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## Kopex-Ex™ - Hazardous location conduit and fittings



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E

# **Kopex-Ex -** Hazardous location conduit and fittings

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# Hazardous areas

## Applications

### Protection for critical wiring in hazardous areas

From our UK-based facility, ABB manufactures a wide range of globally approved products, including metallic conduit and fittings along with a full range of conduit accessories.

We are committed to an extensive and ongoing product development program, which will continue to deliver innovative and high performance products for effective cable protection in safety-critical areas.

Our current range of high performance products is designed for many highly demanding market sectors, including petrochemical, pharmaceutical and offshore industries or any ATEX/IECEX/UL/CSA areas.



### ATEX/IECEX

The directive is designed to harmonize the law of EU member states concerning equipment and protective systems intended for use in potentially explosive areas.

Products are categorized 1, 2 and 3 with category 1 meaning the product employs a very high level of protection; category 2, a high level of protection; category 3, a normal level of protection.

Its main requirements are the need to classify areas as Zones 0, 1 and 2 (for gases and vapours) and Zones 20, 21, 22 (for dusts and equipment for mining). Mining applications are covered by Group I and non-mining applications by Group II.



### UL/CSA directives

Products are categorized into Classes and Divisions (UL) or Zones (CSA), where Class I denotes use in gas environments and Class II, dust and flyings.

This Class and Division or Zone system identifies what equipment can be used as stated in the NEC National Electrical Code or CEC Canadian Electrical Code, Part I.



### Technical support

ABB can provide technical assistance in the selection of the appropriate product from its range. For help, please contact your regional sales office.

## Hazardous areas

Standards and what they mean

### Zone definitions – Dust (as per ATEX 60079)

**ZONE**  
**20**

Zone 20 —————

#### Permanent/frequent

Area in which an explosive atmosphere in the form of a cloud of combustible dust in air is **present continuously**, or for long periods, or frequently.

**ZONE**  
**21**

Zone 21 —————

#### Occasional

Area in which an explosive atmosphere, in the form of a cloud of combustible dust in air is **likely to occur**, in normal operation, occasionally.

**ZONE**  
**22**

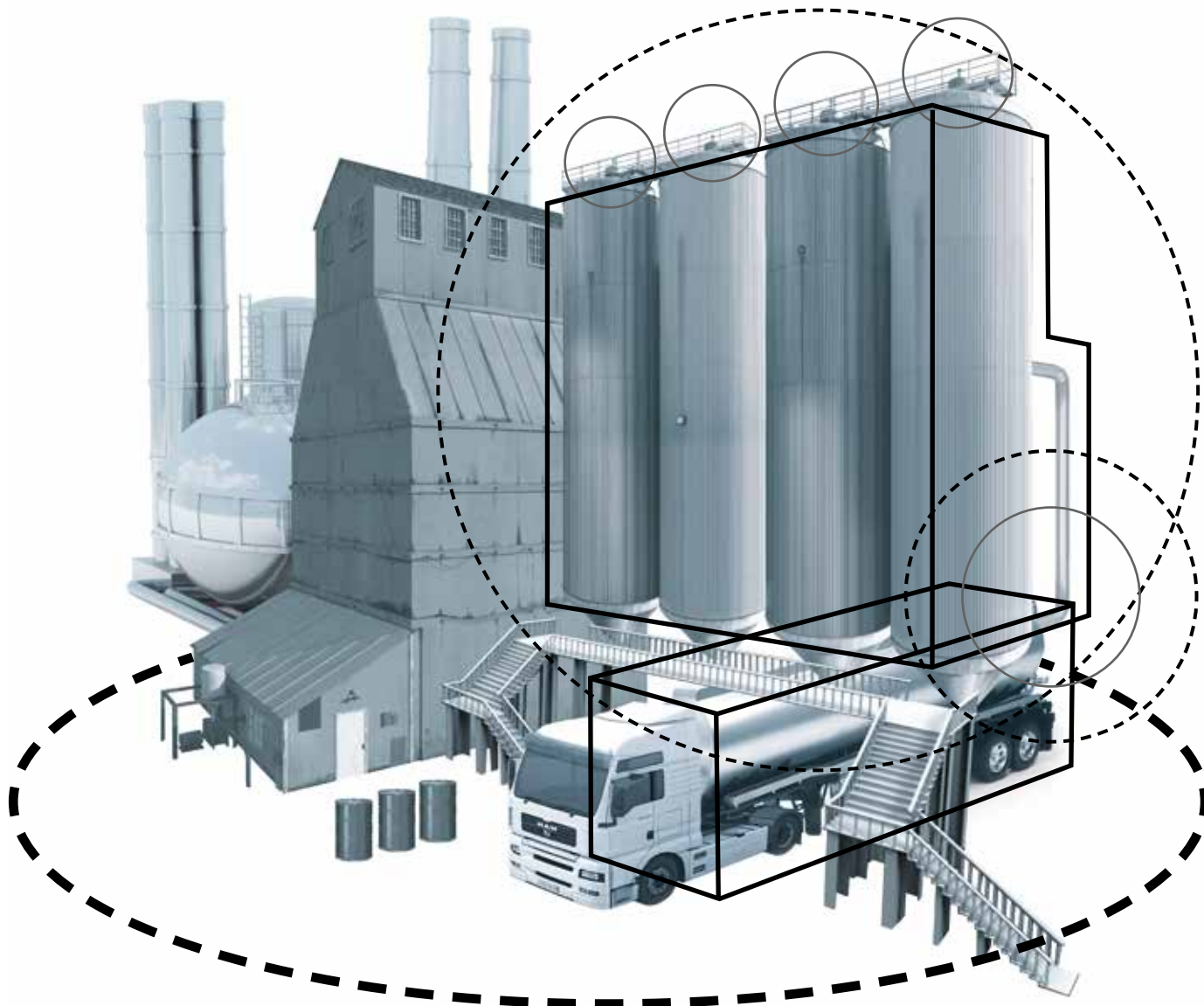
Zone 22 - - - - -

#### Dust irregular/short duration

Area in which an explosive atmosphere, in the form of a cloud of combustible dust in air is **not likely to occur** in normal operation but, if it does occur, will persist for a **short period** only.

#### Safety zone

No explosion risk ————



## Hazardous areas

Standards and what they mean

### Zone definitions – Gases and vapours (as per ATEX 60079-10)

**ZONE**  
**0**

#### Zone 0

##### Permanent/frequent

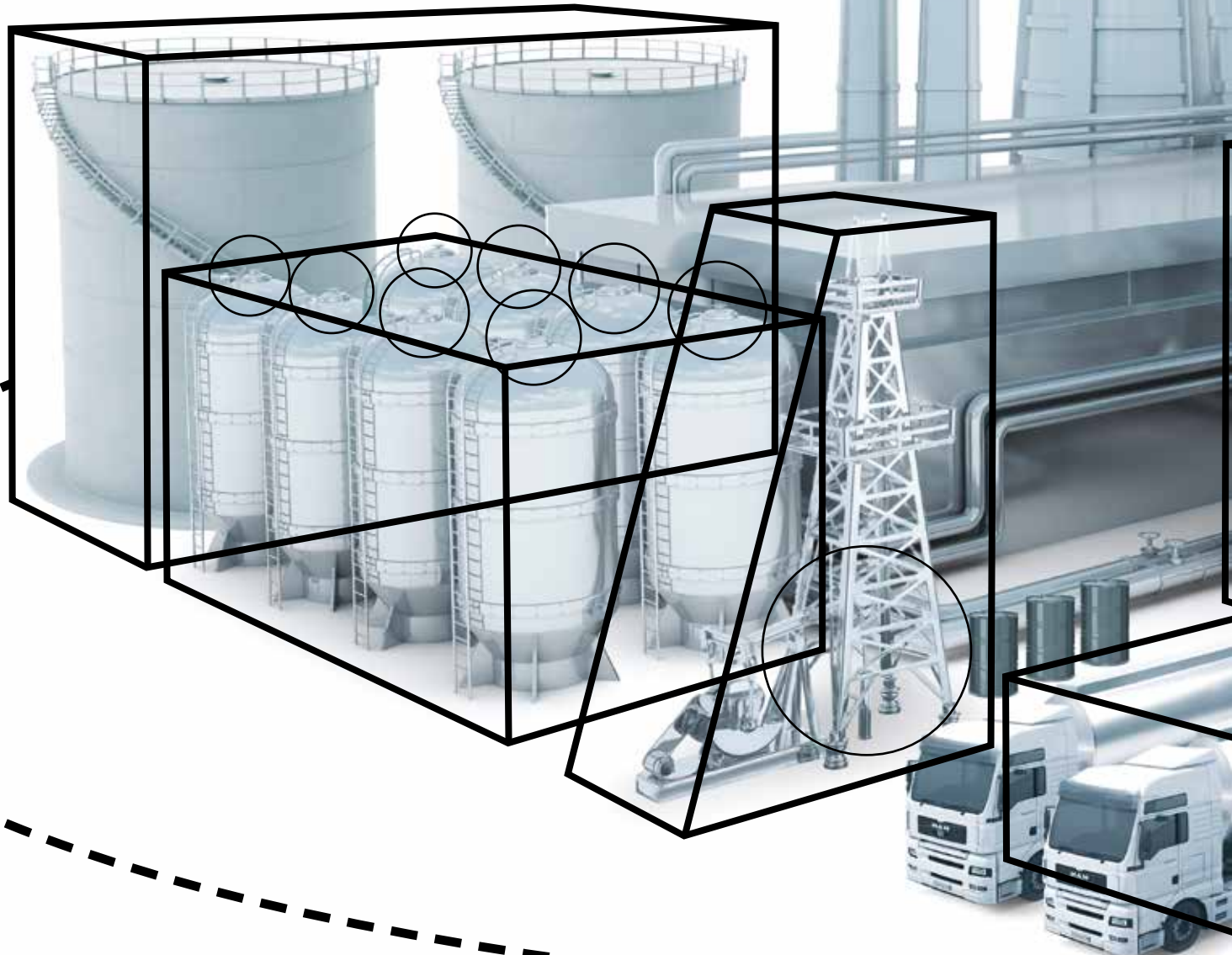
Place in which an explosive atmosphere consisting of a mixture of air and flammable substances in the form of gas, vapour or mist is **present continuously** or for long periods, or frequently.

**ZONE**  
**1**

#### Zone 1

##### Occasional

Place where an atmosphere consisting of a mixture of air and flammable substances in the form of gas, vapour or mist is **likely to arise occasionally** during normal operation.



## Hazardous areas

Standards and what they mean

ZONE  
2

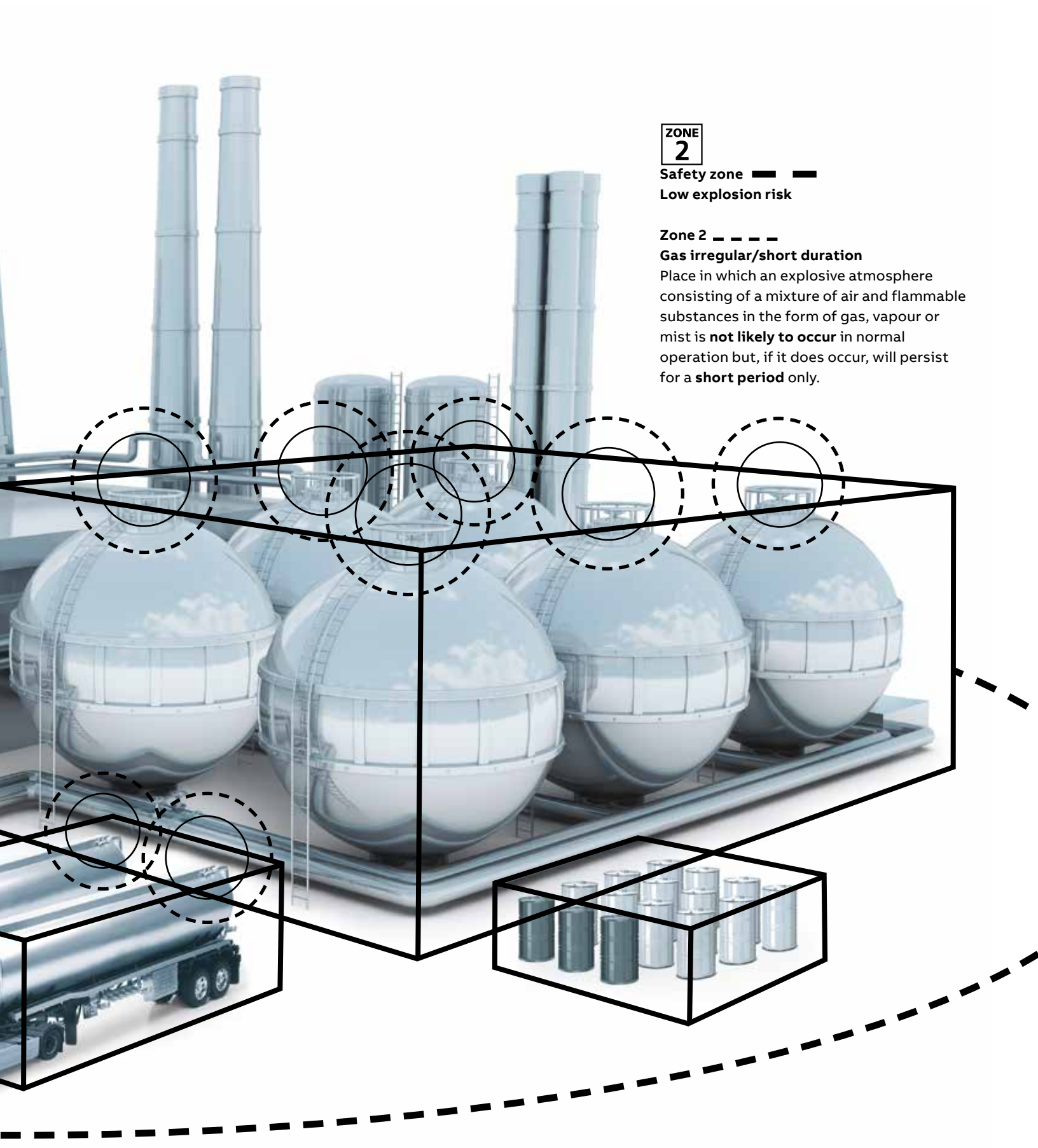
Safety zone — — — —

Low explosion risk

Zone 2 - - - - -

Gas irregular/short duration

Place in which an explosive atmosphere consisting of a mixture of air and flammable substances in the form of gas, vapour or mist is **not likely to occur** in normal operation but, if it does occur, will persist for a **short period** only.



# Product marking guide

## Classification of equipment for use in potentially explosive atmospheres

Classification of hazardous areas		Canadian/IEC or NEC classifications		
Flammable substances	Temporary behaviour of flammable substances in hazardous places	Typical zones	Required marking for installation	
			Equipment group	Equipment protection level
Gases vapours	Is present continuously or for long periods or frequently	zone 0	II	Ga
	Is likely to occur in normal operation occasionally	zone 1	II	Gb
	Is not likely to occur in normal operation but, if it does occur, will persist for a short period only	zone 2	II	Gc
Dusts	Is present continuously or for long periods or frequently	zone 20	III	Da
	Is likely to occur in normal operation occasionally	zone 21	III	Db
	It is not likely to occur in normal operation but, if it does occur, will persist for a short period only	zone 22	III	Dc
Methane dusts	- mines		I	Ma
	- mines		I	Mb

Subdivision of gases and vapours						
Apparatus may be used in group			Gases or vapours			
IIC	IIB	IIA				
IIC	IIB	IIA	Ammonia	Ethyl alcohol	Gasoline	Acetaldehyde
			Methane	Cyclohexane	N-hexane	
			Ethane	N-butane		
			Town gas, Acrylnitril	Ethylene oxide	Ethylene glycol	Ethyl-ether
			Hydrogen	Ethylene (acetylene)	Sulphide carbon	

Dust	
IIIA	Combustible flyings
IIIB	Non-conductive dust
IIC	Conductive dust

### Product stamp detail



### Class and divisions



CLI.Div1.ABCD

.CLII.Div1.EFG.

#### CLI (Class I), Div1

Where ignitable concentrations of flammable gases, vapors or liquids are present within the atmosphere under normal operation conditions.

#### CLI (Class I), Div2

Where ignitable concentrations of flammable gases, vapors or liquids are present within the atmosphere under abnormal operation conditions.

#### Class I Areas

Group A: Acetylene  
Group B: Hydrogen  
Group C: Propane and ethylene  
Group D: Benzene, butane and propane.

#### CLII (Class II), Div1

Where ignitable concentrations of combustible dusts are present within the atmosphere under normal operation conditions.

#### CLII (Class II), Div2

Where ignitable concentrations of combustible dusts are present within the atmosphere under abnormal operation conditions.








#### Class II Areas

Group E: Metal dust  
Group F: Carbon and charcoal  
Group G: Flour, starch, wood and plastic.



# Product marking guide

## Classification of equipment for use in potentially explosive atmospheres

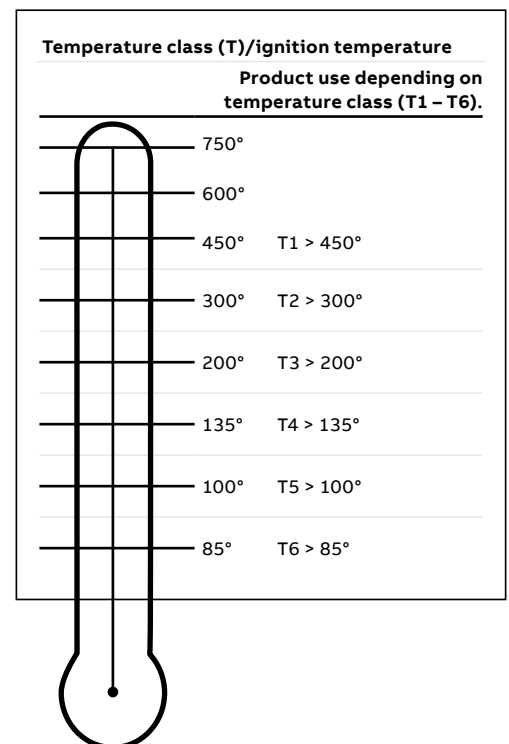
Protection technique			
Application	Type of protection	Marking	EN/IEC standard
All applications	General requirements	–	60079-0
Control stations, motors, fuses, switchgear, power electronics	Flameproof enclosure 	<b>Exd</b>	60079-1
Installation materials, motors, luminaries	Increased safety 	<b>Exe</b>	60079-7
Measurement and control, automation technology, sensors, actuators	Intrinsic safety 	<b>Exi</b>	60079-11
Switch- and control cupboards, analyse-apparatus, computers	Pressurisation 	<b>Exp</b>	60079-2
Coils of motors or relays, solenoid valves	Encapsulation 	<b>Exm</b>	60079-18
Transformers, relays, control stations, magnetic contactors	Oil immersion 	<b>Exo</b>	60079-6
Capacitors, transformers	Powder filling 	<b>Exq</b>	60079-5
See at the top - only for zone 2	'Non sparking'	<b>Exn</b>	60079-15
For use in zone 0, 1, 2 / for use in zone 1, 2	Dust atmospheres	<b>Ext</b>	60079-31

Restriction for using apparatus	
Requirements	Marking
Equipment without restriction	–
Equipment with special condition may be noted	X
Ex component, which is not intended to be used alone and requires additional certification before being used in hazardous area	U

Certification number

**IECEx**    **SIRA09.0103**    **X**

- IIA T1 Acetone 735°
- IIA T1 Ammonia 630°
- IIB T1 Carbon monoxide 605°
- IIA T1 Bensene 560°
- IIC T1 Hydrogen 560°
- IIA T1 Methane 537°
- IIA T1 Toluene 535°
- IIA T1 Styrene 490°
- IIA T1 Propane 470°
- IIA T1 1-Butene 455°
- IIB T1 Butadiene 430°
  
- IIB T2 Ethylene 425°
- IIA T2 Butane 372°
- IIA T2 Ethanol 363°
- IIA T2 Butylalcohol 359°
- IIB T2 Dimetyletcher 350°
- IIC T2 Acetylene 305°
  
- IIA T3 Nafta 290°
- IIA T3 Hydrogen sulphide 270°
- IIA T3 Cyclohexane 259°
- IIA T3 Hexane 233°
- IIA T3 Heptane 215°
- IIA T3 Kerosene 210°
- IIA T3 Dekane 201°
  
- IIB T4 Diethyl ether 160°
  
- IIC T6 Carbon disulphide 95°



### New marking — EPLs (explosion protection levels)

The introduction of the EPLs and changes in the EN 60079 series standard has introduced new marking requirements.

## Liquidtight flexible metallic conduit system

### Certification and characteristics – Steel cores

#### General oil resistant — Galvanized steel core with a general purpose oil-resistant coating



**Certification standard:**  
IEC 61386  
**Static Temp:** -25 °C to +105 °C  
**Flexing Temp:** -5 °C to +105 °C

**Special characteristics:**  
Flame-retardant PVC covering  
**Flame propagation:**  
Flame dies in less than 30 seconds after ignition source is removed

\*Add coil length to complete part number, e.g. 10 metres = EXLB0510

#### Low fire hazard – Galvanized steel core with an LFH coating

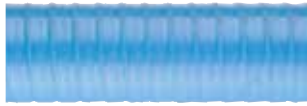


**Certification standard:**  
IEC 61386  
LUL fully compliant (E1042A6)  
MOD to NES 518: Issue 3 DEF STAN 61-12 (Part 31) Issue 1  
**Static temp:** -25 °C to +90 °C  
**Flexing temp:** -5 °C to +90 °C

**Special characteristics:**  
Limited fire hazard, zero halogen (BS6425 Pt 1)  
**Flame propagation:**  
Flame dies in less than 30 seconds after ignition source is removed

\*Add coil length to complete part number, e.g. 10 metres = EXLT0510

#### High temperature – Galvanized steel core with a high temperature-resistant coating



**Certification standard:**  
IEC 61386  
**Static temp:** -50 °C to +130 °C  
**Flexing temp:** -5 °C to +90 °C

**Special characteristics:**  
Flame resistance: UL94 V2  
Chemical and oil resistant  
**Flame propagation:**  
Flame dies in less than 30 seconds after ignition source is removed

\*Add coil length to complete part number, e.g. 10 metres = EXLH0510

#### Low fire hazard with EMC protection – Galvanized steel core with a galvanized steel EMC shield and LFH covering



**Certification standard:**  
IEC 61386  
MOD to NES 518: Issue 3 DEF STAN 61-12 (Part 31) Issue 1  
**Static temp:** -25 °C to +90 °C  
**Flexing temp:** -5 °C to +90 °C

**Special characteristics:**  
Limited fire hazard covering  
EMC Screening level: 60 db at 1 MHz braided  
**Flame propagation:**  
Flame dies in less than 30 seconds after ignition source is removed

\*Add coil length to complete part number, e.g. 10 metres = EXBBT0510

#### High temperature highly flexible – Galvanized steel core with a high temperature, highly flexible coating



**Certification standard:**  
IEC 61386  
**Static temp:** -65 °C to +150 °C  
**Flexing temp:** -45 °C to +135 °C

**Special characteristics:**  
High flexibility  
High temperature  
**Flame propagation:**  
Flame dies in less than 30 seconds after ignition source is removed

### Related products



Group I and II gland  
pages E14–E15



Universal gland  
pages E16–E17



90° Elbow gland  
pages E14–E15



Group II gland  
pages E14–E15

## Liquidtight flexible metallic conduit system

### Technical specifications – Steel cores

<b>See note 1</b>	<b>Nominal conduit size (mm)</b>	<b>16</b>	<b>20</b>	<b>25</b>	<b>32</b>	<b>40</b>	<b>50</b>	<b>63</b>	
	<b>US trade size (in.)</b>	<b>⅜</b>	<b>½</b>	<b>¾</b>	<b>1</b>	<b>1¼</b>	<b>1½</b>	<b>2</b>	
	<b>Inside diameter (mm)</b>	<b>12.5</b>	<b>16.0</b>	<b>21.0</b>	<b>26.4</b>	<b>35.3</b>	<b>40.4</b>	<b>51.6</b>	
	<b>Type</b>	<b>Coil lengths (m)</b>	<b>10/30</b>	<b>10/30</b>	<b>10/30</b>	<b>10/20</b>	<b>10/20</b>	<b>10/20</b>	<b>10/20</b>
	General oil-resistant (black)	EXLB03*	EXLB04*	EXLB05*	EXLB06*	EXLB07*	EXLB08*	EXLB09*	

<b>See note 1</b>	<b>Nominal conduit size (mm)</b>	<b>16</b>	<b>20</b>	<b>25</b>	<b>32</b>	<b>40</b>	<b>50</b>	<b>63</b>	
	<b>US trade size (in.)</b>	<b>⅜</b>	<b>½</b>	<b>¾</b>	<b>1</b>	<b>1¼</b>	<b>1½</b>	<b>2</b>	
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	<b>Type</b>	<b>Coil lengths (m)</b>	<b>10/30</b>	<b>10/30</b>	<b>10/30</b>	<b>10/20</b>	<b>10/20</b>	<b>10/20</b>	<b>10/20</b>
	Low fire hazard (black)	EXLT03*	EXLT04*	EXLT05*	EXLT06*	EXLT07*	EXLT08*	EXLT09*	

<b>See note 1</b>	<b>Nominal conduit size (mm)</b>	<b>16</b>	<b>20</b>	<b>25</b>	<b>32</b>	<b>40</b>	<b>50</b>	<b>63</b>	
	<b>US trade size (in.)</b>	<b>⅜</b>	<b>½</b>	<b>¾</b>	<b>1</b>	<b>1¼</b>	<b>1½</b>	<b>2</b>	
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	<b>Type</b>	<b>Coil lengths (m)</b>	<b>10/30</b>	<b>10/30</b>	<b>10/30</b>	<b>10/20</b>	<b>10/20</b>	<b>10/20</b>	<b>10/20</b>
	High temperature (black)	EXLH03*	EXLH04*	EXLH05*	EXLH06*	EXLH07*	–	–	
High temperature (blue)	EXLB03*	EXLB04*	EXLB05*	EXLB06*	EXLB07*	–	–		

<b>See note 1</b>	<b>Nominal conduit size (mm)</b>	<b>16</b>	<b>20</b>	<b>25</b>	<b>32</b>	<b>40</b>	<b>50</b>	<b>63</b>	
	<b>US trade size (in.)</b>	<b>⅜</b>	<b>½</b>	<b>¾</b>	<b>1</b>	<b>1¼</b>	<b>1½</b>	<b>2</b>	
	<b>Inside diameter (mm)</b>	<b>12.5</b>	<b>16.0</b>	<b>21.0</b>	<b>26.4</b>	<b>35.3</b>	<b>40.4</b>	<b>51.6</b>	
	<b>Type</b>	<b>Coil lengths (m)</b>	<b>10/30</b>	<b>10/30</b>	<b>10/30</b>	<b>10/20</b>	<b>10/20</b>	<b>10/20</b>	<b>10/20</b>
	Low fire hazard with EMC (black)	EXBBT03*	EXBBT04*	EXBBT05*	EXBBT06*	EXBBT07*	EXBBT08*	EXBBT09*	

<b>See note 1</b>	<b>Nominal conduit size (mm)</b>	<b>16</b>	<b>20</b>	<b>25</b>	<b>32</b>	<b>40</b>	<b>50</b>	<b>63</b>	
	<b>US trade size (in.)</b>	<b>⅜</b>	<b>½</b>	<b>¾</b>	<b>1</b>	<b>1¼</b>	<b>1½</b>	<b>2</b>	
	<b>Inside diameter (mm)</b>	<b>12.5</b>	<b>16.0</b>	<b>21.0</b>	<b>26.4</b>	<b>35.3</b>	<b>40.4</b>	<b>51.6</b>	
	<b>Type</b>	<b>Coil lengths (m)</b>	<b>10/30</b>	<b>10/30</b>	<b>10/30</b>	<b>10/20</b>	<b>10/20</b>	<b>10/20</b>	<b>10/20</b>
	High temperature highly flexible (black)	EXLHC03*	EXLHC04*	EXLHC05*	EXLHC06*	EXLHC07*	EXLHC08*	EXLHC09*	

\*Add coil length to complete part number, e.g. 10 metres = EXLHC0510

Note 1: In Canada, as per CEC Part I, trade size are respectively ⅜ (12), ½ (16), ¾ (21), 1 (27), 1¼ (35), 1½ (41) and 2 (53).

## Liquidtight flexible metallic conduit system

### Certification and characteristics – Stainless steel 316 cores

#### General oil resistant – Stainless steel 316 core with a general purpose oil-resistant coating



**Certification standard:**  
IEC 61386  
**Static temp:** -25 °C to +105 °C  
**Flexing temp:** -5 °C to +105 °C

**Special characteristics:**  
Flame-retardant PVC covering  
**Flame propagation:**  
Flame dies in less than 30 seconds after ignition source is removed

\*Add coil length to complete part number, e.g. 10 metres = EXLB0510

#### Low fire hazard – Stainless steel 316 core with an LFH coating

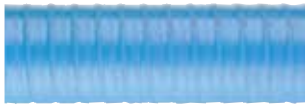


**Certification standard:**  
IEC 61386  
LUL fully compliant (E1042A6)  
MOD to NES 518: Issue 3 DEF STAN 61-12 (Part 31)  
Issue 1  
**Static temp:** -25 °C to +90 °C  
**Flexing temp:** -5 °C to +90 °C

**Special characteristics:**  
Limited fire hazard, zero halogen (BS6425 Pt 1)  
**Flame propagation:**  
Flame dies in less than 30 seconds after ignition source is removed

\*Add coil length to complete part number, e.g. 10 metres = EXLT0510

#### High temperature – Stainless steel 316 core with a high temperature-resistant coating



**Certification standard:**  
IEC 61386  
**Static temp:** -50 °C to +130 °C  
**Flexing temp:** -5 °C to +130 °C

**Special characteristics:**  
Flame resistance: UL94 V2  
Chemical and oil resistant  
**Flame propagation:**  
Flame dies in less than 30 seconds after ignition source is removed

\*Add coil length to complete part number, e.g. 10 metres = EXLH0510

#### Low fire hazard with EMC protection – Stainless steel 316 core with a galvanized steel EMC shield and LFH covering



**Certification standard:**  
IEC 61386, UL full compliant  
MOD to NES 518: Issue 3 DEF STAN 61-12 (Part 31)  
Issue 1  
**Static temp:** -25 °C to +90 °C  
**Flexing temp:** -5 °C to +90 °C

**Special characteristics:**  
Zero halogen (BS6425 pt1) limited fire hazard covering EMC screening level: 60 db at 1 MHz braided  
**Flame propagation:**  
Flame dies in less than 30 seconds after ignition source is removed

\*Add coil length to complete part number, e.g. 10 metres = EXLB0510

#### High temperature highly flexible – Stainless steel 316 core with a high temperature, highly flexible coating



**Certification standard:**  
IEC 61386  
**Static temp:** -65 °C to +150 °C  
**Flexing temp:** -45 °C to +135 °C

**Special characteristics:**  
High flexibility  
High temperature  
**Flame propagation:**  
Flame dies in less than 30 seconds after ignition source is removed

### Related products



Group I and II gland  
pages E14–E15



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90° Elbow gland  
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Group II gland  
pages E14–E15

## Liquidtight flexible metallic conduit system

Technical specifications – Stainless steel 316 cores

<b>See note 1</b>	<b>Nominal conduit size (mm)</b>	<b>16</b>	<b>20</b>	<b>25</b>	<b>32</b>	<b>40</b>	<b>50</b>	<b>63</b>
	<b>US trade size (in.)</b>	<b>¾</b>	<b>½</b>	<b>¾</b>	<b>1</b>	<b>1¼</b>	<b>1½</b>	<b>2</b>
	<b>Inside diameter (mm)</b>	<b>12.5</b>	<b>16.0</b>	<b>21.0</b>	<b>26.4</b>	<b>35.3</b>	<b>40.4</b>	<b>51.6</b>
	<b>Type</b>	<b>Coil lengths (m)</b>	<b>10/30</b>	<b>10/30</b>	<b>10/30</b>	<b>10/20</b>	<b>10/20</b>	<b>10/20</b>
General oil-resistant (black)		EXSB03*	EXSB04*	EXSB05*	EXSB06*	EXSB07*	EXSB08*	EXSB09*

<b>See note 1</b>	<b>Nominal conduit size (mm)</b>	<b>16</b>	<b>20</b>	<b>25</b>	<b>32</b>	<b>40</b>	<b>50</b>	<b>63</b>
	<b>US trade size (in.)</b>	<b>¾</b>	<b>½</b>	<b>¾</b>	<b>1</b>	<b>1¼</b>	<b>1½</b>	<b>2</b>
	<b>Inside diameter (mm)</b>	<b>12.5</b>	<b>16.0</b>	<b>21.0</b>	<b>26.4</b>	<b>35.3</b>	<b>40.4</b>	<b>51.6</b>
	<b>Type</b>	<b>Coil lengths (m)</b>	<b>10/30</b>	<b>10/30</b>	<b>10/30</b>	<b>10/20</b>	<b>10/20</b>	<b>10/20</b>
Low fire hazard (black)		EXST03*	EXST04*	EXST05*	EXST06*	EXST07*	EXST08*	EXST09*

<b>See note 1</b>	<b>Nominal conduit size (mm)</b>	<b>16</b>	<b>20</b>	<b>25</b>	<b>32</b>	<b>40</b>	<b>50</b>	<b>63</b>
	<b>US trade size (in.)</b>	<b>¾</b>	<b>½</b>	<b>¾</b>	<b>1</b>	<b>1¼</b>	<b>1½</b>	<b>2</b>
	<b>Inside diameter (mm)</b>	<b>12.5</b>	<b>16.0</b>	<b>21.0</b>	<b>26.4</b>	<b>35.3</b>	<b>40.4</b>	<b>51.6</b>
	<b>Type</b>	<b>Coil lengths (m)</b>	<b>10/30</b>	<b>10/30</b>	<b>10/30</b>	<b>10/20</b>	<b>10/20</b>	<b>10/20</b>
High temperature (black)		EXSH03*	EXSH04*	EXSH05*	EXSH06*	EXSH07*	–	–
High temperature (blue)		EXSLH03*	EXSLH04*	EXSLH05*	EXSLH06*	EXSLH07*	–	–

<b>See note 1</b>	<b>Nominal conduit size (mm)</b>	<b>16</b>	<b>20</b>	<b>25</b>	<b>32</b>	<b>40</b>	<b>50</b>	<b>63</b>
	<b>US trade size (in.)</b>	<b>¾</b>	<b>½</b>	<b>¾</b>	<b>1</b>	<b>1¼</b>	<b>1½</b>	<b>2</b>
	<b>Inside diameter (mm)</b>	<b>12.5</b>	<b>16.0</b>	<b>21.0</b>	<b>26.4</b>	<b>35.3</b>	<b>40.4</b>	<b>51.6</b>
	<b>Type</b>	<b>Coil lengths (m)</b>	<b>10/30</b>	<b>10/30</b>	<b>10/30</b>	<b>10/20</b>	<b>10/20</b>	<b>10/20</b>
Low fire hazard with EMC (black)		EXSBBT03*	EXSBBT04*	EXSBBT05*	EXSBBT06*	EXSBBT07*	EXSBBT08*	EXSBBT09*

<b>See note 1</b>	<b>Nominal conduit size (mm)</b>	<b>16</b>	<b>20</b>	<b>25</b>	<b>32</b>	<b>40</b>	<b>50</b>	<b>63</b>
	<b>US trade size (in.)</b>	<b>¾</b>	<b>½</b>	<b>¾</b>	<b>1</b>	<b>1¼</b>	<b>1½</b>	<b>2</b>
	<b>Inside diameter (mm)</b>	<b>12.5</b>	<b>16.0</b>	<b>21.0</b>	<b>26.4</b>	<b>35.3</b>	<b>40.4</b>	<b>51.6</b>
	<b>Type</b>	<b>Coil lengths (m)</b>	<b>10/30</b>	<b>10/30</b>	<b>10/30</b>	<b>10/20</b>	<b>10/20</b>	<b>10/20</b>
High temperature highly flexible (black)		EXSHC03*	EXSHC04*	EXSHC05*	EXSHC06*	EXSHC07*	EXSHC08*	EXSHC09*

\*Add coil length to complete part number, e.g. 10 metres = EXLHC0510

Note 1: In Canada, as per CEC Part I, trade size are respectively ¾ (12), ½ (16), ¾ (21), 1 (27), 1¼ (35), 1½ (41) and 2 (53).

## Liquidtight hazardous areas glands

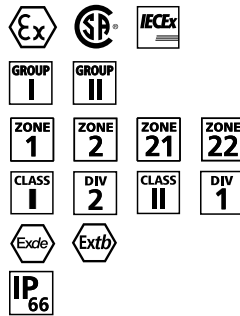
### Certification and characteristics



#### Flameproof gland

Constructed from either brass or stainless steel, with an epoxy resin barrier, the Group I flameproof gland is a high quality, high specification product, ideal for Ex I and II 2 GD gas and dust, Exde IIC and Exe II applications, Extb II applications, as well as **CSA Class 1 Div 2 hazardous locations.**

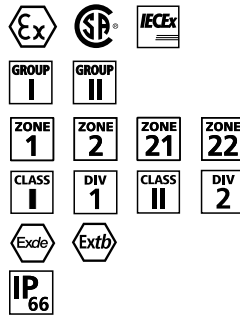
ATEX flameproof G1 gland – Group I and II, Zones 1, 2, 21 and 22, Class I Div2 ABCD, Class II Div1 EFG



#### Certification standard:

Sira 09 ATEX 1231X, IECEx Sira 09.0103X  
Exde I Mb  
Exde IIC Gb  
Extb IIIC Db  
CSA certified  
Class I Div 2 ABCD  
Class II Div 1 EFG  
**Temperature:** -60 °C to +130 °C

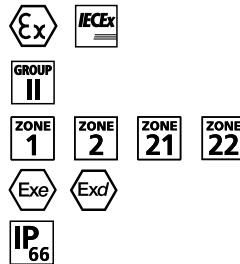
ATEX flameproof 90° elbow gland – Group I and II, Zones 1, 2, 21 and 22, Class I Div1 BCD (rigid conduit only) Class II Div1 EFG



#### Certification standard:

Sira 09 ATEX 1231X, IECEx Sira 09.0103X  
Exde I Mb  
Exde IIC Gb  
Extb IIIC Db  
CSA certified  
Class I Div 1 BCD (rigid conduit only)  
Class I Div 2 ABCD  
Class II Div 1 EFG  
**Temperature:** -60 °C to +130 °C

ATEX flameproof Group II gland – Group II, Zones 1, 2, 21 and 22



#### Certification standard:

Baseefa 06 ATEX 0256X  
IECEX Bas 06.0059X  
Exd IIC  
Exe II  
ExtD A21  
**Temperature:** -60 °C to +80 °C

### Related products



General oil resistant  
pages E10–E13



High temperature conduit  
pages E10–E13



Low fire flexible conduit  
pages E10–E13



Sealing washers  
pages E28–E29

## Liquidtight hazardous areas glands

### Technical specifications

Nominal conduit size (mm)	16	20	25	32	40	50	63	
Metric thread size (mm)	20	20	25	32	40	50	63	
Type	NPT thread size (in.)	½	½	¾	1	1¼	1½	2
Metric – Brass	HAM0304G1	HAM0404G1	HAM0505G1	HAM0606G1	HAM0707G1	HAM0808G1	HAM0909G1	
Metric – Nickel plated	HAMM0304G1	HAMM0404G1	HAMM0505G1	HAMM0606G1	HAMM0707G1	HAMM0808G1	HAMM0909G1	
Metric – Stainless steel	HAMS0304G1	HAMS0404G1	HAMS0505G1	HAMS0606G1	HAMS0707G1	HAMS0808G1	HAMS0909G1	
NPT thread – Brass	HAA0304G1	HAA0404G1	HAA0505G1	HAA0606G1	HAA0707G1	HAA0808G1	HAA0909G1	
NPT thread – Nickel plated	HAAM0304G1	HAAM0404G1	HAAM0505G1	HAAM0606G1	HAAM0707G1	HAAM0808G1	HAAM0909G1	
NPT thread – Stainless steel	HAAS0304G1	HAAS0404G1	HAAS0505G1	HAAS0606G1	HAAS0707G1	HAAS0808G1	HAAS0909G1	

See pages E10–E13 for suitable conduit

Nominal conduit size (mm)	16	20	25	32	40	50	63	
Metric thread size (mm)	20	20	25	32	40	50	63	
Type	NPT thread size (in.)	½	½	¾	1	1¼	1½	2
Metric – Brass	HAM0304E	HAM0404E	HAM0505E	HAM0606E	HAM0707E	HAM0808E	HAM0909E	
Metric – Nickel plated	HAMM0304E	HAMM0404E	HAMM0505E	HAMM0606E	HAMM0707E	HAMM0808E	HAMM0909E	
NPT thread – Brass	HAA0304E	HAA0404E	HAA0505E	HAA0606E	HAA0707E	HAA0808E	HAA0909E	
NPT thread – Nickel plated	HAAM0304E	HAAM0404E	HAAM0505E	HAAM0606E	HAAM0707E	HAAM0808E	HAAM0909E	

See pages E10–E13 for suitable conduit. \*Stainless steel available but elbow is nickel-plated brass. \*\*Elbow supplied is for Liquidtight conduit only

Nominal conduit size (mm)	16	20	25	32	40	50	63	
Metric thread size (mm)	20	20	25	32	40	50	63	
Type	NPT thread size (in.)	½	½	¾	1	1¼	1½	2
Metric – Brass	HAM0304	HAM0404	HAM0505	HAM0606	HAM0707	HAM0808	HAM0909	
Metric – Nickel plated	HAMM0304	HAMM0404	HAMM0505	HAMM0606	HAMM0707	HAMM0808	HAMM0909	
Metric – Stainless steel	HAMS0304	HAMS0404	HAMS0505	HAMS0606	HAMS0707	HAMS0808	HAMS0909	
NPT thread – Brass	HAA0304	HAA0404	HAA0505	HAA0606	HAA0707	HAA0808	HAA0909	
NPT thread – Nickel plated	HAAM0304	HAAM0404	HAAM0505	HAAM0606	HAAM0707	HAAM0808	HAAM0909	
NPT thread – Stainless steel	HAAS0304	HAAS0404	HAAS0505	HAAS0606	HAAS0707	HAAS0808	HAAS0909	

See pages E10–E13 for suitable conduit

## Liquidtight hazardous areas glands

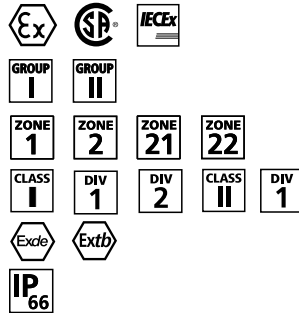
### Certification and characteristics



#### Flameproof gland

Constructed from either brass or stainless steel, with an epoxy resin barrier, the Group I universal flameproof gland is a high quality, high specification product, ideal for Ex I and II 2 GD gas and dust, Exde IIC, Exe II applications and Extb II applications.

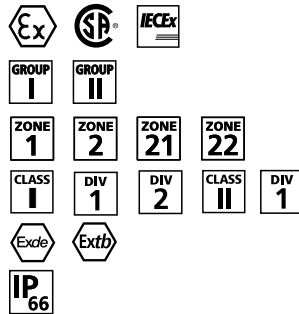
Universal gland – Group I and II, Zones 1, 2, 21 and 22, Class I Div1 BCD (rigid conduit only), Class II Div1 EFG



#### Certification standard:

Sira 09 ATEX 1231X, IECEx Sira 09.0103X  
 Exde I Mb  
 Exde IIC Gb  
 Extb IIIC Db  
 CSA certified  
 Class I Div 1 BCD (rigid conduit only)  
 Class I Div 2 ABCD  
 Class II Div 1 EFG  
**Temperature:** -60 °C to +130 °C

Universal swivel gland – Group I and II, Zones 1, 2, 21 and 22, Class I Div1 BCD (rigid conduit only) Class II Div1 EFG



#### Certification standard:

Sira 09 ATEX 1231X, IECEx Sira 09.0103X  
 Exde I Mb  
 Exde IIC Gb  
 Extb IIIC Db  
 CSA certified  
 Class I Div 1 BCD (rigid conduit only)  
 Class I Div 2 ABCD  
 Class II Div 1 EFG  
**Temperature:** -60 °C to +130 °C



# Liquidtight hazardous areas glands

## Technical specifications

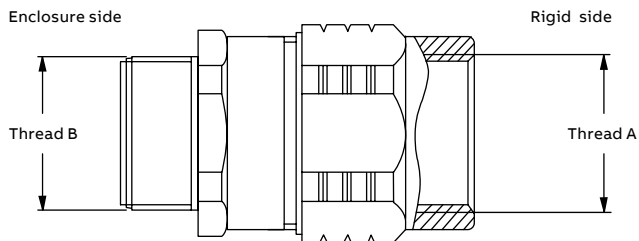
Metric thread size (mm)	20	20	25	32	40	50	63
NPT thread size (in.)	¾	½	¾	1	1¼	1½	2
Metric – Brass	HAM0304U	HAM0404U	HAM0505U	HAM0606U	HAM0707U	HAM0808U	HAM0909U
Metric – Nickel plated	HAMM0304U	HAMM0404U	HAMM0505U	HAMM0606U	HAMM0707U	HAMM0808U	HAMM0909U
Metric – Stainless steel	HAMS0304U	HAMS0404U	HAMS0505U	HAMS0606U	HAMS0707U	HAMS0808U	HAMS0909U
NPT thread – Brass	HAA0304U	HAA0404U	HAA0505U	HAA0606U	HAA0707U	HAA0808U	HAA0909U
NPT thread – Nickel plated	HAAM0304U	HAAM0404U	HAAM0505U	HAAM0606U	HAAM0707U	HAAM0808U	HAAM0909U
NPT thread – Stainless steel	HAAS0304U	HAAS0404U	HAAS0505U	HAAS0606U	HAAS0707U	HAAS0808U	HAAS0909U

For use with all threaded conduit including rigid

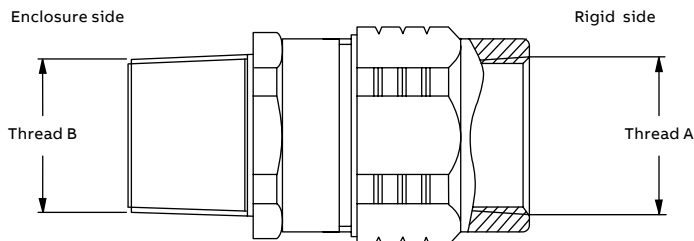
Metric thread size (mm)	20	20	25	32	40	50	63
NPT thread size (in.)	¾	½	¾	1	1¼	1½	2
Metric – Brass	HAM0304U/SW	HAM0404U/SW	HAM0505U/SW	HAM0606U/SW	HAM0707U/SW	HAM0808U/SW	HAM0909U/SW
Metric – Nickel plated	HAMM0304U/SW	HAMM0404U/SW	HAMM0505U/SW	HAMM0606U/SW	HAMM0707U/SW	HAMM0808U/SW	HAMM0909U/SW
Metric – Stainless steel	HAMS0304U/SW	HAMS0404U/SW	HAMS0505U/SW	HAMS0606U/SW	HAMS0707U/SW	HAMS0808U/SW	HAMS0909U/SW
NPT thread – Brass	HAA0304U/SW	HAA0404U/SW	HAA0505U/SW	HAA0606U/SW	HAA0707U/SW	HAA0808U/SW	HAA0909U/SW
NPT thread – Nickel plated	HAAM0304U/SW	HAAM0404U/SW	HAAM0505U/SW	HAAM0606U/SW	HAAM0707U/SW	HAAM0808U/SW	HAAM0909U/SW
NPT thread – Stainless steel	HAAS0304U/SW	HAAS0404U/SW	HAAS0505U/SW	HAAS0606U/SW	HAAS0707U/SW	HAAS0808U/SW	HAAS0909U/SW

For use with all threaded conduit including rigid

### Diagrams



**Part no. explanation**  
**HAM0304U**  
 HAM = Metric male thread  
 HAA = NPT male thread  
 0304 = Thread sizes  
 Thread A = M16  
 Thread B = M20

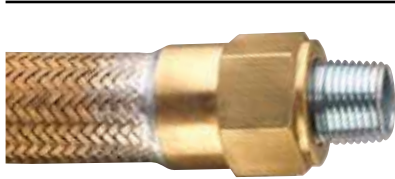


**Part no. explanation**  
**HAA0304U**  
 HAM = Metric male thread  
 HAA = NPT male thread  
 0304 = Thread sizes  
 Thread A = ¾" NPT  
 Thread B = ½" NPT

## XP Flex couplers

Explosion-proof flexible couplings

- Corrosion-resistant – ideal for washdown areas
- Flexible bronze construction with arc-resistant inner sleeve and brass fittings
- Terminated with two threaded female end fittings and male close nipples



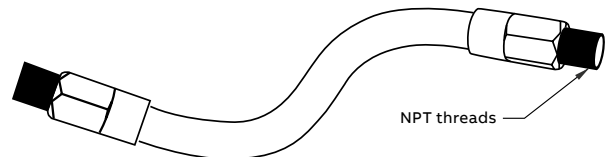
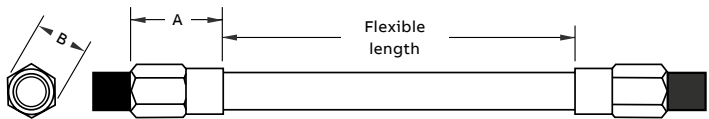
### Certification and standards



### Technical specifications

$\frac{1}{2}$ " and  $\frac{3}{4}$ " Hub sizes: Class I Div 1 and 2 ABCD;  
 Class II Div 1 EFG, Class III  
 1" Hub Size: Class I Div 1 and 2 CD;  
 Class II Div 1 EFG, Class III  
 UL Listed

### Dimensions



### Related products



Enlargers, reducers  
and thread  
convertors  
pages E20–E25



Locknuts  
pages E28–E29



Sealing washers  
pages E28–E29

## XP Flex couplers

Explosion-proof flexible couplings

Reference	NPT thread size (in.)	Flexible length (mm)	Dimensions (mm)	
			A	B
XPLFL16	½	150	39.1	36.6
XPLFL18	½	200	39.1	36.6
XPLFL110	½	250	39.1	36.6
XPLFL112	½	300	39.1	36.6
XPLFL115	½	380	39.1	36.6
XPLFL118	½	460	39.1	36.6
XPLFL124	½	610	39.1	36.6
XPLFL212	¾	300	40.6	47.5
XPLFL215	¾	380	40.6	47.5
XPLFL218	¾	460	40.6	47.5
XPLFL224	¾	610	40.6	47.5
XPLFL236	¾	915	40.6	47.5
XPLFL318	1	460	50.08	58.7



### Explosion-proof and dust-ignition-proof for use in hazardous locations

With their flexible design, ABB XP Flex couplers make it easy to achieve tight bends in conduit systems in confined spaces – or to connect stationary equipment to equipment that moves or vibrates. Their explosion-proof and corrosion-resistant construction means you can use them with confidence in hazardous and wet locations.



















## Enlargers, reducers and thread converters

### Convertors and accessories

Our comprehensive range of adaptors and reducers provides a method of matching threadforms on hazardous area approved equipment while ensuring the integrity and approval of the installation is maintained.

Manufactured in the UK, this range of converters meets the latest ATEX/IECEX and CSA/UL standards. This means that all the standards are marked on the product around the main body. This allows for them to be seen easily once installed, a key component of the new standard.

#### Metric – Technical specification

		Certification and standards	Male external thread	M16
	   	<b>Connector description:</b> EX – Brass EXN – Nickel-plated brass EXS – Stainless steel 316 <b>Certification standard:</b> Baseefa07 ATEX 0247X, IECEx BAS07.0090X Class I Div1 ABCD, Class II Div1 EFG (does not include M16 and 3/8" NPT or unplated brass products) Approved to UL Approved to CSA	M16	–
	 		M20	EX/M20-M16/R
	   		M25	EX/M25-M16/R
	   		M32	EX/M32-M16/R
	 		M40	EX/M40-M16/R
	M50	EX/M50-M16/R		
			M63	EX/M63-M16/R
			M75	EX/M75-M16/R
			PG9	EX/PG9-M16/TC
			PG11	EX/PG11-M16/TC
			PG13	EX/PG13-M16/TC
			PG16	EX/PG16-M16/TC
			PG21	EX/PG21-M16/TC
			PG29	EX/PG29-M16/TC
			PG36	EX/PG36-M16/TC
			PG42	EX/PG42-M16/TC
			PG48	EX/PG48-M16/TC
			NPT 3/8	EX/038-M16/TC
			NPT 1/2	EX/050-M16/TC
			NPT 3/4	EX/075-M16/TC
			NPT 1	EX/100-M16/TC
			NPT 1 1/4	EX/125-M16/TC
			NPT 1 1/2	EX/150-M16/TC
			NPT 2	EX/200-M16/TC
			NPT 2 1/2	EX/250-M16/TC
			NPT 3	EX/300-M16/TC

## Enlargers, reducers and thread convertors

**Enlargers (/E)** are used where the thread size of the female side of the device is larger than the male side.

**Reducers (/R)** are used where the thread size of the female side of device is smaller than the male side.


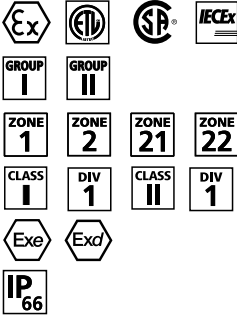
**Thread convertors (/TC)** are used where a conversion is required between thread types, e.g. metric to PG.

ABB enlargers, reducers and thread convertors are designed for hazardous area applications and are certified to protection concepts Exd "Flameproof" and Exe "Increased Safety" for use in Zone 1, 2, 2.1, 2.2 applications. Under NEC Class I Div1 ABCD Class II Div1 EFG.

Metric female internal thread						
M20	M25	M32	M40	M50	M63	M75
EX/M16-M20/E	EX/M16-M25/E	-	-	-	-	-
-	EX/M20-M25/E	EX/M20-M32/E	-	-	-	-
EX/M25-M20/R	-	EX/M25-M32/E	EX/M25-M40/E	-	-	-
EX/M32-M20/R	EX/M32-M25/R	-	EX/M32-M40/E	EX/M32-M50/E	-	-
EX/M40-M20/R	EX/M40-M25/R	EX/M40-M32/R	-	EX/M40-M50/E	EX/M40-M63/E	-
EX/M50-M20/R	EX/M50-M25/R	EX/M50-M32/R	EX/M50-M40/R	-	EX/M50-M63/E	EX/M50-M75/E
EX/M63-M20/R	EX/M63-M25/R	EX/M63-M32/R	EX/M63-M40/R	EX/M63-M50/R	-	EX/M63-M75/E
EX/M75-M20/R	EX/M75-M25/R	EX/M75-M32/R	EX/M75-M40/R	EX/M75-M50/R	EX/M75-M63/R	-
EX/PG9-M20/TC	-	-	-	-	-	-
EX/PG11-M20/TC	-	-	-	-	-	-
EX/PG13-M20/TC	-	-	-	-	-	-
EX/PG16-M20/TC	EX/PG16-M25/TC	-	-	-	-	-
EX/PG21-M20/TC	EX/PG21-M25/TC	EX/PG21-M32/TC	-	-	-	-
EX/PG29-M20/TC	EX/PG29-M25/TC	EX/PG29-M32/TC	EX/PG29-M40/TC	-	-	-
EX/PG36-M20/TC	EX/PG36-M25/TC	EX/PG36-M32/TC	EX/PG36-M40/TC	EX/PG36-M50/TC	-	-
EX/PG42-M20/TC	EX/PG42-M25/TC	EX/PG42-M32/TC	EX/PG42-M40/TC	EX/PG42-M50/TC	EX/PG42-M63/TC	-
EX/PG48-M20/TC	EX/PG48-M25/TC	EX/PG48-M32/TC	EX/PG48-M40/TC	EX/PG48-M50/TC	EX/PG48-M63/TC	-
-	-	-	-	-	-	-
EX/050-M20/TC	EX/050-M25/TC	-	-	-	-	-
EX/075-M20/TC	EX/075-M25/TC	EX/075-M32/TC	-	-	-	-
EX/100-M20/TC	EX/100-M25/TC	EX/100-M32/TC	EX/100-M40/TC	-	-	-
EX/125-M20/TC	EX/125-M25/TC	EX/125-M32/TC	EX/125-M40/TC	EX/125-M50/TC	-	-
EX/150-M20/TC	EX/150-M25/TC	EX/150-M32/TC	EX/150-M40/TC	EX/150-M50/TC	EX/150-M63/TC	-
EX/200-M20/TC	EX/200-M25/TC	EX/200-M32/TC	EX/200-M40/TC	EX/200-M50/TC	EX/200-M63/TC	-
EX/250-M20/TC	EX/250-M25/TC	EX/250-M32/TC	EX/250-M40/TC	EX/250-M50/TC	-	-
EX/300-M20/TC	EX/300-M25/TC	EX/300-M32/TC	EX/300-M40/TC	EX/300-M50/TC	-	EX/300-M75/TC

## Enlargers, reducers and thread converters

### NPT – Technical specification


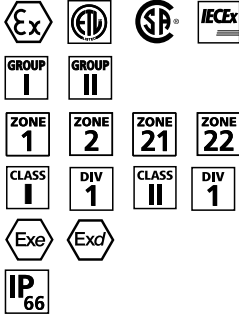
	Certification and standards	Male external thread	NPT	
			NPT ¾	NPT ½
	 <p><b>Connector description:</b> EX – Brass EXN – Nickel-plated brass EXS – Stainless steel 316</p> <p><b>Certification standard:</b> Baseefa07 ATEX 0247X, IECEX BAS07.0090X Class I Div1 ABCD, Class II Div1 EFG (does not include M16 and ¾" NPT or unplated brass products) Approved to UL Approved to CSA</p>	M16	EX/M16-038/TC	EX/M16-050/TC
		M20	–	EX/M20-050/TC
		M25	–	EX/M25-050/TC
		M32	–	EX/M32-050/TC
		M40	–	EX/M40-050/TC
		M50	–	EX/M50-050/TC
		M63	–	EX/M63-050/TC
		M75	–	EX/M75-050/TC
		PG9	–	EX/PG9-050/TC
		PG11	–	EX/PG11-050/TC
		PG13	–	EX/PG13-050/TC
		PG16	–	EX/PG16-050/TC
		PG21	–	EX/PG21-050/TC
		PG29	–	EX/PG29-050/TC
		PG36	–	EX/PG36-050/TC
		PG42	–	EX/PG42-050/TC
		PG48	–	EX/PG48-050/TC
		NPT ½	–	–
		NPT ¾	–	EX/075-050/R
		NPT 1	–	EX/100-050/R
NPT 1¼	–	EX/125-050/R		
NPT 1½	–	EX/150-050/R		
NPT 2	–	EX/200-050/R		
NPT 2½	–	EX/250-050/R		
NPT 3	–	EX/300-050/R		

## Enlargers, reducers and thread convertors

NPT ¾	NPT 1	NPT 1¼	NPT 1½	NPT 2	NPT female internal thread	
					NPT 2½	NPT 3
-	-	-	-	-	-	-
EX/M20-075/TC	-	-	-	-	-	-
EX/M25-075/TC	EX/M25-100/TC	-	-	-	-	-
EX/M32-075/TC	EX/M32-100/TC	EX/M32-125/TC	-	-	-	-
EX/M40-075/TC	EX/M40-100/TC	EX/M40-125/TC	EX/M40-150/TC	-	-	-
EX/M50-075/TC	EX/M50-100/TC	EX/M50-125/TC	EX/M50-150/TC	EX/M50-200/TC	-	-
EX/M63-075/TC	EX/M63-100/TC	EX/M63-125/TC	EX/M63-150/TC	EX/M63-200/TC	-	-
EX/M75-075/TC	EX/M75-100/TC	EX/M75-125/TC	EX/M75-150/TC	EX/M75-200/TC	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
EX/PG16-075/TC	-	-	-	-	-	-
EX/PG21-075/TC	EX/PG21-100/TC	-	-	-	-	-
EX/PG29-075/TC	EX/PG29-100/TC	EX/PG29-125/TC	EX/PG29-150/TC	-	-	-
EX/PG36-075/TC	EX/PG36-100/TC	EX/PG36-125/TC	EX/PG36-150/TC	-	-	-
EX/PG42-075/TC	EX/PG42-100/TC	EX/PG42-125/TC	EX/PG42-150/TC	EX/PG42-200/TC	-	-
EX/PG48-075/TC	EX/PG48-100/TC	EX/PG48-125/TC	EX/PG48-150/TC	EX/PG48-200/TC	-	-
EX/050-075/E	-	-	-	-	-	-
-	EX/075-100/E	-	-	-	-	-
EX/100-075/R	-	EX/100-125/E	-	-	-	-
EX/125-075/R	EX/125-100/R	-	EX/125-150/E	-	-	-
EX/150-075/R	EX/150-100/R	EX/150-125/R	-	EX/150-200/E	-	-
EX/200-075/R	EX/200-100/R	EX/200-125/R	EX/200-150/R	-	-	-
EX/250-075/R	EX/250-100/R	EX/250-125/R	EX/250-150/R	EX/250-200/R	-	EX/250-300/E
EX/300-075/R	EX/300-100/R	EX/300-125/R	EX/300-150/R	EX/300-200/R	EX/300-250/R	-

## Enlargers, reducers and thread convertors

### PG – Technical specification

	Certification and standards	Male external thread	PG9	PG11
	 <p><b>Connector description:</b> EX – Brass EXN – Nickel-plated brass EXS – Stainless steel 316</p> <p><b>Certification standard:</b> Baseefa07 ATEX 0247X, IECEX BAS07.0090X Class I Div1 ABCD, Class II Div1 EFG (does not include M16 and 3/8" NPT or unplated brass products) Approved to UL Approved to CSA</p>			
		M16	EX/M16-PG9/TC	EX/M16-PG11/TC
		M20	EX/M20-PG9/TC	EX/M20-PG11/TC
		M25	EX/M25-PG9/TC	EX/M25-PG11/TC
		M32	EX/M32-PG9/TC	EX/M32-PG11/TC
		M40	EX/M40-PG9/TC	EX/M40-PG11/TC
		M50	EX/M50-PG9/TC	EX/M50-PG11/TC
		M63	EX/M63-PG9/TC	EX/M63-PG11/TC
		M75	EX/M75-PG9/TC	EX/M75-PG11/TC
		PG11	EX/PG11-PG9/R	–
		PG13	EX/PG13-PG9/R	EX/PG13-PG11/R
		PG16	EX/PG16-PG9/R	EX/PG16-PG11/R
		PG21	EX/PG21-PG9/R	EX/PG21-PG11/R
		PG29	EX/PG29-PG9/R	EX/PG29-PG11/R
		PG36	EX/PG36-PG9/R	EX/PG36-PG11/R
		PG42	EX/PG42-PG9/R	EX/PG42-PG11/R
		PG48	EX/PG48-PG9/R	EX/PG48-PG11/R
NPT 1/2	EX/050-PG9/TC	EX/050-PG11/TC		
NPT 3/4	EX/075-PG9/TC	EX/075-PG11/TC		
NPT 1	EX/100-PG9/TC	EX/100-PG11/TC		
NPT 1 1/4	EX/125-PG9/TC	EX/125-PG11/TC		
NPT 1 1/2	EX/150-PG9/TC	EX/150-PG11/TC		
NPT 2	EX/200-PG9/TC	EX/200-PG11/TC		



## Enlargers, reducers and thread convertors





							PG female internal thread	
PG13	PG16	PG21	PG29	PG36	PG42	PG48		
EX/M16-PG13/TC	-	-	-	-	-	-	-	-
EX/M20-PG13/TC	EX/M20-PG16/TC	-	-	-	-	-	-	-
EX/M25-PG13/TC	EX/M25-PG16/TC	EX/M25-PG21/TC	-	-	-	-	-	-
EX/M32-PG13/TC	EX/M32-PG16/TC	EX/M32-PG21/TC	EX/M32-PG29/TC	-	-	-	-	-
EX/M40-PG13/TC	EX/M40-PG16/TC	EX/M40-PG21/TC	EX/M40-PG29/TC	EX/M40-PG36/TC	-	-	-	-
EX/M50-PG13/TC	EX/M50-PG16/TC	EX/M50-PG21/TC	EX/M50-PG29/TC	EX/M50-PG36/TC	EX/M50-PG42/TC	-	-	-
EX/M63-PG13/TC	EX/M63-PG16/TC	EX/M63-PG21/TC	EX/M63-PG29/TC	EX/M63-PG36/TC	EX/M63-PG42/TC	EX/M63-PG48/TC	-	-
EX/M75-PG13/TC	EX/M75-PG16/TC	EX/M75-PG21/TC	EX/M75-PG29/TC	EX/M75-PG36/TC	EX/M75-PG42/TC	EX/M75-PG48/TC	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
EX/PG16-PG13/R	-	EX/P16-PG21/E	-	-	-	-	-	-
EX/PG21-PG13/R	EX/PG21-PG16/R	-	EX/PG21-PG29/E	-	-	-	-	-
EX/PG29-PG13/R	EX/PG29-PG16/R	EX/PG29-PG21/R	-	EX/PG29-PG36/E	-	-	-	-
EX/PG36-PG13/R	EX/PG36-PG16/R	EX/PG36-PG21/R	EX/PG36-PG29/R	-	EX/PG36-PG48/E	-	-	-
EX/PG42-PG13/R	EX/PG42-PG16/R	EX/PG42-PG21/R	EX/PG42-PG29/R	EX/PG42-PG36/R	-	EX/PG42-PG48/E	-	-
EX/PG48-PG13/R	EX/PG48-PG16/R	EX/PG48-PG21/R	EX/PG48-PG29/R	EX/PG48-PG36/R	EX/PG48-PG42/R	-	-	-
EX/050-PG13/TC	EX/050-PG16/TC	-	-	-	-	-	-	-
EX/075-PG13/TC	EX/075-PG16/TC	EX/075-PG21/TC	-	-	-	-	-	-
EX/100-PG13/TC	EX/100-PG16/TC	EX/100-PG21/TC	EX/100-PG29/TC	-	-	-	-	-
EX/125-PG13/TC	EX/125-PG16/TC	EX/125-PG21/TC	EX/125-PG29/TC	EX/125-PG36/TC	-	-	-	-
EX/150-PG13/TC	EX/150-PG16/TC	EX/150-PG21/TC	EX/150-PG29/TC	EX/150-PG36/TC	EX/150-PG42/TC	-	-	-
EX/200-PG13/TC	EX/200-PG16/TC	EX/200-PG21/TC	EX/200-PG29/TC	EX/200-PG36/TC	EX/200-PG42/TC	EX/200-PG48/TC	-	-

## Stopping plugs

### Certification and characteristics





For use in potentially explosive atmospheres.  
Manufactured from brass, nickel-plated  
brass or stainless steel.

#### Standard Exd stopping plug

	  	<b>Certification standard:</b> Baseefa 08 ATEX 6324 IECEx BAS08.0109X Exd I and Exd IIC UL listed (nickel-plated brass and stainless steel only) Class I Div 1 ABCD Class II Div 1 EFG	<b>NPT thread size (inch)</b>	<b>¾</b>	
			<b>Metric thread size (mm)</b>	<b>20</b>	
			<b>Type</b>	<b>PG thread size</b>	<b>PG9</b>
			NPT thread – Brass		EX/038/SP
			Metric – Brass		EX/M16/SP
			PG thread – Brass		EX/PG9/SP





For nickel-plated brass, add the letter N after the EX prefix and for stainless steel, add the letter S after the EX prefix, e.g. EXS/M16/SP  
Does not include M16 and ¾ in. NPT or unplated brass products

#### Tamperproof Exd stopping plug – Group I and II, Zones 1, 2, 21 and 22, Class I Div 1 ABCD, Class II Div 1 EFG

	  	<b>Certification standard:</b> Baseefa 08 ATEX 6324 IECEx BAS08.0109X Exd I and Exd IIC UL listed (nickel-plated brass and stainless steel only) Class I Div 1 ABCD Class II Div 1 EFG	<b>NPT thread size (inch)</b>	<b>¾</b>	
			<b>Metric thread size (mm)</b>	<b>20</b>	
			<b>Type</b>	<b>PG thread size</b>	<b>PG9</b>
			NPT thread – Brass		EX/038/TSP
			Metric – Brass		EX/M16/TSP
			PG thread – Brass (EX)		EX/PG9/TSP





For nickel-plated brass, add the letter N after the EX prefix and for stainless steel, add the letter S after the EX prefix, e.g. EXS/M16/SP  
Does not include M16 and ¾ in. NPT or unplated brass products

#### Hex head Exe stopping plug – Group I and II, Zones 1, 2, 21 and 22, Class I Div 1 ABCD, Class II Div 1 EFG

	  	<b>Certification standard:</b> Baseefa 08 ATEX 0325X IECEx BAS08.0108X Exe I, Exe II and Extb IIIC UL listed (nickel-plated brass and stainless steel only) IP 65 for plain holes IP 66 for threaded holes Class I Div 1 ABCD Class II Div 1 EFG <b>Temperature:</b> -60 °C to +80 °C	<b>NPT thread size (inch)</b>	<b>¾</b>	
			<b>Metric thread size (mm)</b>	<b>20</b>	
			<b>Type</b>	<b>PG thread size</b>	<b>PG9</b>
			Metric – Brass		EX/M16/HSP
			PG thread – Brass		EX/PG9/HSP

For nickel-plated brass, add the letter N after the EX prefix and for stainless steel, add the letter S after the EX prefix, e.g. EXS/M16/SP  
Does not include M16 and ¾ in. NPT or unplated brass products

#### Dome head Exe stopping plug – Group I and II, Zones 1, 2, 21 and 22, Class I Div 1 ABCD, Class II Div 1 EFG

	  	<b>Certification standard:</b> Baseefa 08 ATEX 6324 IECEx BAS 08.0109X Exd I and Exd IIC UL listed (nickel plated brass and stainless steel only) Class I Div 1 ABCD Class II Div 1 EFG	<b>NPT thread size (inch)</b>	<b>¾</b>	
			<b>Metric thread size (mm)</b>	<b>20</b>	
			<b>Type</b>	<b>PG thread size</b>	<b>PG9</b>
			Metric – Brass		EX/M16/DSP
			PG thread – Brass		EX/PG9/DSP

For nickel-plated brass, add the letter N after the EX prefix and for stainless steel, add the letter S after the EX prefix, e.g. EXS/M16/SP  
Products supplied with sealing washers and O-rings  
Does not include M16 and ¾ in. NPT or unplated brass products

## Stopping plugs

### Technical specifications

$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2		
20	25	32	40	50	63		
PG11	PG13	PG16	PG21	PG29	PG36	PG42	PG48
EX/050/SP	EX/075/SP	EX/100/SP	EX/125/SP	EX/150/SP	EX/200/SP	-	-
EX/M20/SP	EX/M25/SP	EX/M32/SP	EX/M40/SP	EX/M50/SP	EX/M63/SP	-	-
EX/PG11/SP	EX/PG13/SP	EX/PG16/SP	EX/PG21/SP	EX/PG29/SP	EX/PG36/SP	EX/PG42/SP	EX/PG48/SP

$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2		
20	25	32	40	50	63		
PG11	PG13	PG16	PG21	PG29	PG36	PG42	PG48
EX/050/TSP	EX/075/TSP	EX/100/TSP	EX/125/TSP	EX/150/TSP	EX/200/TSP	-	-
EX/M20/TSP	EX/M25/TSP	EX/M32/TSP	EX/M40/TSP	EX/M50/TSP	EX/M63/TSP	-	-
EX/PG11/TSP	EX/PG13/TSP	EX/PG16/TSP	EX/PG21/TSP	EX/PG29/TSP	EX/PG36/TSP	EX/PG42/TSP	EX/PG48/TSP

$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2		
20	25	32	40	50	63		
PG11	PG13	PG16	PG21	PG29	PG36	PG42	PG48
EX/M20/HSP	EX/M25/HSP	EX/M32/HSP	EX/M40/HSP	EX/M50/HSP	EX/M63/HSP	-	-
EX/PG11/HSP	EX/PG13/HSP	EX/PG16/HSP	EX/PG21/HSP	EX/PG29/HSP	EX/PG36/HSP	EX/PG42/HSP	EX/PG48/HSP

$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2		
20	25	32	40	50	63		
PG11	PG13	PG16	PG21	PG29	PG36	PG42	PG48
EX/M20/DSP	EX/M25/DSP	EX/M32/DSP	EX/M40/DSP	EX/M50/DSP	EX/M63/DSP	-	-
EX/PG11/DSP	EX/PG13/DSP	EX/PG16/DSP	EX/PG21/DSP	EX/PG29/DSP	EX/PG36/DSP	EX/PG42/DSP	EX/PG48/DSP

## Couplers, sealing washers and locknuts

### Certification and characteristics

#### Couplers, sealing washers and locknuts

For use in potentially explosive atmospheres.  
Manufactured from either brass, nickel-plated brass, stainless steel or nylon and fiber.

Coupler – Female to female thread couplers for use in both Exd and Exe applications



**Certification standard:**  
Baseefa 08 ATEX 0359U  
IECEX BAS08.0121U  
**Temperature:** -60 °C to +200 °C

Hex locknut – For metric threads and NPT threads (nickel-plated brass only)



Sealing joint washer – For use with all ATEX and IECEx approved products (nylon only)



**Certification standard:**  
Nylon metric approved  
for use with all  
ATEX/IECEX products

Earth tag – To be used to create an earthing bond on an enclosure, when a cable gland is used



## Couplers, sealing washers and locknuts

### Technical specifications

See note 1 Type	Metric thread size (mm)	16	20	25	32	40	50	63	75
	PG thread size	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$
Metric – Brass	EX/M16/C	EX/M20/C	EX/M25/C	EX/M32/C	EX/M40/C	EX/M50/C	EX/M63/C	EX/M75/C	
NPT thread – Brass	EX/038/C	EX/050/C	EX/075/C	EX/100/C	EX/125/C	EX/150/C	EX/200/C	EX/250/P	

For nickel plated brass, add the letter N after the EX prefix and for stainless steel, add the letter S after the EX prefix, e.g. EXS/M16/C  
Does not include M16 and  $\frac{3}{8}$  NPT or unplated brass products

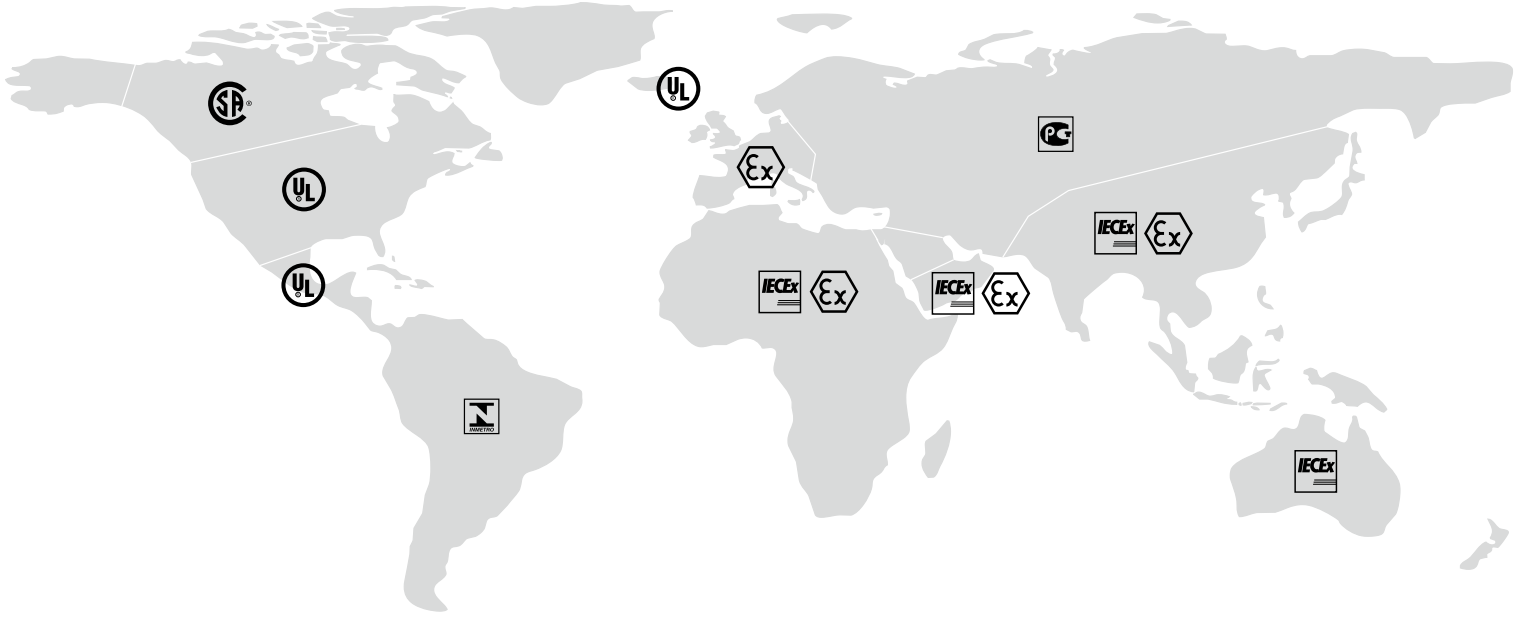
See note 1 Type	Metric thread size (mm)	16	20	25	32	40	50	63	75
	PG thread size	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$
Metric – Stainless steel	–	MXWH04	MXWH05	MXWH06	MXWH07	MXWH08	–	–	–
Metric – Brass	WHMB03	WHMB04	WHMB05	WHMB06	WHMB07	WHMB08	–	–	–
Metric – Nickel-plated brass	WHMM03	WHMM04	WHMM05	WHMM06	WHMM07	WHMM08	WHMM09	–	–
NPT thread – Nickel-plated brass	–	WHAM04	WHAM05	WHAM06	WHAM07	WHAM08	WHAM09	–	–

See note 1 Type	Metric thread size (mm)	16	20	25	32	40	50	63	75
	PG thread size	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$
	Outside diameter (mm)	22	26	34.3	41.5	52	66.5	84.5	–
	Thickness (mm)	1.6	1.6	1.7	1.7	2	2	2	–
Metric – Nylon (ATEX/IECEX approved)	EXFM03	EXFM04	EXFM05	EXFM05	EXFM07	EXFM08	EXFM09	–	–
Metric – Fiber	EXFM03F	EXFM04F	EXFM05F	EXFM05F	EXFM07F	EXFM08F	–	–	–

See note 1 Type	Metric thread size (mm)	16	20	25	32	40	50	63	75
	PG thread size	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$
Earth tag – Brass	EX/M16/TAG	EX/M20/TAG	EX/M25/TAG	EX/M32/TAG	EX/M40/TAG	EX/M53/TAG	EX/M63/TAG	EX/M75/TAG	

Note 1: In Canada, as per CEC Part I, trade size are respectively  $\frac{3}{8}$  (12),  $\frac{1}{2}$  (16),  $\frac{3}{4}$  (21), 1 (27), 1 $\frac{1}{4}$  (35), 1 $\frac{1}{2}$  (41) and 2 (53).

## Ex standards worldwide



### Key of symbols

#### Product approvals



#### Product characteristics

