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## **ACCREDITATION CRITERIA FOR FIELD EVALUATION OF UNLISTED ELECTRICAL EQUIPMENT**

**AC354**

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### **PREFACE**

The attached accreditation criteria has been issued to provide all interested parties with guidelines on implementing performance features of the applicable standards referenced herein. The criteria was developed and adopted following public hearings conducted by the International Accreditation Service, Inc. (IAS), Accreditation Committee and is effective on the date shown above. All accreditations issued or reissued on or after the effective date must comply with criteria. If the criteria is an updated version from a previous edition, solid vertical lines (||) in the outer margin within the criteria indicate a technical change or addition from the previous edition. Deletion indicators (→) are provided in the outer margins where a paragraph or item has been deleted if the deletion resulted from a technical change. This criteria may be further revised as the need dictates.

IAS may consider alternate criteria provided the proponent submits substantiating data demonstrating that the alternate criteria are at least equivalent to the attached criteria and otherwise meet applicable accreditation requirements.

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# ACCREDITATION CRITERIA FOR FIELD EVALUATION OF UNLISTED ELECTRICAL EQUIPMENT

## 1.0 INTRODUCTION

**1.1 Purpose:** The purpose of this accreditation criteria is to specify requirements for IAS-accredited field evaluation bodies (FEBs) performing evaluations of unlisted electrical equipment installed in the field. FEBs complying with this criteria will have demonstrated that they have the personnel, organization, experience, knowledge and competence to inspect and test unlisted electrical equipment installed in the field in accordance with specified requirements.

**1.2** This criteria is limited to inspection and related testing only and does not apply to the products or the design or performance characteristics of the products.

**1.3** This criteria specifically excludes listing of field-installed electrical equipment and specifically excludes surveillance of the product unless periodic surveillance is directed by the authority having jurisdiction (AHJ).

## 2.0 REFERENCES

**2.1** NFPA 70, National Electrical Code (NEC), Chapter One.

**2.2** IAS Accreditation Criteria AC98, Accreditation Criteria for Inspection Agencies.

**2.3** ISO/IEC (International Organization for Standardization/International Electrotechnical Commission) Standard 17025:2005, General Requirements for the Competence of Calibration and Testing Laboratories.

**2.4** ISO/IEC (International Organization for Standardization/International Electrotechnical Commission) Standard 17020:1998, General Criteria for the Operation of Various Types of Bodies Performing Inspection.

## 3.0 DEFINITIONS

**3.1 Authority Having Jurisdiction (AHJ):** Governmental organization, office, and/or representative responsible for approving equipment, materials, installations, procedure(s), and/or structures; authoritative body which performs functions related to enforcement of construction and other laws; and/or the officer or other designated authority charged with the administration and enforcement of codes as adopted in their jurisdiction. Typically, a building department, code enforcement official, fire marshal, or similar.

**3.2 Emergency Main Off (EMO):** Also known as Emergency Stop or Emergency Machine Off. A category 0 stop device that overrides all other controls to remove power from all control actuators and bring the equipment to a safe stand-by condition.

**3.3 Engineer:** Personnel specifically designated as responsible for oversight and approval, and for assuring the quality and technical competence of inspections and associated testing.

**3.4 Evaluated Mark:** The mark or symbol applied by the evaluation agency to indicate conformance to the relevant product safety standard(s), and to other applicable requirement(s) as directed in this criteria.

**3.5 Field Evaluation:** The process used for one-of-a-kind, limited-production, used, or modified products that are not listed or labeled under a full listing and certification program. The process is completed at the point of manufacturing, interim points of distribution, in the evaluating company's facilities, at the final installation site, or a combination of the above.

**3.6 Field Evaluation Body (FEB):** An organization furnishing evaluation services under this criteria, accredited by IAS in accordance with this criteria.

**3.7 Inspector:** Personnel appropriately trained to inspect products or systems or types of products or systems in a field installation, and appropriately trained and qualified to conduct any associated testing that may be required.

**3.8 Label:** An identification indicating that a product has been evaluated. Under no conditions must the label suggest that the evaluation constitutes listing of the product.

**3.9 Listed:** Equipment, materials, or services included in a list published by an organization acceptable to the AHJ and concerned with evaluation of products or services. The organization maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and the listing states either that the equipment, material, or service meets identified standards or that it has been tested and found suitable for a specified purpose.

**3.10 Product:** An unlisted item, product, or system installed in a field location. The product may or may not have listed components or subsystems.

## 4.0 GENERAL REQUIREMENTS

**4.1 Required:** The organization seeking accreditation under this criteria must meet all requirements of this criteria; documents referenced in Sections 2.1, 2.2, and 2.4; and applicable clauses of the document referenced in Section 2.3.

### 4.2 Assessment by IAS

**4.2.1** Prior to accreditation under this criteria, the FEB is required to undergo a field assessment by IAS. The purpose of this assessment is to assess the evaluation procedures and the competence of personnel performing the evaluation.

**4.2.2** After the initial year of accreditation, FEBs are subject to a surveillance evaluation.

**4.2.3** IAS field observation of the FEB's personnel under this criteria will be conducted at a minimum of once every two years. Depending on the number of personnel employed by the FEB (staff and/or contract), a sampling of personnel may be observed. Scheduling for field observations may be flexible, depending on evaluation contracts.

### 4.3 Required Personnel

**4.3.1 Engineer:** The FEB shall designate an engineer(s) (by whatever name) who will have responsibility for technical management of the evaluation

operations. This person shall have defined and documented authority and responsibility, and must meet the following:

**4.3.1.1** The engineer shall be specifically designated in writing as an authorized signatory to review evaluation reports.

**4.3.1.2** The engineer shall have appropriate qualifications to allow technical judgments regarding the evaluation results for the field of FEB. Qualifications shall be appropriate technical education and/or appropriate professional certification, with at least five years of work experience in the field of electrical evaluation.

**4.3.1.3** The engineer shall physically observe inspectors in the field at an interval not to exceed two years, and documentation shall be maintained of the field observation, including a copy of the report from the evaluation observed. Such observation is in addition to field observation by IAS, but may be conducted concurrently.

**4.3.1.4** The engineer and the inspector for any specific evaluation cannot be the same person.

**4.3.1.5** The engineer shall review reports issued in the field to assure that the reports are complete and have sufficient and appropriate technical information.

**4.3.2 Inspector:** The FEB shall designate inspector(s) to conduct evaluations. The inspector may be staff or contract personnel. If the inspector is on contract, then the inspector shall be under direct contract to the FEB. Inspectors must have defined and documented responsibilities and authority, and have the following qualifications:

**4.3.2.1** The inspector shall be appropriately trained by the FEB in evaluation techniques, in use of any test and measuring equipment required, and in the FEB's quality management system (QMS), including evaluation procedures. The FEB shall document the inspector's training, and conduct refresher training at an interval not to exceed every two years.

**4.3.2.2** The inspector shall have appropriate experience, in addition to training, to conduct the evaluations in the field. The inspector shall be qualified for specific types of evaluations based on training, experience, and field observations, and the FEB shall maintain records of the qualifications, including the date of qualification.

**4.3.2.3** The inspector shall have documented knowledge of electrical parameters. This shall include AC and DC theory for voltage and current, grounding, ESD (electro-static discharge) protection, electrical safety, test equipment usage (e.g., meters and oscilloscopes), power supplies (high- and low-voltage, switching and non-switching), wiring and labeling protocols, and other electrical parameters as appropriate and necessary for the field of evaluation.

**4.3.2.4** Appropriate professional certification is acceptable as evidence of knowledge of electrical parameters.

## **5.0 TECHNICAL REQUIREMENTS FOR THE FEB**

**5.1** The FEB shall assure that product(s) evaluated meet all applicable requirements for the location of the evaluation, including local codes and appropriate safety requirements. For electrical evaluations, the document referenced in Section 2.1 of this criteria shall be used, and information documented shall be maintained as a part of the report under Section 6.0.

**5.2** The FEB shall have test and measuring equipment used in the evaluation appropriately calibrated by a calibration provider accredited to ISO/IEC Standard 17025, by an accrediting body that is a signatory to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA). Records of the calibrations shall be maintained. The FEB must be able to identify which equipment is used for which evaluation.

**5.3** Where listed products are utilized in primary or backup power or grounding circuits, or in safety-of-life circuits/applications, or in Emergency Main Off applications, the FEB shall record the part number and/or description, the circuit the item is in, the listing organization (e.g., UL/CSA/FM/ITS), and the listing number.

**5.4** The FEB shall have a policy and procedure to observe inspectors in the field prior to qualification. Records of the observation(s) shall be maintained.

**5.5** Digital (electronic) records may be maintained in lieu of hard copies. The FEB must have procedures to assure that once a report is complete it cannot be tampered with, that reports in progress are protected against unauthorized modification, and that reports are backed up (with a copy of the backup to be maintained off-site). Documents may be sent digitally (electronically) so long as protection against subsequent modification of the document is assured. Up-to-date antivirus and similar protection software shall be employed to protect computers giving access to the reports.

**5.6** Subcontracting of evaluations to another organization under this criteria is allowed providing the subcontracted organization is also accredited under this criteria. Both FEB organizations must maintain copies of the report, and documentation of the inspector qualifications and training, including refresher training. The engineer employed by the primary FEB must conduct a review of the report.

## **6.0 REQUIRED REPORT INFORMATION**

**6.1** Reports shall accurately and clearly outline the results of evaluations. The report must be maintained by the FEB in accordance with record retention time specified in the QMS, but not less than four years. The report must be provided to the responsible person at the location of the evaluation. A copy of the report must be provided to the AHJ upon written request from the AHJ. The FEB may also provide a copy of the report directly to the AHJ upon completion of the evaluation. Report formats may vary, but reports must be easily understandable and readable.

**6.2** Reports shall contain at least the following information:

**6.2.1** Name, address, phone number, designated contact person (e.g., Engineer), and accreditation information (Accreditation Body logo and accreditation number) of the evaluation agency.

**6.2.2** Name, address, phone number, contact information for responsible person(s) at the location of the field evaluation.

**6.2.3** Name, address, phone number, and contact information of the jurisdiction that has approval responsibility over the final installation site (AHJ).

**6.2.4** The project identifier, which shall be a unique identifier.

**6.2.5** A full description of the product evaluated. Multiple products that are not identical may be included in a single report only if the products collectively constitute an integrated system. However, multiple products may be covered in a single report if the products and installations are identical, specifically authorized by the AHJ, and documented in accordance with referenced document 2.1.

**6.2.6** If the report is an amended/revised report, the amendment or revision information must be clearly identified.

**6.2.7** Evaluation date(s), and arrival and departure times of the inspector.

**6.2.8** Description of the location and surrounding environment of the product. Drawings, schematics, blueprints or a written description are acceptable evidence.

**6.2.9** Results of tests witnessed or performed, including sufficient detail to establish that the installed product complies with specifications, requirements, and/or regulatory requirements (e.g., electrical code).

**6.2.10** Information pertaining to review of any label(s) applied to the installed product, and of any listed components or subsystems. This shall include the listed products identified and recorded as described above.

**6.2.11** The applicable specifications and requirements, including revision information, specific clauses/paragraphs excluded, and local requirements, must be listed, including permit number.

**6.2.12** Photographs (digital or film) of the product and the applied label, where photographs are possible. If the label is serialized, the report must also include the serial number of the label applied.

**6.2.13** Evidence that the inspector has checked product traceability to the extent that inspecting traceability is possible. Recording of information regarding listed items is considered sufficient traceability for those items. For unlisted items (e.g., ducting) a recording of approved drawings and/or source(s) of the items may be sufficient.

**6.2.14** Date that the report was prepared.

**6.2.15** Limitation or restriction on product use (e.g., indoor use only).

**6.2.16** A statement that the report addresses only the product described in the report, as the product existed at the time of the inspection.

**6.2.17** Name, title, and signature of the inspector who conducted the evaluation.

**6.2.18** If the inspection is subcontracted, that must be specifically stated, with the accreditation information of the subcontracted organization included.

**6.2.19** Name, title, and signature of the engineer, upon completion of the review. ■