



American National Standard for

Evaluating Welding Pads,
Welding Blankets and
Welding Curtains for
Hot Work Operations

ANSI/FM 4950
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Foreword

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This standard is intended to verify that the products described will meet stated conditions of performance and quality. The purpose of this Standard is to present the criteria for evaluating various types of welding blankets, pads and curtains to be used as guidance for manufacturers, users and authorities having jurisdiction.

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Approval of an American National Standard requires verification by ANSI that the principles of openness and due process have been followed and that a consensus of those directly and materially affected by the standard has been achieved. Consensus requires that all views and objections be considered, and that a concerted effort be made toward their resolution. Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached.

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ANSI regulations require that this American National Standard shall be revised, reaffirmed or withdrawn within five years of the date of publication.

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I. INTRODUCTION

1.1 Purpose

This standard states test requirements for welding pads, welding blankets and welding curtains for use in hot work operations. These items are intended to be used as fire resistant covers that prevent the ignition of combustibles due to welding, cutting and other hot work operations.

1.2 Scope

1.2.1 This standard sets performance requirements for welding pads, welding blankets and welding curtains used as a means of preventing the ignition of combustibles during welding, cutting and other hot work operations.

1.2.2 The fire performance of a fire resistant cover depends on the type of welding function to which it will be subjected. In general, welding pads, welding blankets and welding curtains are evaluated on their ability to:

- prevent burn through of the material and provide adequate protection for adjacent combustibles from possible sources of ignition;
- limit temperature transmission through the material to a degree that will prevent ignition to underlying combustibles;
- resist melting, dripping or deformation so as to prevent sparks from spreading outside of confined and protected areas;
- maintain their flexibility, durability and structural integrity when charred areas are subjected to 90° bends;
- maintain their fire and temperature rise resistance properties when subjected to accelerated weathering tests intended to simulate exposure to light and water (ultra violet [uv] and condensation, respectively) conditions.

1.2.3 This standard is not intended to determine the suitability for all end use conditions of a product. Conditions under which welding pads, welding blankets and welding curtains are used vary widely. For example, these materials may be subjected to environments not anticipated by this standard. It is the responsibility of the end user to determine the suitability of the welding pad, welding blanket or welding curtain for the specific hot work operation.

1.2.4 This standard does not address the issue of toxicity or out-gassing of the materials when they are subjected to molten or other fire conditions resulting from hot work operations.

1.2.5 The use of the materials evaluated to this standard does not take the place of or eliminate the need to observe other hot work precautions such as the issuance of hot work permits, fire watches or the need to practice other safety precautions recommended NFPA 51B, or whenever Hot Work precautions are required.

1.3 Basis for Requirements

- 1.3.1 The requirements of this standard are based on experience, research and testing and/or the standards of other national and international organizations. The advice of manufacturers, users, trade associations and loss control specialists was also considered.
- 1.3.2 The requirements of this standard reflect tests and practices used to examine characteristics of welding pads, welding blankets and welding curtains for hot work operations.

1.4 System of Units

Units of measurement are U.S. customary units. These are followed by their arithmetic equivalents in International System (SI) units, enclosed in parentheses. Appendix B lists the selected units for qualities dealt with in testing these products; conversions to SI units are included. Conversion of U.S. customary units is in accordance with ANSI/IEEE/ASTM SI 10-97, *Standard for Use of the International System of Units (SI): The Modern Metric System*.

2. APPLICABLE DOCUMENTS

2.1 Applicable Documents

- The following are standards, test methods and practices referenced in this standard:
- American Society for Testing and Materials (ASTM) G-53 - 96, *Standard Practice for Operating Light and Water Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Nonmetallic Materials*
 - National Fire Protection Association (NFPA) 51B, *Standard for Fire Prevention During Welding, Cutting and Other Hot Work* (1999)
 - Test Method for Evaluating Welding Pads, Blankets and Curtains (Appendix B)
 - Test Method for Assessing Charring Embrittlement (Appendix C)

2.2 Glossary

<i>Charring</i>	the formation of a carbonaceous residue as the result of pyrolysis or incomplete combustion.
<i>Fill</i>	the yarn running selvage to selvage at right angle to the warp. Also commonly referred to as the cross machine direction.
<i>Hot work</i>	any work involving burning, welding, cutting or similar operations that produces sparks, flames or heat that is capable of initiating fires or explosions.
<i>Ignition</i>	the initiation or continuance of combustion.
<i>Molten substance</i>	metals in their liquified, elevated temperature state, as well as related non-metallic substances such as slag, dross and salt, handled at elevated temperatures.