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*Seismic Certification of Nonstructural Electrical Subcomponents
by Shake-Table Testing Independent of the Parent Equipment*

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Foreword

This standard was developed to provide detailed procedures for seismic certification by testing nonstructural electrical and medical imaging equipment subcomponents independent of the parent equipment to augment testing subcomponents at the equipment level.

These guidelines have been developed and approved by the NEMA Seismic Council, which periodically reviews them for any revisions necessary to address changing conditions, product listing and installation requirements, and technical progress. Section approval of the standard does not necessarily imply that all section members voted for its approval or participated in its development. Comments for proposed revisions are welcome and should be submitted to:

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1 Purpose

The purpose of this test standard is to establish minimum requirements for the seismic certification of electrical and medical imaging equipment subcomponents by shake-table testing subcomponents independent of the parent equipment they are contained in. This test standard is compatible with the special certification requirements for designated seismic systems contained in the 2018, 2015, and 2012 International Building Code® (IBC) nonstructural seismic provisions.

The reason for the development of this standard is to provide detailed procedures for seismic certification by testing nonstructural electrical and medical imaging equipment subcomponents independent of the parent equipment to augment testing subcomponents at the equipment level. There are three sets of test criteria: (1) subcomponent test unit and pre-test information, (2) subcomponent certification test procedure, and (3) test laboratory reports of test. Testing done in accordance with these criteria is intended to enhance certification data for the seismic certification of electrical and medical imaging nonstructural components permanently attached to structures, as specified in the IBC model code and ASCE/SEI 7 design standard.

2 Scope

These test criteria are applicable for shake-table testing of electrical and medical imaging equipment subcomponent functional units per Figure 1 nomenclature. The term “subcomponent” is used herein to describe various types of equipment functionality resulting from the assemblage of equipment devices (i.e., subcomponents) and subassemblies that deliver specific electrical distribution, control, electromagnetic, and imaging functions. Subcomponent functional unit testing (i.e., child testing) per these criteria is conducted to augment equipment testing (i.e., parent testing) per ICC-ES AC156 test protocol.

Subcomponent testing assumes an equipment importance factor, I_p , greater than one, which requires post-test subcomponent functionality validation for designated seismic systems servicing critical infrastructure. Additionally, subcomponent testing per these criteria assumes that seismic qualification rationalization has been conducted to identify the subcomponents requiring testing for a given product line. This test standard provides procedures and criteria for testing subcomponents and does not provide selection criteria for type testing rationalization for electrical equipment. This test standard is not applicable for use on mechanical or architectural nonstructural components.

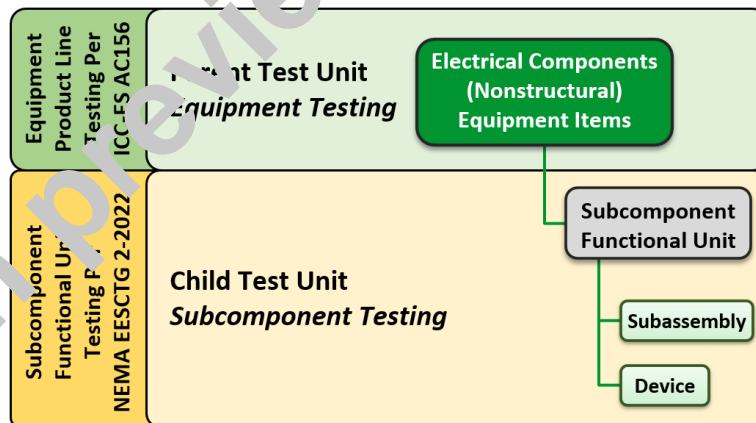


Figure 1
Electrical Equipment Nomenclature
Distinguishing Parent and Child Test Units