IECEx ASSESSMENT AND TEST REPORT

Section 1
To be completed by ACB

Reference No: _____ **IEC 60079-0**

Field of application	**Standard:**	**Instructions for use**
This form is intended to be used when assessing and testing electrical apparatus for explosive atmospheres according to the standard specified in the adjoining column. The test results are valid for the tested items only. **Reproduction** This report must not be reproduced other than in its entirety except with the prior written approval of the issuing body **This test report may only be used for the IECEx Scheme and must be accompanied by an ATR cover page issued by an ACB**	**IEC 60079-0 : 2000** **Edition 3.1** Electrical apparatus for explosive gas atmospheres – General requirements This ATR covers the consolidated version of IEC 60079-0 which is based on the third edition (1998), incorporating amendment 1 (2000)	The comment columns can be used to e.g. specify test values, applied alternative requirements/tests or to refer to enclosed additional pages with comments. Abbreviations: N/A = Not applicable (for the equipment assessment/test of the and its design documentation) The applicant is the body/person who has requested the assessment/test and to which the results, as specified in this report, are provided. The short descriptions in the column for "Clause" do not replace the complete text in the standard.

Product name		**Model/Type designation**
Serial No	**Code** (e.g. Ex _ II_ T_)	**Ambient temperature** [min-max]
Applicant [name and postal address]		**Manufactured by** [name and postal address]
Test sample received [date]		
Product description		

The equipment complies with the standard [yes/no]	**Prepared by** [signature]	_____ _____	**Date** [year-month-day]

Reference No: _____ **IEC 60079-0**

Clause		**Results**				
		Pass	Fail	N/A	Comments	ACB Review
1	Scope					
2	Normative references					
3	Definitions and symbols					
4	Apparatus grouping and temperature classification					
5.1	Maximum surface temperature					
5.2	Ambient temperatures					
5.3	Surface temperature and ignition temperature					
6	Requirements for all apparatus					
7	Non-metallic enclosures and non-metallic parts of enclosures					
8	Enclosures containing light metals					
9	Fasteners					
10	Interlocking devices					
11	Bushings					
12	Materials used for cementing					
13	Ex components					
14	Connection facilities and terminal compartments					
15	Connection facilities for earthing or bonding conductors					
16	Cable and conduit entries					
17	Supplementary requirements for rotating electrical machines					
18	Supplementary requirements for switchgear					
19	Supplementary requirements for fuses					
20	Supplementary requirements for plugs and sockets					
21	Supplementary requirements for luminaires					
22	Supplementary requirements for caplights, caplamps and handlamps					

Reference No: _____ **IEC 60079-0**

Clause		**Results**				
		Pass	Fail	N/A	Comments	ACB Review
23.2	Verification of documents					
23.3	Compliance of prototype or sample with documents					
23.4.1	Type tests, General					
23.4.3.1 23.4.3.3	Test for resistance to impact/Required results					
23.4.3.2 23.4.3.3	Drop test/Required results					
23.4.4	Tests for the degree of protection IP by enclosures					
23.4.5	Torque test for bushings					
23.4.6.1	Temperature measurement					
23.4.6.2	Thermal shock test					
23.4.7 23.4.7.1	Tests of non-metallic enclosures or of non-metallic parts of enclosures/Ambient temperatures during tests					
23.4.7.2	Tests of enclosures or parts of enclosures in plastic materials					
23.4.7.3	Thermal endurance to heat					
23.4.7.4	Thermal endurance to cold					
23.4.7.5	Resistance to light					
23.4.7.6	Resistance to chemical agents for Group I electrical apparatus					
23.4.7.8	Insulation resistance test of parts of enclosures of plastic materials					
23.4.8	Tests in explosive mixtures					
24	Routine verifications and tests					
25	Manufacturer's responsibility				Manufacturer's responsibility (based on applying markings) to perform routine verifications	
26	Verifications and tests on modified or repaired electrical apparatus					
27	Marking					

Reference No: _____ **IEC 60079-0**

Clause		**Results**				
		Pass	Fail	N/A	Comments	ACB Review
	Annex B — Ex cable entries					
B.1	General					
B.2.1 B.2.2	Cable sealing/Materials					
B.2.3	Clamping					
B.2.4	Lead-in of cable					
B.3.1	Tests of clamping of non-armoured and braided cables					
B.3.2 B.3.2.1	Tests of clamping of armoured cables/Tests of clamping where the armourings are clamped by a device within the gland					
B.3.2 B.3.2.2	Tests of clamping of armoured cables/Tests of clamping where the armourings are not clamped by a device within the gland					
B.3.3	Ageing test for material used for elastomeric sealing rings					
B.3.4	Type test for resistance to impact					
B.3.5	Type test for degree of protection (IP) of cable entries					
B.4.1	Marking of cable entries					
B.4.2	Marking of cable sealing rings					
	Annex C					
	Table C.1 – Clauses with which Ex components shall comply					

Section 2
EVALUATION RECORD
To be completed by ExTL
IEC 60079-0 2000 (1998 edition Incorporating Amdt. 1 2000)
Electrical apparatus for explosive gas atmospheres -
Part 0: General requirements

Report

Reference No.

Tested by (+ signature)..... .....

Approved by (+ signature)..... .....

Date of issue .....

Content .....

.....

This report is based on a standard format prepared by CSA International

Client

Name .....

Address.....

.....

Evaluation Record Form No. ATR600790/Ed. 3.....

Testing laboratory

Name .....

Address.....

Testing location .....

.....

Test item

Standard IEC 60079-0 .....

Description. .....

Trademark. .....

Model and/or type reference.....

Manufacturer .....

Test Item (continued)

Rating(s) ....

....

Type of transformers (where relevant)....

Application ..... stationary / portable / hand-held

Protection index..... IP

Other characteristics .....

Rated ambient temperature ta (^{O}C)

Other information

General remarks

This evaluation record is not valid unless appended to an IECEx Assessment and Test Report issued by an ACB, in accordance with IECEx 02.

This evaluation record shall not be reproduced except in full without the written approval of the testing laboratory.

The test results presented in this evaluation record relate only to the item tested.

Copy of marking plate

REPORT Nº ____________ **ISSUER** ____________________ Page ____ of ____

MANUFACTURER'S DOCUMENTS

Item	Subject	Drawing Nº	Rev.	Date

Prepared by ____________ **[signature]** ____________ **Date [yy-mm-dd]** ________

Evaluation Record

IEC 60079-0	COVERAGE 1/4	APPLIED		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
1	**Scope**			
2	**Normative references**			

Apparatus**:** _____

Scope

The electrical apparatus defined above is feasible for coverage for use in explosive gas atmospheres in accordance with the general requirements addressed by this part of IEC 60079:

☐ YES

☐ NO

Notes: _____

Protection techniques

Specific types of protection:	Applied to Item (apparatus or part of apparatus):
☐ Flameproof enclosures "d" (IEC 60079-1)	
☐ Pressurized enclosures "p" (IEC 60079-2)	
☐ Powder filling "q" (IEC 60079-5)	
☐ Oil-immersion "o" (IEC 60079-6)	
☐ Increased safety "e" (IEC 60079-7)	
☐ Intrinsic safety "i" (IEC 60079-11)	
☐ Encapsulation "m" (IEC 60079-18)	
☐ Type of protection "n" (IEC 60079-15)	
☐ _____	
☐ _____	

☐ Caplights for mines susceptible to firedamp (IEC 60079-22)

Form sheets included for specific coverage in this report:

☐ **SUPPLEMENTARY REQUIREMENTS**, Sheet **1/6**, **Supplementary requirements for rotating electrical machines**

☐ **SUPPLEMENTARY REQUIREMENTS**, Sheets **2/6** and **3/6**, **Supplementary requirements for switchgear**

☐ **SUPPLEMENTARY REQUIREMENTS**, Sheet **3/6**, **Supplementary requirements for fuses**

☐ **SUPPLEMENTARY REQUIREMENTS**, Sheet **4/6**, **Supplementary requirements for plugs and sockets**

☐ **SUPPLEMENTARY REQUIREMENTS**, Sheet **5/6**, **Supplementary requirements for luminaires**

☐ **SUPPLEMENTARY REQUIREMENTS**, Sheet **6/6**, **Supplementary requirements for caplights, caplamps and handlamps**

☐ **ANNEX B — Ex CABLE ENTRIES**, Sheets **1/9** through **9/9** (normative)

☐ **ANNEX C — Ex COMPONENTS**, Sheets **1/2** and **2/2** (normative)

(IEC60079-0, 2000)

IEC 60079-0	**COVERAGE** **2/4**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
2	**Normative references**			

Normative references

The electrical apparatus has been assessed to the most recent editions of the standards which are referenced and posted as provisions of this part of IEC 60079:

☐ YES

☐ NO

Notes: _____

Overview:

(IEC60079-0, 2000)

Prepared by _____ **[signature]** _____ **Date [yy-mm-dd]** _____

IEC 60079-0	COVERAGE 3/4	APPLIED		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
3	**Definitions and symbols**			
4	**Apparatus grouping and temperature classification**			
5.1	**Maximum surface temperature**			
5.2	**Ambient temperatures**			

*Note: Sheets **3/4** and **4/4** cover one item of electrical apparatus.*

Item: _____

Definitions and symbols

☐ All definitions and symbols covered in Clause 3 apply, as noted for the specific requirements herein

☐ Degree of protection of enclosure (IP ___ ___) by apparatus enclosure for the type of protection

☐ Degree of protection of enclosure (IP ___ ___) by (other enclosure):

_____

☐ Ex cable entry

☐ Ex component

Apparatus grouping and temperature classification

☐ Group I

☐ Groups I/II ☐ Groups I/IIC ☐ Groups I/IIB ☐ Groups I/IIA

☐ Group II ☐ Group IIC ☐ Group IIB ☐ Group IIA

☐ Specific gas/vapour (Groups I/II or Group II): _____

☐ Apparatus (Group II) marked as a function of maximum surface temperature of _____ EC

Maximum surface temperature

Group I, maximum surface temperature (ref. manufacturer's document, _____):

☐ ≤ 150 EC (coal dust can form a layer)

☐ ≤ 450 EC (coal dust is not expected to form a layer due to _____

_____

_____), in which case:

☐ actual maximum surface temperature (_____ EC) is marked

or ☐ marking includes symbol **X** re safe use

Group II apparatus, based on maximum surface temperature: Note: Cable entries excluded.

☐ classified in temperature class,

☐ T1 (# 450 EC) ☐ T2 (# 300 EC) ☐ T3 (# 200 EC)

☐ T4 (# 135 EC) ☐ T5 (# 100 EC) ☐ T6 (# 85 EC) or

☐ defined by actual maximum surface temperature or

☐ restricted to a specific gas (_____)

Ambient temperatures

☐ !20 EC to + 40 EC (normal range)

☐ special range (_____), denoted by symbol T_a ,T_{amb} or **X** (see **Marking**)

Note: Special range of ambient temperatures as stated by the manufacturer and specified in the certificate.

(IEC60079-0, 2000)

IEC 60079-0	COVERAGE 4/4	APPLIED		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
5.3	**Surface temperature and ignition temperature**			
6	**Requirements for all apparatus**			

Surface temperature and ignition temperature

Lowest ignition temperature of explosive atmospheres concerned: _____ EC

Required: > maximum surface temperature, except components having a total surface area ≤ 10 cm²

Components having total surface area ≤ 10 cm²; verified as no risk for ignition:

Component	Maximum surface temperature > value for T class (Gp II) or > Gp I max. surface temperature (EC)	Verified for temperature class (Group II) or Group I maximum surface temperature			
		Safety Margin			*safety margin ensured by experience of similar components or by tests in representative explosive mixtures (safety margin may be provided by increasing ambient temperature) and, in the case of type of protection "i", subject to the specific relaxations for the surface temperature of small components in accordance with IEC 60079-11* Rationale / Test Method
		50K	25K		
		T1, T2, T3 (X)	*T4, T5, T6, Group I* (X)	Verification temperature (EC)	

Requirements for all apparatus

☐ The applicable requirements in the forms which follow are supplemented or modified per accompanying forms for specific types of protection.

Delayed opening of enclosures:

Incorporated capacitors				Hot components			Components considered	Time required to open enclosure	Warning marked	
Group	Limiting value of residual discharge energy (mJ) at capacitor charging voltage		Time to discharge to limiting value	T Class	Component surface temperature (EC)	Time to cool to value < T Class			AFTER DE-ENERGISING, DELAY Y MINUTES BEFORE OPENING (X)	DO NOT OPEN WHEN AN EXPLOSIVE GAS ATMOSPHERE MAY BE PRESENT (X)
	≥ 200 V (X)	< 200 V (X)								
I, IIA	0.2	0.4								
IIB	0.06	0.12								
II, IIC	0.02	0.04								

Note: A marked warning is required if Y (the greater value of capacitor discharge and cooling times recorded above) > time to open enclosure.

(IEC60079-0, 2000)

IEC 60079-0	**CONSTRUCTION** 1/7	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
7	**Non-metallic enclosures and non-metallic parts of enclosures**			

Item:

Non-metallic enclosures and non-metallic parts of enclosures Note: For sealing rings proof per B.3.3 is sufficient.

Generic name of material: _____ Minimum thickness, _____ mm

Specifications:

☐ manufacturing process of enclosure or part; ref. manufacturer's documents, _____

☐ plastic material; ref. manufacturer's documents, _____ , which include

- ☐ manufacturer's name
- ☐ exact and complete reference *Required: Including colour, % fillers, additives*
- ☐ surface treatment
- ☐ temperature index, TI *Required: TI at 20 000 h point on thermal endurance graph without loss of flexural strength exceeding 50%, per IEC 60216-1 and IEC 60216-2 and based on flexing property per ISO 178; if material does not break in this test before exposure to heat, TI to be based on tensile strength per ISO 527-2 (type 1A or 1B test bars)*

Note: The testing station is not required to verify compliance of the material with its definition.

Thermal endurance:

temperature of hottest point of enclosure/part of enclosure at maximum service ambient, _____ °C

Required: ≤ TI minus 20K

☐ refer to **TYPE VERIFICATIONS AND TESTS, Temperature measurement**

☐ refer to **TYPE VERIFICATIONS AND TESTS, Thermal endurance to heat**

☐ refer to **TYPE VERIFICATIONS AND TESTS, Thermal endurance to cold**

Electrostatic charges on enclosures or parts of enclosures of plastic material:

Group	Surface area not subject to test (cm^2)	Actual surface area (cm^2)	Insulation resistance (Ω) (23 ± 2) °C & (50 ± 5) % RH *Required: ≤1 GΩ*	Enclosure surface/part considered	Other protective method	Warning label re safety measures (X)
I	≤ 100					
IIA, IIB	≤ 100					
	≤ 400[a]					
IIC	≤ 20					
	≤ 100[b]					

[a] Where the exposed areas are surrounded by conductive earthed frames.

[b] Where additionally protected against occurrence of dangerous electrostatic charges.

☐ refer to **TYPE VERIFICATIONS AND TESTS, Insulation resistance test of parts of enclosures of plastic materials**

Threaded holes: (details of compatible thread size/form/depth of tapping and type/length for fasteners of covers removable in service)

_____

_____

(IEC60079-0, 2000)

IEC 60079-0	**CONSTRUCTION** 2/7	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
8	**Enclosures containing light metals**			
9	**Fasteners**			

Item: .....

Enclosures containing light metals

Type and generic name of alloy	Composition of alloy	Fabrication	Min. thickness (mm)

Group I apparatus; specific material content, by mass, in total of aluminum, magnesium and titanium:

☐ ≤ 15 % and, in total, ☐ ≤ 6 % magnesium and titanium

Note: Not applicable to Group I surveying instruments carried by persons.

Threaded holes: (details of compatible thread size/form/depth of tapping and type/length for fasteners of covers removable in service)

_____

_____

Fasteners (used on _____)

☐ Refer to form(s) for specific type(s) of protection (_____)

Fastenings necessary to achieve a standard type of protection or to prevent access to uninsulated live parts:

☐ removable only by use of a tool; (details) _____

_____

Fastening screws (head type(s); _____):

☐ light alloy (composition; _____)

☐ plastics (_____)

☐ other material (_____)

☐ compatible with enclosure material (reason) _____

Note: Screws for light alloy enclosures may be made of light alloy, plastics or other materials if compatible with the enclosure material.

Special fasteners:

Used on:	1			3	
	2			4	

Fastener	Hexagon head bolt (X)	ISO 4014 (X)	Hexagon head screw (X)	ISO 4017 (X)	Hexagon nut (X)	ISO 4032 (X)	Hexagon socket head cap screw (X)	ISO 4762 (X)	Hexagon socket set screw (X)	ISO 4026 (flat point) (X)	ISO 4027 (cone point) (X)	ISO 4028 (dog point) (X)	ISO 4029 (cup point) (X)	Size (M __)	coarse pitch (ISO 262) (X)	6g/6H tolerance fit (ISO 965) (X)	Head protection (Group I) (e.g. shroud, counterbore)
1																	
2																	
3																	
4																	

continued on Sheet **3/7**

(IEC60079-0, 2000)

IEC 60079-0	CONSTRUCTION 3/7	APPLIED		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
9	**Fasteners** (continued)			
10	**Interlocking devices**			
11	**Bushings**			
12	**Materials used for cementing**			

Item: .....

Fasteners (continued)

Electrical apparatus – holes for special fasteners:

Fastener (ref. Sheet **3/7**, Special fasteners)	Major dia. of fastener thread (mm)	Hole threading distance *h*, figs. 1, 2 (mm) *≥ major dia. of fastener thread*	6H hole thread tolerance fit (ISO 965) (X)	≤ H13 tolerance fit (*c*, fig. 1) per ISO 286-2 at clearance hole (X)	Reduced shank fastener: hole under head/nut threaded to enable fastener retention (X)	Reduced shank fastener: contact dimension (*X*, fig. 2) ≥ value for standard fastener (X)	Hexagon socket set screw: 6H tolerance fit (ISO 965) (X)	Hexagon socket set screw: tightened screw does not protrude from threaded hole (X)
1								
2								
3								
4								

Interlocking devices

Details: _____

_____

_____

_____

☐ interlocking device cannot be defeated by the use of normally available tools (e.g. screwdriver, pliers)

Bushings

Means to prevent turning: _____

_____

_____

☐ ref. **TYPE VERIFICATIONS AND TESTS, Torque test for bushings**

Materials used for cementing

Applied to: _____

Material: _____

temperatures to which the material will be subjected, based on apparatus rating:-

lowest, _____ EC *Required: equal to or higher than the limiting value for the material*

highest, _____ EC *Required: at least 20 K below the limiting value for the material*

Thermal stability ; ref. specifications per manufacturer's document(s):

_____

Note: The testing station is not required to verify the characteristics specified in the manufacturer's documents.

(IEC60079-0, 2000)

IEC 60079-0	CONSTRUCTION 4/7	APPLIED		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
13	**Ex components**			

Item: .....

Ex components

(e.g. empty enclosure or components/assemblies of components for use with apparatus complying with one or more types of protection)

Details:

_____

_____

_____

_____

_____

☐ ref. **ANNEX C — Clauses with which Ex components shall comply**

Mounting:

☐ completely within apparatus enclosure; _____

_____

☐ Ex component evaluated as a component part of the apparatus

☐ qualification as a separate Ex component is adequate for use of the component

☐ completely external to apparatus; _____

_____

☐ Ex component/enclosure interface evaluated for the relevant type of protection; reference/details:

_____

_____

_____

_____

☐ Ex component/enclosure interface is subject to the following mechanical tests:

☐ resistance to impact ☐ drop

ref. **TYPE VERIFICATIONS AND TESTS**, Sheets **2/12**, **3/12**

☐ qualification as a separate Ex component is adequate for use of the component

☐ partly within/partly external to apparatus; _____

_____

☐ Ex component/enclosure interface evaluated for the relevant type of protection; reference/details:

_____

_____

_____

_____

☐ Ex component/enclosure interface is subject to the following mechanical tests:

☐ resistance to impact ☐ drop

ref. **TYPE VERIFICATIONS AND TESTS**, Sheets **2/12**, **3/12**

☐ qualification as a separate Ex component is adequate for use of the component

(IEC60079-0, 2000)

IEC 60079-0	**CONSTRUCTION** 5/7	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
14	**Connection facilities and terminal compartments**			
15	**Connection facilities for earthing or bonding conductors**			

Item: .....

Connection facilities and terminal compartments

Permanently connected cable; (details/reference) _____

☐ free end of cable terminated; (method/reference) _____

☐ free end of cable unterminated *Required: Apparatus shall be marked with symbol **X** to indicate the need for appropriate connection of the free end of the cable*

Terminal compartment (type of protection, Ex ____):

Terminal compartment for:	Dimensions of terminal compartment	Dimensions of access opening

☐ design ensures that conductors can be readily connected

☐ design ensures that clearances/creepage distances are not compromised by proper connection of conductors

Connection facilities for earthing or bonding conductors

Provision for connection of earthing or equipotential bonding conductor:

☐ external connection facility not required; i.e. apparatus (with metallic enclosure) designed to be moved when energised and having appropriate conductor in supply cable

☐ earthing/bonding not necessary (e.g. double or reinforced insulation) _____

☐ inside terminal compartment; (location, capacity, *conductor size) _____

**Required: Accommodate at least one conductor of size as in table 3*

☐ outside metallic enclosure; (location, **capacity, conductor size) _____

***Required conductor capacity ≥ 4 mm²*

☐ protected against corrosion; _____

☐ means to prevent loosening/twisting of conductors; _____

☐ means to ensure that contact pressure is maintained; _____

Light alloy parts are used: ☐ NO

☐ YES; (corrosion protection) _____

(IEC60079-0, 2000)

IEC 60079-0	**CONSTRUCTION** **6/7**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
16	**Cable and conduit entries**			

Item: _____

Cable and conduit entries

1		3		
2		4		

Circuit	Cable entry (X)	Conduit entry (X)	Specifications per manufacturer's document(s): position on apparatus (X)	Specifications per manufacturer's document(s): max. number permitted (X)	Specifications per manufacturer's document(s): Document reference *i.e. specifications and, where applicable, construction*	Characteristics: Size(s)/size range	Characteristics: integral part of apparatus (X)	Characteristics: Separate from apparatus: Ex component (X)	Characteristics: Separate from apparatus: installed with apparatus (X)	Characteristics: Separate from apparatus: Manufacturer, Part No.	ref. **ANNEX B** (cable entry) (X)
1											
2											
3											
4											

Note: Cable and conduit entries shall be constructed and fixed so as not to alter the type of protection of the apparatus.

Group I cable entry of design such that twisting of the cable can be transmitted to the connections:

☐ anti-rotation device fitted (details) _____

Entry by conduit:

☐ threaded hole; (size(s)) _____

☐ plain hole (size(s)/locking means) _____

☐ in enclosure wall(s) or

☐ in adaptor plate in/on enclosure; (details) _____

or

continued on Sheet **7/7**

(IEC60079-0, 2000)

IEC 60079-0	CONSTRUCTION 7/7	APPLIED		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
16	**Cable and conduit entries** (continued)			

Item: _____

Cable and conduit entries (continued)

Entry by conduit: (continued)

☐ into a stopping box:- ☐ integral with wall of enclosure

☐ attached to wall of enclosure; (details) _____

Closing of openings not fitted with cable or conduit entries:

☐ blanking element provided; (details) _____

Note: Blanking elements, together with the enclosure wall of the apparatus, shall concur with the type of protection concerned.

☐ means ensuring that blanking element is removable only with the aid of a tool; details:

Elevated temperature under rated conditions (_____) at entries:

☐ > 70 °C at entry point ☐ > 80 °C at branching point of conductors

☐ label affixed as a guide to selection of cable or of wiring in conduit; details:

(IEC60079-0, 2000)

IEC 60079-0	**SUPPLEMENTARY REQUIREMENTS 1/6**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
17	**Supplementary requirements for rotating electrical machines**			

Item: .....

Supplementary requirements for rotating electrical machines

Ventilation openings for external fans:

degree of protection: air inlet side, IP ____ (*at least IP20*); air outlet side, IP ____ (*at least IP10*)

☐ ingress protection verified according to IEC 60034-5; (reference) _____

_____

☐ for vertical machines, means to prevent foreign bodies from falling into ventilation openings:

_____

_____

Note: For Group I rotating machines degree of protection IP10 is adequate only when objects > 12.5 mm cannot be carried onto moving parts either by falling vertically or by vibration.

Construction and mounting of the ventilating systems (e.g. fans, fanhoods, screens):

☐ means preventing distortion and displacement of parts to avoid impact or friction with rotating parts:

_____

_____

☐ refer to **TYPE VERIFICATIONS AND TESTS, Test for resistance to impact**

Clearances for the ventilating system (external fan and hood, screen and fasteners):

Fan max. dia. (mm)	*Clearance		Criteria supporting minimum clearance of 1mm for opposing parts manufactured for dimensional accuracy and stability
	(mm)	Between fan and (part):	

**Clearances are required to be ≥ 1/100 maximum fan diameter and ≥ 1mm (clearances need not exceed 5mm)*

Materials for external fans and fanhoods:

Part *fan, fanhood, ventilation screen, etc.*	Material	Insulation resistance			Plastic (thermal stability)		Light metal (composition)		
		≤ 1 GΩ (X)	ref. **TYPE VERIFICATIONS AND TESTS**, Sheet **10/12** (X)	Group II machine; not considered (peripheral fan speed < 50 m/s) (X)	Manufacturer's specified operating temperature *(°C)	*exceeds maximum service temperature by at least 20 K (X)	Group I: ≤ 15% total of aluminum, magnesium, titanium and (X)	Group I: ≤ 6% total of magnesium and titanium (X)	≤ 6% magnesium (Group II) (X)

(IEC60079-0, 2000)

Prepared by _____ **[signature]** _____ **Date [yy-mm-dd]** _____

IEC 60079-0	**SUPPLEMENTARY REQUIREMENTS 2/6**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
18	**Supplementary requirements for switchgear**			

Item: .....

Supplementary requirements for switchgear

Ratings:

_____

_____

Immersed contacts:

☐ non-flammable dielectric material (_____)

Disconnector not designed to be operated under the intended load:

☐ electrically or mechanically interlocked with a suitable load breaking device; (method)

_____

_____

_____ or

☐ (Group II only) marked (near the actuator) with the warning DO NOT OPERATE UNDER LOAD

Disconnector included with switchgear:

☐ disconnects all poles

☐ contact position visible, or

☐ open position reliably indicated; (method)

_____

_____

_____

Note: Refer to IEC 60947-1; i.e. symbol "O" (power off) and, in two push-button systems, designated by red button or button marking. For indication by actuator position the actuator must automatically stay in a position corresponding to that of the moving contacts and requires two distinct rest positions; a third distinct rest position may be provided for automatic opening.

☐ cover/door interlock (☐ design allows opening only when separation of contacts is effective); (method)

_____

_____

_____

Group I switchgear:

☐ means for padlocking operating mechanism of disconnector in open position; (details)

_____

_____

☐ short-circuit relay (☐ latch-out provision)

☐ earth fault relay (☐ latch-out provision)

☐ local relay resetting device accessible from outside the enclosure; (details)

_____

_____

_____

☐ special fastener for access cover

☐ refer to **CONSTRUCTION** Sheets **2/7** and **3/7**, **Fasteners**, Special fasteners

continued on Sheet **3/6**

IEC 60079-0	SUPPLEMENTARY REQUIREMENTS 3/6	APPLIED		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
18	**Supplementary requirements for switchgear** (continued)			
19	**Supplementary requirements for fuses**			

Item: .....

Supplementary requirements for switchgear (continued)

Access to enclosure(s) containing remotely operated circuits with non-manual switching contact make/break means:

☐ door(s)/cover(s) interlocked with a disconnector, preventing access to interior unprotected circuits; (method)

_____

_____

_____

_____ or

☐ door(s)/cover(s) marked with warning DO NOT OPEN WHEN ENERGISED

Internal parts intended to remain energised after operation of the disconnector	Type of protection (Ex __)	refer to forms for IEC 60079-	Alternative method of protection: clearance and creepage distances between phases (poles) and to earth per IEC 60079-7 (X)	Alternative method of protection: refer to forms for IEC 60079-7 (X)	Internal supplementary enclosure: Manufacturer's drawing(s) reference	Internal supplementary enclosure: degree of protection (ref. IEC 60529) *at least IP30* (IP)	Internal supplementary enclosure: marked with warning DO NOT OPEN WHEN ENERGISED (X)

Supplementary requirements for fuses

Enclosure containing fuse(s); _____

☐ interlocked so that:- ☐ removal of replaceable element(s) is possible only with the supply disconnected

☐ fuse(s) cannot be energised until the enclosure is correctly closed

(method) _____

_____

_____

_____

☐ apparatus is marked with the warning DO NOT OPEN WHEN ENERGISED (alternative to the above requirements)

(IEC60079-0, 2000)

IEC 60079-0	SUPPLEMENTARY REQUIREMENTS 4/6	APPLIED		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
20	**Supplementary requirements for plugs and sockets**			

Item: .....

Supplementary requirements for plugs and sockets

Note: Plugs and components remaining energised when not engaged with a socket are not permitted.

Plug/socket identification or circuit	1				2									
	Interlock or equivalent means								Alternatively					
	Interlock		Design provision		Method				fixed together by special fasteners	ref. **CONSTRUCTION** Sheets 2/7, 3/7, **Fasteners**, Special fasteners	*marked with warning DO NOT OPEN WHEN ENERGISED	cannot be de-energised before separation (connected to a battery)	(*alternatively) marked SEPARATE ONLY IN A NON-HAZARDOUS AREA
	mechanical	electrical	cannot be separated with contacts energised	cannot be energised when separated										
	(X)	(X)	(X)	(X)					(X)	(X)	(X)	(X)	(X)	
1														
2														

Plugs and sockets rated 10A or less, 250 V a.c. or less, 60 V d.c. or less: (i.e. exempted from compliance with the above)

Plug/socket identification or circuit	1			2								
	Rating	only socket outlet remains energised	Current break with delayed release			plug and socket remain flameproof during arc quenching period		type of protection for contacts remaining energised (Ex_)	
			arc extinguished before separation of plug and socket	Method		refer to forms for IEC 60079-1		refer to forms for IEC 60079-	
		(X)	(X)			(X)	(X)		
1									
2									

(IEC60079-0, 2000)

Prepared by _____ **[signature]** _____ **Date [yy-mm-dd]** _____

IEC 60079-0	SUPPLEMENTARY REQUIREMENTS 5/6	APPLIED		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
21	**Supplementary requirements for luminaires**			

Item: .....

Supplementary requirements for luminaires

Type of lamp and ratings:

_____

_____

Note: Lamps containing free metallic sodium are not permitted (e.g. low pressure sodium lamps per IEC 60192).

☐ light transmitting cover of _____

☐ additional protective guard (material, _____;

mesh size, _____) *Required: mesh size ≤ 50 mm squares*

☐ refer to **TYPE VERIFICATIONS AND TESTS, Test for resistance to impact** (cover and guard)

Mounting provision:

_____

_____

_____

Notes: 1. Mounting shall not depend on a single screw.
2. A single integral eyebolt (i.e. cast or welded to enclosure or locked against loosening if threaded) may be used.

Luminaires other than intrinsically safe:

Access cover(s) for lampholder and other internal parts of luminaire other than intrinsically safe (IEC 60079-11:

☐ interlocked with a device automatically disconnecting all poles as soon as cover opening procedure begins;

(method) _____

_____

_____

_____ or

☐ cover(s) marked with warning DO NOT OPEN WHEN ENERGISED

Internal parts intended to remain energised after operation of the disconnecting device (other than lampholder)	Type of protection (Ex __)	refer to forms for IEC 60079-	Alternative method of protection: disconnecting device not manually operable to inadvertenly energise unprotected parts (X)	Alternative method of protection: clearance and creepage distances between phases (poles) and to earth per IEC 60079-7 (X)	Alternative method of protection: refer to forms for IEC 60079-7 (X)	Internal supplementary enclosure *can be reflector for light source*: Manufacturer's drawing(s) reference	Internal supplementary enclosure: degree of protection (ref. IEC 60529) *at least IP30* (IP)	Internal supplementary enclosure: marked with warning DO NOT OPEN WHEN ENERGISED (X)

(IEC60079-0, 2000)

Prepared by _____ **[signature]** _____ **Date [yy-mm-dd]** _____

IEC 60079-0	**SUPPLEMENTARY REQUIREMENTS 6/6**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
22	**Supplementary requirements for caplights, caplamps and handlamps**			

Item: .....

Supplementary requirements for caplights, caplamps and handlamps

Caplights for Group I: (requirements under consideration)

Caplamps for Group II and hand lamps:

Battery: (type) _____

(electrolyte) _____

Materials of construction:

Part	Composition	Verification of resistance to electrolyte

Measures to prevent leakage of electrolyte, considering all positions of the apparatus:

Connecting cable for separately enclosed light source and supply source with no other mechanical connection:

☐ refer to **ANNEX B, Tests of clamping of non-armoured and braided cables**

☐ refer to **ANNEX B, Tests of clamping of armoured cables**

(IEC60079-0, 2000)

Prepared by _____ **[signature]** _____ **Date [yy-mm-dd]** _____

IEC 60079-0	**TYPE VERIFICATIONS AND TESTS 1/12**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
23.1	**General**			
23.2	**Verification of documents**			
23.3	**Compliance of prototype or sample with documents**			
23.4.1	**Type tests, General**			

Item: _____

General

Prototype/sample(s) of electrical apparatus used to verify compliance with relevant requirements of this standard:

_____

_____

_____

Prototype/sample(s) of electrical apparatus used to verify compliance with relevant requirements of standard(s) for specific type(s) of protection:

☐ as above

or _____

_____

_____

Verification of documents

☐ the manufacturer's documents that were considered in the evaluation are listed in this report

☐ the manufacturer's documents specifying the design and safety aspects of the electrical apparatus address the requirements of IEC 60079-0 and those parts of IEC Publication 60079 specific to the type of protection

Compliance of prototype or sample with documents

☐ a prototype or sample of the electrical apparatus was found to comply with the listed documents

Type tests, General

☐ the prototype/sample was tested in accordance with the requirements of IEC 60079-0 and those parts of IEC Publication 60079 specific to the type of protection concerned.

Notes: 1. Tests shall be made in the laboratory of the testing station or elsewhere under the supervision of the testing station.
2. The testing station shall not conduct tests which have already been carried out on an Ex component.
3. Each test shall be made in that configuration of the apparatus considered the most unfavourable by the testing station.
4. The testing station shall call for any modifications that it considers to be needed for compliance.

Record of tests judged to be unnecessary and justification for tests omitted:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Note: Excluding Ex components which have already undergone the relevant tests.

(IEC60079-0, 2000)

Prepared by _____ **[signature]** _____ **Date [yy-mm-dd]** _____

IEC 60079-0	**TYPE VERIFICATIONS AND TESTS 2/12**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
23.4.3.1/23.4.3.3	**Test for resistance to impact/Required results**			

Item:

Test for resistance to impact/Required results

refer to **TYPE VERIFICATIONS AND TESTS**, Sheet **6/12**, **Tests of enclosures or parts of enclosures in plastic materials**			Gp I, Gp II	Gp I	Gp I
			following tests of thermal endurance	following tests of resistance to oils and greases	following tests of resistance to hydraulic liquids
			(X)	(X)	(X)
(enclosure/part/surface/point of impact)	1	*Plastic materials following conditioning tests:* *The places of impact shall be on the external parts exposed to impact. If the enclosure is protected by another enclosure, only the external parts of the assembly shall be subjected to the resistance to impact tests.* *Tests shall be made at the maximum ambient in service, increased by 10K to 15K,and at the minimum ambient in service, reduced by 5K to 10 K.*			
	2				
	3				
	4				

		Conditions																				Results	
		Enclosure/part *guard, protective cover, fanhood, cable entry incl.*			Light-transmitting part						Impact application									Temperature (°C) *(20 ± 5) °C or lowest value for specified range* *Plastic: max. ambient in service, increased by 10K to 15K and min. ambient in service, reduced by 5K to 10 K*	apparatus marked with symbol X *required when tested as low risk of mechanical danger*		
					Impact energy (J)						*two impacts at separate places on each of two samples (except for light-transmitting parts made of glass)*				Glass light-transmitting parts			impact applied normal to flat surface	impact applied normal to tangent to surface			damage invalidating type of protection (NO/YES)	displacement/deformation (fanhood or ventilation screen) causing rubbing by moving parts (NO/YES)
					Without guard			With guard *tested without guard*															
		Impact energy (J)													*single impact on each of three samples*								
	plastic material	*high risk (Group I)*	*low risk (Group I) high risk (Group II)*	*low risk (Group II)*	*high risk (Group I)*	*low risk (Group I) high risk (Group II)*	*low risk (Group II)*	*high risk (Group I)*	*low risk (Group I) high risk (Group II)*	*low risk (Group II)*	Sample 1 (1ST *impact*)	Sample 1 (2ND *impact*)	Sample 2 (1ST *impact*)	Sample 2 (2ND *impact*)	Sample 1	Sample 2	Sample 3						
		20	7	4	7	4	2	4	2	1													
	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)		(X)		
1																							
2																							
3																							
4																							

Notes: 1. The points of impact shall be the places considered by the testing station to be the weakest.

2. Applies to plastic, light/cast metal enclosures or enclosures of other materials of wall thickness < 3 mm (Group I) or < 1 mm (Group II).

Prepared by _____ **[signature]** _____ **Date [yy-mm-dd]** _____

IEC 60079-0	TYPE VERIFICATIONS AND TESTS 3/12	APPLIED		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
23.4.3.2/23.4.3.3	**Drop test/Required results**			
23.4.4	**Tests for the degree of protection IP by enclosures**			

Item: .....

Drop test/Required results (portable apparatus)

Applied to

_____

_____

_____

Parts of plastic material: _____

_____

_____

_____

ref. Sheet **6/12**, **Tests of enclosures or parts of enclosures in plastic materials**

Drop (*4 required*)	Sample position	following tests of thermal endurance (X)	following tests of resistance to oils and greases (X)	following tests of resistance to hydraulic liquids (X)	drop height (m) *Required: 1 m onto a horizontal concrete surface*	Temperature (°C) *(20 ± 5) °C or lowest value for specified range* *Plastic: min. ambient in service, reduced by 5K to 10 K*	Results: damage invalidating type of protection (NO/YES)	Results: displacement/deformation (fanhood or ventilation screen) causing rubbing by moving parts (NO/YES)
		Gp I, Gp II	Gp I	Gp I				
1								
2								
3								
4								

Tests for the degree of protection IP by enclosures

Applied to: _____

Test procedures per IEC 60529 (*test report reference):

☐ first numeral ____ (* _____)

☐ second numeral ____ (* _____)

Notes: 1. Enclosures shall be considered as category 1 per IEC 60529.
2. The apparatus shall not be energised during tests.
3. When required by IEC 60529, the dielectric test in 12.3.2 of IEC 60529 shall be $[(2\ U_n + 1000) \pm 10\ \%]$ V r.m.s. applied between 10 s and 12 s, where U_n = max. rated or internal voltage of the apparatus.

Test procedures per IEC 60034-5 (*test report reference): (rotating electrical machine)

☐ first numeral ____ (* _____)

☐ machine provided with drain hole(s) intended normally to be open on site

☐ machine provided with drain hole(s) intended normally to be closed on site

☐ second numeral ____ (* _____)

machine surface area, excluding mounting surface, _____ m^2 *Required accuracy of 10 %*

Note: Acceptance criteria shall be applied insofar as compliance with an IEC explosion protection standard is concerned in addition to normal operating conditions.

Applied acceptance criteria as required by explosion protection standard, (details and/or reference):

_____

_____

(IEC60079-0, 2000)

IEC 60079-0	**TYPE VERIFICATIONS AND TESTS 4/12**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
23.4.5	**Torque test for bushings**			
23.4.6.1	**Temperature measurement**			

Item: .....

Torque test for bushings (used for connection facilities)

Part or circuit	Torque (Nm)									Other stem size (M _)	Torque (Nm) *may be determined from graph plot using Table 5 values and extrapolated for larger sizes*	Turning	
	Stem size from Table 5											stem in bushing (NO/YES)	mounted bushing (NO/YES)
	M 4	M 5	M 6	M 8	M 10	M 12	M 16	M 20	M 24				
	2.0 (X)	3.2 (X)	5 (X)	10 (X)	16 (X)	25 (X)	50 (X)	85 (X)	130 (X)				

Temperature measurement

Applied to: _____

☐ Refer to form(s) for specific type(s) of protection (_____)

Apparatus input ratings: _____ V (_____ Hz / ☐ d.c.), _____ A, _____ W / _____ VA

Test voltage: _____ V based on tolerance, _____ (*ref. _____)

Note: The most unfavourable voltage within 90% and 110% of the rated voltage of the electrical apparatus shall be applied (*unless the manufacturer demonstrates that other international standards prescribe other tolerances for equivalent industrial electrical apparatus).

Conditions of loading/output/operation: _____

Note: The test shall be performed under the most adverse conditions.

☐ apparatus mounted in normal service position (_____)

☐ apparatus tested in different normally used positions; highest temperature (see data below) with (position):

_____

(position, if different, for hottest point of any enclosure or part of enclosure, of plastic material:

_____)

Note: The position resulting in the highest temperature shall be marked on the apparatus and shall be denoted either by the symbol **X** or by a label.

continued on Sheet **5/12**

IEC 60079-0	TYPE VERIFICATIONS AND TESTS 5/12	APPLIED		
CLAUSE	REQUIREMENTS	YES	NO	ENCL.
23.4.6.1	**Temperature measurement** (continued)			

Item: .....

Temperature measurement (continued)

Temperature data:

Location	Maximum temperature	
component/surface/part	Method of measurement	(°C)
ambient		

Max. surface temperature (_____ °C); corrected for ☐ 40 °C ambient to _____ °C or

corrected for other specified ambient (°C) to °C

Note: Measured maximum temperature (corrected for max. ambient) for surfaces exposed to potentially explosive atmospheres shall not exceed:

- for Group I electrical apparatus, the maximum surface temperature specified under **COVERAGE**, Sheet **3/4**
- for Group II electrical apparatus where each manufactured sample is routinely tested, the maximum temperature marked on the apparatus
- for Group II electrical apparatus subjected to type testing, the marked temperature less 5 K for temperature classes T6, T5, T4 and T3 and less 10 K for temperature classes T2 and T1

Hottest of enclosure/part of enclosure of plastic material:

temperature, _____ °C); corrected for ☐ 40 °C ambient to _____ °C or

corrected for other specified ambient (_____ °C) to _____ °C

Value to be recorded on Sheet **1/7, CONSTRUCTION, Non-metallic enclosures and non-metallic parts of enclosures**, Thermal endurance.

(IEC60079-0, 2000)

IEC 60079-0	**TYPE VERIFICATIONS AND TESTS 6/12**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
23.4.6.2	**Thermal shock test**			
23.4.7/23.4.7.1	**Tests of non-metallic enclosures or of non-metallic parts of enclosures/Ambient temperatures during tests**			
23.4.7.2	**Tests of enclosures or parts of enclosures in plastic materials**			

Item: .....

Thermal shock test (glass parts of luminaires and windows of electrical apparatus)

Applied to: _____

☐ subjected to a jet of water ≅ 1mm dia. at 10 ± 5 °C with glass part at max. service temperature (_____ °C)

Breakage of glass part(s): ☐ NO ☐ YES; _____

Tests of non-metallic enclosures or of non-metallic parts of enclosures/Ambient temperatures during tests

For the purposes of this standard or the standards for specific types of protection, the tests carried out as a function of permissible upper and lower ambient temperature values comply with the following:

☐ maximum ambient in service increased by 10 K to 15 K for the upper ambient temperature

☐ maximum ambient in service reduced by 5 K to 10 K for the upper ambient temperature

Tests of enclosures or parts of enclosures in plastic materials

Applied to _____

Group I electrical apparatus:

☐ refer to forms for IEC 60079-1, **ANNEX A**, Sheets **2/12** through **7/12**

☐ 1ST test sequence;

- thermal endurance to heat (on 2 samples)
- thermal endurance to cold (on 2 samples)
- mechanical tests (on 2 samples)
- tests specific to type of protection

☐ 2ND test sequence;

- resistance to oils and greases (on 2 samples)
- mechanical tests (on 2 samples)
- tests specific to type of protection

☐ 3RD test sequence;

- resistance to hydraulic liquids (on 2 samples)
- mechanical tests (on 2 samples)
- tests specific to type of protection

Group II electrical apparatus:

☐ refer to forms for IEC 60079-1, **ANNEX A**, Sheets **8/12** and **9/12**

☐ test sequence;

- thermal endurance to heat (on 2 samples)
- thermal endurance to cold (on 2 samples)
- mechanical tests (on 2 samples)
- tests specific to type of protection

Rationale re tests specific to the type of protection that were waived for conditioned samples and/or tests specific to the type of protection that were conducted in conjunction with conditioning tests:

(IEC60079-0, 2000)

IEC 60079-0	**TYPE VERIFICATIONS AND TESTS 7/12**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
23.4.7.3	**Thermal endurance to heat**			
23.4.7.4	**Thermal endurance to cold**			

Item: .....

Thermal endurance to heat

Applied to _____

☐ refer to forms for IEC 60079-1, **ANNEX A**, Sheet **2/12** (Group I)

☐ refer to forms for IEC 60079-1, **ANNEX A**, Sheet **8/12** (Group II)

Maximum service temperature ≤ 75 °C:

☐ continuous storage for _____ weeks *Required: four weeks*

☐ relative humidity, _____ % *Required: 90 ±5%*

☐ temperature, _____ °C *Required: 80 °C ≤(20 ±2) K above maximum service temperature*

Maximum service temperature > 75 °C:

☐ continuous storage for _____ weeks at _____ °C and _____ % relative humidity

Required: two weeks at (95 ±2) °C and (90 ±5)% relative humidity

and _____ weeks at _____ °C

Required: two weeks at (20 ±2) K above maximum service temperature

Observations : _____

Thermal endurance to cold

☐ refer to forms for IEC 60079-1, **ANNEX A**, Sheet **2/12** (Group I)

☐ refer to forms for IEC 60079-1, **ANNEX A**, Sheet **8/12** (Group II)

☐ continuous storage for _____ h at _____ °C

Required: 24 h at minimum ambient in service, reduced by 5K to 10 K

Observations: _____

(IEC60079-0, 2000)

Prepared by _____ **[signature]** _____ **Date [yy-mm-dd]** _____

IEC 60079-0	**TYPE VERIFICATIONS AND TESTS** **8/12**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
23.4.7.5	**Resistance to light**			

Item: _____

Resistance to light (enclosure or parts of plastic materials)

☐ refer to forms for IEC 60079-1, **ANNEX A**, Sheet **11/12**

☐ refer to forms for IEC 60079-18, **ANNEX C**, Sheet **2/2**

☐ test not applied (i.e. enclosure/part protected from light; details: _____)

Note: Protected from light; (e.g.) protected from daylight or light from luminaires.

☐ apparatus marked **X**

☐ not applicable (i.e. Group I apparatus other than a luminaire)

Impact bending strength (ISO 179):

Component	Specimen Nº	Before exposure			Period of exposure (h)	After exposure		
		impact energy absorbed (kJ/m^2)	break			impact energy absorbed (exposed side) (kJ/m^2)	break	
			YES	NO			YES	NO
	1							
	2							
	3							
	4							
	5							
	6							
	1							
	2							
	3							
	4							
	5							
	6							

Notes
(i) The test shall be made on six test bars of standard size 50 mm × 6 mm × 4 mm according to ISO 179.
(ii) Test bars shall be produced under conditions equivalent to those used to produce the actual enclosure and the conditions shall be stated in the test report.
(iii) The test shall be made in accordance with ISO 4892 (i.e. exposure chamber using xenon lamp and sunlight simulating filter system, at a black panel temperature of (55 ± 3) °C).
(iv) Exposure time shall be 1000 h.
(v) Impact bending strength (on exposed side) shall be ≥ 50% of corresponding value measured on unexposed test piece.
(vi) Where the impact bending strength cannot be determined prior to exposure (i.e. no rupture), not more than three of the exposed test bars may break.

☐ test bars were made under conditions equivalent to those used to produce the actual enclosure; details:

_____

_____

_____

(IEC60079-0, 2000)

IEC 60079-0	TYPE VERIFICATIONS AND TESTS 9/12	APPLIED		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
23.4.7.6	**Resistance to chemical agents for Group I electrical apparatus**			

Resistance to chemical agents for Group I electrical apparatus

Enclosure samples (4 in total), conditioned as below:

☐ refer to forms for IEC 60079-1, **ANNEX A**, Sheet **4/12** (oils and greases)

☐ refer to forms for IEC 60079-1, **ANNEX A**, Sheet **6/12** (hydraulic liquids)

☐ sealed against intrusion of test liquids (method); _____

Oils and greases: (2 samples)

☐ immersed for _____ h in No. 2 oil (ref. ISO 1817) at _____ °C

Required: (24 ± 2) h at 50 °C ± 2 °C

☐ samples removed from liquid bath and stored for _____ h in laboratory atmosphere (ambient, _____ °C)

Required: samples carefully wiped and stored for (24 ± 2) h

Observations: _____

Hydraulic liquids for mining applications: (2 samples)

☐ immersed for _____ h in an aqueous solution of polymer in 35% water at _____ °C

Required: (24 ± 2) h at 50 °C ± 2 °C

☐ samples were removed from liquid bath and stored for _____ h in laboratory atmosphere (ambient, _____ °C)

Required: samples carefully wiped and stored for 24 h

Observations: _____

Ref. Sheet **3/12**, **Drop test** and/or Sheet **2/12**, **Test for resistance to impact**:

☐ all enclosure samples withstand mechanical tests

☐ one or more enclosure samples do not withstand mechanical tests;

☐ special conditions of safe use stated in certificate and

☐ apparatus marked with symbol **X**

(IEC60079-0, 2000)

IEC 60079-0	TYPE VERIFICATIONS AND TESTS 10/12	APPLIED		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
23.4.7.8	**Insulation resistance test of parts of enclosures of plastic materials**			
23.4.8	**Tests in explosive mixtures**			

Item: _____

Insulation resistance test of parts of enclosures of plastic materials

Applied to: _____

(refer to **CONSTRUCTION**, Sheet **1/7**, **Non-metallic enclosures and non-metallic parts of enclosures**)

Preparation of test piece; using intact surface of:

☐ part itself

or ☐ test piece at least 149 mm by 59.5 mm

☐ two parallel electrodes painted per Fig. 4, using conducting paint;

_____

Note: Conducting paint solvent must not have significant effect on insulation resistance.

part cleaned with (in turn): ☐ distilled water

☐ *isopropyl alcohol

☐ *alternatively, _____

Note: Alternative solvent must be miscible with water and must not affect specimen material.

☐ distilled water

Note: Following cleaning the part must be subjected to conditioning without being touched by hand.

☐ part conditioned for 24 h in a clean atmosphere at:- ☐ (23 ± 2) °C

and ☐ (50 ± 5) % R.H.

Test: (conducted under ambient conditions)

☐ (500 V ± 10) V d.c. applied between electrodes for 1 min.

Note: Applied voltage shall be sufficiently steady for the charging current due to voltage fluctuation to be negligible compared with current flowing through the test piece.

method of measurement; _____

_____

_____

_____

$$\text{insulation resistance} = \frac{\text{d.c. voltage applied between electrodes}}{\text{total current flowing between electrodes}} = \_\_\_\_ = \_\_\_\_\ \Omega$$

Note: The voltage and current are determined when the voltage has been applied for 1 min.

Tests in explosive mixtures

Applied to: _____

☐ ref. form(s) for specific type(s) of protection (_____)

Test gases and vapours:

☐ known purity ≥ 95%

details; (optional) _____

_____

_____

_____

Note: The purity of commercially available gases and vapours is in general satisfactory but if their purity is below 95% they should not be used.

(IEC60079-0, 2000)

Prepared by _____ **[signature]** _____ **Date [yy-mm-dd]** _____

IEC 60079-0	**TYPE VERIFICATIONS AND TESTS 11/12**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
24	**Routine verifications and tests**			
25	**Manufacturer's responsibility**			

Item: _____

Routine verifications and tests

(as necessary to ensure that the electrical apparatus produced complies with specifications submitted to the testing station together with the prototype or sample; see also routine verifications and tests required per forms for the specific type(s) of protection)

Applied to: 1) _____

☐ refer to forms for specific type(s) of protection (_____)

☐ refer to specification(s) submitted per manufacturer's documents list, Item(s):

_____

☐ per established procedure(s): _____

Details: _____

Applied to: 2) _____

☐ refer to forms for specific type(s) of protection (_____)

☐ refer to specification(s) submitted per manufacturer's documents list, Item(s):

_____

☐ per established procedure(s): _____

Details: _____

Applied to: 3) _____

☐ refer to forms for specific type(s) of protection (_____)

☐ refer to specification(s) submitted per manufacturer's documents list, Item(s):

_____

☐ per established procedure(s): _____

Details: _____

Manufacturer's responsibility (refer to **Marking** sheets of this form set and of forms for specific types of protection)

By marking the electrical apparatus as recorded in this report the manufacturer attests on his own responsibility that the electrical apparatus has been constructed in accordance with the applicable requirements of the relevant standards in safety matters, that routine verifications and tests have been successfully completed and that the product complies with the specification submitted to the testing station.

(IEC60079-0, 2000)

Prepared by _____ **[signature]** _____ **Date [yy-mm-dd]** _____

IEC 60079-0	**TYPE VERIFICATIONS AND TESTS 12/12**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
26	**Verifications and tests on modified or repaired electrical apparatus**			

Item: _____

Verifications and tests on modified or repaired electrical apparatus (ref. IEC 60079-19, except mines/explosives)

Nature of modification of apparatus affecting the integrity of the type of protection or affecting temperature:

_____

_____

_____

_____

Re-evaluation/re-testing by the testing station :

refer to forms for IEC 60079-	Clause(s)	ref. REPORT Nº _____ Form *e.g. title, Sheet _/_, Page*	New/Revised	Assembly or part modified

☐ only the above forms are included in this report

Note: In the case of repairs to electrical apparatus affecting the type of protection, the parts which have been repaired should be subjected to new routine verifications and tests which need not necessarily be made by the manufacturer. This report does not confirm acceptability of the repair of electrical apparatus.

(IEC60079-0, 2000)

Prepared by _____ **[signature]** _____ **Date [yy-mm-dd]** _____

IEC 60079-0	**MARKING** **1/2**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
27	**Marking**			

Item: .....

Marking *Note: This sheet covers major marking content. See forms for specific types of protection for other required markings.*

☐ listed manufacturer's documents illustrate applied markings which include the details indicated below

Manufacturer's identification:

☐ *manufacturer=s name ☐ *registered trademark) ☐ type identification (or

☐ serial number (except for very small electrical apparatus on which there is very limited space or connection accessories)

☐ batch number (alternative to serial number)

Designations:

Applied to: (apparatus or part) *different apparatus parts having different types of protection, shall each bear the symbol for the specific type of protection* *where more than one type of protection is used, the symbol for the main type of protection shall be followed by the symbols for the other types of protection*	[1]*Symbol Ex (X)	[2]*Symbol of type of protection				[3]Group symbol			[4]Temperature						
									Maximum surface temperature *Group I apparatus; ref. **COVERAGE**, Sheet 3/4* (X)	Group II apparatus					
										Ambient *otherwise symbol* **X**			Maximum surface temperature		
		(d, e, m, o, p, q)	(ia, [ia], ib, [ib])	(nA, nC, nR)	(s) *without symbol Ex*	(I, I/II, I/IIA, I/IIB, I/IIC)	(II, IIA, IIB, IIC)	II(chemical formula or name of gas)		T_a and special range (X)	T_{amb} and special range (X)	Temperature class T(1, 2, 3, 4, 5, 6)	(°C)	" __ °C (T__)" (X)	" __°C" only *max. surface temperature > 450 °C* (X)

Notes:
1. The symbol "s" shall be marked on electrical apparatus not in compliance with IEC 60079 but recognized as safe.
2. Apparatus marked IIB is suitable for Group IIA and similarly, apparatus marked IIC is suitable for Groups IIB and IIA.
3. Cable entries need not be marked with the temperature class.
4. Group II electrical apparatus marked for use in a particular gas need not have a temperature reference.
5. Superscript numerals $^{(1, 2, 3, 4)}$ denote the order in which markings shall be placed.

Associated apparatus for Group II, having protection in addition to type "i" and sub-divisions differ:

☐ [ia II ___] ☐ [ib II ___]

Other markings normally required by the standards of construction of the electrical apparatus: (optional verification)

continued on Sheet **2/2**

IEC 60079-0	**MARKING** 2/2	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
27	**Marking** (continued)			

Item: .....

Marking (continued)

Markings denoting that a certificate has been issued:

☐ *name/mark of testing station (_____) and

☐ *certificate reference (_____)

Required: Last two figures of year of certification followed by serial number of certificate in that year

Indication of special conditions for safe use (*symbol **X**, placed after certificate reference):

special conditions noted in the certificate	warning markings (alternative to **X** marking)

☐ see forms for specific types of protection

Ex components:

☐ the foregoing markings (except serial number, temperature) are included and , in addition

☐ *symbol **U** (the symbol **X** shall not be used)

Reduction of marking content where there is limited space; applied to: (very small apparatus and Ex components)

_____

_____

_____

Refer to foregoing markings (Sheets **1/2**, **2/2**) denoted by asterisk (*)

Method of marking:

.....

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Note: The electrical apparatus shall be marked on the main part in a visible place in a legible and durable manner considering chemical corrosion.

(IEC60079-0, 2000)

IEC 60079-0	ANNEX B — Ex CABLE ENTRIES 1/9	APPLIED		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
B.1	**General**			
B.2.1, B2.2	**Cable sealing/Materials**			

Type: .....

General

Allowable cable size:

a) _____

b) _____

c) _____

d) _____

e) _____

☐ refer to forms for specific type(s) of protection (_____)

Cable type(s) accommodated:

☐ non-armoured ☐ braided ☐ armoured

Cable sealing/Materials (between cable and entry body; ref. figure B.1)

Note: Cable sealing may be made of a single material or a combination of materials.

☐ elastomeric sealing ring (material) .....

refer to Sheet **8/9**, **Ageing test for material used for elastomeric sealing rings**

☐ metallic sealing ring (material) _____

☐ composite sealing ring (material) .....

☐ filling compound (material) .....

refer to **CONSTRUCTION**, Sheet **3/7**, **Materials used for cementing**

☐ combination (details) _____

.....

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Exposed non-metallic parts of cable entry; details:

.....

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_____

refer to **CONSTRUCTION**, Sheet **1/7**, **Non-metallic enclosures and non-metallic parts of enclosures**,
Electrostatic charges on enclosures or parts of enclosures of plastic material
(IEC60079-0, 2000)

Prepared by _____ **[signature]** _____ **Date [yy-mm-dd]** _____

IEC 60079-0	ANNEX B — Ex CABLE ENTRIES 2/9	APPLIED		
CLAUSE	REQUIREMENTS	YES	NO	ENCL.
B.2.3	**Clamping**			
B.2.4	**Lead-in of cable**			

Type: .....

Clamping

Method whereby cable entry prevents pulling/twisting of cable from being transmitted to connections:

☐ clamping device (details) .....

☐ by a sealing ring (details) .....

☐ by filling compound (details) .....

☐ by the sealing ring noted under **Cable sealing/Materials** on Sheet **2/9** (for unarmoured cable)

☐ by the filling compound noted under **Cable sealing/Materials** on Sheet **2/9** (for unarmoured cable)

☐ other (details) .....

Group II cable entry without a clamping device; evaluated to reduced clamping test values:

☐ refer to Sheets **2/9** and **3/9**, **Tests of clamping of non-armoured and braided cables**

Note: Clamping test values may be reduced to 25% of those specified for the relevant tests

☐ statements in descriptive documents limiting use to fixed installations and re clamping of cable by user and

☐ cable entry marked with symbol **X**

Lead-in of cable

Cable entry:

☐ no sharp edges capable of damaging the cable; for flexible cable, the point of entry includes

☐ a rounded edge ≥ 75° with

☐ radius ***R*** (figure B.2) ≥ ¼ dia. of maximum admissible cable (need not exceed 3 mm)

☐ ref. manufacturer's documents list, Item _____

☐ can only be released/dismantled by tool (.....

)

☐ refer to Sheets **3/9** through **8/9** re mechanical tests of clamping and resistance to impact

☐ refer to Sheet **9/9**, **Type test for degree of protection (IP) of cable entries**

(IEC60079-0, 2000)

IEC 60079-0	**ANNEX B — Ex CABLE ENTRIES 3/9**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
B.3.1	**Tests of clamping of non-armoured and braided cables**			

Type: .....

Tests of clamping of non-armoured and braided cables

Cable entry with clamping by the sealing ring; preparation of test samples:

☐ applied to armoured cable where the armouring is not clamped by a device within the gland

Sealing ring	a)	1	smallest admissible cable size:
		2	largest admissible cable size:
	b)	3	smallest admissible cable size:
		4	largest admissible cable size:
	c)	5	smallest admissible cable size:
		6	largest admissible cable size:
	d)	7	smallest admissible cable size:
		8	largest admissible cable size:
	e)	9	smallest admissible cable size:
		10	largest admissible cable size:

Sealing ring	Elastomeric		Metallic	Assembly, fitted into cable entry					
	circular cable	non-circular cable		Torque applied to prevent slipping of mandrel/cable with applied force, N *ref. Sheet **6/9**, Tensile test and Mechanical Strength*					
	mounted on clean, dry, polished, cylindrical mild steel mandrel of diameter: (mm) *equal to the smallest cable diameter allowable in the ring and specified by cable entry manufacturer*	mounted on a sample of dry, clean cable of dimensions: *dimensions equal to the size specified by the cable entry manufacturer*	mounted on a sample of dry, clean cable of diameter: (mm) *diameter equal to the smallest cable diameter allowable in the ring and specified by the cable entry manufacturer*	screws of flanged compression element fitted with screws (Nm)	nut of screwed compression element (Nm)	20 × value in mm of dia. of mandrel or cable (round cable) (X)	6 × value in mm of perimeter of cable (non-circular cable) (X)	(N)	value reduced to 25 % for Group II cable entry without clamping device (X)
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									

Notes: Torque figures may be determined experimentally prior to tests or may be supplied by the manufacturer of the cable entry.

continued on Sheet **4/9**

(IEC60079-0, 2000)

IEC 60079-0	ANNEX B — Ex CABLE ENTRIES 4/9	APPLIED		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
B.3.1	**Tests of clamping of non-armoured and braided cables** (continued)			

Type: .....

Tests of clamping of non-armoured and braided cables (continued)

Cable entry with clamping by filling compound; preparation of test samples:

☐ applied to armoured cable where the armouring is not clamped by a device within the gland

a)	1	smallest admissible size:	
	2	largest admissible size:	
b)	3	smallest admissible size:	
	4	largest admissible size:	
c)	5	smallest admissible size:	
	6	largest admissible size:	
d)	7	smallest admissible size:	
	8	largest admissible size:	
e)	9	smallest admissible size:	
	10	largest admissible size:	

Sample of clean, dry cable, fitted in cable entry	Shape of cable		Filling compound			Filling compound prevents slippage of cable with applied force, N *ref. Sheet **6/9**, Tensile test and Mechanical Strength*			
	circular (X)	non-circular (X)	prepared as stated by the manufacturer of the cable entry (X)	filled into available space (X)	allowed to harden in accordance with the manufacturer's instructions (X)	20 × value in mm of dia. of mandrel or cable (circular cable) (X)	6 × value in mm of perimeter of cable (non-circular cable) (X)	(N)	reduced to 25 % for Group II cable entry without clamping device (X)
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									

continued on Sheet **5/9**

(IEC60079-0, 2000)

IEC 60079-0	ANNEX B — Ex CABLE ENTRIES 5/9	APPLIED		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
B.3.1	**Tests of clamping of non-armoured and braided cables** (continued)			

Type: .....

Tests of clamping of non-armoured and braided cables (continued)

Cable entry with clamping by means of a clamping device; preparation of test samples:

☐ applied to armoured cable where the armouring is not clamped by a device within the gland

a)	clamping device for cable size:
b)	clamping device for cable size:
c)	clamping device for cable size:
d)	clamping device for cable size:
e)	clamping device for cable size:

Clamping device with clean, dry cable and sealing ring				Assembly, fitted in cable entry					
				Torque applied to prevent slipping of cable with applied force, N *ref. Sheet **6/9**, Tensile test and Mechanical Strength*					
	circular cable of diameter allowable in the device and specified by the manufacturer of the cable entry (X)	non-circular cable of dimensions equal to the size specified for use with the sealing ring (X)	Largest size of cable allowable in sealing ring and specified by the manufacturer of the cable entry *clamping device tested shall have the capacity for this size*	screws of flanged compression element fitted with screws (Nm)	nut of screwed compression element (Nm)	clamping device (Nm)	20 × value in mm of dia. of mandrel or cable (circular cable) (X)	6 × value in mm of perimeter of cable (non-circular cable) (X)	(N)
a)									
b)									
c)									
d)									
e)									

Notes: Torque figures may be determined experimentally prior to tests or may be supplied by the manufacturer of the cable entry.

continued on Sheet **6/9**

IEC 60079-0	ANNEX B — Ex CABLE ENTRIES 6/9	APPLIED		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
B.3.1	**Tests of clamping of non-armoured and braided cables** (continued)			

Type: .....

Tests of clamping of non-armoured cables in cable entries (continued)

Tensile test:

Sample; mounted on tensile testing machine	Refer to (Sheet _/_, Page) *i.e. Sheet **3/9**, **4/9** or **5/9***		Tensile force: constant force applied for 6 h (X)	Tensile force: (20 ± 5) °C ambient (X)	Tensile force: (N)	Slippage ≤6mm allowed: none discernible (X)	Slippage ≤6mm allowed: ≤ 6 mm (X)	Slippage ≤6mm allowed: > 6 mm (X)

Mechanical strength; applied after tensile test to cable entry with clamping by sealing ring or a clamping device:

Sample; removed from tensile testing machine	Refer to (Sheet _/_, Page) *i.e. Sheet **3/9**, **4/9** or **5/9***		Torque *1,5 × value to prevent slipping*: screws of flanged compression element fitted with screws (X)	Torque: nut of screwed compression element (X)	Torque: clamping device (X)	*Observations on dismantled cable entries*: Deformation affecting type of protection (No/Yes)	Physical/visible damage to filling compound affecting type of protection afforded (No/Yes)	Prescribed proof torque not met - plastic material (temporary thread deformation) (X)	noticeable damage (No/Yes)

Note: Any deformation of the sealing ring shall be ignored.

(IEC60079-0, 2000)

Prepared by _____ **[signature]** _____ **Date [yy-mm-dd]** _____

IEC 60079-0	**ANNEX B — Ex CABLE ENTRIES 7/9**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
B.3.2/B.3.2.1	**Tests of clamping of armoured cables/Tests of clamping where the armourings are clamped by a device within the gland**			

Type: .....

Tests of clamping of armoured cables/Tests of clamping where the armourings are clamped by a device within the gland

Preparation of test samples:

a)	smallest size of cable:	
b)	smallest size of cable:	
c)	smallest size of cable:	
d)	smallest size of cable:	
e)	smallest size of cable:	

Sample of armoured cable, fitted into clamping device of cable entry	Torque applied to prevent slipping of cable with applied force, N *ref. Sheet **8/9**, Tensile test*				
	screws of flanged clamping device (Nm)	nut of screwed clamping device (Nm)	80 × value in mm of dia. of cable over armour (Group I) (X)	20 × value in mm of dia. of cable over armour (Group II) (X)	(N)
a)					
b)					
c)					
d)					
e)					

Notes: Torque figures may be determined experimentally prior to tests or may be supplied by the manufacturer of the cable entry.

Tensile test:

Sample; mounted on tensile testing machine		Tensile force: constant force applied for (120 ± 10) s (X)	Tensile force: (20 ± 5) °C ambient (X)	Tensile force (N)	Slippage (No/Yes)
	a)				
	b)				
	c)				
	d)				
	e)				

Mechanical strength:

Sample; removed from tensile testing machine		Torque *1,5 × value to prevent slipping*: screws of flanged clamping device (X)	Torque *1,5 × value to prevent slipping*: nut of screwed clamping device (X)	*Observation on dismantled cable entry*	Deformation affecting type of protection (No/Yes)
	a)				
	b)				
	c)				
	d)				
	e)				

(IEC60079-0, 2000)

Prepared by _____ **[signature]** _____ **Date [yy-mm-dd]** _____

IEC 60079-0	**ANNEX B — Ex CABLE ENTRIES 8/9**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
B.3.2/B.3.2.2	**Tests of clamping of armoured cables/Tests of clamping where the armourings are not clamped by a device within the gland**			
B.3.3	**Ageing test for material used for elastomeric sealing rings**			
B.3.4	**Type test for resistance to impact**			

Type: .....

Tests of clamping of armoured cables/Tests of clamping where the armourings are not clamped by a device within the gland

Cable entry evaluated as non-armoured; refer to:

☐ Sheet **3/9**, Page ____ ; Cable entry with clamping by the sealing ring; preparation of test samples

☐ Sheet **4/9**, Page ____ ; Cable entry with clamping by filling compound; preparation of test samples

☐ Sheet **5/9**, Page ____ ; Cable entry with clamping by means of a clamping device; preparation of test samples

☐ Sheet **6/9**, Page ____ ; Tensile test and Mechanical strength

Ageing test for material used for elastomeric sealing rings

Test piece (per ISO 48)	Hardness (IRDH) at ambient temperature	Oven exposure ≥ 168h, uninterrupted			Refrigerated ≥ 48 h, uninterrupted			at least 24 h at ambient temperature	Hardness (IRDH) at ambient temperature after ageing	variation in hardness ≤ 20 % of value before ageing (Yes/No)	Test report reference
		(100 ± 5) °C (X)	cable entry for use at elevated temperature (ref. **CONSTRUCTION**, Sheet 7/7) (X)	Temperature (°C) *(20 ± 5) K above declared max. operating value of cable*	(−20 ± 2) °C (X)	cable entry for use at in ambient temperature below −20 °C (X)	Temperature (°C) *declared min.. ambient temperature ± 2 K*	(X)			

Type test for resistance to impact

Refer to **TYPE VERIFICATIONS AND TESTS**, Sheet **2/12**, **Test for resistance to impact/Required results**:

☐ cable entries tested with smallest specified cable fitted

Notes: 1. For testing purposes, the cable entry is fixed on a rigidly mounted steel plate or secured as specified by the manufacturer of the cable entry.

2. The torque applied in fixing the threaded cable entry shall be according to the "Mechanical strength" test of Sheet **6/9**) where armouring is not clamped by a device within the gland.

3. The torque applied in fixing the threaded cable entry shall be according to "**Tests of clamping of armoured cables/Tests of clamping where the armourings are clamped by a device within the gland**" of Sheet **7/9** where armouring is clamped by a device within the gland.

(IEC60079-0, 2000)

IEC 60079-0	**ANNEX B — Ex CABLE ENTRIES9/9**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
B.3.5	**Type test for degree of protection (IP) of cable entries**			
B.4.1	**Marking of cable entries**			
B.4.2	**Marking of cable sealing rings**			

Type: .....

Type test for degree of protection (IP) of cable entries

Sealing ring, mounted on clean, dry cable equal to smallest diameter allowable in ring						
	a)	cable sealing ring of size:				
	b)	cable sealing ring of size:				
	c)	cable sealing ring of size:				
	d)	cable sealing ring of size:				
	e)	cable sealing ring of size:				
	IEC 60529 *test conditions*		cable entry fixed to a sealed enclosure	Test report reference	Result	
	first numeral (__)	second numeral (__)	(X)			
a)						
b)						
c)						
d)						
e)						

Marking of cable entries

☐ refer to **MARKING** (except section on Ex components)

☐ reduced marking applied (size(s) _____)

☐ type/size of thread (i.e. threaded entry)

_____

_____

_____

Marking of cable sealing rings

On the sealing ring or, when bound with a metal washer, on the washer:

☐ minimum and maximum diameters (in mm) of permitted cables

☐ identifying marking allowing user to determine if ring is appropriate for cable entry

☐ temperature range outside –20 °C to + 80 °C (where the entry and ring have been tested accordingly) and, in addition to appearing on the sealing ring, ☐ appearing on the cable entry

_____

_____

_____

_____

(IEC60079-0, 2000)

IEC 60079-0	**ANNEX C — Ex COMPONENTS 1/2**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
	Table C.1 – Clauses with which Ex components shall comply			

Item: .....

Clauses with which Ex components shall comply

Clause or subclause		Refer to Form		(X)	Remarks
1	Scope	COVERAGE	1/4		applied
2	Normative references	COVERAGE	2/4		applied
3	Definitions and symbols	COVERAGE	3/4		applied
4	Apparatus grouping and temperature classification	COVERAGE	3/4		applied (excluding marking of Group II apparatus as a function of maximum surface temperature)
5	Temperature	COVERAGE	3/4		does not apply, except that the operating temperature limits are specified; i.e.
6.1	Requirements for all apparatus (compliance with the requirements of this standard, modified by specific standards for the type of protection)	COVERAGE	4/4		applied
7.1	Non-metallic enclosures and non-metallic parts of enclosures General	CONSTRUCTION	1/7		applied
7.2	Non-metallic enclosures and non-metallic parts of enclosures Thermal endurance	CONSTRUCTION	1/7		applied (considering placement in other enclosures)
7.3	Non-metallic enclosures and non-metallic parts of enclosures Electrostatic charges on enclosures or parts of enclosures of plastic material	CONSTRUCTION	1/7		applied (if external; i.e. considering placement in other enclosures)
7.4	Non-metallic enclosures and non-metallic parts of enclosures Threaded holes	CONSTRUCTION	1/7		applied (if external; i.e. considering placement in other enclosures)
8	Enclosures containing light metals	CONSTRUCTION	2/7		applied
9.1	Fasteners General	CONSTRUCTION	2/7		applied
9.2	Fasteners Special fasteners	CONSTRUCTION	2/7		applied (if an apparatus enclosure)
9.3	Fasteners Electrical apparatus – holes for special fasteners	CONSTRUCTION	3/7		applied (if an apparatus enclosure)
10	Interlocking devices	CONSTRUCTION	3/7		applied
11	Bushings	CONSTRUCTION	3/7		applied
12	Materials used for cementing	CONSTRUCTION	3/7		applied
13	Ex components	CONSTRUCTION	4/7		applied
14	Connection facilities and terminal compartments	CONSTRUCTION	5/7		applied (**X** marking not necessary)
15.1	Connection facilities for earthing or bonding conductors (inside terminal compartment)	CONSTRUCTION	5/7		applied (if an apparatus enclosure)
15.2	Connection facilities for earthing or bonding conductors (additional external connection facility)	CONSTRUCTION	5/7		applied (if an apparatus enclosure)
15.3	Connection facilities for earthing or bonding conductors (where not required)	CONSTRUCTION	5/7		applied
15.4	Connection facilities for earthing or bonding conductors (conductor size)	CONSTRUCTION	5/7		applied

continued on Sheet **2/2**

(IEC60079-0, 2000)

Prepared by _____ **[signature]** _____ **Date [yy-mm-dd]** _____

IEC 60079-0	**ANNEX C — Ex COMPONENTS 2/2**	**APPLIED**		
CLAUSE	**REQUIREMENTS**	**YES**	**NO**	**ENCL.**
	Table C.1 – Clauses with which Ex components shall comply (continued)			

Item: .....

Clauses with which Ex components shall comply (continued)

Clause or subclause		Refer to Form		(X)	Remarks
15.5	Connection facilities for earthing or bonding conductors (protection against corrosion, conductor secureness, contact pressure, light alloy parts)	CONSTRUCTION	5/7		applied
16	Cable and conduit entries	CONSTRUCTION	5/7, 6/7		applied (if an apparatus enclosure)
17	Supplementary requirements for rotating electrical machines	SUPPLEMENTARY REQUIREMENTS	1/6		(only as affecting machine enclosure)
18	Supplementary requirements for switchgear	SUPPLEMENTARY REQUIREMENTS	2/6, 3/6		applied
19	Supplementary requirements for fuses	SUPPLEMENTARY REQUIREMENTS	3/6		applied
20	Supplementary requirements for plugs and sockets	SUPPLEMENTARY REQUIREMENTS	4/6		applied
21	Supplementary requirements for luminaires	SUPPLEMENTARY REQUIREMENTS	5/6		applied
22.1	Supplementary requirements for caplights, caplamps and handlamps Caplights for Group I	SUPPLEMENTARY REQUIREMENTS	6/6		(requirements under consideration)
23.1	Type verifications and tests General	TYPE VERIFICATIONS AND TESTS	1/12		applied
23.2	Verification of documents	TYPE VERIFICATIONS AND TESTS	1/12		applied
23.3	Compliance of prototype or sample with documents	TYPE VERIFICATIONS AND TESTS	1/12		applied
23.4.1	Type tests General	TYPE VERIFICATIONS AND TESTS	1/12		applied
23.4.3	Mechanical tests	TYPE VERIFICATIONS AND TESTS	2/12, 3/12		applied (if an apparatus enclosure)
23.4.4	Tests for the degree of protection IP by enclosures	TYPE VERIFICATIONS AND TESTS	3/12		applied (if an apparatus enclosure)
23.4.5	Torque test for bushings	TYPE VERIFICATIONS AND TESTS	4/12		applied
23.4.6.2	Thermal shock test	TYPE VERIFICATIONS AND TESTS	6/12		applied (where the maximum temperature is specified)
23.4.7	Tests of non-metallic enclosures or of non-metallic parts of enclosures	TYPE VERIFICATIONS AND TESTS	6/12 through 10/12		applied (where the maximum temperature is specified)
23.4.8	Tests in explosive mixtures	TYPE VERIFICATIONS AND TESTS	10/12		applied
24	Routine verifications and tests	TYPE VERIFICATIONS AND TESTS	11/12		applied
25	Manufacturer's responsibility	TYPE VERIFICATIONS AND TESTS	11/12		reference of responsibility accepted upon applying required markings
26	Verifications and tests on modified or repaired electrical apparatus	TYPE VERIFICATIONS AND TESTS	12/12		applied
27	Marking (subclauses 27.1, 27.2, 27.3 and 27.4 are superseded by those (below) specific to Ex components)	MARKING	1/2, 2/2		applied (except temperature classification)
27.5	Marking (Ex components)	MARKING	2/2		applied
27.6	Marking (reduction of marking content for very small electrical apparatus and Ex components where there is limited space)	MARKING	2/2		applied
27.7	Marking Examples of marking of certified apparatus				for reference

(IEC60079-0, 2000)

Prepared by _____ **[signature]** _____ **Date [yy-mm-dd]** _____

IEC 60079-0	**COMMENTS**	
Clause		**Page**