Accreditation N° 1-1114

**cofrac**

Section Laboratoires

*Laboratory Section*

**ANNEXE TECHNIQUE**

*TECHNICAL ANNEX*

**à l’attestation N° 1-1114 rev. 6**

## to certificate No. 1-1114 rev. 6

L'accreditation concerne les prestations realisees par :

*Certification concerns the services performed by:*

### ACOME

**Usine de Mortain/Romagny BP 45**

### 50140 MORTAIN

Dans son unite technique :

*In its technical unit:*

### - LABORATOIRE D'ESSAIS

*TEST LABORATORY*

Elle est accordee selon le perimetre suivant :

*It is granted according to the following test scope:*

### ELECTRICITE/ Tout equipement ou produit electrique et/ou electronique soumis à des essais de comportement au feu

*ELECTRICITY / All electrical and/or electronic equipment or products subject to fire behaviour testing*

/ Essais de comportement au feu (77-2)

Fire behaviour tests (77-2)

***Pour tous les essais concernant cette accreditation*** */ For all tests concerning this accreditation :*

***(\*) Le /aboratoire est reconnu competent pour pratiquer les essais en suivant les methodes referencees et leurs revisions ulterieures (FLEX1****) / The laboratory is recognised as competent to carry out tests following the reference methods and their subsequent revisions (FLEX1).*

***La liste exhaustive des normes mises en œuvre est tenue à jour par le laboratoire*** */ The exhaustive list of standards implemented is kept up to date by the laboratory.*

Accreditation No. 1-1114

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| --- | --- | --- | --- | --- |
| **Test object** | **Characteristics or quantities measured *(including measuring range)*** | **Test method principle*****(including main test means)*** | **Test method reference** (\*) | **Adaptable parameters *(limits of adaptation of the method)*** |
| **Flame retardancy**FE10Conductors, electric or fiber optic cables | Burn height (0 to 60 cm) Flame heightTemp.Propane flow rate Air flow ratePropane and air back pressure Time | **Tests for classifying conductors and cables with regard to their fire behaviour** - **tests with the****1kW premix burner**: measuring flame propagation along asample of cable, placed vertically in a metal screen and subjected to the action of a 1kW flame for a predefined time | NFC 32070 test 1C 32078-1EN 60332-1-1EN 60332-1-2EN 60332-1-3IEC 60332-1-1IEC 60332-1-2IEC 60332-1-3+Other technical specifications (ORANGE / FT R&D)ACPE 75 method 8 | -Number of test tubes tested (origin and ageing)-Number of satisfactory test tubes |

**ACPE: Acome Test Procedure**

Accreditation No. 1-1114

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| **Test object** | **Characteristics or quantities measured *(including measuring range)*** | **Test method principle*****(including main test means)*** | **Test method reference** (\*) | **Adaptable parameters *(limits of adaptation of the method)*** |
| **Fire retardancy**FE110Conductors, electric or fiber optic cables (in bundles) | Burn height (0 to 100 cm) TemperatureOven temperature Oven temp gradient Air speed in the oven Calibration curve in T0Time | **Test for classifying conductors and cables with regard to their fire behaviour** – **Ring furnace test**: measuring flame propagation along a test tube (bundle of cable(s)) subjected to the heat of a ring furnace(+ pilot flames) in a ventilated cabinet, for a predefined time | NFC 32070 Test 2+Other technical specifications(railway sector: SNCF, RATP)ACPE 135 | Burn height |
|  | Burn height (0 to 300 cm) TemperaturePropane flow rate Burner air flow rate Ventilation air flow rate Time | **Fire reaction test on cables arranged in layers**: After a predefined application | C 32078-3IEC 60332-3-10IEC 60332-3-21 to 25EN 60332-3-10EN 60332-3-21 to 25+Other technical specifications(railway sector: SNCF, RATP)ACPE 130 | Burn height |
| **Fire retardancy** | time, measuring flame propagation |  |
|  | along a layer of cables (predefined volume | Excepted class A |
| FE120 | of combustible materials) arranged | test with at least |
|  | vertically and subjected to the flame | one 35 mm2 |
| Conductors, electric or fiber optic cables (in layers) | of a 20.5 kW burner in a ventilated cabinet | conductor andrequiring the use of |
|  |  | wide scale and |
|  |  | 2 burners |

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Accreditation No. 1-1114

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| --- | --- | --- | --- | --- |
| **Test object** | **Characteristics or quantities measured *(including measuring range)*** | **Test method principle*****(including main test means)*** | **Test method reference** (\*) | **Adaptable parameters *(limits of adaptation of the method)*** |
|  | Same as above+ Heat output (0 to 500 kW)Calorific output THR (0 to 200 MJ)FIGRA (0 to 1500 W/s)Smoke opacity: SPR (0 to 2 m2/s)TSP (0 to 500 m2)Air flow TemperatureFlaming droplets | **Test for European classification of** | EN 503992006/751/EC (European Commission decision of 27- 10-2006)ACPE 130 | Classification according to EN 13501-6 with additional classifications based on EN 61034 and EN 50267Class A excepted |
|  | **electrical conductors and cables with** |
|  | **regard to their fire behavior within** |
| **Fire retardancy** | **the framework of the Construction** |
| FE120 | **Products Regulation (CPR)**: After |
|  | a predefined burner application time, |
|  | determining flame propagation,  |
| Conductors, electric or fiber optic cables | heat, calorific value and opacity of fumes emitted by a sheet of cables |
|  | (a layer of non-adjoining cables) |
|  | installed vertically on a metal |
|  | rack and exposed to a flame of |
|  | predefined strength (Class A excepted) |
| **Smoke opacity**FE70Conductors, electric or fiber optic cables | Opacity (It: 0 to 100%) TemperatureVolumes Air flow Time |  | C 32073-1 | Opacity and classification according to EN 13501-6 |
|  | C 32073-2 |
| **Measurement of the density of fumes** | EN 61034-1 |
| **emitted by electric cables under defined conditions**: Appling a defined heat source to one or more cables placed on a horizontal metal rack within a27 m3 chamber, and measuring the optical decay after a defined period of time | EN 61034-2IEC 61034-1IEC 61034-2+Other technical specifications (railway sector: |
|  | SNCF, RATP) |
|  | ACPE 250 |

**ACPE**: **Acome Test Procedure**

Accreditation No. 1-1114

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| --- | --- | --- | --- | --- |
| **Test object** | **Characteristics or quantities measured *(including measuring range)*** | **Test method principle*****(including main test means)*** | **Test method reference** (\*) | **Adaptable parameters *(limits of adaptation of the method)*** |
| **Smoke corrosivity**FE80 / FE85Insulating material or cable sheathing | pH (1 to 14) Conductivity (< 200 µSiem)Temperature Air flow Time | **Conventional determination of smoke corrosivity**: Determining corrosivity (measurement of pH and conductivity) of gases (trapped by impinging in purified water) emitted from a sample of pyrolysis material in a tube furnace at a predefined temperature | NFC 20453C 32074EN 50267-1EN 50267-2-2EN 50267-2-3IEC 60754-2ACPE 245 | Conductivity and classification according to EN 13501-6 |
|  |  | **Conventional determination of the toxicity of a material from the** | NF C20454NF X 70100-1 | Qualitative research |
|  |  | **quantity of toxic gases (CO, CO2,** | NF X 70100-2 | with SEM and |
|  | CO emitted (0 to 500 mg) | **halogenated acids, etc.**) **released** | NF F 16101 | EDAX analyzer |
| **Toxicity** | CO2 emitted (0 to 2 g) | **during its combustion**: Based on | **EN 50267-1** |  |
| FPF10 / FPF15 | HCI, HBr in solution (0 to 500 mg) | the pyrolysis of a material (insulation or | **EN 50267-2-1** | CTI: Conventional |
|  | Temperature | cable sheathing) in a tubular furnace at a | **IEC 60754-1** | Toxicity |
| Insulating material or cable | Air flow | predefined temperature, determining its | + | Index |
| sheathing |  | conventional toxicity index (CTI) from | Other specifications |  |
|  | Time | the quantities of CO et CO2 emitted, | **PSA, RSA, ORANGE / FT** | Analysis limited to CO, CO2, |
|  |  | and the halogens released | R&D and railway | HCI and HBr |
|  |  | (halogenated acids trapped in acid form |  |  |
|  |  | in an impinger solution) | **ACPE 259** |  |

**ACPE**: **Acome Test Procedure**

# *Accreditation made compulsory in the French regulatory framework specified by the text referenced in the Cofrac LAB INF 99 document available on* [*www.cofrac.fr*](http://www.cofrac.fr/)

Accreditation N° 1-1114

Date de prise d’effet / *granting date* : **07/02/2019** Date de fin de validité / *expiry date* : **31/05/2020**

Cette annexe technique annule et remplace l'annexe technique 1-1114 Rev. 5.

*This Technical Annex cancels and replaces Technical Annex 1-1114 Rev. 5*

