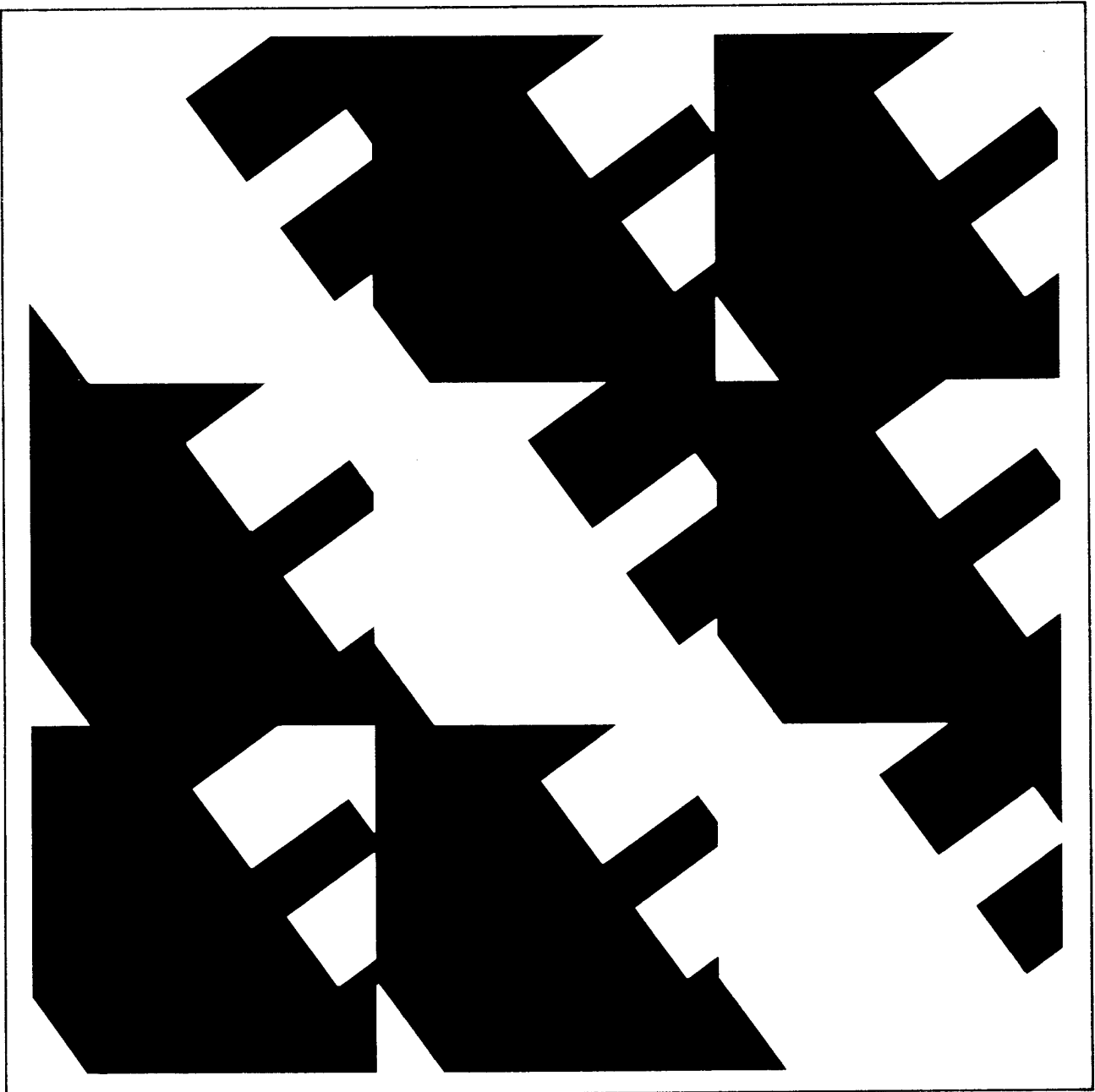


IEEE Standard General Requirements and Test Procedure for Outdoor Apparatus Bushings

ANSI/IEEE Std 21-1976



Published by The Institute of Electrical and Electronics Engineers, Inc 345 East 47th Street, New York, NY 10017, USA

November 30, 1976

SH06452

ANSI
C76.1-1976
IEEE
Std 21-1976
(Supersedes ANSI
C76.1-1964, IEEE
Std 21-1964)

An American National Standard

**IEEE General Requirements and Test Procedure for
Outdoor Apparatus Bushings**

Approved June 3, 1976

IEEE Standards Board

Secretariat

Institute of Electrical and Electronics Engineers, Inc

Approved July 23, 1976

American National Standards Institute

Published by

The Institute of Electrical and Electronics Engineers, Inc

American National Standard

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Foreword

[This foreword is not part of IEEE Std 21-1976, IEEE General Requirements and Test Procedure for Outdoor Apparatus Bushings (ANSI C76.1-1976).]

This document is based on the standard practices in the United States for outdoor apparatus bushings. It is the result of joint efforts of professional engineers, manufacturers, and users working together in an American National Standards Committee C76 under the auspices of the American National Standards Institute (ANSI). The work was initially carried out under the auspices of the American Institute of Electrical Engineers (AIEE) [now the Institute of Electrical and Electronics Engineers (IEEE)] and the National Electrical Manufacturers Association (NEMA). The original standard, approved in 1942 as AIEE Standard 21 (which became American National Standard for Apparatus Bushings, ANSI C76.1-1943) was prepared by the Joint Committee on Bushing Standardization of the Electric Machinery, Power Transmission and Distribution, and Protection Devices Committees of the AIEE.

A supplement and partial revision, ANSI C76.1a-1958, Electrical and Dimensional Characteristics of Outdoor Apparatus Bushings (used with Power Circuit Breakers and Outdoor Transformers), was prepared by the NEMA Joint Sections Committee on Outdoor Apparatus Bushings (composed of representatives of the High Voltage Insulator Section, Power Circuit Breakers Group, Switchgear Section, and the Transformers Section. It resulted from work by the regional associations of electrical utilities and filled the user's needs for dimensional interchangeability.

At the time of this supplement, ANSI Sectional Committee C76 foresaw the need for a general revision and updating of the standard and asked AIEE and NEMA to submit recommendations. In NEMA implementation of this request was undertaken by a Subcommittee of the Joint Sections Committee on Outdoor Apparatus Bushings and resulted in a proposal which was approved in February 1960 by the Codes and Standards Committee for submission to C76 as the NEMA recommendation. In the AIEE a Joint Working Group consisting of members of the Transformer and Dielectric Test Committee of the Transformer Committee and of the Power Circuit Breaker Committee was established and developed a recommendation which was submitted to ANSI Committee C76 in July 1960. The AIEE proposal was subsequently reviewed by the West Coast Subcommittee of the AIEE Transformers Committee which developed additional recommendations and submitted them to ANSI Committee C76 in November 1960. ANSI Committee C76 appointed a special Working Group for Revision of ANSI C76.1-1943 to consolidate the several proposals and recommendations. This became IEEE Std 21-1964 and was approved June 9, 1964, as ANSI C76.1-1964, Standard Requirements and Test Code for Outdoor Apparatus Bushings; it was reaffirmed in 1970.

Work on a revision was initiated in Committee C76 in August 1968. A decision was made to separate the standard into three parts: the first (C76.1) to cover the general requirements and test procedures, the second (C76.2) to cover explicit ratings and dimensions, and the third to be an application guide. The latter is still under consideration. Other changes in this revision included: (1) test procedure updating, (2) adding 362 through 800 kV maximum system voltage bushing electrical ratings with wet switching impulse test values and coordination with switching surge sparkover values of arresters, and (3) establishing dual current ratings for 115 through 196 kV insulation class bushings, since circuit breakers have a lower temperature rise, permitting a larger current rating for a given maximum ambient temperature compared to transformers.

At the time it approved this standard, American National Standards Committee C76 on Apparatus Bushing Standardization had the following personnel:

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