



# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: IECEx CES 14.0011U issue No.: 0 Certificate history:

Status: **Current**

Date of Issue: 2014-10-09 Page 1 of 3

Applicant: **CORTEM S.p.A.**  
Via Aquileia 10  
I - 34070 Villesse (GO)  
Italy

Electrical Apparatus: **Flexible conduits series SP..**  
Optional accessory:

Type of Protection: **Flameproof enclosures 'd'; Dust ignition protection "t"**

Marking: **Ex d IIC Gb  
Ex d IIB Gb  
Ex tb IIIC Db  
IP66/67**


Approved for issue on behalf of the IECEx  
Certification Body:

Mirko Balaz

Position:

Head of IECEx CB

Signature:  
(for printed version)

  
09-10-2014

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

**CESI**  
Centro Elettrotecnico  
Sperimentale Italiano S.p.A.  
Via Rubattino 54  
20134 Milano  
Italy

**CESI**  
**CESI S.p.A.**  
Testing & Certification Division  
Business Area Certification

Responsible

Florenzo Bregani



# IECEx Certificate of Conformity

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Manufacturer: **CORTEM S.p.A.**  
Via Aquileia 10  
I - 34070 Villesse (GO)  
Italy

Additional Manufacturing location  
(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

#### STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

<b>IEC 60079-0 : 2011</b> Edition: 6.0	Explosive atmospheres - Part 0: General requirements
<b>IEC 60079-1 : 2007-04</b> Edition: 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
<b>IEC 60079-31 : 2008</b> Edition: 1	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure 't'

*This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

#### TEST & ASSESSMENT REPORTS:

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

#### Test Report:

IT/CES/ExTR14.0012/00

#### Quality Assessment Report:

IT/CES/QAR06.0002/08



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The flexible conduits series SP.. are used to connect equipments that are offset, Ex-d housing or equipments subject to vibrations such as electrical motors.

The flexible conduits can be also installed with ambient temperature from -50°C to +150°C. For temperature -50°C, the fittings must be manufacturing only in stainless steel.

The flexible conduits series SP.. are composed of:

- Continuous wall conduit ribbed with parallel spirals made of stainless steel AISI 321 or AISI 316L.
- Stainless steel AISI 304 plait sheath.
- Revolving or fixed fittings made of UNI 10233, Fe36, Fe37, ASTM A105 steel or stainless steel AISI 303, AISI 304 or AISI 316.

The flexible conduits series SP.. characteristics and a Schedule of Limitations are further described in the Annexe of this certificate.

### CONDITIONS OF CERTIFICATION: NO



# IECEx Certificate of Conformity



Prot: B4025976

Annex to certificate:

Applicant:

Electrical Apparatus:

IECEx CES 14.0011U Issue No.:0 of 2014-10-09

COR.TEM S.p.A.

Via Aquileia 10, I - 34070 Villesse (GO), Italy

Flexible conduits, series SP..

### General product information:

The flexible conduits series **SP..** are used to connect equipments that are offset, Ex-d housing or equipments subject to vibrations such as electrical motors. The flexible conduits series **SP..** are manufactured in agreement to standard ISO 10807:1994 "Corrugated flexible metallic hose assemblies for the protection of electrical cables in explosive atmospheres". The flexible conduits can be also installed with ambient temperature from -50°C to +150°C. For temperature -50°C, the fittings must be manufacturing only in stainless steel.

The flexible conduits series **SP..** are composed of:

- Continuous wall conduit ribbed with parallel spirals made of stainless steel AISI 321 or AISI 316L.
- Stainless steel AISI 304 plait sheath.
- Revolving or fixed fittings made of UNI 10233, Fe36, Fe37, ASTM A105 steel or stainless steel AISI 303, AISI 304 or AISI 316.

The male and female fittings standard threads types are NPT ANSI/ASME B1.20.1 from 1/2" up to 4" and cylindrical ISO Metric 965/1 and ISO 965/3 from M20x1.5 up to M100x1.5. Alternative available tapered threads are Gk CEI EN 60079-1, Annex 1, while for cylindrical threads are GAS UNI 228/1.

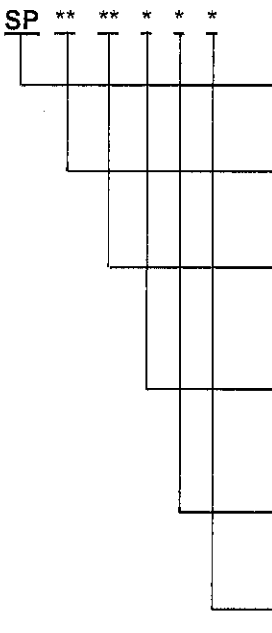
Revolving fittings are covered by the IECEx CES 10.0002U certificate.

- Type **B..**: for ambient temperature -20°C +60°C for group **IIB** (or -50°C +60°C only for stainless steel material).
- Type **R..**: for ambient temperature -20°C +60°C for group **IIC** (or -50°C +60°C only for stainless steel material).
- Type **RB..**: for ambient temperature -20°C +150°C (or -50°C +150°C only for stainless steel material). These types are suitable for group **IIB** only.

To guarantee the IP 66/67 degree of protection the flexible conduit series **SP..** have an IP 66/67 mechanical protection in-between the body and the ring obtained by inserting an O-ring or plain gasket made of silicon rubber, while for external male cylindrical threads have a sealing edge machined for fitting a silicon O-ring and for all other threads the IP 66/67 degree of protection is achieved with sealant put at least on two complete threads engaged of the threaded coupling.

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### Identification of flexible conduit series **SP..**:



Code of the series

Type of fitting:

- **H, G, Z, RN, RI, RY, RD, RP, RE, RT** (group IIC)

- **N, I, Y, D, P, E, T** (group IIB)

Size of fitting:

- 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

Type of threads:

- **N**: NPT ANSI/ASME B1.20.1

- **I**: ISO 261 pitch 1,5

- **C**: GAS UNI 228-1

- **Blank**: Gk CEI EN 60079-1 Annex 1

Length of flexible conduit in dm:

ex. 2=200mm; 3=300mm etc.

Fitting material:

- **G**: galvanized carbon steel

- **S**: stainless steel

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Annex to certificate:

Applicant:

Electrical Apparatus:

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COR.TEM S.p.A.

Via Aquileia 10, I - 34070 Villesse (GO), Italy

Flexible conduits, series SP..

Description of component (follows):

Types, sizes and threads of flexible conduit series SP.. are listed on the following Table 1:

**Table 1:**

Flexible conduit series SP..		
Size code	NPT Thread	ISO pitch 1,5 Thread
1	1/2"	M 20
2	3/4"	M 25
3	1"	M 32
4	1 1/4"	M 40
5	1 1/2"	M 50
6	2"	M 63
7	2 1/2"	M 75
8	3"	M 90
9	3 1/2"	--
10	4"	M 100

### Ambient temperature

The temperature limits are listed in the following Table 2:

**Table 2:**

	Flexible conduit type	Exec.	Manufacturing materials		Size	Ambient Temperature
			Fixed fitting	Revolving fitting (gasket)		
Fixed fittings	SPH – SPG SPZ	Ex-d IIC	Stainless steel	/	1/2" + 1"	-20°C +150°C
			Galvanised steel	/	1 1/4" + 4"	
	SPH – SPG SPZ	Ex-d IIC	Stainless steel	/	1/2" + 4"	-50°C +150°C
Revolving fittings type	B..	Ex-d IIB	Stainless steel	Galvanised steel	1/2" + 1"	-20°C +60°C
			Galvanised steel	Galvanised steel	1 1/4" + 4"	
	R..	Ex-d IIC	Stainless steel	Galvanised steel	1/2" + 1"	-20°C +60°C
			Galvanised steel	Galvanised steel	1 1/4" + 4"	
RB..	SPRN – SPRI SPRY – SPRD SPRP – SPRE SPRT	Ex-d IIB	Stainless steel	Stainless steel	1/2" + 4"	-50°C +60°C
			Stainless steel	Stainless steel	1/2" + 4"	



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## IECEX Certificate of Conformity

# CESI

IECEX CES 14.0011U Issue No.:0 of 2014-10-09

COR.TEM S.p.A.

Via Aquileia 10, I - 34070 Villesse (GO), Italy

Flexible conduits, series SP..

### "Scheduled of Limitations" for Ex Components:

- The coupling of the Flexible conduit series **SP..** with the enclosures shall be made as indicated by the manufacturer in the documents annexed to this certificate in order to respect the type of protection of the electrical apparatus on which Flexible conduit are mounted.
- The Flexible conduit series **SP..** shall be mounted at the electrical apparatus in such a way that accidental rotation and loosening will be prevented.
- The Flexible conduit series **SP..** shall be installed in such a way that the temperature at the mounting point will remain within the following service temperature ranges:
  - from -20 up to +150 °C for types **SPH, SPG** and **SPZ** made of Galvanized steel and/or Stainless Steel.
  - from -50 up to +150 °C for types **SPH, SPG** and **SPZ** made of Stainless Steel only.
  - from -20 up to +60 °C for types **SPN, SPI, SPY, SPD, SPP, SPE** and **SPT** with revolving fitting type **B..** made of Galvanized steel and/or Stainless Steel.
  - from -50 up to +60 °C for types **SPN, SPI, SPY, SPD, SPP, SPE** and **SPT** with revolving fitting type **B..** made of Stainless Steel only.
  - from -20 up to +60 °C for types **SPRN, SPRI, SPRY, SPRD, SPRP, SPRE** and **SPRT** with revolving fitting type **R..** made of Galvanized steel and/or Stainless Steel.
  - from -50 up to +60 °C for types **SPRN, SPRI, SPRY, SPRD, SPRP, SPRE** and **SPRT** with revolving fitting type **R..** made of Stainless Steel only.
  - from -50 up to +150 °C for types **SPRN, SPRI, SPRY, SPRD, SPRP, SPRE** and **SPRT** with revolving fitting type **RB..** made of Stainless Steel only.
- The IP 66/67 mechanical protection of the Flexible conduit series **SP..** with revolving fittings type **B.., R..** or **RB..** is obtained by inserting an O-ring or plain gasket made of silicon rubber, in-between the body and the ring as shown into the safety instruction, depending on the maximum service temperature.
- If the Flexible conduit series **SP..** are intended for use with dust protection "Ex tb" the holes into Flexible conduit are mounted shall maintain the ingress protection rating of the enclosure. To this scope the correct positioning of the gaskets (for cylindrical threads) or the application of sealant on the threads (for tapered threads), shall be done as indicated in the manufacturer instruction.
- It is the final assemblers/users responsibility to ensure the threaded joint between the flexible conduit series **SP..** and the associated enclosure meet all the requirements of the applicable standards for the assembly.