1 EU - TYPE EXAMINATION CERTIFICATE

2 Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 EU - Type Examination Certificate Number: **Baseefa13ATEX0174X – Issue 7**

3.1 In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

4 Product: **Mineral Insulated Electric Surface Heating Units**

5 Manufacturer: **Chemelex Belgium NV**

6 Address: **Romeinse straat 14, 3001 Leuven, Belgium**

7 This re-issued certificate extends EC Type Examination Certificate No. **Baseefa13ATEX0174X** to apply to product designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

8 SGS Fimko Oy, Notified Body number 0598, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

8.1 The original certificate was issued by SGS Baseefa Ltd (UK Notified Body 1180). It, and any supplements previously issued by SGS Baseefa Ltd have been transferred to the supervision of SGS Fimko Oy (EU Notified Body 0598). The original certificate number is retained.

The examination and test results are recorded in confidential Report No. **See Certificate History.**

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 EN 60079-1:2014 EN IEC 60079-7:2015+A11:2018 EN 60079-30-1:2017 EN 60079-31:2014

except in respect of those requirements listed at item 18 of the Schedule.

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

11 This EU - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following:

Ⓔx II 2 GD Ex 60079-30-1 db eb IIC T* Gb Ex 60079-30-1 tb IIIC T*°C Db Tmin -60°C (*see schedule)

SGS Fimko Oy Customer Reference No. **5034** Project File No. **25/0112**

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S003 (EN ISO/IEC 17065)

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SGS Fimko Oy

13 # Schedule

14 ## Certificate Number Baseefa13ATEX0174X – Issue 7

15 Description of Product

The Mineral Insulated Electric Surface Heating Units comprise metal sheathed mineral insulated heating cable(s) to Baseefa13ATEX0173U. A cold lead of mineral insulated heating cable is attached to both ends by joints within the provisions of this certificate.

Alternatively, one end may be provided with an end cap within the provision of this certificate.

Two sealing mechanism are detailed in the certificate, an integral part Mineral Insulated Cable Seal Assembly and a Compression Ring Type Cable Gland to Baseefa08ATEX0327X. These are included to provide provision for connection and sealing to an Ex certified enclosure.

The hot/cold joints may be brazed and crimped or welded and crimped, and the outer sheath of the cold lead may be copper, cupro-nickel or stainless steel. The copper sheath cold lead has an option of LSZH jacket.

The maximum withstand temperature and the maximum supply voltage for the 5 different cable sheath types are shown in the table below. The maximum supply voltage is between the heating element conductor and the heating cable sheath. Both are dependent on the jointing method used.

Heater Reference	Conductor Configuration	Cable Sheath Material	Maximum Withstand Temp. (°C)	Maximum Withstand Temp. with Brazed joints (°C)	Maximum Supply Voltage with Brazed Joints (U_o/U Vac)	Maximum Withstand Temp. with Laser Welded Joints (°C)	Maximum Supply Voltage with Laser Welded Joints (U_o/U Vac)
HCH1M/ HCC1M	Single	Copper	+200	+200	300/500	N/A	N/A
32C	Dual	Copper	+200	+200	300/300	N/A	N/A
61C	Single	Copper	+200	+200	600/600	N/A	N/A
62C	Dual	Copper	+200	+200	600/600	N/A	N/A
HDF1M/ HDC1M	Single	Cupro-Nickel	+400	+400	300/500	N/A	N/A
HSQ1M	Single	Stainless Steel	+680	+550	300/500	+680	460/600
HIQ1M	Single	Inconel ‘Alloy 600’	+680	+550	300/500	+680	460/600
HAx1N or 61S	Single	Stainless Steel ‘Alloy 825’	+680	+550	600/600	+680	600/600
HAx2N or 62S	Dual	Stainless Steel ‘Alloy 825’	+680	+550	600/600	+680	600/600
HAx2M or 32S	Dual	Stainless Steel ‘Alloy 825’	+680	+550	300/300	+680	300/300
HCHR1M/ HCCR1M	Single	Copper (LSZH Jacket)	+200	+200	300/500	N/A	N/A
61R	Single	Copper (LSZH Jacket)	+200	+200	600/600	N/A	N/A
62R	Dual	Copper (LSZH Jacket)	+200	+200	600/600	N/A	N/A

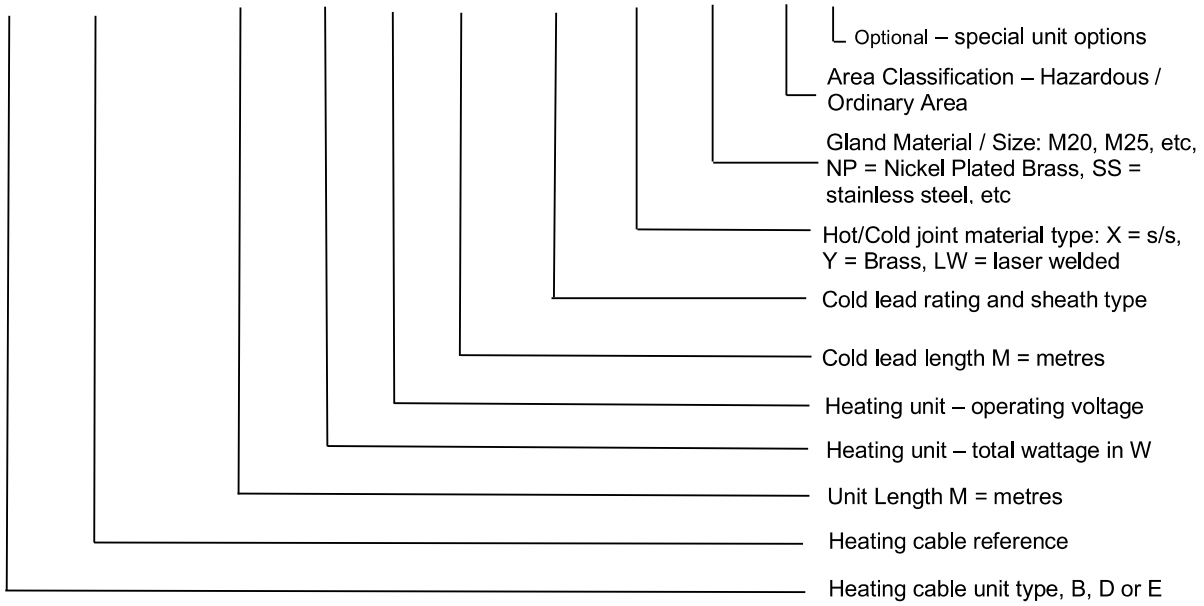
Heater Reference	Conductor Configuration	Cable Sheath Material	Maximum Withstand Temp. (°C)	Maximum Withstand Temp. with Brazed joints (°C)	Maximum Supply Voltage with Brazed Joints (U_o/U Vac)	Maximum Withstand Temp. with Laser Welded Joints (°C)	Maximum Supply Voltage with Laser Welded Joints (U_o/U Vac)
32R	Dual	Copper (LSZH Jacket)	+200		300/300	N/A	N/A

The T class of the Mineral Insulated Electric Surface Heating Units defined as part of a stabilised design or controlled design system that is dependent on application and is determined using nVent proprietary software Trace Calc Pro. The algorithm defined in this software may be used in additional software.

A temperature limiting sensor or artificially created hot spot may still be used to limit the maximum surface temperature.

The configuration of the heating units is defined by the following naming convention:

B / HSQ1M1000 / 43.0M / 1217 / 230 / 1.2M / SC1H2.5 / X / NPM20 / EX / S*



* - Special unit options relate to non-Ex special variants.

The integral part Pyrotenax mineral insulated cable seal assembly comprises a brass housing or pot attached to the cable by threading, clamping by means of grub screws, crimping or brazing. The pot is compound filled with or without a disk to retain the compound during curing of the compound. Up to ten sleeved flexible cables are attached to the MIC conductors by crimping or brazing or the sleeved MIC conductors pass through the compound. The seals can be provided with or without an earth conductor. The seals are for use with copper, cupro-nickel, or grade 825 stainless steel sheathed cables and are rated up to 300V, 500V or 750V.

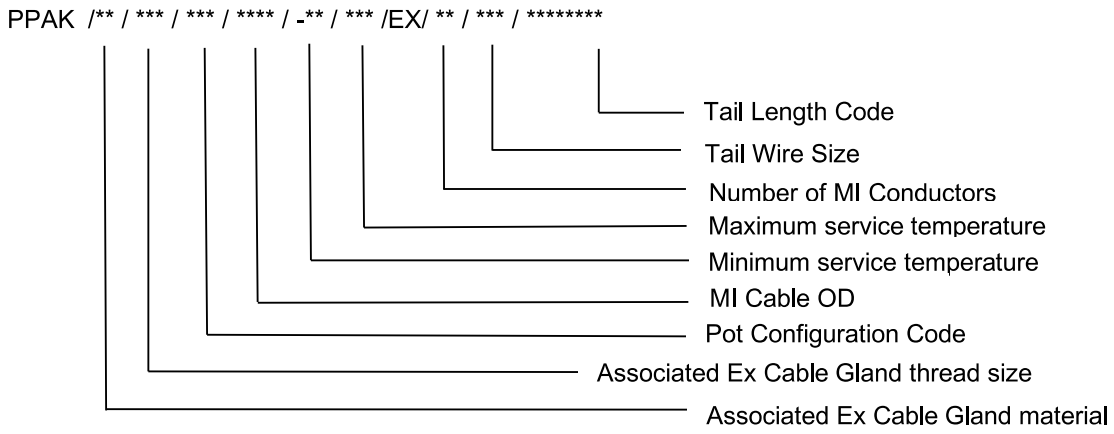
The seal assemblies have a service temperature that is detailed in the identification string by defined values. The service temperature is also defined by the 3-digit Pot Configuration Code.

1st Digit of Code	Type of Pot
T	Threaded/Screw-on
G	Grub Screw Secured
C	Crimped or Brazed

2nd and 3rd Digit of Code	Min Service Temperature (°C)	Max Service Temperature (°C)
1A	-30	+105
1D	-30	+105
2A	-30	+120
2D	-30	+120
3A*	-60	+70
3R	-60	+70
3D	-30	+120
4A	-30	+105
4D	-30	+105
4X	-30	+105
4H	-30	+105
5A	-30	+120
5D	-30	+120
5X	-30	+105
5H	-30	+105

* - Alternative temperature rating of -30°C to +120°C optional

The seals are identified by the following identification string:



16 Report Number

See Certificate History.

17 Specific Conditions of Use

1. The MI Cable Seal Assembly is to be installed within a suitable enclosure to protect from light and impact.
2. The MI Cable Seal Assembly has a service temperature range of -30°C to +120°C or -30°C to +105°C or -60°C to +70°C. See the manufacturer's instructions for further information.
3. The maximum withstand temperatures are shown in the table in the equipment description.
4. The maximum supply voltages are shown in the equipment description.
5. The minimum installation temperature is -60°C.

   The minimum cable spacing must not be less than 25mm.
6. The minimum bend radius is 6 x the cable diameter.
7. Extreme care shall be used when handling and manipulating the Mineral Insulated Electric Heating Cables. Repeated bending actions of the cable may weaken the mechanical strength of the cable which could lead to failure. For further information, consult the manufacturer.

8. Consideration shall be given during the selection of the heating cable sheath material for the environmental exposure. Certain environmental impurities may lead to failures such as stress corrosion cracking (SCC). Consult the manufacturer for further information.

9. When PVC sleeving is used the operating temperature must not exceed +85°C.

10. When used in dust atmospheres the Compression Ring Type Cable Gland shall be sealed in accordance with the manufacturer's instructions and applicable code of practice, and the enclosure to which the gland is attached shall be provided with a minimum ingress protection of IP6X.

11. The heating element supply circuit must include an electrical protection device in accordance with Clause 4.4 of EN 60079-30-1.

18 Essential Health and Safety Requirements

In addition to the Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9, the following are considered relevant to this product, and conformity is demonstrated in the report:

Clause	Subject
1.2.7	LVD type requirements
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

New drawings submitted for this issue of certificate:

None.

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
LBL1055-3-AP*	1 of 1	C	APR 15/24	Termination Kit Label for Cold Leads Including IECEx/ATEX
LBL1055-4-AP*	1 of 1	C	APR 15/24	Adhesive Label for RPA/RPAL Cold Lead Pot Seal Kits
LBL1076-3*	1 of 1	F	APR12/22	Global Metal Tag (EU-RU)
B3120-14-AP*	1 of 1	C	APR 15/24	Cold Lead IECEx/ATEX Pyropak Reference Numbers
B3316-1-AP	1 of 1	C	OCT 5/20	MI Heating Units Voltage Ratings
LBL1075-2-AP	1 of 1	B	MAY 09/18	Global Unit Metal Tag
B3315-1-AP	1 of 1	B	APR 12/18	MI Sealing Terminations (General Assembly)
B3320-1-AP	1 of 1	A	JULY 17/18	Joint Details
B3321-1-AP	1 of 1	A	AUG 20/18	Unit Configuration
B3120-11-AP	1 of 1	D	AUG 10/20	Heating Unit Configuration Coding

*These drawings are common to BAS21UKEX0519X

All drawings are common to IECEx BAS 13.0090X

20 Certificate History

Certificate No.	Date	Comments
Baseefa13ATEX0174X	13 July 2015	The release of the prime certificate. The associated test and assessment is documented in the certification report GB/BAS/ExTR13.0197/00.
Baseefa13ATEX0174X Issue 1	3 September 2018	To confirm the certificate is now held in the name of nVent Thermal Belgium NV. To introduce the Cable Seal Assembly as an integral part only, to amend the Specific Condition of Use number 2, to introduce an alternative tail insulation material and potting compound used in the Cable Seal Assembly, demonstrate compliance with EN 60079-7: 2015 and EN 60079-31: 2014, to introduce testing data covered by partial test report CA/CSA/ExTR17.0010/00. This test data provides supporting evidence for the maximum sheath temperature determination of the MI cables shown in the table below. Conductor/Sheath Family / Sheath Material AX / Alloy 825 DC / Cupro-Nickel DF / Cupro-Nickel IQ / Alloy 600 SQ / SS (321) SGS Baseefa certification report GB/BAS/ExTR17.0235/00 refers.
Baseefa03ATEX0174X/2	11 June 2019	To include the stainless steel sheathed cold lead types SC33A and SC55A, for American Wire Gauges 14 and 10 with a single conductor, on the Cold Lead Selection Table of Drawing B3120-11-AP, Revision C. SGS Baseefa certification report GB/BAS/ExTR19.0144/00 refers.
Baseefa13ATEX0174X Issue 3	22 June 2020	To assess the Mineral Insulated Electric Surface Heating Units against the requirements of EN 60079-30-1:2017 and to de-rate the maximum withstand temperatures of the Inconel and stainless steel sheathed MI cables from 700°C to 680°C and to de-rate the maximum withstand temperatures of the laser welded joints from 700°C to 680°C. The Mineral Insulated Electric Surface Heating Units are confirmed to comply with the requirements of EN 60079-30-1:2017 and the product description has been amended to reflect the above changes to the maximum withstand temperatures associated with Inconel and stainless steel sheathed MI cables and laser welded joints. SGS Baseefa certification report GB/BAS/ExTR20.0074/00 refers.
Baseefa13ATEX0174X Issue 4	27 August 2020	To amend the product description to reference the optional LSZH over jacket material for the copper sheathed heating cables. The heating cables with the LSZH over jacket are included in nVent test report NTM 2002-003. SGS Baseefa certification report GB/BAS/ExTR20.0074/01 refers.
Baseefa13ATEX0174X Issue 5	12 March 2021	To demonstrate compliance with EN IEC 60079-0:2018 and EN IEC 60079-7:2015+A1:2018. SGS Baseefa Certification report GB/BAS/ExTR20.0204/00 refers.
Baseefa13ATEX0174X Issue 6	4 June 2024	To amend the nameplates to accommodate UKEX certificate numbers. Certification report GB/SGS/ExTR24.0068/00 refers.

Certificate No.	Date	Comments
Baseefa13ATEX0174X Issue 7	19 November 2025	The issue of this certificate permits existing information (for example on Certificate Schedule Drawings or label marking) to be updated to show the new name, no other changes may be made to the certified design. A technical review has not been undertaken, and the standards remain at the editions listed previously. Report Number: None Project Number: 25/0112
For drawings applicable to each issue, see original of that issue.		