

IEEE
Std 499-1983
(Revision of
IEEE Std 499-1974)

IEEE Recommended Practice for Cement Plant Electric Drives and Related Electrical Equipment

Sponsor

**Cement Industry Committee of the
IEEE Industry Applications Society**

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Foreword

(This Foreword is not part of IEEE Std 499-1983, IEEE Recommended Practice for Cement Plant Electric Drives and Related Electrical Equipment.)

Electrical equipment is the major factor in the powering and control of cement plants. As management demands more precision for quality control, greater production capacity, and less production cost, more and more emphasis is placed on the performance of the plant's installed electrical equipment.

The Cement Industry Committee has analyzed many areas pertaining to such requirements and through the working groups recommended practices have evolved for this industry. The Electrical Distribution Group published their analysis of plant power system practice, IEEE Std 277-1983.

The recommended practices listed herein pertain to the Drives and Related Products Working Group. This evaluation update is in a form of an agreement reached by all members of the working group and the committee in general. Certainly specific plant conditions could and probably would alter such a recommendation in a certain area; however, in general it is hoped the practices are a good guideline for the industry.

This recommended practice is a revision of IEEE Std 499-1974.

At the time this recommended practice was approved the membership of the Drives and Related Products Working Group was:

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IEEE Recommended Practice for Cement Plant Electric Drives and Related Electrical Equipment

1. General

1.1 Purpose. The purpose of these recommendations is to define and recommend practice for electric drives and related electrical equipment for installation in the cement industry in order to promote

- (1) Safety to personnel and equipment
- (2) Maximum reliability with minimum loss of production
- (3) Reduced maintenance and increased life of equipment
- (4) Clarification of needs and conditions to reduce special engineering and chance of error in specification
- (5) Overall economy.

1.2 Scope. These recommendations apply to all electric drives and include motors, control, and control wiring associated with machinery or equipment commonly used in the manufacturing areas of cement plants. They are intended as a guide and may be supplemented where special needs exist. They are not intended to apply to power distribution circuits.

These recommendations apply to electrical equipment having a supply voltage of 13 800 V or less. Voltages higher than this are not being covered at this time.

1.3 Use of Recommendations. It is urged that users and manufacturers cooperate with the working group to help formulate recommendations which will ensure the use of proven equipment and methods. The objective is to establish recommendations which will assist in preparing specifications for electric drives for cement plant equipment and their installation.

1.3.1 Definitions. Certain words used throughout these recommendations are defined as follows:

adequate. *See:* 1.3.2.

effective. *See:* 1.3.2.

nominal. An approximate or rated value. For purposes of this standard within $\pm 10\%$.

securely. *See:* 1.3.2.

should. Intended to indicate that which, at the present time, is considered a recommendation, that is, advised but not required.

suitable. *See:* 1.3.2.

1.3.2 Special Use of Terms. The terms suitable, adequate, effective, and securely denote conditions determined by the user or his representative after taking cognizance of all codes, standards, or practices applicable to the situation.

1.4 References. It is assumed that apparatus mentioned herein shall comply with the latest edition of the National Electrical Code. Cognizance of local codes must also be taken by the user to ensure that equipment involved complies therewith. Compliance with NEMA and American National Standards is also assumed where applicable to the equipment involved.

[1] ANSI/IEEE Std 519-1981, IEEE Guide for Harmonic Control and Reactive Compensation of Static Power Converters.

[2] ANSI/NEMA ICS-1978.¹

ANSI/NEMA ICS 1-1978, Industrial Control and Systems.²

ANSI/NEMA ICS 2-1978, Devices, Controllers, and Assemblies for Industrial Control.

ANSI/NEMA ICS 3-1978, Industrial Systems.

ANSI/NEMA ICS 6-1978, Enclosures for Industrial Control and Systems.

¹ ANSI publications are available from the Sales Department of American National Standards Institute, 1430 Broadway, New York, NY 10018.

² NEMA publications are available from the National Electrical Manufacturers Association, 2101 L Street, NW, Washington, DC 20037.