTION

1 This procedure involves hazardous materials, operations, and equipment. This procedure does not purport to address all safety problems associated with its use or all regulatory requirements. It is the responsibility of the user of this procedure to establish appropriate safety and health practices and to determine the applicability or regulatory limitations before its use.

2 This test should be conducted in a well ventilated area to avoid inhalation of smoke and toxic products of combustion. Personnel should be protected from risk of injury and equipment protected from damage.

2 Test Resources

2.1 Equipment

2.1.1 An inspirator torch capable of producing and maintaining a flame at a constant temperature of $1100\text{ }^{\circ}\text{C} \pm 25\text{ }^{\circ}\text{C}$ ($2012\text{ }^{\circ}\text{F} \pm 45\text{ }^{\circ}\text{F}$) from propane or natural gas with a flow rate equivalent to an input of $3.48 \times 10^7\text{ J/h}$ to $3.90 \times 10^7\text{ J/h}$ (33,000 Btu/h to 37,000 Btu/h). Primary cone diameter shall be 12.7 millimeters - 19 millimeters (0.50 inch - 0.75 inch) at nozzle. Secondary cone shall engulf or provide representative impingement coverage, dependent on size of the test sample.