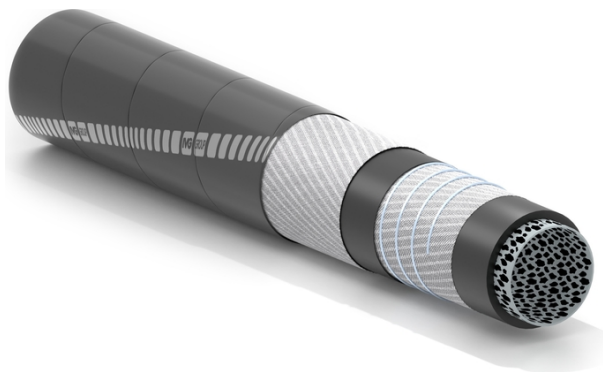


Thunderflex



Ex
zone

Токопроводящ. рукав для нефте., хим., и пищ. продуктов, внутренний слой из PE-UHMW



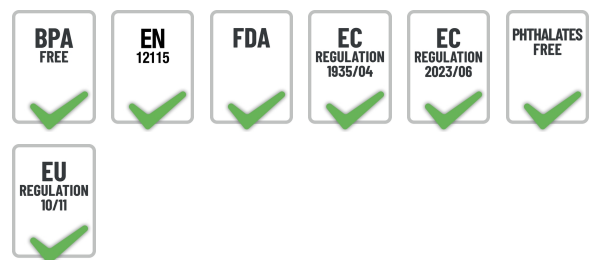
Нормативно-правовые акты:

Без бисфенола А. EN 12115:2021. FDA tit. 21 it. 177.1520 для пищевых внутренний слой Reg. EC 1935/2004 внутренний слой Reg. 2023/2006. Не содержит фталатов (REACHReg.). Рег. EU 10/2011 пищевых с содержанием алкоголя до 95%.

Применение:

напорно-всасывающий токопроводящ. рукав для агрессивных хим. веществ, пищевых продуктов, нефтепрод. и масел. Рукав для зоны АTEX. Тестирован обществом INERIS.

пригоден для большинства хим. веществ в соответствии с EN 12115 может быть использован в зонах АTEX



Внутренний слой:

из чёрно/белого высокомолек. полиэт. (PE-UHMW). Хим. стойкость по таб. IVG. При темп. выше 50°C - просим связаться с IVG.

Усиление:

высокопрочный синтетич. корд, стальная спираль.

Покрытие:

чёрное, из каучука EPDM, устойчивое к хим. продуктам, истиранию, атмосфер. воздействиям, озону.

Температура:

от -30°C до +100°C зависит от веществ.

Электрическое сопротивление:

Ω/Т, токопроводящ. рукав. Электрич. сопротивл. для длин менее или равным 40 м.

Маркировка:

сине/белая маркир. "IVG Chem THUNDERFLEX...". Тиснение в соответ. EN 12115.



Thunderflex


**Ex
zone**


Код	Внутренний диаметр		Внешний диаметр		Рабочее давление		Разрывное давление		Номинальный вес		Раздиус изгиба		Вакуум	Максимальная длина	
	mm	inch	mm	inch	bar	psi	bar	psi	kg/m	lbs/ft	mm	inch		bar	m
1466216	13	1/2	25	0,99	16	240	64	960	0,52	0,35	60	2,4	0,9	60	200
1476823	16	5/8	28	1,10	16	240	64	960	0,6	0,40	75	3,0	0,9	60	200
1463063	19	3/4	31	1,22	16	240	64	960	0,67	0,46	90	3,5	0,9	60	200
1451847	25	1	38	1,50	16	240	64	960	0,91	0,61	120	4,7	0,9	60	200
1456156	32	1-1/4	44	1,73	16	240	64	960	1,01	0,68	150	5,9	0,9	60	200
1463071	38	1-1/2	51	2,01	16	240	64	960	1,31	0,89	180	7,1	0,9	60	200
1465171	40	1-37/64	53	2,09	16	240	64	960	1,36	0,93	180	7,1	0,9	60	200
1456148	51	2	65	2,56	16	240	64	960	1,77	1,19	250	9,9	0,9	60	200
1464981	63,5	2-1/2	78	3,07	16	240	64	960	2,39	1,59	320	12,6	0,9	60	200
1466232	76	3	91	3,59	16	240	64	960	2,9	1,93	400	15,8	0,9	60	200
1476343	100	3-15/16	116	4,57	16	240	64	960	4,26	2,86	550	21,7	0,9	60	200

Рекомендуемые соединения:



Safety clamps EN 14420-3 (DIN 2817)



Clamp



Camlock

SPECIAL DETAILS

NOTES AND SUGGESTIONS FOR THE END USERS FOR HOSE ASSEMBLIES INTENDED TO BE USED IN ATEX ENVIRONMENTS 2014/34/UE

Below are the notes for the proper use of the product in ATEX environments and warnings resulting from the risk analysis for the verification of effective ignition sources **regarding the hose assembly**.

Suggestions for a correct Risk Analysis are also given. There is no presumption that these suggestions could be exhaustive of every possible ATEX environment scenario in which the hose assembly could be found, however the goal is to help the final user to carry out a correct Risk Analysis.

IVG Colbachini cannot, nor does it intend to, replace the Employer in his task of carrying out the Analysis. The aim is to help him in this activity.

The 1999/92/CE Directive (Minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres) obliges the Employer to:

1. evaluate the risks of explosion considering the following:
 - likelihood and persistence of explosive atmospheres;
 - likelihood that ignition sources will be present including electrostatic discharge;
 - scale of possible effects;
 - characteristics of the plant, substances used, processes and possible interactions;
 - places that are or can be connected via openings with areas where explosive atmospheres are likely to generate.
2. To issue a document "**Explosion protection document**" (Risk Analysis).
3. To always update the "**Explosion protection document**" (Risk Analysis)

NOTE A – hot surfaces.

The hose does not contain heat sources, so the surface temperature of the hose depends strictly on the use by the end user. In the pneumatic conveying systems periodically check the integrity of the hose and its layers.

Do not use the hose if the inner layer is heavily worn. The range of the working temperature of the material for which we guarantee the properties is according to the technical data sheet of the product.

Damage resulting from improper use of the product are not attributable to the manufacturer.

NOTE B – sparks of mechanical origin.

The hose has no moving parts and it is not able to generate this source of ignition. In the pneumatic conveying systems, it is likely that sparks are carried from earlier process operations and not due to the hose itself. It is the end user's responsibility to operate so that this source of ignition is not present, internally and externally to the hose.

NOTE C – electrical equipment.

There are no electrical materials provided with the hose. The possible steel helix wire (if present between the layers of the hose) has been designed, to impart mechanical strength to the hose. The helix wire is not intended as an electrical conductor, but it can help the dispersion of electrostatic charges if and only if it is correctly connected to the ground line or to equipotential bonding jumpers with equipment already connected to the ground line.

NOTE D – eddy currents.

This ignition source is not applicable to the hose in question. The end user must operate so that the hose is not isolated from sections of insulating hoses. The hose, thanks to its conductive/dissipative characteristics is able to disperse possible electric/electrostatic charges accumulated during the process if and only if the hose is properly connected to the ground line.

NOTE E – electrostatic charges.

The hose does not contain or inherently generates electrostatic ignition sources. Eventual generation and accumulation of charges may depend on the material transported in the process and the ability of the material, properly connected with equipotential connections and/or connections with grounding, to be able to drain them. Care should be taken in the perfect cleaning and maintenance of connections and periodic assessment of the earth resistance that can detect anomalies in the system. The material the hose is made of has been designed to maximize the dispersion of electrostatic charges that can be generated due to the process. The nonapplication of these notes and improper use of the product as designed, absolve the manufacturer from any responsibility for any damage that may result. According to the characteristics and needs of the process that may generate internal and external hazardous atmospheres, detailed studies should be performed by experienced staff to guarantee a proper use of the product.

The concepts, recommendations, references and the limits reported in the following standards are extremely important in order to carry out a detailed study:

- CEI CLC/TR 60079-32-1:2016 – Electrostatics – Code of practice for the avoidance of hazards due to static electricity.
- NFPA 77 - 2014 - Recommended Practice on Static Electricity.
- UNI CEI EN ISO 80079-36:2016 – Explosive atmospheres - Part 36: Non-electrical equipment intended for explosive atmospheres - Basic method and requirements.
- UNI CEI EN ISO 80079-37:2016 – Explosive atmospheres - Part 37: Non-electrical equipment intended for explosive atmospheres - Type of non-electrical protection for constructive safety "c", for ignition source control "b", by immersion in liquid "k".
- UNI EN 1127-1/2011 Explosive atmospheres. Explosion prevention and protection – Part 1: Basic concepts and methodology.

NOTE F – adiabatic compression and shockwaves.

It is not applicable to the supplied hose. The possible releases of gas at high speed can only be caused by the process. The user must assess the possible presence of this ignition source before putting the hose into use.

SPECIAL DETAILS

NOTE G - temperature increases due to chemical reactions or unstable materials.

Chemical incompatibility of the materials of the hose with the product/s to be conveyed. Verify in the design phase and before use, the chemical compatibility of the substances used in the process with the material of the hose. For any questions or doubts, please contact IVG Colbachini for the necessary compatibility checks.

NOTE H - combustion of a layer of powder or other combustible material: presence of dust between moving parts.

The ignition source is not inherently present in the product supplied. Correct transport speeds could prevent accumulations of the dust. Periodic cleaning prevents dust accumulations that, besides modifying and make less effective the dissipative characteristics of the material, could promote this kind of ignition.

The use of the product / hose as pneumatic conveying equipment brings the transport of embers generated in the connected process equipment.

SUGGESTION 1 - Fluid loss.

We suggest considering as a possible foreseeable effect the possibility of a fluid loss of the system while in use. Therefore, all necessary precautions must be taken to contain/eliminate the possible negative consequences, in order to safeguard those workers exposed to possible explosive atmospheres.

A correct maintenance of the plants/installation helps minimizing the above mentioned risk.

SUGGESTION 2 - Flames and hot gas.

We suggest checking that there are no flames or hot gas in the potentially explosive zones, in particular assessing the risk that can accidentally arises from places that are or can be connected through openings to places where explosive atmospheres may occur.

SUGGESTION 3 - Lightning strike.

We suggest making sure that there is an adequate protection against the possible ignition of explosive atmosphere caused by the ground discharge of a lightning strike. We also suggest that the proper function of this protection is periodically checked. Furthermore, we suggest evaluating the possibility of ignition of explosive atmosphere caused by very high temperatures of the lightning-conductors.

SUGGESTION 4 - Radiofrequency electromagnetic waves (RF) from 104 Hz to 3x10¹² Hz.

We suggest checking the presence of systems that generate and use radio frequency electrical energies, such as RF generator for medical use or industrial use for heating, drying or hardening, which produce electromagnetic waves. If the electromagnetic field amounts an important value and the antenna is big enough, these conductors can ignite the explosive atmosphere.

SUGGESTION 5 - Electromagnetic waves from 3x10¹¹ Hz to 3x10¹⁵ Hz.

We suggest checking the presence of electromagnetic radiation in this range because it can become an ignition source as an effect of the absorption of explosive atmospheres or solid surfaces.

Sunlight can, for example, ignite an explosion through objects causing the convergence of sunlight (i.e. reflecting surfaces etc.).

SUGGESTION 6 - Ionizing radiation.

We suggest checking the presence of ionizing radiation, which can be generated from X-ray tube or radioactive substances since they can ignite an explosive atmosphere, especially in the presence of dust particles.

SUGGESTION 7 - Ultrasound.

We suggest checking the presence of ultrasonic waves as they may, in extreme cases, cause the ignition of a liquid or solid substance.

SPECIAL DETAILS

SAFETY INSTRUCTIONS FOR HOSES INTENDED FOR CHEMICAL APPLICATIONS

INTRODUCTION

The chemical resistance of a hose is closely related to the medium conveyed and to the conditions of use. In particular, remember to check the chemical resistance of the elastomer that constitutes the inner tube in the table found on the IVG website (<https://www.ivgspa.it/en/chemical-resistance.aspx>).

The useful life of the product is seriously influenced by the conditions of use such as temperature and pressure, as well as delivery speed, abrasion, frequency, and duration of use. The age of the hose and the degree of impurities of the transported chemical product are also determining factors.

USE

Particular care must be taken to ensure that the cover and ends of the hose don't come into contact with the chemicals and/or elements that may damage the integrity of the hose.

All operators involved in the use and maintenance of the hose and its fittings must be adequately trained on the proper use of chemicals. They must also wear appropriate protective clothing and devices.

A system failure could cause the release of toxic, corrosive and/or flammable material.

If you use chemical products or mixtures that differ from what is listed in the IVG chemical resistance chart please contact IVG before use. You are also advised to contact IVG if the nature or composition of the product to be conveyed, for example concentration or temperature, do not correspond to indications given by IVG. www.ivgspa.it/resistenze-chimiche.aspx

FITTINGS

We recommend using fittings in materials suitable for the conveyed product. Pay particular attention to the combination between different materials if their contact can produce galvanic corrosion (e.g. aluminum - brass). Any small variation in concentration or temperature of the conveyed product can determine an important reduction of the mechanical characteristics of the metallic fitting. In case of doubts about the choice of the appropriate fitting please contact IVG Colbachini (<https://www.ivgspa.it/en/contacts.aspx>).

INSPECTION AND MAINTENANCE

Even if the use of the product complies with all the prescriptions reported in this document and in the attached sheets, all the materials used for the hose production suffer a natural aging with subsequent loss of the chemical-physical-mechanical characteristics. Hoses and fittings must be carefully inspected preferably before each use and in any case with a periodic frequency not exceeding 6-12 months. This will help prevent possible leakage of polluting substances, dangerous for the health of man and the environment.

It is important during these periodic checks to pay attention to the state of the hose and fittings. Any anomalies that are detected indicate a degraded state of the hose and determine its removal from service.

Main anomalies detectable on hoses:

- cracks, cuts, abrasions, detachments, tears of the cover with damaged or uncovered areas of reinforcement
- deformations, bubbles, specific swelling under pressure
- sticky or soft areas
- leaks

Main anomalies detectable on fittings:

- cracks or signs of corrosion on the metal parts
- worn gaskets
- sliding of the fitting on the hose
- leaks

Avoid stagnation of products in the hose, especially in the case of solutions or emulsions. The resulting decanting causes concentrations to exceed the allowed limits. To avoid this phenomenon, proceed with emptying and cleaning after each use where possible.

SPECIAL DETAILS

ИНФОРМАЦИЯ ПО БЕЗОПАСНОСТИ – ОТВЕТСТВЕННОСТЬ ПОЛЬЗОВАТЕЛЯ

Срок службы резиновых шлангов варьируется главным образом в зависимости от условий их эксплуатации.

Оборудование и системы, в которых устанавливается шланг, должны быть спроектированы с учетом требований безопасности. Учитывая разнообразие областей применения, **IVG Colbachini** не может гарантировать корректную работу продукции во всех возможных ситуациях, поскольку анализ технических аспектов, связанных с особыми условиями использования, является обязанностью пользователя при выборе наиболее подходящего продукта для своих нужд. Следовательно, ввиду различий эксплуатационных условий и областей применения, для которых может быть приобретена продукция IVG, пользователь несет полную ответственность за окончательный выбор изделия, соответствующего требованиям по производительности и безопасности, необходимым для конкретного применения.

Информация и технические данные, содержащиеся в технических паспортах изделий, должны анализироваться пользователями, обладающими соответствующей технической квалификацией.

IVG Colbachini не несет ответственности за использование продукции конечным пользователем, отличное от того, что указано в каталогах, технических паспортах, коммерческих предложениях, подтверждениях заказов или предоставленных рекомендациях.

Неправильный выбор изделия либо несоблюдение процедур установки, эксплуатации, технического обслуживания или хранения шлангов может привести к их разрыву и вызвать повреждение имущества и/или серьезные травмы людей.

Для правильного выбора и эксплуатации продукции IVG рекомендуется обращаться также к документу «Рекомендации по выбору, хранению, использованию и техническому обслуживанию резиновых гибких шлангов», подготовленному организацией Assogomma и доступному на сайте www.ivgspa.it. Данные рекомендации соответствуют международному стандарту ISO 8331, «Резиновые и пластмассовые шланги и шланговые сборки - Руководство по выбору, хранению, использованию и техническому обслуживанию».

В целях безопасности не допускается превышение рабочего давления, указанного в технической документации изделия.

В целом, постоянная эксплуатация при максимальных допустимых давлениях и/или температурах существенно сокращает срок службы шланга. Через определённые интервалы времени необходимо проводить осмотр и гидростатические испытания при тестовом давлении, чтобы определить, пригоден ли шланг к дальнейшему использованию. Гидростатические испытания должны выполняться обученным персоналом с использованием соответствующих инструментов и в соответствии с признанными стандартами испытаний.

Для специальных применений резиновых шлангов следует руководствоваться законодательными требованиями или соответствующими нормативами, а также дополнительными рекомендациями, предусмотренными для особо критических условий эксплуатации.

По дополнительной информации обращайтесь в Маркетинговую службу: (marketing@ivgspa.it).