

SLOVENSKI STANDARD SIST EN 50306-2:2020

01-junij-2020

Nadomešča:

SIST EN 50306-2:2003

Železniške naprave - Kabli v železniških vozilih s posebno požarno odpornostjo -Tanka stena - 2. del: Enožilni kabli

Railway applications - Railway rolling stock cables having special fire performance - Thin wall - Part 2: Single core cables

Bahnanwendungen - Kabel und Leitungen für Schienenfahrzeuge mit verbessertem Verhalten im Brandfall - Reduzierte Isolierwanddicken - Teil 2: Einadrige Kabel und Leitungen (standards.iteh.a)

Applications ferroviaires. Câbles pour matériel roulant ferroviaire ayant des performances particulières de comportement au feu - Isolation mince - Partie 2: Câbles monoconducteurs

Ta slovenski standard je istoveten z: EN 50306-2:2020

ICS:

13.220.40	Sposobnost vžiga in obnašanje materialov in proizvodov pri gorenju	Ignitability and burning behaviour of materials and products
29.060.20	Kabli	Cables
45.060.01	Železniška vozila na splošno	Railway rolling stock in general

SIST EN 50306-2:2020 en

SIST EN 50306-2:2020

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN 50306-2:2020 https://standards.iteh.ai/catalog/standards/sist/8fde041a-7fe8-465e-843f-6acec343b89c/sist-en-50306-2-2020

EUROPEAN STANDARD NORME EUROPÉENNE

EN 50306-2

EUROPÄISCHE NORM

March 2020

ICS 13.220.40; 29.060.20; 45.060.01

Supersedes EN 50306-2:2002 and all of its amendments and corrigenda (if any)

English Version

Railway applications - Railway rolling stock cables having special fire performance - Thin wall - Part 2: Single core cables

Applications ferroviaires - Câbles pour matériel roulant ferroviaire ayant des performances particulières de comportement au feu - Isolation mince - Partie 2: Câbles monoconducteurs

Bahnanwendungen - Kabel und Leitungen für Schienenfahrzeuge mit verbessertem Verhalten im Brandfall - Reduzierte Isolierwanddicken - Teil 2: Einadrige Kabel und Leitungen

This European Standard was approved by CENELEC on 2019-12-30. CENELEC 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 CENELEC 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 CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovakia, Spain, Sweden, Switzerland, Turkey and the United Kingdom. https://standards.iteh.ai/catalog/standards/sist/8fde041a-7fe8-465e-843f-

6acec343b89c/sist-en-50306-2-2020



European Committee for Electrotechnical Standardization Comité Européen de Normalisation Electrotechnique Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Scope	C	onte	nts	Page	
1 Scope 5 2 Normative references 5 3 Terms and definitions 6 4 Single-core cables 6 4.1 General 6 4.2 Marking and code designation 6 4.2.1 Marking of cable 6 4.2.2 Code Designation 6 4.3 Core identification 7 4.3.1 Single core cables 7 4.3.2 Multicore/multipair cables 7 4.4 Rated voltage 7 4.5 Construction 7 4.5.1 Conductor 7 4.5.2 Insulation system STANDARD PREVIEW 7 5 Tests (\$\$\frac{\text{standards.itch.air}}{\text{standards.itch.air}}\$ 8 5.1 Definitions relating to tests 8 5.2 Voltage test \$\$\text{Standards.itch.air}\$ 8 5.1 Definitions relating to tests 8 5.2 Voltage test \$\$\text{Standards.itch.air}\$ <	Ει	ıropean	foreword	3	
2 Normative references 5 3 Terms and definitions 6 4 Single-core cables 6 4.1 General 6 4.2 Marking and code designation 6 4.2.1 Marking of cable 6 4.2.2 Code Designation 6 4.3.1 Single core cables 7 4.3.2 Multicore/multipair cables 7 4.4 Rated voltage 7 4.5 Construction 7 4.5.1 Conductor 7 4.5.2 Insulation/systemSTANDARD PREVIEW 7 5.1 Definitions relating to tests 8 5.2 Voltage test SISTEMISONG-20200 8 5.2 Voltage test SISTEMISONG-20200 9 5.4 Dielectric strength Saccc343880/ssst-en-5036-2-2020 9 5.5 Spark test 9 5.6 DC stability 9 5.7 Strippability and adhesion of insulation to the conductor 10	Int	roductio	n	4	
3 Terms and definitions 6	1	Scope	e	5	
3 Terms and definitions 6	2	Norm	ative references	5	
4 Single-core cables 6 4.1 General 6 4.2 Marking and code designation 6 4.2.1 Marking of cable 6 4.2.2 Code Designation 7 4.3 Core identification 7 4.3.1 Single core cables 7 4.3.2 Multicore/multipair cables 7 4.4 Rated voltage 7 4.5 Construction 7 4.5.2 Insulation system TANDARD PREVIEW 7 5 Tests (stantiards.itch.act) 5.1 Definitions relating to tests 8 5.2 Voltage test 8 5.3 Insulation resistance the inharcunbustantion system STANDARD PREVIEW 7 5.4 Dielectric strength 6xccc3/3589c/sist-en-5030c-2-2020 5.5 Spark test 9 5.6 DC stability 9 5.7 Strippability and adhesion of insulation to the conductor 10 5.8 Hot set test 10 5.9 Long term ageing - Thermal endurance 11 5.10 Mineral oil resistance 11 5.11 Fuel resistance 11 5.12 Acid and alkali resistance 11 5.13 Pressure test at high temperature 12					
4.1 General 6 4.2 Marking and code designation 6 4.2.1 Marking of cable 6 4.2.2 Code Designation 6 4.3 Core identification 7 4.3.1 Single core cables 7 4.3.2 Multicore/multipair cables 7 4.4 Rated voltage 7 4.5.1 Conductor 7 4.5.2 Insulation system TANDARD PREVIEW 7 5 Tests (\$\text{standards.itch.itch.itch.itch.itch.itch.itch.itch					
4.2.1 Marking of cable 6 4.2.2.1 Code Designation 6 4.3.2 Core identification 7 4.3.1 Single core cables 7 4.3.2 Multicore/multipair cables 7 4.4 Rated voltage 7 4.5.1 Conductor 7 4.5.2 Insulation system TANDARD PREVIEW 7 5 Tests (standards.itch.air) 8 5.1 Definitions relating to tests 8 5.2 Voltage test SISTEN 50306-2-2020 8 5.3 Insulation resistance at such air catalog standards standards and relations are standards. 9 5.4 Dielectric strength 6acc343b89c/sisten-50306-2-2020 9 5.5 Spark test 9 5.6 DC stability 9 5.7 Strippability and adhesion of insulation to the conductor 10 5.8 Hot set test 10 5.9 Long term ageing - Thermal endurance 11 <tr< td=""><td>7</td><td>· ·</td><td></td><td></td></tr<>	7	· ·			
4.2.1 Marking of cable 6 4.2.2 Code Designation 6 4.3 Core identification 7 4.3.1 Single core cables 7 4.3.2 Multicore/multipair cables 7 4.4 Rated voltage 7 4.5 Construction 7 4.5.1 Conductor 7 4.5.2 Insulation system TANDARD PREVIEW 7 5. Tests (standards.iteh.ai) 8 5.1 Definitions relating to tests 8 5.2 Voltage test SISTEM 50306-2-2020 8 5.3 Insulation resistance is inclusively standards sis 8164418-768-8435 9 5.4 Dielectric strength 6accc343b89c/sist-en-50306-2-2020 9 5.5 Spark test 9 5.6 DC stability 9 5.7 Strippability and adhesion of insulation to the conductor 10 5.8 Hot set test 10 5.9 Long term ageing - Thermal endurance 11 5.10 Mineral oil resistance 11 5.11 <					
4.2.2 Code Designation 6 4.3 Core identification 7 4.3.1 Single core cables 7 4.3.2 Multicore/multipair cables 7 4.4 Rated voltage 7 4.5 Construction 7 4.5.1 Conductor 7 4.5.2 Insulation system TANDARD PREVIEW 7 5 Tests (standards.itch.ai) 8 5.1 Definitions relating to tests 8 5.2 Voltage test 8 8 5.2 Voltage test 8 8 5.3 Insulation resistance its technicatologistandards sankite of in Fig. 18 9 8 5.4 Dielectric strength 6xccc343b89c/sist-en-50306-2-2020 9 9 5.5 Spark test 9					
4.3 Core identification .7 4.3.1 Single core cables .7 4.3.2 Multicore/multipair cables .7 4.4 Rated voltage .7 4.5 Construction .7 4.5.1 Conductor .7 4.5.2 Insulation system TANDARD PREVIEW .7 5 Tests .8 5.1 Definitions relating to tests .8 5.2 Voltage test .8 5.2 Voltage test .8 5.3 Insulation resistance is incharcationy standards set/filed His 788 465e 843f .9 5.4 Dielectric strength .9 5.5 Spark test .9 5.6 DC stability .9 5.7 Strippability and adhesion of insulation to the conductor .10 5.8 Hot set test .10 5.9 Long term ageing - Thermal endurance .11 5.10 Mineral oil resistance .11 5.11 Fuel resistance .11 5.12 Acid and alkali resistance .11 5.13			-		
4.3.1 Single core cables .7 4.3.2 Multicore/multipair cables .7 4.4 Rated voltage .7 4.5 Construction .7 4.5.1 Conductor .7 4.5.2 Insulation system TANDARD PREVIEW .7 5 Tests .8 5.1 Definitions relating to tests .8 5.2 Voltage test .8 5.3 Insulation resistance at sitch alcando standards six Ricol 11a. 768. 465e. 843.6 .9 5.4 Dielectric strength .0 5.5 Spark test .9 5.6 DC stability .9 5.7 Strippability and adhesion of insulation to the conductor .10 5.8 Hot set test .10 5.9 Long term ageing - Thermal endurance .11 5.10 Mineral oil resistance .11 5.11 Fuel resistance .11 5.12 Acid and alkali resistance .11 5.13 Pressure test at high temperature .12 5.15 Notch propagation .12 <tr< td=""><td></td><td></td><td>· · · · · · · · · · · · · · · · · · ·</td><td></td></tr<>			· · · · · · · · · · · · · · · · · · ·		
4.3.2 Multicore/multipair cables 7 4.4 Rated voltage 7 4.5.1 Construction 7 4.5.2 Insulation system TANDARD PREVIEW 7 5 Tests. (standards:iteh:air) 8 5.1 Definitions relating to tests 8 5.2 Voltage test. SISTENI-50306-2-2020 8 5.3 Insulation resistance rule iteh air catalogy standards say RRE041a-788-465e-8416 9 5.4 Dielectric strength. 6accc343b89c/sist-en-50306-2-2020 9 5.5 Spark test. 9 5.6 DC stability. 9 5.7 Strippability and adhesion of insulation to the conductor 10 5.8 Hot set test 10 5.9 Long term ageing - Thermal endurance 11 5.10 Mineral oil resistance 11 5.11 Fuel resistance 11 5.12 Acid and alkali resistance 11 5.13 Pressure test at high temperature 12 5.15 Notch propagation 12 5.16 Heat Shrinkage 12 </td <td></td> <td>_</td> <td></td> <td></td>		_			
4.4 Rated voltage 7 4.5 Construction 7 4.5.1 Conductor 7 4.5.2 Insulation system TANDARD PREVIEW 7 5 Tests 8 5.1 Definitions relating to tests 8 5.2 Voltage test 8 5.3 Insulation resistancents itch arcual by standards six RE041a-768-465c-8436 9 5.3 Insulation resistancents itch arcual by standards six RE041a-768-465c-8436 9 5.4 Dielectric strength 6accc343b89c/sist-en-50306-2-2020 9 5.5 Spark test 9 5.6 DC stability 9 5.7 Strippability and adhesion of insulation to the conductor 10 5.8 Hot set test 10 5.9 Long term ageing - Thermal endurance 11 5.10 Mineral oil resistance 11 5.11 Fuel resistance 11 5.12 Acid and alkali resistance 11 5.13 Pressure test at high temperature 12 5.14 Dynamic cut through 12 5.15		_	· ·		
4.5 Construction 7 4.5.1 Conductor 7 4.5.2 Insulation system TANDARD PREVIEW 7 5 Tests (standards:itch.ai) 8 5.1 Definitions relating to tests 8 5.2 Voltage test SISTIEM 50306-2-2020 8 5.3 Insulation resistance its itchuricatologistandarks is RECATE - 768-465e-843F 9 5.4 Dielectric strength 6accc343b89c/sist-en-50306-2-2020 9 5.5 Spark test 9 5.6 DC Stability 9 5.7 Strippability and adhesion of insulation to the conductor 10 5.8 Hot set test 10 5.9 Long term ageing - Thermal endurance 11 5.10 Mineral oil resistance 11 5.11 Fuel resistance 11 5.12 Acid and alkali resistance 11 5.13 Pressure test at high temperature 12 5.14 Dynamic cut through 12 5.15 Notch propagation 12 5.16 Heat Shrinkage 12 <tr< td=""><td></td><td>_</td><td></td><td></td></tr<>		_			
4.5.1 Conductor 7 4.5.2 Insulation system STANDARD PREVIEW 7 5 Tests (standards:iteh.ar) 8 5.1 Definitions relating to tests 8 5.2 Voltage test SIST.EN.50306-2-2020 8 5.3 Insulation resistance rids itch ai/catalog/standards/sist/8/fic041a-7/88-465e-843£ 9 5.4 Dielectric strength 6accc343b89c/sist-en-50306-2-2020 9 5.5 Spark test 9 5.6 DC stability 9 5.7 Strippability and adhesion of insulation to the conductor 10 5.8 Hot set test 10 5.9 Long term ageing - Thermal endurance 11 5.10 Mineral oil resistance 11 5.11 Fuel resistance 11 5.12 Acid and alkali resistance 11 5.13 Pressure test at high temperature 12 5.14 Dynamic cut through 12 5.15 Notch propagation 12 5.16 Heat Shrinkage 12 5.19 Abrasion resistance 13			•		
4.5.2 Insulation system TANDARD PREVIEW 7 5 Tests (standards.itch.ai) 8 5.1 Definitions relating to tests 8 5.2 Voltage test SISTEN 50306-2-2020 8 5.3 Insulation resistancerds itch ai/catalog/standards/sist/8ide041a-7ic8-465e-843f 9 5.4 Dielectric strength 6accc343b89c/sist-en-50306-2-2020 9 5.5 Spark test 9 5.6 DC stability 9 5.7 Strippability and adhesion of insulation to the conductor 10 5.8 Hot set test 10 5.9 Long term ageing - Thermal endurance 11 5.10 Mineral oil resistance 11 5.11 Fuel resistance 11 5.12 Acid and alkali resistance 11 5.13 Pressure test at high temperature 12 5.14 Dynamic cut through 12 5.15 Notch propagation 12 5.16 Heat Shrinkage 12 5.17 Blocking of cores 13 5.18 Bending test at low temperature 13					
5 Tests (standards:iteh:ai) 8 5.1 Definitions relating to tests 8 5.2 Voltage test SIST I N: 50306-2-2000 8 5.3 Insulation resistance rds itch air catalog/standards/sst/8ite041a-7ic8-465c-843f- 9 5.4 Dielectric strength 6accc343b89c/sist-en-50306-2-2020 9 5.5 Spark test 9 5.6 DC stability 9 5.7 Strippability and adhesion of insulation to the conductor 10 5.8 Hot set test 10 5.9 Long term ageing - Thermal endurance 11 5.10 Mineral oil resistance 11 5.11 Fuel resistance 11 5.12 Acid and alkali resistance 11 5.13 Pressure test at high temperature 12 5.14 Dynamic cut through 12 5.15 Notch propagation 12 5.16 Heat Shrinkage 12 5.17 Blocking of cores 13 5.18 Bending test at low temperature 13 5.20 Pliability 13			Insulation system STANDARD PREVIEW	7	
5.1 Definitions relating to tests 8 5.2 Voltage test SIST EN 50306-2:3020 8 5.3 Insulation resistance rds.ich.ai/catalog/standards/sist/8tic041a-7ic8-465e-843E 9 5.4 Dielectric strength 6accc343b89c/sst-cn-50306-2-2020 9 5.5 Spark test 9 5.6 DC stability 9 5.7 Strippability and adhesion of insulation to the conductor 10 5.8 Hot set test 10 5.9 Long term ageing - Thermal endurance 11 5.10 Mineral oil resistance 11 5.11 Fuel resistance 11 5.12 Acid and alkali resistance 11 5.13 Pressure test at high temperature 12 5.14 Dynamic cut through 12 5.15 Notch propagation 12 5.16 Heat Shrinkage 12 5.17 Blocking of cores 13 5.18 Bending test at low temperature 13 5.20 Pliability 13 5.21 Ozone resistance 14	5				
5.2 Voltage test SISTEN 50306-2-2020 8 5.3 Insulation resistance rus, itch air catalog/standards/sist/8fde041a-768-465e-843f 9 5.4 Dielectric strength 6acec343b89c/sist-en-50306-2-2020 9 5.5 Spark test 9 5.6 DC stability 9 5.7 Strippability and adhesion of insulation to the conductor 10 5.8 Hot set test 10 5.9 Long term ageing - Thermal endurance 11 5.10 Mineral oil resistance 11 5.11 Fuel resistance 11 5.12 Acid and alkali resistance 11 5.13 Pressure test at high temperature 12 5.14 Dynamic cut through 12 5.15 Notch propagation 12 5.16 Heat Shrinkage 12 5.17 Blocking of cores 13 5.18 Bending test at low temperature 13 5.19 Abrasion resistance 13 5.20 Pliability 13 5.21 Ozone resistance 14 5.22 </td <td>J</td> <td>F 4</td> <td>(standards.iten.ar)</td> <td></td>	J	F 4	(standards.iten.ar)		
5.3 Insulation resistance rds itch al/catalog/standards/sist/8fte041a-7fc8-465e-843f 9 5.4 Dielectric strength 6accc343b89c/sist-en-50306-2-2020 9 5.5 Spark test 9 5.6 DC stability 9 5.7 Strippability and adhesion of insulation to the conductor 10 5.8 Hot set test 10 5.9 Long term ageing - Thermal endurance 11 5.10 Mineral oil resistance 11 5.11 Fuel resistance 11 5.12 Acid and alkali resistance 11 5.13 Pressure test at high temperature 12 5.14 Dynamic cut through 12 5.15 Notch propagation 12 5.16 Heat Shrinkage 12 5.17 Blocking of cores 13 5.18 Bending test at low temperature 13 5.19 Abrasion resistance 13 5.20 Pliability 13 5.21 Ozone resistance 14 5.22 Stress cracking test 15 5.23 Fire perform					
5.4 Dielectric strength 6accc343b89c/sist-en-50306-2-2020 9 5.5 Spark test 9 5.6 DC stability 9 5.7 Strippability and adhesion of insulation to the conductor 10 5.8 Hot set test 10 5.9 Long term ageing - Thermal endurance 11 5.10 Mineral oil resistance 11 5.11 Fuel resistance 11 5.12 Acid and alkali resistance 11 5.13 Pressure test at high temperature 12 5.14 Dynamic cut through 12 5.15 Notch propagation 12 5.16 Heat Shrinkage 12 5.17 Blocking of cores 13 5.18 Bending test at low temperature 13 5.19 Abrasion resistance 13 5.20 Pliability 13 5.21 Ozone resistance 14 5.22 Stress cracking test 15 5.23 Fire performance 15					
5.5 Spark test 9 5.6 DC stability 9 5.7 Strippability and adhesion of insulation to the conductor 10 5.8 Hot set test 10 5.9 Long term ageing - Thermal endurance 11 5.10 Mineral oil resistance 11 5.11 Fuel resistance 11 5.12 Acid and alkali resistance 11 5.13 Pressure test at high temperature 12 5.14 Dynamic cut through 12 5.15 Notch propagation 12 5.16 Heat Shrinkage 12 5.17 Blocking of cores 13 5.18 Bending test at low temperature 13 5.19 Abrasion resistance 13 5.20 Pliability 13 5.21 Ozone resistance 14 5.22 Stress cracking test 15 5.23 Fire performance 15					
5.6 DC stability 9 5.7 Strippability and adhesion of insulation to the conductor 10 5.8 Hot set test 10 5.9 Long term ageing - Thermal endurance 11 5.10 Mineral oil resistance 11 5.11 Fuel resistance 11 5.12 Acid and alkali resistance 11 5.13 Pressure test at high temperature 12 5.14 Dynamic cut through 12 5.15 Notch propagation 12 5.16 Heat Shrinkage 12 5.17 Blocking of cores 13 5.18 Bending test at low temperature 13 5.19 Abrasion resistance 13 5.20 Pliability 13 5.21 Ozone resistance 14 5.22 Stress cracking test 15 5.23 Fire performance 15			-		
5.7 Strippability and adhesion of insulation to the conductor 10 5.8 Hot set test 10 5.9 Long term ageing - Thermal endurance 11 5.10 Mineral oil resistance 11 5.11 Fuel resistance 11 5.12 Acid and alkali resistance 11 5.13 Pressure test at high temperature 12 5.14 Dynamic cut through 12 5.15 Notch propagation 12 5.16 Heat Shrinkage 12 5.17 Blocking of cores 13 5.18 Bending test at low temperature 13 5.19 Abrasion resistance 13 5.20 Pliability 13 5.21 Ozone resistance 14 5.22 Stress cracking test 15 5.23 Fire performance 15			·		
5.8 Hot set test 10 5.9 Long term ageing - Thermal endurance 11 5.10 Mineral oil resistance 11 5.11 Fuel resistance 11 5.12 Acid and alkali resistance 11 5.13 Pressure test at high temperature 12 5.14 Dynamic cut through 12 5.15 Notch propagation 12 5.16 Heat Shrinkage 12 5.17 Blocking of cores 13 5.18 Bending test at low temperature 13 5.19 Abrasion resistance 13 5.20 Pliability 13 5.21 Ozone resistance 14 5.22 Stress cracking test 15 5.23 Fire performance 15			•		
5.9 Long term ageing - Thermal endurance 11 5.10 Mineral oil resistance 11 5.11 Fuel resistance 11 5.12 Acid and alkali resistance 11 5.13 Pressure test at high temperature 12 5.14 Dynamic cut through 12 5.15 Notch propagation 12 5.16 Heat Shrinkage 12 5.17 Blocking of cores 13 5.18 Bending test at low temperature 13 5.19 Abrasion resistance 13 5.20 Pliability 13 5.21 Ozone resistance 14 5.22 Stress cracking test 15 5.23 Fire performance 15					
5.10 Mineral oil resistance 11 5.11 Fuel resistance 11 5.12 Acid and alkali resistance 11 5.13 Pressure test at high temperature 12 5.14 Dynamic cut through 12 5.15 Notch propagation 12 5.16 Heat Shrinkage 12 5.17 Blocking of cores 13 5.18 Bending test at low temperature 13 5.19 Abrasion resistance 13 5.20 Pliability 13 5.21 Ozone resistance 14 5.22 Stress cracking test 15 5.23 Fire performance 15					
5.11 Fuel resistance 11 5.12 Acid and alkali resistance 11 5.13 Pressure test at high temperature 12 5.14 Dynamic cut through 12 5.15 Notch propagation 12 5.16 Heat Shrinkage 12 5.17 Blocking of cores 13 5.18 Bending test at low temperature 13 5.19 Abrasion resistance 13 5.20 Pliability 13 5.21 Ozone resistance 14 5.22 Stress cracking test 15 5.23 Fire performance 15					
5.12 Acid and alkali resistance 11 5.13 Pressure test at high temperature 12 5.14 Dynamic cut through 12 5.15 Notch propagation 12 5.16 Heat Shrinkage 12 5.17 Blocking of cores 13 5.18 Bending test at low temperature 13 5.19 Abrasion resistance 13 5.20 Pliability 13 5.21 Ozone resistance 14 5.22 Stress cracking test 15 5.23 Fire performance 15					
5.13 Pressure test at high temperature 12 5.14 Dynamic cut through 12 5.15 Notch propagation 12 5.16 Heat Shrinkage 12 5.17 Blocking of cores 13 5.18 Bending test at low temperature 13 5.19 Abrasion resistance 13 5.20 Pliability 13 5.21 Ozone resistance 14 5.22 Stress cracking test 15 5.23 Fire performance 15					
5.14 Dynamic cut through 12 5.15 Notch propagation 12 5.16 Heat Shrinkage 12 5.17 Blocking of cores 13 5.18 Bending test at low temperature 13 5.19 Abrasion resistance 13 5.20 Pliability 13 5.21 Ozone resistance 14 5.22 Stress cracking test 15 5.23 Fire performance 15					
5.15 Notch propagation 12 5.16 Heat Shrinkage 12 5.17 Blocking of cores 13 5.18 Bending test at low temperature 13 5.19 Abrasion resistance 13 5.20 Pliability 13 5.21 Ozone resistance 14 5.22 Stress cracking test 15 5.23 Fire performance 15			• .		
5.16 Heat Shrinkage 12 5.17 Blocking of cores 13 5.18 Bending test at low temperature 13 5.19 Abrasion resistance 13 5.20 Pliability 13 5.21 Ozone resistance 14 5.22 Stress cracking test 15 5.23 Fire performance 15			,		
5.17 Blocking of cores 13 5.18 Bending test at low temperature 13 5.19 Abrasion resistance 13 5.20 Pliability 13 5.21 Ozone resistance 14 5.22 Stress cracking test 15 5.23 Fire performance 15					
5.18 Bending test at low temperature. 13 5.19 Abrasion resistance. 13 5.20 Pliability. 13 5.21 Ozone resistance. 14 5.22 Stress cracking test. 15 5.23 Fire performance. 15			-		
5.19 Abrasion resistance 13 5.20 Pliability 13 5.21 Ozone resistance 14 5.22 Stress cracking test 15 5.23 Fire performance 15			· ·		
5.20 Pliability			·		
5.21 Ozone resistance					
5.22 Stress cracking test			•		
5.23 Fire performance					
•			· · · · · · · · · · · · · · · · · · ·		
	Bil		·		

European foreword

This document (EN 50306-2:2020) has been prepared by CLC/TC 20, "Electric cables".

The following dates are fixed:

•	latest date by which this document has	(dop)	2020-12-30
	to be implemented at national level by		
	publication of an identical national		
	standard or by endorsement		

 latest date by which the national (dow) 2022-12-30 standards conflicting with this document have to be withdrawn

This document supersedes EN 50306-2:2002 and all of its amendments and corrigenda (if any).

This edition includes the following significant technical changes with respect to the previous edition:

- The documents have been updated to reflect the changes in the test standard EN 50305;
- The range of the conductor cross sections has been extended;
- The reference to cited standards (e.g. 60811 series) has been updated.

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

SIST EN 50306-2:2020 https://standards.iteh.ai/catalog/standards/sist/8fde041a-7fe8-465e-843f-6acec343b89c/sist-en-50306-2-2020

Introduction

The EN 50306 series covers a range of sheathed and unsheathed cables with thin wall thickness insulation, based on halogen-free materials, for use in railway rolling stock. It is divided into four parts:

Part 1: General requirements;

Part 2: Single core cables;

Part 3: Single core and multicore cables screened and thin wall sheathed;

Part 4: Multicore and multipair screened or not screened sheathed cables.

Special test methods referred to in the EN 50306 series are given in EN 50305. A guide to use is given in EN 50355 and rules for installation are given in EN 50343.

The cables in EN 50306-2:2020 are also required in other parts of this series of standards to build up cables with additional screening and sheathing and also in multicore and multipair combinations.

EN 50306-1:2020, General requirements, contains a more extensive introduction to the EN 50306 series and should be read in conjunction with this document.

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN 50306-2:2020 https://standards.iteh.ai/catalog/standards/sist/8fde041a-7fe8-465e-843f-6acec343b89c/sist-en-50306-2-2020

1 Scope

This document specifies requirements for, and constructions and dimensions of, single core cables, rated voltage U_0 / U = 300 /300 V, of the following type:

Unscreened (0,5 mm² to 2,5 mm² single core)

These cables are rated for occasional thermal stresses causing ageing equivalent to continuous operational life at a temperature of 105 °C. For standard cables, this is determined by the acceptance test defined in EN 50305, using accelerated long-term (5 000 h) thermal ageing indicating a 125 °C/20 000 h temperature index. If the customer were to require lifetime predictions, this would be demonstrated based on the temperature index of the product as supplied by the manufacturer. The maximum temperature for short circuit conditions is 160 °C based on duration of 5 s.

Under fire conditions the cables exhibit special performance characteristics in respect of maximum permissible flame propagation (flame spread) and maximum permissible emission of smoke and toxic gases. These requirements are specified to permit the cables to satisfy Hazard Level 3 of EN 45545-1 and EN 45545-2.

EN 50306-2:2020 is expected to be used in conjunction with EN 50306-1:2020, General requirements.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 10002-1, Metallic materials - Tensile testing - Part 1: Method of test at ambient temperature

EN 45545-1, Railway applications - Fire protection on railway vehicles - Part 1: General

EN 50305:2020, Railway applications - Railway rolling stock cables having special fire performance - Test methods

EN 50306-1:2020, Railway applications - Railway rolling stock cables having special fire performance - Thin wall - Part 1: General requirements

EN 50334, Marking by inscription for the identification of cores of electric cables

EN 60332-1-2, Tests on electric and optical fibre cables under fire conditions - Part 1-2: Test for vertical flame propagation for a single insulated wire or cable - Procedure for 1 kW pre-mixed flame

EN 60811 (all parts), Electric and optical fibre cables - Test methods for non-metallic materials

EN 61034-2, Measurement of smoke density of cables burning under defined conditions - Part 2: Test procedure and requirements

EN 62230, Electric cables - Spark-test method

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at https://www.iso.org/obp
- IEC Electropedia: available at http://www.electropedia.org/

4 Single-core cables

4.1 General

The cables shall conform to the applicable general requirements given in EN 50306-1:2020 and to the specific requirements of this Part 2.

Conformity with the requirements shall be checked by inspection and by the tests given in Table 4.

4.2 Marking and code designation

4.2.1 Marking of cable

Cables shall be marked with the following: NDARD PREVIEW

- Manufacturer's name; (standards.iteh.ai)
- EN reference; <u>SIST EN 50306-2:2020</u>
- Voltage rating ($U_0^{\text{https://standards.iteh.ai/catalog/standards/sist/8fde041a-7fe8-465e-843f-6acec343b89c/sist-en-50306-2-2020}$
- Conductor size;
- A code designation according for use of the cable (see 4.2.2).

For example:

```
XYZ EN 50306-2 300 V 1x1,5 M
```

The marking shall conform to the requirements of EN 50306-1:2020, Clause 5.

4.2.2 Code Designation

The following letters shall be used as a code to identify the suitability of a particular cable with the Hazard Level 3 of EN 45545-1, and to indicate performance levels relating to low temperature and to oil and fuel resistance:

Hazard Level EN 45545-1 HL3

- low temperature / oil resistance
- extra low temperature / oil resistance
- low temperature / extra oil and fuel resistance J
- extra low temperature / extra oil and fuel resistance M

4.3 Core identification

4.3.1 Single core cables

The colour of the cores shall be white unless otherwise specified in the particular sections.

The colour shall be clearly identifiable and durable. Durability shall be checked by the test given in 10.1 of EN 50305:2020.

Conformity with these requirements shall be verified by visual examination.

4.3.2 Multicore/multipair cables

Cores complying with EN 50306-2:2020 are used as components of multicore and multipair cables, e.g. in EN 50306-3:2020 or EN 50306-4:2020. In such cases the identification of the individual core in a cable or a pair shall be by numbers.

The numbers shall be printed in a colour, which contrasts with the core colour. The numbers on individual cores shall be spaced at a maximum of 25 mm apart.

The marking by numbers shall conform to EN 50334, unless otherwise specified, and conformity shall be checked by visual examination and measurement.

4.4 Rated voltage

The rated voltage recognized for the purposes of this standard shall be

 $U_0 / U = 300/300 \text{ viTeh STANDARD PREVIEW}$

NOTE See EN 50355 and EN 50343 for further information.eh.ai)

4.5 Construction

SIST EN 50306-2:2020

https://standards.iteh.ai/catalog/standards/sist/8fde041a-7fe8-465e-843f-

6acec343b89c/sist-en-50306-2-2020

4.5.1 Conductor

The conductor shall conform to the requirements given in Table 1. The wires shall be tin coated annealed copper.

When tested in accordance with EN 10002-1, the minimum elongation of conductors shall be 10 %.

4.5.2 Insulation system

The insulation system shall be manufactured from material as defined in 3.1 of EN 50306-1:2020 and shall meet the requirements of Clause 5 of this Part 2. The insulation shall be applied by extrusion. The insulation thickness shall conform to the specified value given in Table 1 and determined in accordance with EN 50306-1:2020, Annex A.