



EU Notified Body
No. 2549

International Center for Quality Certification - ICQC Ltd.
63-19, Skolas street, Jurmala, LV-2016, Latvia
Phone: +371 27168371 E-mail: office@icqc.lv Web: www.icqc.lv

SIA „International Center for Quality Certification - ICQC”
Reg. Nr.LV40103539825
Skolas iela 63-19, Jūrmala, LV-2016, Latvija



EN ISO/IEC 17065
S1-499

(1) EU-TYPE EXAMINATION CERTIFICATE

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres – Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number: **ICQC 21 ATEX 0431 X** **Issue: 0**

(4) Equipment: **Equipment Set of in-line inspection tools KVD-ATEX**

(5) Manufacturer: **LLC “NPC “VTD”**

(6) Address: **Office 402, Nagatinskaya street 5, Moscow, 115533, Russia**

(7) This equipment and any acceptable variation, also documents which are specified in the schedule to this certificate.

(8) The certification body ICQC, Notified body No. 2549 in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in confidential report No. **431/2021/08/ATEX**

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

**EN IEC 60079-0:2019, EN 60079-1:2014, EN 60079-11:2012, EN ISO 80079-36:2016,
EN ISO 80079-37:2016**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

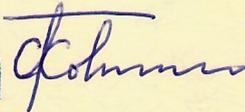
(11) This EU-Type Examination Certificate relates only to the design and the construction of the specified equipment in accordance with Directive 2014/34/EU. Further requirements of this Directive apply to the manufacture and supply of this equipment. These are not covered by the certificate

(12) The marking of the equipment or protective system shall include the following:

 **II 2 G Ex db h ib IIB T4 Gb, -10°C ≤ Ta ≤ +50°C**
II 2 G Ex h IIB T4 Gb, -10°C ≤ Ta ≤ +50°C

Head of Certification Body:



 **Sergey Kovalev**

Date of issue: 25 May, 2021
Jurmala, Latvia

(13) **SCHEDULE**

(14) **to EU-TYPE EXAMINATION CERTIFICATE: ICQC 21 ATEX 0431 X**

Issue: 0

(15) **Description of Equipment:**

Equipment Set of ILI tools KVD-ATEX, are intended for internal cleaning and subsequent in-line inspection of main pipelines together with collection of data on pipe condition from 219 up to 1420 mm (from 8 up to 56 inch).

Transported product is natural gas of gas condensate and gas fields or oil, petrochemicals, gas liquids with upper flammable limit concentration below 70%. Since the hydrocarbons transported in the pipeline systems do not contain the air and therefore there is no oxygen acting as oxidizer inside the pipe, the tool's environment is considered as a safe area, hence the tool can operate in not explosion-proof mode.

During technological operation of tools loading to the launcher trap or tools retrieval from the receiver trap, the tools may appear in the explosion-hazardous area classified as class 1 under EN 60079-10-1.

The KVD-ATEX sets of tools include electrical equipment (containing on-board power source) and non-electrical equipment. The list of the KVD-ATEX equipment with appropriated Ex-marking is given in Table 1.

	Equipment	Ex-marking
1.	Electrical equipment	
1.1.	MFL tools DMT- X, MFL tools DMTB - X	II 2 G Ex db h ib IIB T4 Gb -10°C ≤ Ta ≤ +50°C
1.2.	TFI tools DMTP- X, TFI tools DMTPB- X	II 2 G Ex db h ib IIB T4 Gb -10°C ≤ Ta ≤ +50°C
1.3.	Geometry tools PRT- X, Geometry tools PRTB- X	II 2 G Ex db h ib IIB T4 Gb -10°C ≤ Ta ≤ +50°C
1.4.	Magnetic pigs PMOB- X	II 2 G Ex db h ib IIB T4 Gb -10°C ≤ Ta ≤ +50°C
2.	Non-electrical equipment	
2.1.	Magnetic pigs PMO- X	II 2 G Ex h IIB T4 Gb -10°C ≤ Ta ≤ +50°C
2.2.	Cleaning pigs CO- X	II 2 G Ex h IIB T4 Gb -10°C ≤ Ta ≤ +50°C

X - item diameter in mm and inches, item diameter corresponds to the diameter of inspected pipeline.

1. Electrical equipment.

- **MFL tools DMT, MFL tools DMTB, TFI tools DMTP, TFI tools DMTPB** are intended for in-line inspection of main pipelines.

The tools are autonomous inspection systems equipped with on-board computer, which move inside the pipeline and record the parameters of magnetic flux leakage appearing when the magnetic field is applied to the defect.

The tools for pipelines from diameter 500 up to 1400 mm (20"-56") can be single- or two-section, tools for pipelines from diameter 219 up to 450 mm (8"-18") - three- or four- sections. All the sections are connected with ball or cardan joints.

MFL tools DMTB and TFI tools DMTPB intended for pipelines from diameter 900 up to 1400 mm (36"-56") are additionally equipped with active (bypass) unit to control the tool's movement speed in the pipeline.

Single-section MFL tools DMTB for pipelines diameter of 1400 mm (56") can have special sensor subsystem functioning as introscope. Such inspection tools have additional signing "Is" in the type name, which is indicated in the end of the name.

- **Geometry tools PRT, Geometry tools PRTB** are intended for measurement of internal bore section and bending radii of the inspected pipeline, detecting and locating the pipe geometry defects. These tools operation principle is based on logging the pipe body shape deviation from cylinder by special electromechanical sensors.

The tools are autonomous inspection systems equipped with on-board computer and power source. These can be single- or two-section. The sections are connected with ball or cardan joints.

Geometry tools PRTB intended for pipelines diameter from 900 up to 1400 mm (36"-56") can be additionally equipped with active (bypass) unit to control the tool's movement speed in the pipeline.

- **Magnetic pigs PMOB** are intended for magnetic and mechanical cleaning of pipeline internal bore diameter from 900 up to 1400 mm (36"-56") and magnetic preparation of the pipe wall metal for inspection. The tools have on-board computer, power source and automation system.

Main electronic units and on-board power source are placed in one or several sealed explosion-proof enclosures

The sealed explosion-proof enclosure is a steel cylindrical case closed with front and rear covers with installed necessary instruments and sealed bushings to connect the external cables as well as safety-relief valve with flame arrestor intended for automatic relief of excessive internal pressure which may be caused by explosion-proof enclosure sealing failure and injection of explosive product from the pipeline into it.

When electrical equipment is in explosion-hazardous area (during loading and retrieval operations), external non-Ex electrical circuits are deenergized at external pressure below 0.4 MPa when the mixture of a combustible substance with air becomes explosive.

External non-Ex electrical circuits are switched on and off by the signal from intrinsically safe circuit of the threshold pressure safety switch (KS), deenergizing being confirmed by terminated signal from electromagnetic protective deenergizing alarm (OZO).

OZO signal is received by the operator with the use of special receiver which shall be explosion-proof and certified separately

2. Non-electrical equipment.

- **Magnetic pigs PMO** are intended for magnetic and mechanical cleaning of pipeline internal bore diameter from 900 up to 1400 mm (36"-56") and magnetic preparation of the pipe wall metal for inspection.

- **Cleaning pigs CO** are intended for mechanical cleaning of main pipeline internal bore. Each cleaning pig is a cylindrical case with cleaning and sealing discs in the forebody and afterbody.

The non-electrical equipment can include a separate low-frequency transmitter as Ex-component with carrier frequency of 22 Hz intended for their detection during the movement inside the pipeline with the use of a corresponding receiver placed outside the pipeline. The transmitter and receiver shall be explosion-proof, certified separately and be intended for use in operation conditions similar to those for non-electrical equipment of KVD-ATEX sets of tools.

Technical characteristics:

Parameter	Value
Ambient temperature range (Ta)	$-10^{\circ}\text{C} \leq \text{Ta} \leq +50^{\circ}\text{C}$
Supply voltage	no more 48 V
KS operation thresholds	
- switch-on threshold (the tool launching operation)	$0.65 \pm 0.15 \text{ MPa}$
- switch-off threshold (the tool receiving operation)	$0.4 \pm 0.1 \text{ MPa}$

Warning markings:

"DO NOT OPEN IN HAZARDOUS AREA"

Routine tests:

Routine tests according to cl. 16 of EN 60079-1 shall be conducted with a test pressure of 3,6 MPa.

(16) Descriptive Documents:

Sets of ILI tools KVD-ATEX. User Manual.
General characteristics and parameters.

VTD9.01.101RE

The drawings are listed in Evaluation report No:

431/2021/08/ATEX

Certificate History:

Issue/Date	Evaluation report	Comment
Issue 0 from 25.05.2021	431/2021/08/ATEX	The release of the prime certificate.

(17) Specific conditions of use:

17.1. Application area of the Set of ILI tools KVD-ATEX equipment –transported product–natural gas of gas condensate and gas fields, oil, petrochemicals, gas liquids with upper flammable limit concentration below 70%.

Table 3, VTD9.01.101RE lists the products (combustibles) transported by pipeline, in which operation of the equipment is prohibited.

17.2 Handling operations with the KVD-ATEX equipment, their loading to the launcher trap and retrieval from the receiver trap, emergency actions shall be made in strict compliance with the procedures and requirements stated by the user manual VTD9.01.101RE.

17.3 The fastening screws shall be of stainless steel socket head cap screws M12x25-8.8A2F, M10x20-8.8A2F, M8x20-8.8A2F, M6x16-8.8A2F, M5x8-8.8A2F with minimum yield stress of 640 MPa and M4x8-A2-70 with minimum yield stress of 450 MPa according to ISO 4762.

(18) Essential Health and Safety Requirements:

Met by compliance with the standards mentioned in clause (9).