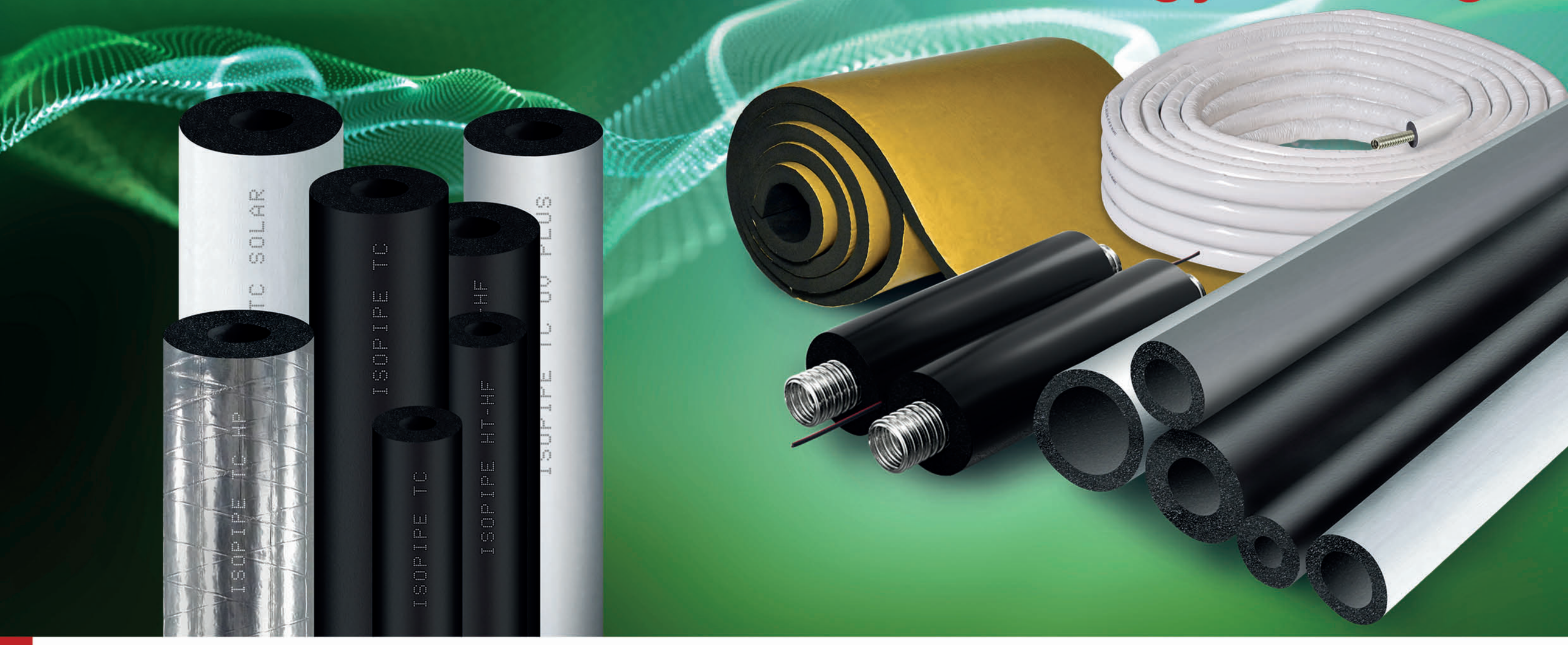
ISOPIPE®

Integrated Insulation Systems

Integrated Insulation Systems For Energy Saving



In modern times where facilities are more complex and light constructions, the protection against thermal peaks has been taken over by various artificial control systems, such as central heating and air conditioning. Energy consumption for their operation was not major problem, until the Energy Crisis. Resources as fossil fuels have ceased to be low cost and we all now realize the great importance of thermal insulation in saving energy. In addition to the required respect for the environment, the insulation of fluid networks can bring significant economic benefits, as the use of a suitable coating on hot or cold pipes and tanks - vessels can reduce heat losses by up to 80%. The environmental performance of insulating materials, in the life cycle of the building, depends on two factors:

• environmental impacts related to the production of the materials and

• saving energy during the building operation.

When building's insulation is strengthened, more energy is required to produce the materials, while the energy demand for its heating or air conditioning is reduced. EU research states that "energy use in residential and commercial buildings represents approximately 40% of the EU's total final consumption and CO2 emissions" (for Greece, buildings are responsible for 60%). In the data collected by Eurostat, 39% of total energy were used in households and commercial buildings, which confirms the contribution of insulating materials to the reduction of energy consumption and greenhouse gas emissions.

ISOPIPE S.A. was founded in 1997 and specializes in the vertical production of synthetic expanded elastomeric insulation material with a closed cell structure, maintaining an **ISO 9001:2015** quality assurance system. Products are certified with **ISO 14001** and an environmental declaration **(EPD)**, which is the most comprehensive assessment of the impact of carbon emissions during the production.

EN ISO 14001:2015

EPD®

THE INTERNATIONAL EPD® SYSTEM

The insulation is made from a UV-resistant polymer blend of NBR synthetic expanded elastomeric material with a closed cell structure of 98.5%, under the brand name **ISOPIPE**. In large installations, such as railway stations, track vehicles and shipping, the production and distribution of sealing and thermal protection products is specialized with solutions, that combine the reliability of the basic material **ISOPIPE TC** with the various forms of application and packaging that it can acquire, according to the standards of the Bureau Veritas Transportation Approval, U.S. regulations, Navy Environmental Department, and International Maritime Organization. The options cover a broad range of installations thanks to the flexibility of the vertically integrated forming process in **ISOPIPE** pipes, **ISOSHEETS** or **ISOROLLS**.

Each dimension and type of the above materials has international certification for industrial use (Industrial Property Organization), as well as in the infrastructure sector, which also includes indoor parking lots, train depots, airport hangars, boiler rooms and logistics warehouses (Technical & Test Institute for Construction Building Equipment). Especially with the addition of the **HEAVY DUTY** coating, with a three-layer protective sheet, made of slow-burning **PVC**, an **aluminum layer** and special **UV** protection, with a total thickness of 230μm, it acquires a resistance of at least seven (7) years to the solar radiation of the Mediterranean climate zone and the resistance of the protective film from -25°C to +75°C.

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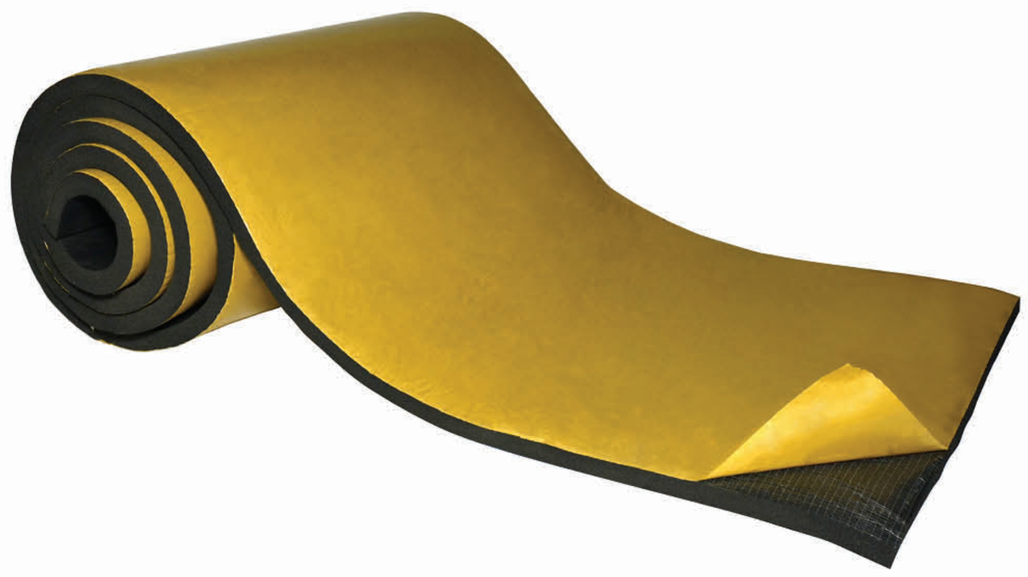
With a flame and smoke class of 25/50 **(Class A)** at a layer thickness of 1-1/2'' according to ASTM E84, NBR is **Euroclass B, S2, d0**, while it has excellent tensile strength, tear resistance, which makes it easy to install and extends its lifecycle. In case of fire, there will be no particle dispersion, nor flame transmission, which makes it an ideal choice for fireproof compartments and hazardous areas in public buildings located even in frequent earthquake locations.

ISOPIPE HT-HF halogen-free products are manufactured with respect for the environment and human health and all the required certifications (CE marking, antimicrobial & antifungal ASTM E2180 and ASTM G21) which reveal them the top choice in demanding applications such as hospitals, school buildings, laboratories of chemical & pharmaceutical industries, museums, etc. Toxins and microorganisms present in the environment can wear down the human immune system and lead to allergic and respiratory problems. **ISOPIPE HT-HF** systems do not contain or release **VOC** (volatile organic compounds), which are substances harmful to the environment and are manufactured **without CFC, HCFC or HFC** according to the requirements for bioclimatic buildings. The combination of **ISOPIPE HT-HF** flexible insulation materials with the **HP coating** for indoor use only, contains a four-layer protective sheet, consists of special paper with increased resistance in water vapor diffusion, fiberglass 5mm x 5mm and aluminum 60 μm thick, protective film from 35°C to +120°C according to ASTM C 1263 and 20% elongation at break according to ASTM D3759.
For applications in air ducts, oversized diameter piping and XL surfaces, where insulation is required to avoid heat or cold losses and water vapor condensation on their cold sides, especially during summer operation, we use **ISODUCT** rolls or sheets, which is certified according to EN 14706 and EN 14707, resistant to temperatures from -50°C to +85°C and an average density of 60kgr/m^3, with a deviation of ±10kgr/m3 which offers an additional noise reduction of 30dB according to DIN 4109. **ISOSYSTEM** one more innovating product supplied with comparative advantage the diagonal cut in the sheet of insulation, which offers easy and convenient installation of big scale applications. It is also available with a factory-installed adhesive, with a minimum force of 18N/25mm withstand the operating temperature of the air ducts. The joints will be welded and covered with adhesive tape 3mm thick and 5cm wide.



ISOROLLS are available with or without self-adhesive, in a silicone paper, which is easy to peel off and with a Polyolefin cover if necessary. In existing networks, where the insulation has worn out or needs to be replaced, to ensure protection from solar radiation, easy cleaning and longer life, **ISOPIPE** created the **slit & seal** in **ISOPIPE TC & ISOPIPE HT-HF** with **SOLAR** coating with a special polymer film of silver, black or white color, resistant of at least three (3) years to the solar radiation of a Mediterranean climate zone, from -40°C to +80°C according to ISO 306, tensile >0.10 MPa according to ASTM D 882 and break elongation >200% according to ISO 1798, certified according to the requirements of the EN14304 standard.

For large-scale projects and minimal impairment for the technician, the **ISOSOL TWIN** format of pair of insulated pipes connected through a thin membrane, which may also include a power cable. Like the **ISOPIPE TC SOLAR** it is available in a single coil with a total length of up to 76 meters.
With a presence on the market for more than 30 years, NBR closed cell insulation products have been tested in a variety of applications with efficiency in energy saving and resistance to moisture/water vapor, as well as in preventing condensation, since they show particularly low permeability (highest factor μ ≥10000). The R & D department managed to combine effective insulation with specially developed outer sheaths (polymeric membranes) that form a single body with the insulator, maintaining the flexibility and thermal performance of the elastomeric material.

ISOPIPE S.A., with a successful presence in 40 countries, stands out in the field of integrated synthetic rubber insulation systems for air conditioning, heating, water supply, ventilation & cooling. The unique production plant in Greece area with distinctions from official bodies and world prestige and a wide range of innovative products for high demand installations. **3i** is a certified external thermal insulation system, adapted to the needs of consumer and is the top choice for a quality result and reliability of construction, as it has been designed with the most updated specifications.