IECEx TEST REPORT
IEC 60079-1
Explosive atmospheres – Part 1: Equipment protection by flameproof enclosures "d"

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Test procedure ..... :	IECEx System
Test Report Form Number ..... :	ExTR60079-1_7A_DS (released 2019-12)

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Possible test case verdicts:

- test case does not apply to the test item..... :N / A

- test item does meet the requirement..... :Pass

General remarks:
The test results presented in this Ex Test Report relate only to the item or product tested.

- "(see Attachment #)" refers to additional information appended to this document.
- "(see appended table)" refers to a table appended to this document.
- Throughout this document, a point "." is used as the decimal separator.

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IEC 60079-1			
Clause	**Requirement – Test**	**Result – Remark**	**Verdict**
1	Scope This ExTR considers gas sensors type NCR-6309 for use in “GX-Force” gas detectors.		
2 See also **DS2010/006A**	Normative references		
3 See also **DS 2015/015**	Terms and definitions		
4	Level of protection (equipment protection level, EPL)		
4.1	General	Level of protection “db” (EPL Ga)	Pass
4.2 See also **DS2015/016A**	Requirements for level of protection “da”	The sensor assessed is a catalytic sensor to be used in a portable gas detector - Internal volume < 1 cm³ - The electrical conductors are potted in the enclosure and assessed for clause 6, -The breather is assessed for clause 10 and casted in the enclosure wall, leaving no gap and secured with a rim on both sides. -Supply is by an Ex ia circuit. Maximum dissipated power < 3.3 W -The flame non-transmission test was performed with 50 ignitions for each test gas.	Pass
4.3	Requirements for level of protection “db”	Not evaluated.	N/A
4.4	Requirements for level of protection “dc”	Not evaluated.	N/A
5	Flameproof joints		

IEC 60079-1			
Clause	**Requirement – Test**	**Result – Remark**	**Verdict**
5.1	General requirements	The flameproof joints comply with the requirements of clause 5. Specific condition of use in the certificate will apply: “X” - The flameproof joints are not intended to be repaired. A limitation and advisory marking are applied: "This product is an explosion-proof product and is not to be disassembled or modified with the exception of specified parts." Plastic enclosure, which does not require corrosion protection. For design details see drawing: M3-4463-10-02K	Pass
5.2 See also **DS 2015/018**	Non-threaded joints Relevant for: 1. The multi-step joint between enclosure halves. 2. Cemented joints of electrical contacts. 3. Cemented joint of breather element.		
5.2.1	Width of joints (*L*)	The multi-step joint requirements applied see 5.9 below.	Pass
5.2.2	Gap (*i)*	The multi-step joint requirements applied see 5.9 below.	Pass
5.2.3 See also **DS 2015/018**	Spigot joints	No spigot joints.	N/A
5.2.4	Holes in joint surfaces		
5.2.4.1	General	See 5.2.3 above.	N/A
5.2.4.2	Flanged joints with holes outside the enclosure (see Figures 3 and 5)	See 5.2.3 above.	N/A
5.2.4.3	Flanged joints with holes inside the enclosure (see Figure 4)	See 5.2.3 above.	N/A
5.2.4.4	Spigot joints where, to the edges of the holes, the joint consists of a cylindrical part and a plane part (see Figure 6)	See 5.2.3 above.	N/A
5.2.4.5	Spigot joints where, to the edges of the holes, the joint consists only of the plane part (see Figures 7 and 8), in so far as plane joints are permitted (see 5.2.7)	See 5.2.3 above.	N/A
5.2.5	Conical joints	No conical joints.	N/A

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Clause	**Requirement – Test**	**Result – Remark**	**Verdict**
5.2.6	Joints with partial cylindrical surfaces (not permitted for Group IIC)	No partial cylindrical surfaces as per fig. 9a.	N/A
5.2.7	Flanged joints for acetylene atmospheres	No flanged joints.	N/A
5.2.8	Serrated joints	No serrated joints.	N/A
5.2.9	Multi-step joints	The joint 1 between enclosure halves assessed as multi-step joint consists of three adjacent segments where path changes direction two times by 90°. Length of the joints L Segment 1 (L1) -specified: min 2.65 mm -measured: 2.75 mm Segment 2 (L2) -specified: 0.48 mm -measured: 0.50 mm Segment 3 (L3) -specified: min 3.35 mm -measured: 3.5 mm Construction gaps ic Segment 1 (ic1) and 3 (ic3) -specified: max. 0.10 mm -measured: 0.10 mm Segment 2 (ic2) -specified: 0.05 mm -measured: 0.05 mm “X” - The flameproof joints are not intended to be repaired. See Comment 2 at the end of this report.	Pass
5.3	Threaded joints	No threaded joints.	N/A
5.4	Gaskets (including O-rings)	O-rings doesn’t have influence to flameproof joints dimensions.	Pass
5.5	Equipment using capillaries	No capillaries used.	N/A
6	Sealed joint		
6.1 See Also **DS 2015/015**	Cemented joints		

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Clause	**Requirement – Test**	**Result – Remark**	**Verdict**
6.1.1	General	The joints between the in-casted breather and the Cap and between the electrical contacts and Base are cemented joints. Since the joint is formed by injection molding, the molding parameters are relevant here, these are found on drawing M3-4463-10-02K.	Pass
6.1.2	Mechanical strength	The breather is fixed with a rim on top and under it. The contacts are fixed by their multi-turn shape. These joints are not intended to be opened. Tests done on the breather: An overpressure test on two samples with the breather blocked before ageing. An overpressure test on two samples with the breather blocked after ageing. Tests on the in-casted contacts: An overpressure test on two samples, before ageing, with the breather replaced by plate. An overpressure test on two samples with the breather replaced by plate after ageing. The mechanical strength is provided by enclosure. It isn't dependent upon the cement. The cement is blocked and secured and it is not part of the external wall of the enclosure. See 15.2.3.2 below and report 60079-0.	Pass
6.1.3	Width of cemented joints	Internal volume is << 10 cm³. The width of the cemented joints: Joint 2. Contacts -required: 3 mm -specified: min. 3.9 mm -verified: min. 3.9 mm Joint 3. Breather -required: 3 mm -specified: min. 3.66 mm -verified: min. 3.66 mm See Comment 2.2 at the end of this report.	Pass
6.2	Fused glass joints		
6.2.1	General	Not fussed glass joints.	N/A
6.2.2	Width of fused glass joints	Not applicable.	N/A
7	Operating rods	No operating rods.	N/A
8	Supplementary requirements for shafts and bearings	No shafts and bearings.	N/A
9	Light-transmitting parts	No light-transmitting parts.	N/A

IEC 60079-1			
Clause	**Requirement – Test**	**Result – Remark**	**Verdict**
10	Breathing and draining devices which form part of a flameproof enclosure		
10.1	General	Breather device is part of enclosure used for exchange of hazardous atmosphere for gas sampling. Types of breather with pressed metal wire element used. The breathers are tested to withstand overpressure and flame propagation without deformation.	Pass
10.2	Openings for breathing or draining	Not a such construction.	Pass
10.3	Composition limits	Stainless steel only.(Cu content < 0.1%)	Pass
10.4	Dimensions	Breathing devices and their parts are fully specified in the descriptive drawings with appropriate tolerances. Press metal wire element -diameter: 10 ± 0.1, thickness: 1.66 ± 0.1 mm	Pass
10.5	Elements with measurable paths	No such elements.	N/A
10.6	Elements with non-measurable paths	See Annex B (below).	Pass
10.7	Removable devices		
10.7.1	General	The breather can’t be removed.	N/A
10.7.2	Mounting arrangements of the elements	See above.	N/A
10.8	Mechanical strength	Constructed such a way that prevents any risk of the mechanical damage. The position of breather element is fully protected by “detector enclosure” which considered as “guard”. See report 60079-0 for the Impact test.	Pass
10.9	Breathing devices and draining devices when used as Ex components	Breathing devices aren’t going to be used as Ex components.	N/A
11	Fasteners and openings	The Sensor does not have fasteners or openings, it is completely closed with an in-casted breather and cemented electrodes.	N/A

IEC 60079-1			
Clause	**Requirement – Test**	**Result – Remark**	**Verdict**
12 See also DS 2012/004	Materials		
12.1	Tests prescribed by Clauses 14 to 16	Equipment tested according to clause 14 to 16	Pass
12.2	Assembly of multiple flameproof enclosures	No multiple flameproof enclosures.	N/A
12.3	Intercommunicating enclosure compartments	No intercommunicating compartments.	N/A
12.4	Use of cast iron	Cast iron not used.	N/A
12.5	Use of liquids	Liquids not used.	N/A
12.6	Insulating materials for Group I apparatus	Group I not evaluated.	N/A
12.7	Zinc content	No Zn content.	Pass
12.8	Copper or copper alloys in explosive gas atmospheres containing acetylene	No copper or copper alloys used.	Pass
13	Entries for flameproof enclosures	No entries.	N/A
14	Verification and tests	See 60079-0 report for maximum surface temperature determination.	Pass
15	Type tests		

IEC 60079-1			
Clause	**Requirement – Test**	**Result – Remark**	**Verdict**
15.1	General	Breather element and cemented joints were excluded from testing because they were tested before. (refer to reports NL/DEK/ExTR17.0047/00-02). Subject of the additional testing (performed in this report) was flameproof joint 1 in test sequence as follows: 1. Overpressure test 2. Test for non-transmission performed on samples which have been used for previous test sequence. See comment 1, 3 and 4 at the end of this report.	Pass
15.2	Tests of ability of the enclosure to withstand pressure		
15.2.1	General	The equipment has been tested according to the requirements in clauses 15.2.3 and 15.3 No permanent deformation was observed. The units tested according to clause 15.2.3 was also subjected to the test for flame non-transmission with satisfactory result.	Pass
15.2.2	Determination of explosion pressure (reference pressure)		
15.2.2.1	General	Determination of explosion pressure considered impracticable due to extremely small internal volume of the gas sensor.	N/A
15.2.2.2	Test procedure	See 15.2.2.1 above.	N/A
15.2.2.3	Rotating electrical machines	Not a rotating electrical machine.	N/A
15.2.2.4	Pressure-piling	Group IIC tested.	N/A
15.2.2.5	Apparatus intended for use in a single gas	Not evaluated.	N/A
15.2.3	Overpressure test		
15.2.3.1	General	Performed by first method.	Pass
15.2.3.2	Overpressure test - First method (static)	Tested acc. value from Table 8 (Relative pressures for small equipment) Volume << 10 cm³ gas group IIC, for low ambient temperature: -40 °C: (value 10 bar x 1.45 = 14.5 bar applied. See Comment 3 at the end of this report.	Pass
15.2.3.3	Overpressure test - Second method (dynamic)	First method used.	N/A
15.3	Test for non-transmission of an internal ignition		
15.3.1	General	Flame transmission didn't occur. See Comment 4 at the end of this report.	Pass
15.3.2	Electrical equipment of groups I, IIA and IIB		
15.3.2.1	Test gap and test gas	Not evaluated.	N/A

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Clause	**Requirement – Test**	**Result – Remark**	**Verdict**
15.3.2.2	Increasing of gaps for test	Not evaluated.	N/A
15.3.2.3	Number of tests and acceptance criterion	Not evaluated.	N/A
15.3.3	Electrical apparatus of group IIC		
15.3.3.1	General	All the test performed according to the second method. See 15.3.3 below and Comment 4 at the end of this report.	Pass
15.3.3.2	First method – Testing by increased test gap	Not used.	N/A
15.3.3.3	Second method – Testing by increased pressure	The test gaps provided were 90% -100% of construction gaps. Test gas mixture acetylene (7.5 ± 1)% and H_2-hydrogen (27.5 ± 1.5)% volume in air used. Fifty ignition have been done with each test gas at pre-compression pressure (1510-1530 mbar) and normal ambient temperature See Comment 4 at the end of this report.	Pass
15.3.3.4	Third method – Testing by oxygen enrichment of test gases	Not used.	N/A
15.3.3.5	Number of tests for single piece production	Not a single piece production.	N/A
15.4	Tests of flameproof enclosures with breathing and draining devices		
15.4.1	General	Tests carried out acc. the test sequence described in 15.1 above: Determined maximum test pore size of the breather elements was min. 85% of the specified maximum bubble test pore size.	Pass
15.4.2	Tests of ability of the enclosure to withstand pressure		
15.4.2.1	General	Tests have been made in accordance with 15.2 with following additions and modifications.	Pass
15.4.2.2	Replacement of breathing and draining devices	See 15.2.2.1	N/A
15.4.2.3	Overpressure test	Thin flexible membrane has been fitted in each of the tested breather elements. No permanent deformation or damage observed after the test.	Pass
15.4.3	Thermal tests		
15.4.3.1	Test procedure	Tested per 15.4.4.2 5 times with both gases, surface temperature measure. Because of the small size of the Sensor ignition on one location. No forced flow. No ventilating or sampling system. See 14 (above) and Comment 1 at the end of this report.	Pass

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Clause	**Requirement – Test**	**Result – Remark**	**Verdict**
15.4.3.2	Acceptance criterion	No continuous burning observed. Temperature increase measured: 8.4 K (with C_2H_2)	Pass
15.4.4	Tests for non-transmission of an internal ignition		
15.4.4.1	General	The test made according to 15.3 including the following additions and modifications	Pass
15.4.4.2	Test procedure	Breather elements are tested as part of the gas sensor enclosure with ignition on one location due to small size of the gas sensor.	Pass
15.4.4.3	Non-transmission test for breathing and draining devices		
15.4.4.3.1	General	Tests performed according to (Group IIC with non-measurable paths) the “Method B”.	Pass
15.4.4.3.2	Method A – Testing by increased pressure	Not applied.	N/A
15.4.4.3.3	Method B – Testing by oxygen enrichment of test gases	The non-transmission tests are performed with: 40% H2, 20% 02 and N2 10% C2H2, 24% 02 and N2 See 15.3.3.4	Pass
15.4.4.4	Acceptance criterion	No flame transmission occurred.	Pass
15.5	Tests for “dc” devices	Not applicable.	N/A
16	Routine tests		
16.1	General		
16.1.1	Overview	Routine tests not required.	N/A
16.1.2	Routine overpressure test – first method	Not applicable.	N/A
16.1.3	Routine test – second method	Not applicable.	N/A
16.1.4	Routine test – empty enclosure & parts of enclosure	Not applicable.	N/A
16.2 See also **DS 2015/015**	Enclosures not incorporating a welded construction	The enclosure does not have a welded construction and has an internal volume << 10 cm^3, a routine test isn’t required.	Pass
16.3 See also **DS 2015/015**	Enclosures incorporating a welded construction	Not applicable.	N/A
16.4	Bushings not specific to one flameproof enclosure	Not applicable.	N/A

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Clause	**Requirement – Test**	**Result – Remark**	**Verdict**
16.5	Acceptance criteria	Not applicable.	N/A
16.6	Batch testing	Not applicable.	N/A
17	Switchgear for Group I	Not a switchgear.	N/A
18	Lampholders and lamp caps	Not a lamp holder or lamp cap.	N/A
19	Non-metallic enclosures and non-metallic parts of enclosures		
19.1	General	Flameproof joint 1 includes two non-metallic faces of the joint.	Pass
19.2	Resistance to tracking and creepage distances on internal surfaces of the enclosure walls	The electrodes are molded directly in the plastic of the base part. Between 2 elements: CTI: 175 V, voltage: 3.7 V, distance 3.6 mm. Because in normal operation there is no potential difference between the electrodes of one element; creepage will not occur.	Pass
19.3	Requirements for type tests	a) Due to small size ref. pressure determination is impracticable. b) Overpressure tests performed on samples after tests per 60079-0, see 15.2.3 c) Non-transmission tests performed on samples after tests per 60079-0, see 15.3.3.4 d) Erosion by flame not required, see 19.4 e) Not required, see above.	Pass
19.4	Test of erosion by flame	The internal volume is <<50 cm^3.	Pass
20	MARKING		
20.1	General	“da”	Pass
20.2	Caution and warning markings	No caution or warning marking required.	Pass
20.3	Informative markings	No informative markings required.	Pass

IEC 60079-1			
Clause	**Requirement – Test**	**Result – Remark**	**Verdict**
21	Instructions	See 60079-0 report.	Pass
Annex A (Normative)	Additional requirements for crimped ribbon elements and multiple screen elements of breathing and draining devices	No crimped ribbon and multiple screen elements	N/A
Annex B (Normative)	Additional requirements for elements, with non-measurable paths, of breathing and draining devices		
B.1	Sintered metal elements	No sintered elements.	N/A
B.2	Pressed metal wire elements		
B.2.1	Construction	Matrix consists of five layers made from different combination of stainless steel wire braid mesh and diameter. (FP100 and FP75)	Pass
B.2.2	Specifications	The wire diameters and mesh size are specified for each layer in the matrix. (ref dwg M3-4463-10-02K) Density of st.st. 316: 7.95 g/cm³. The specific density of the breather is 5.2 g/cm³. Resulting in a ratio of 0.65 This is accepted since the pressed wire element is also sintered which will give an increase of density.	Pass
B.2.3	Bubble test pore size	Performed on three samples. Design: 139.3 µm. All samples > 85% Test per 15.4.3 performed with 133 µm.	Pass
B.2.4	Density	Performed on 8 pieces being 5.041 g in total. Result: 5.139 g/cm^3 this is regarded within the margin. See B.2.2 and Appendix B.	Pass
B.2.5	Open porosity and or fluid permeability	With the defined and checked pore size and density of the breather the functionality is sufficiently secured.	Pass
B.2.6	Identification	a) Stainless steel SUS316 b) Max. pore size: 139.3 µm c) Min. density: 5.2 g/cm^3 d) Thickness: 1.66 ± 0.1 mm, Diameter: 10 mm e) Wire diameter, see B.2.2 f) N/A see B.2.5	Pass
B.3	Metal foam elements	No metal foam elements.	N/A
Annex C (Normative)	Additional requirements for flameproof entry devices	Not applicable.	N/A
Annex D (Normative)	Empty flameproof enclosures as Ex components	Not applicable.	N/A

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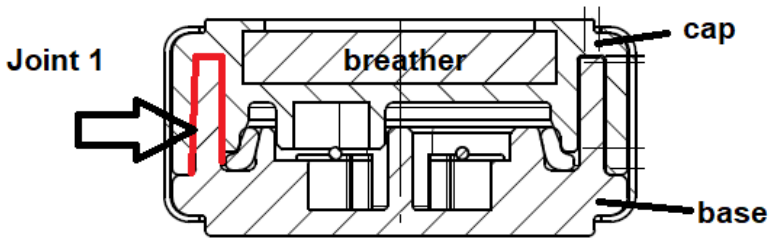
Clause	**Requirement – Test**	**Result – Remark**	**Verdict**
Annex E (Normative)	Cells and batteries used in flameproof “d” enclosures	Not applicable.	N/A
Annex F (Informative)	Mechanical properties for screws and nuts		
Annex G (Normative) See also DS 2019/003	Additional requirements for flameproof enclosures with an internal source of release (containment system)	Not applicable.	N/A
Annex H (Normative)	Requirements for machines with flameproof “d” enclosures fed from converters	Not applicable.	N/A

Measurement Section, including Additional Narrative Remarks (as deemed applicable)

1. General description

The subject of the testing is gas sensor, type NCR-6309, consists of two catalytic elements in a flameproof enclosure. The gas sensor is to be used in the portable gas detectors GX force which are no part of this assessment. The gas sensor is fed by an Ex i signal from the gas detector.

The gas sensor consists of two plastic enclosure halves (the Cap and the Base) permanently fixed together metallic rim. A stainless steel breather element is enclosed in the cap by injection moulding.



Picture 1. Flameproof enclosure of the gas sensor NCR-6309

This report is based on NL/DEK/ExTR17.0047/00-02 test reports. Subject of additional testing (in this report) was flameproof joint 1 (multi-step joint).

2. Flameproof joints

The enclosure consists of one multi-step joint and two cemented joints. As shown on picture 2 below.
The requirements for group IIC have been considered.

Date	2022-03-20

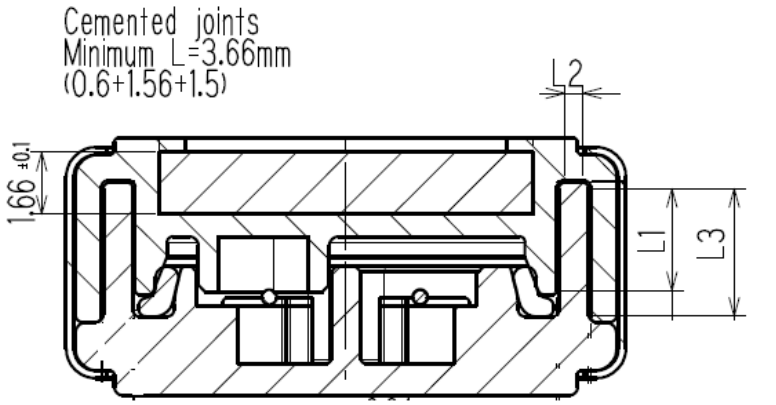
Samples	Breather - type pressed metal wire element D23 (PPS) no. 39, (2-1)
Equipment	No
Digital calliper	P0021
Micrometer 0-25mm (self cal.) standard reference 25 mm	P0284

2.1 Multi-step joint

Joint 1. Cap – Base

Table 1. Multi-step joint (declared and verified measures)

Segment	Lx min (specified)	Lx (measured)	Gap (ic) (specified)	Gap (ic) (measured)
1	2,65	2.75	0,10	0,10
2	0,48	0.50	0,05	0,05
3	3,35	3.5	0,10	0,10



Picture 2. Flameproof enclosure of the gas sensor NCR-6309

2.2 Cemented Joints

Cemented Joint 2 - “Cemented joints of electrical contacts.

Cemented joints Clause 6.1.3 Table 2	Requirement [mm]	Specification [mm]	Verification [mm]
Width	≥ 3 mm	3.9	3.9

Cemented Joint 3 - “Cemented joint of breather element.

Cemented joints Clause 6.1.3 Table 3	Requirement [mm]	Specification [mm]	Verification [mm]
Width	≥ 3 mm	3.6	3.6

3. Overpressure Test

Date	2020-03-16
Sample	3-1, 3-2 (Sensors especially prepared for FNT).
Equipment	No
Pressure gauge	P0223

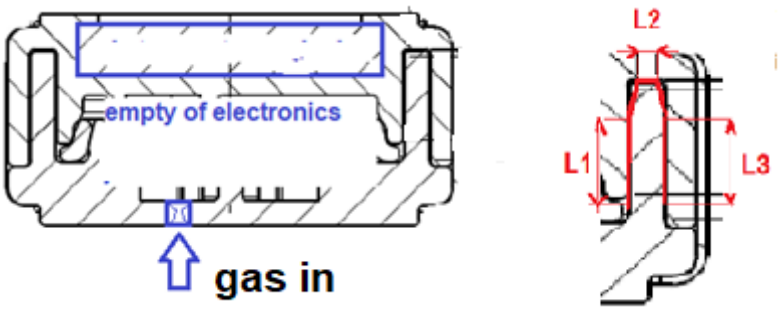
There was no any damage observed or leakage through the cemented joints.

Test performed on normal ambient temperature. Sensor head tested empty, the wire mesh was covered with thin membrane from the inner side. Test performed in four test rounds.
The overpressure test was made at 14.5 bar. This pressure was held for 60 s The ambient temperature during test was +20°C.

4. Non-transmission of an Internal Ignition Test

Date	2022-04-29 to 2022-05-17
Sample	3-3 (Sensor especially prepared for FNT)
Equipment	No
Oxygen analyzer	P0114
Oxygen Transmitter	P0115
Pressure meter	P0027
Barrometer&thermometer	P0083

Subject of the test was Joint 1 (multi-step joint) as shown on picture 3 below. Test gap provided a follows:



Picture 3. Especially prepared sample of the gas sensor NCR-6309 enclosure for flame non-transmission test

Verification of the specially prepared sample for Flame Non-transmission test.

Multistep joint (declared and verified measures)

Segment	Lc max	Le (reduced)	Gap (ie)	Comment
1	1,95	74%	0,10	100%
2	0,35	73%	0,05	100%
3	2,5	75%	0,10	100%

No flame transmission out of enclosure occurred during the non-transmission tests.

The test arrangement used e (see picture 3 above) ignition point was located on gas inlet.

The gas mixture was measured at the gas outlet from the both sample and external chamber prior to each internal ignition. The internal mixture was ignited by spark plug.

The test was made at pre-compression pressure (1500-1530 mbar) and normal ambient temperature of 20°C, 5 times with each gas mixture, for Acetylene within the range by (7.4 to 7.9)% volumetric ratio to air and with Hydrogen by (27.0 to 27.5)% volumetric ratio to air.

Mixture in external enclosure verified the same as in the test sample before each ignition..

Gas A: acetylene

Lab temp and pressure: +21C, 1012-1015 mbar.

Gas B: hydrogen

Lab temp and pressure: +21C, 1004-1007 mbar.

Ignition no	O_2 %	Pressure	Result	Ignition no	O_2 %	Pressure	Result
1	19.40	1520	Pass	1	15.29	1500	Pass
2	19.38	1520	Pass	2	15.28	1500	Pass
3	19.37	1520	Pass	3	15.27	1500	Pass
4	19.37	1530	Pass	4	15.25	1500	Pass
5	19.37	1530	Pass	5	15.25	1500	Pass
6	19.37	1520	Pass	6	15.24	1500	Pass
7	19.36	1530	Pass	7	15.24	1500	Pass
8	19.36	1520	Pass	8	15.24	1500	Pass
9	19.36	1520	Pass	9	15.24	1500	Pass
10	19.36	1520	Pass	10	15.24	1510	Pass
11	19.36	1520	Pass	11	15.24	1510	Pass
12	19.35	1520	Pass	12	15.24	1510	Pass
13	19.35	1530	Pass	13	15.23	1510	Pass
14	19.35	1530	Pass	14	15.23	1500	Pass
15	19.35	1520	Pass	15	15.23	1500	Pass
16	19.35	1520	Pass	16	15.23	1500	Pass
17	19.34	1530	Pass	17	15.23	1510	Pass
18	19.34	1520	Pass	18	15.23	1510	Pass
19	19.34	1530	Pass	19	15.23	1510	Pass
20	19.34	1530	Pass	20	15.23	1510	Pass
21	19.34	1530	Pass	21	15.22	1500	Pass
22	19.34	1530	Pass	22	15.22	1500	Pass
23	19.34	1530	Pass	23	15.22	1510	Pass
24	19.33	1520	Pass	24	15.22	1500	Pass
25	19.33	1530	Pass	25	15.22	1500	Pass
26	19.33	1520	Pass	26	15.22	1500	Pass
27	19.33	1520	Pass	27	15.22	1510	Pass
28	19.33	1520	Pass	28	15.22	1510	Pass
29	19.33	1520	Pass	29	15.22	1510	Pass

30	19.33	1520	Pass	30	15.21	1510	Pass
31	19.33	1520	Pass	31	15.21	1510	Pass
32	19.32	1520	Pass	32	15.21	1510	Pass
33	19.32	1520	Pass	33	15.21	1510	Pass
34	19.32	1530	Pass	34	15.21	1510	Pass
35	19.32	1520	Pass	35	15.21	1510	Pass
36	19.32	1520	Pass	36	15.21	1510	Pass
37	19.32	1520	Pass	37	15.21	1510	Pass
38	19.32	1520	Pass	38	15.21	1510	Pass
39	19.32	1520	Pass	39	15.20	1510	Pass
40	19.31	1530	Pass	40	15.20	1510	Pass
41	19.31	1520	Pass	41	15.20	1510	Pass
42	19.31	1520	Pass	42	15.20	1510	Pass
43	19.31	1520	Pass	43	15.20	1510	Pass
44	19.31	1530	Pass	44	15.20	1510	Pass
45	19.31	1520	Pass	45	15.20	1510	Pass
46	19.31	1520	Pass	46	15.20	1510	Pass
47	19.31	1520	Pass	47	15.20	1510	Pass
48	19.30	1520	Pass	48	15.20	1510	Pass
49	19.30	1520	Pass	49	15.19	1510	Pass
50	19.30	1520	Pass	50	15.19	1510	Pass