

Date: 2009-11-10

NUPIGECO S.p.A.
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Italy

Subject: **Professional opinion**

Based on the valid norms and technical regulations, The Manual of technical norms, The order of obligatory attesting of electrical equipment intended for applications in danger zones and standards that are referring to the protective measures from explosions from electrical equipment and their installations, and upon the requests submitted by DELTA PETROL KAKANJ D.O.O., in which is requested the certification of the polyethylene pipes, manufacturer NUPIGECO S.p.A., the test and the analyses of the complete documentations has been done, and according to the conclusion from the 62nd EX-Commission is given the following

PROFESSIONAL OPINION NUMBER: SM-09-14

For polyethylene pipes that are used with transport of liquid medias on petrol stations

1. SUBJECT OF TREATMENT

DELTA PETROL KAKANJ D.O.O. with its request No.: 907/09-NS from 04.09.2009. has asked for the certification of SMARTFLEX polyethylene pipes with additional installation equipment, which are used for transport of liquid medias in underground installations on petrol stations.

The subject includes the following polyethylene pipes:

- Single wall pipes for the transport of fuel types: TSMA, TSMAH or TSMAXP
- Single wall vent pipes type TSMAU
- Double wall pipes for the transport of fuel types TSMAD, TSMAHD or TSMAXPD
- Secondary pipes types TSMAS and TSMAXS and
- Appropriate connecting equipment

The pipe manufacture is:

NUPIGECO S.p.A.
Busto Arsizio – Italy

The professional opinion has only treated the antiexplosion protection of the pipes with the appropriate installation equipment with regards to the possibility of the ignition of the explosive mixture by static electricity which is generated on the pipe during the transport o liquid fuels.

2. DOCUMENTATION

This Professional opinion was treated based on the documentation given by the applicant and the valid standards, and which includes the following:

- Test report No.: 07 TR 0503 from 23.05.2007. given by EX-Agency-Zagreb, Agency for areas threatened by explosive atmosphere, laboratory for antiexplosive protection.
- Professional opinion No: 0740 from 13.06.2007. given by Ex-Agency-Zagreb, Agency for areas threatened by explosive atmosphere, laboratory for antiexplosive protection
- Test report No: 257/GLH from 13.11.2000. given by WOLFSON ELECTROSTATICS – England
- Certificate No: BC66/2006-0091/001 from 28.02.2006. given by ERA Technology Ltd – England
- Certificate No: BC66/2006-0334/001 from 22.06.2006. given ERA Technology Ltd – England
- Test Certificate No: 4810 from 07.11.2008. given by UKAS – England
- Certificate No: BC66/2009-0213/001 from 14.04.2009. given by ERA Technology Ltd. – England
- Certificate No: BC66/2009-0296/003 from 29.06.2009. given by Cobham Technical Services – England
- Smartflex product Catalogue, catalogue code: 054IN10-07/2006.
- JUS N.S8.050-Antistatic and conductive products – measuring of resistance on finished products
- JUS N. S8.051 – Antiexplosive protection – Testing of isolating material
- JUS N.S8.052 – Antiexplosive protection – Classification of isolating material
- European norm EN 50014 – Antiexplosive protection – General construction requirements
- International norm IEC: 60079.14, Electrical installations in explosive Gas atmospheres (other than mines)
- International norm IEC 93.
- European norm DIN/VDE 0303
- HRN CLC/TR 50404: Electrostatics – Technical report for avoiding danger from static electricity
- EN 1412:2001-12 edition: Pipes for fuels for underground installations on petrol stations

3. DESCRIPTION AND PERFORMANCE

The polyethylene pipes have been made in multi layers which have been made from nonconductive material. The inner layer is a barrier layer which increases the tightness of the pipe while the outer layer serves for mechanical firmness.

In order to give the extra mechanical firmness these pipes can be installed with the secondary layer as well.

Pipes are intended for the use in underground installation and for:

- transport of fuels
- Filling of underground tanks from tank trucks
- Vapor recovery
- Leveling of the pressure in underground tanks

4. TEST RESULTS

The test report, which was conducted based on the standard EN 50014 article 23.4.7.8., showed that the values of the surface of the outer layer of the pipes are higher than $10^{12} \Omega$

5. CONDITIONS FOR USE

Taking into consideration the request of the applicant for the certification of SMARTFLEX polyethylene pipes and the test results published in the authorized laboratories, as well as the level of the submitted documentation, EX commission has brought the decision of using the pipes with the following conditions:

- Pipes can be used for transport of medias on petrol stations.
- Pipes with the appropriate equipment can be used only as underground pipe system. Pipes have be laid in the layer of sand or earth (without rocks) in such a way that their outer surface is always in the contact with sand/earth.
- Metal connections or metal end parts have to be connected to the line for leveling the potential
- Refilling of the underground tanks from the tank trucks is allowed only by a free fall in order to limit the flow of the fuel and in doing that limit the generating of static electricity
- With every delivered product the manufacturer is obliged to give to the user a Statement that the product is the same as the test sample.
- Installation, use, maintenance, supervision and installation of pipes and appropriate equipment has to be done according to the instructions given by the manufacture NUPIGECO S.p.A., Busto Arsizio – Italy, with the regard to all the requirements of the above mentioned certificates.

6. CONCLUSION

SMARTFLEX pipes, the product of NUPIGECO S.p.A., Busto Arsizio-Italy with the appropriate equipment CAN BE USED for:

- transport of fuels
- filling the underground tanks from tank trucks
- vapor recovery
- leveling of the pressure in underground tanks

During installation, use and maintenance of these pipes the instructions given by the manufactures, certificates of the country of the manufacturer and this Professional opinion must to satisfied.

This Professional opinion is valid for the importer and manufacturer in order to sell the products. The individual certification of the products intended for the market of Bosnia and Hercegovina will be confirmed by a separate Professional opinion of EX-Commission BiH.

Carrying out of the stated conditions is subjected to the supervision of the inspection which is done on the sites where the pipes are being installed.

Date: 2009-11-10

General secretary of EX-Commission
Mr. Jusuf Delic,

Director of the Institute
Goran Tesanovic