CSA C22.2 No. 249:96
(IEEE Std 1210-1996, IDT)
National Standard of Canada
(reaffirmed 2020)

CSA C22.2 No. 249:96
Standard tests for determining compatibility of cable-pulling lubricants with wire and cable

(IEEE Std 1210-1996, IDT)

Standards Council of Canada
Conseil canadien des normes

REVISED DECEMBER 2020

Legal Notice for Standards

Canadian Standards Association (operating as "CSA Group") develops standards through a consensus standards development process approved by the Standards Council of Canada. This process brings together volunteers representing varied viewpoints and interests to achieve consensus and develop a standard. Although CSA Group administers the process and establishes rules to promote fairness in achieving consensus, it does not independently test, evaluate, or verify the content of standards.

Disclaimer and exclusion of liability

This document is provided without any representations, warranties, or conditions of any kind, express or implied, including, without limitation, implied warranties or conditions concerning this document's fitness for a particular purpose or use, its merchantability, or its non-infringement of any third party's intellectual property rights. CSA Group does not warrant the accuracy, completeness, or currency of any of the information published in this document. CSA Group makes no representations or warranties regarding this document's compliance with any applicable statute, rule, or regulation.

IN NO EVENT SHALL CSA GROUP, ITS VOLUNTEERS, MEMBERS, SUBSIDIARIES, OR AFFILIATED COMPANIES, OR THEIR EMPLOYEES, DIRECTORS, OR OFFICERS, BE LIABLE FOR ANY DIRECT, INDIRECT, OR INCIDENTAL DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES, HOWSOEVER CAUSED, INCLUDING BUT NOT LIMITED TO SPECIAL OR CONSEQUENTIAL DAMAGES, LOST REVENUE, BUSINESS INTERRUPTION, LOST OR DAMAGED DATA, OR ANY OTHER COMMERCIAL OR ECONOMIC LOSS, WHETHER BASED IN CONTRACT, TORT (INCLUDING NEGLIGENCE), OR ANY OTHER THEORY OF LIABILITY, ARISING OUT OF OR RESULTING FROM ACCESS TO OR POSSESSION OR USE OF THIS DOCUMENT, EVEN IF CSA GROUP HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES.

In publishing and making this document available, CSA Group is not undertaking to render professional or other services for or on behalf of any person or entity or to perform any duty owed by any person or entity to another person or entity. The information in this document is directed to those who have the appropriate degree of experience to use and apply its contents, and CSA Group accepts no responsibility whatsoever arising in any way from any and all use of or reliance on the information contained in this document.

CSA Group is a private not-for-profit company that publishes voluntary standards and related documents. CSA Group has no power, nor does it undertake, to enforce compliance with the contents of the standards or other documents it publishes.

Intellectual property rights and ownership

As between CSA Group and the users of this document (whether it be in printed or electronic form), CSA Group is the owner, or the authorized licensee, of all works contained herein that are protected by copyright, all trade-marks (except as otherwise noted to the contrary), and all inventions and trade secrets that may be contained in this document, whether or not such inventions and trade secrets are protected by patents and applications for patents. Without limitation, the unauthorized use, modification, copying, or disclosure of this document may violate laws that protect CSA Group's and/or others' intellectual property and may give rise to a right in CSA Group and/or others to seek legal redress for such use, modification, copying, or disclosure. To the extent permitted by licence or by law, CSA Group reserves all intellectual property rights in this document.

Patent rights

Attention is drawn to the possibility that some of the elements of this standard may be the subject of patent rights. CSA Group shall not be held responsible for identifying any or all such patent rights. Users of this standard are expressly advised that determination of the validity of any such patent rights is entirely their own responsibility.

Authorized use of this document

This document is being provided by CSA Group for informational and non-commercial use only. The user of this document is authorized to do only the following:

If this document is in electronic form:

- load this document onto a computer for the sole purpose of reviewing it;
- search and browse this document; and
- print this document if it is in PDF format.

Limited copies of this document in printed or paper form may be distributed only to persons who are authorized by CSA Group to have such copies, and only if this Legal Notice appears on each such copy.

In addition, users may not and may not permit others to

- alter this document in any way or remove this Legal Notice from the attached standard;
- sell this document without authorization from CSA Group; or
- make an electronic copy of this document.

If you do not agree with any of the terms and conditions contained in this Legal Notice, you may not load or use this document or make any copies of the contents thereof, and if you do make such copies, you are required to destroy them immediately. Use of this document constitutes your acceptance of the terms and conditions of this Legal Notice.

Revision History

CSA C22.2 No. 249:96, Standard tests for determining compatibility of cable-pulling lubricants with wire and cable

National Standard of Canada — December 2020
Outside front cover, National Standard of Canada text, and title page. This Standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

Standards Update Service

CSA C22.2 No. 249:96
October 1996

Title: *Standard tests for determining compatibility of cable-pulling lubricants with wire and cable*

To register for e-mail notification about any updates to this publication
- go to **www.csagroup.org/store/**
- click on **Product Updates**

The **List ID** that you will need to register for updates to this publication is **2005376**.

If you require assistance, please e-mail **techsupport@csagroup.org** or call 416-747-2233.

Visit CSA Group's policy on privacy at **www.csagroup.org/legal** to find out how we protect your personal information.

Contents

IEEE Standard Tests for Determining Compatibility of Cable-Pulling Lubricants With Wire and Cable

1. Overview

1.1 Scope

This standard applies to cable-pulling lubricants (compounds) and the testing and analysis of their interaction with wire and cable. Cable-pulling lubricants are used to lower the tension on cables when they are installed (pulled) into conduits, ducts, or directionally bored holes. These lubricants and/or their residues are in direct contact with the cable exterior covering and may remain so for the life of the cable. Cable-pulling lubricants should be compatible with the cable. They should not interfere with the function of any component of the cable system that they contact.

Compatibility of cable-pulling lubricants with cable coverings is the only subject of this standard; other important performance criteria for cable-pulling lubricants, such as friction reduction, toxicity, combustibility, etc., are not discussed.

This standard utilizes accepted cable performance standards whenever possible. Relevant standards are cited in the text and listed in clause 2.

1.2 Purpose

This standard describes tests for determining the compatibility of cable-pulling lubricants with cable jacket or other exterior cable covering. Compatibility of cable-pulling lubricants with a variety of common cable coverings is considered.

Often, testing is confined to the effect of the lubricant on the physical properties of the jacket. When the electrical properties, such as dielectric withstand voltage or electrical resistivity, are important, the evaluation also includes these properties.