



NSAI
Standards

Irish Standard
I.S. EN 16028:2012

Railway applications - Wheel/rail friction management - Lubricants for trainborne and trackside applications

I.S. EN 16028:2012

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWIFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces:

This document is based on:
EN 16028:2012

Published:
24 July, 2012

This document was published under the authority of the NSAI and comes into effect on:
24 July, 2012

ICS number:

45.040

75.100

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

ICS 45.040; 75.100

English Version

Railway applications - Wheel/rail friction management - Lubricants for trainborne and trackside applications

Applications ferroviaires - Gestion des frottements roue/rail
- Lubrifiants pour les applications embarquées et fixes de
voie

Bahnanwendungen - Spurkranzschmierung - Prüfung der
Schmierstoffe

This European Standard was approved by CEN on 9 June 2012.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	4
Introduction	5
1 Scope.....	6
2 Normative references	6
3 Terms and definitions.....	9
4 Legislative compliance.....	10
5 Approval procedure	10
6 Control and monitoring of product	11
6.1 Manufacturing process.....	11
6.2 Type tests	12
6.3 Routine tests	12
7 Technical datasheet.....	12
8 Tests.....	12
8.1 Explanation of Annex A: Tables A.1 to A.4	12
8.2 Key to Annex A table columns 'Type', 'Routine' and 'Datasheet'	13
8.3 Key to Annex A table column 'Use'	13
9 Packaging, labelling and storage	13
Annex A (normative) Requirements for lubricants and testing.....	15
Annex B (normative) Water wash-off test.....	27
B.1 Purpose.....	27
B.2 Short description	27
B.3 Conditions for testing.....	27
B.4 Test process	27
Annex C (informative) Corrosion test on steel	30
C.1 Purpose.....	30
C.2 Short description	30
C.3 Conditions for testing.....	30
C.4 Test process	31
Annex D (informative) Behaviour at an elevated temperature – Adhesion on steel sheet	32
D.1 Purpose.....	32
D.2 Short description	32
D.3 Conditions for test	32
D.4 Test process	32
Annex E (informative) Determination of the volatile constituents in greases.....	34
E.1 Purpose.....	34
E.2 Short description	34
E.3 Conditions for testing.....	34
E.4 Test process	35
E.5 Recording of test results.....	35
Annex F (informative) Peak forming and droop	36
F.1 Purpose.....	36
F.2 Short description	36
F.3 Conditions for testing.....	36
F.4 Test process	36

Annex G (informative) Low-temperature torque (rheometer measurement at -20 °C and -30 °C)	39
G.1 Purpose	39
G.2 Short description	39
G.3 Conditions for test	39
G.4 Test process	40
Annex H (informative) Miscibility with flange/rail lubricants in use – greases	43
H.1 Purpose	43
H.2 Short description	43
H.3 Conditions for testing	43
H.4 Test process	44
Annex I (informative) Miscibility with flange/rail lubricants in use – oils	45
I.1 Purpose	45
I.2 Short description	45
I.3 Conditions for testing	45
I.4 Test process	46
Annex J (informative) Determination of low temperature cone penetration of greases	47
J.1 Purpose	47
J.2 Short description	47
J.3 Conditions for test	47
J.4 Test process	47
Annex K (informative) Functional test on specific equipment	49
K.1 General	49
K.2 Flowing behaviour of wheel-flange greases	49
K.3 Test of spraying of oils at various temperatures	51
Annex L (informative) Solid stick testing on twin-disc machine	55
L.1 Purpose	55
L.2 Short description	55
L.3 Conditions for test	55
L.4 Test process	58
L.5 Test results	58
Annex M (informative) Lubricant product performance - Field assessment	60
M.1 General	60
M.2 Product performance assessment	60
Bibliography	61

Foreword

This document (EN 16028:2012) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2013, and conflicting national standards shall be withdrawn at the latest by January 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

Friction management using solid or fluid (oil, grease, etc.) substances at the wheel-rail interface is a complex subject and includes the following aspects:

- lubrication of the wheel flange/rail gauge corner (active interface), commonly referred to as “flange or rail lubrication”;
- friction modification of the top of rail/wheel tread interface, commonly referred to as “top of rail friction management”.

This European Standard sets out requirements for the lubricant for flange or rail lubrication. It specifies requirements for the lubricant, how to test it and how to approve it.

Lubricants should be tested to confirm there is:

- compatibility with lubricating systems;
- no intolerable increased risk of fire;
- no harmful environmental effects;
- no incompatibility between the different lubricants in use, particularly between solid and fluid systems;
- satisfactory and consistent product quality and performance.

The main purpose of the lubricant is to reduce friction and wear, and keep them at an acceptable level.

The content is based on current experience and should not exclude developments that can be later incorporated at reissue.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
 - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-