Designation: B 812 – 96 (Reapproved 2002)$^{\epsilon 1}$

Standard Test Method for Resistance to Environmental Degradation of Electrical Pressure Connections Involving Aluminum and Intended for Residential Applications[1]

This standard is issued under the fixed designation B 812; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

ϵ^1 NOTE—Paragraph 1.4 was corrected editorially in June 2002.

INTRODUCTION

Electrical pressure connection systems involving aluminum are those in which one or more of the components of the system in the direct electrical path or carrying any electrical current is fabricated of aluminum, including aluminum wires, aluminum bus bars, aluminum bolts, aluminum terminations, or any other aluminum current-carrying member. Included are systems which must carry current for safety purposes such as ground shields or straps attached to aluminum framing or other structural members. Pressure connection systems can be evaluated by this test method. Such systems are comprised of the wire or other structure being connected and the means of connection, any element of which is made of aluminum.

Connection systems tested are exposed sequentially to ambients of high relative humidity and temperature cycles of 75°C, such as may be encountered by some connections in actual residential applications. Periodic observation of the potential drop across the connection interfaces while carrying rated current provides a measurement of connection performance.

1. Scope

1.1 This test method covers all residential pressure connection systems. Detailed examples of application to specific types of connection systems, set-screw neutral bus connectors and twist-on wire-splicing connectors, are provided in Appendix X1 and Appendix X2.

1.2 The purpose of this test method is to evaluate the performance of residential electrical pressure connection systems under conditions of cyclic temperature change (within rating) and high humidity.

1.3 The limitations of the test method are as follows:

1.3.1 This test method shall not be considered to confirm a specific lifetime in application environments.

1.3.2 The applicability of this test method is limited to pressure connection systems rated at or below 600 V d-c or a-c RMS.

1.3.3 This test method is limited to temperature and water vapor exposure in addition to electrical current as required to measure connection resistance.

1.3.4 This test method does not evaluate degradation which may occur in residential applications due to exposure of the electrical connection system to additional environmental constituents such as (but not limited to) the following examples:

1.3.4.1 Household chemicals (liquid or gaseous) such as ammonia, bleach, or other cleaning agents.

1.3.4.2 Chemicals as may occur due to normal hobby or professional activities such as photography, painting, sculpture, or similar activities.

1.3.4.3 Environments encountered during construction or remodeling such as direct exposure to rain, uncured wet concrete, welding or soldering fluxes and other agents.

1.3.5 This test method is limited to evaluation of pressure connection systems.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to become familiar with all hazards including those identified in the appropriate Material Safety Data Sheet for this product/material as provided by the manufacturer, to establish appropriate safety and*

[1] This test method is under the jurisdiction of ASTM Committee B02 on Nonferrous Metals and Alloys and is the direct responsibility of Subcommittee B02.11 on Electrical Contact Test Methods.

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