



SINCE 1951

HISTORY MELTED INTO SUCCESS

FROM THE PAST TO THE PRESENT

The history of melting basalt in the EUTIT Company goes back to 1951 when the Company started to cast tubes in the old plant for the mining industry (pipeline coal transport). The very first product was a basalt tube with the diameter of 180 mm and length of 330 mm. The first tile was cast in 1953. The production capacity then was about a thousand tonnes of basalt per year.

The production range gradually expanded from sand castings (pipes, bends, tiles) to tiles cast into metal moulds. The length of tubes increased to 500 mm and that is the standard length today.

In 1957, the raw material source changed; the Company started to use basalt from the Slapany quarry. The chemical and mineralogical composition of the basic raw material has a significant effect on the quality of the cast material. The basalt from the new deposit was more suitable than the originally used material.

That facilitated further production development and the construction of a new plant with a higher production capacity in order to meet the growing demand for basalt products. The production in the new plant began in 1969.

EUTIT still uses the new plant for its production. The production technology has been significantly upgraded and it is improved almost continually. The current EUTIT production range includes over 20 thousand various types of products and the annual basalt production reaches 15 to 17 thousand tonnes.

At the beginning of 1990s, two significant innovations were introduced. Firstly, the fabrication production programme was launched, i.e. own production of complete abrasion-resistant pipelines, and secondly, EUTIT started to cast zircon-silicate under the EUCOR trade name.

The modern history of EUTIT started with the privatization of the former state enterprise. The Company was privatized in 1995 by direct sale to a group of partners, mainly formed by long-term Company employees.

In this period, the sewerage programme was restored. The Company resumed its success from the 1950s and started producing gutters and other casts from melted basalt designed for such application. This completes the current version of the production programme that has three main pillars: piping, tiles and sewerage products.

In 2000, the Company invested into the acquisition of a line for grinding special SKID-PAN tiles. This acquisition was required due to the increasing demands of the major users of the tiles: leading car manufacturers who use them in the construction of special polygons for testing driving properties of cars and tyre performance.

In cooperation with an expert firm, we developed special mortar for gluing basalt products. This line of products is named EUPIX and it was developed with regard to the specific properties of basalt products. The adhesives are mostly used for gluing tiles and sewerage components.

At present, the Company has stable high annual turnovers; it employs about 200 people and exports its products worldwide. EUTIT continuously endeavours to also penetrate unconventional areas; it is open to the needs of its clients and therefore continuously develops new and new products designed for the application in industry or architecture.



MANUFACTURED MATERIALS

BASALT IS ONE OF THE HARDEST CURRENTLY KNOWN ROCKS THAT CAN BE USED IN FOUNDRY PROCESSING AND INDUSTRIAL APPLICATIONS.

THE TECHNOLOGY OF MELTED BASALT IS ECOLOGICALLY-FRIENDLY AND IT DOES NOT STRESS THE ENVIRONMENT. IT IS A WASTE-FREE PRODUCTION PROCEDURE.

THE EMISSIONS OF TECHNOLOGICAL PROCESSING ARE NEGLIGIBLE.

BASALT IS COMPLETELY HARMLESS DURING PROCESSING AND ALSO DURING A LONG-TERM CONTACT WITH PEOPLE.

THE MATERIAL IS ALSO HARMLESS WITH REGARD TO RADIOACTIVITY. IT CONTAINS THE MINIMUM AMOUNT OF NATURAL RADIOACTIVE NUCLIDES.

EUTIT IS CURRENTLY THE LARGEST GLOBAL PRODUCER OF MELTED BASALT.



Basalt, raw material from the Slapany deposit

BASALT is a magmatic rock that abounds in nature all over the world. Melting basalt at temperature of around 1,300°C and then casting basalt into moulds provides this natural material with the required shape and improves its end-use properties. Basalt is distinguished by its abrasion-resistance, hardness, chemical resistance, compression strength and moisture-resistance. Thanks to those properties, basalt can be used for mechanically and chemically stressed surfaces. The unique look also makes it suitable for application as a decorative facing material in specific interiors. Basalt is ideal for hydraulic and pneumatic transport of abrasive materials in power plants, mines, cement mills, glassworks and steelworks, in chemical operations as well as in breweries or milking plants. Basalt products can be used as abrasion-resistant inserts for pipelines, hoppers, chutes, en-masse conveyors, separators, screw conveyors and other equipment.

PROPERTIES

ABRASION-RESISTANCE
CHEMICAL RESISTANCE
HARDNESS
COMPRESSION STRENGTH

EUCOR is a ceramic material produced by melting in an electric arc furnace at temperature exceeding 2,000°C. It is a material that is generally called AZS (aluminium-zircon-silicate). EUCOR is particularly distinguished by its abrasion-resistance, hardness, compression strength and chemical and thermal resistance. Thanks to those properties, it is suitable to be applied in extremely stressed operations. EUCOR has higher abrasion-resistance than basalt and it can be used for higher operating temperatures (up to 1,000°C). It is mainly used in pneumatic transport in power plants, heating plants, cement mills, concrete mixer plants, steelworks, ironworks and chemical and other heavy services. EUCOR products are used as abrasion-resistant inserts for pipeline components, hoppers, chutes, separators, concrete mixers and other similar equipment.



EUCOR, raw material

COMPARISON OF THE PROPERTIES OF BOTH MATERIALS

PROPERTY	BASALT	EUCOR
Mohs Hardness Scale	min. level 8	min. level 9
Specific Gravity	2 900 - 3 000 kg.m ³	3 500 kg.m ³
Water absorption	0 %	10 %
Compression Strength	min. 300 - 450 MPa	min. 300 MPa
Bending Strength	min. 45 MPa	min. 50 MPa
Abrasion Resistance	max. loss 110 mm ³	max. loss 30 mm ³
Thermal Resistance	up to 400 °C	up to 1 000 °C
Resistance to Thermal Shocks	min. temp. diff. 100 °C	min. 20 cycles 950/20 °C

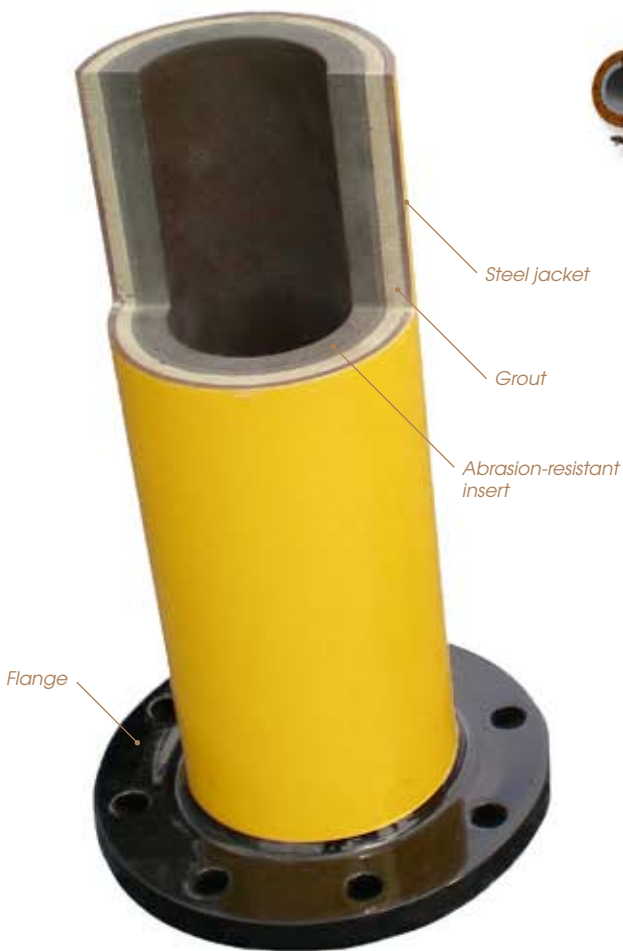
ABRASION-RESISTANT PIPING

Basalt or EUCOR products can not be used directly as piping. They are used as inserts into metal tubes. Therefore, we offer a key-ready solution: suitability assessment, location, project documentation, production and delivery, tailored exactly to your specific needs.

Pipeline components with basalt or EUCOR inserts have significantly better properties than standard metal pipes. In spite of the seemingly higher purchase price, the resulting savings are up to six times higher. Operators can enjoy a longer operating life which leads to economization of production and continuous production uninterrupted by defects and repairs. The abrasion-resistance of both materials is better than that of high-alloy steel. The inserts have excellent chemical resistance to acids and lye.



ATEX Certified



Basalt inserts are suitable for hydraulic or pneumatic transport of various abrasive and chemically aggressive materials. Straight pipeline components as well as bends, branch pipes, reductions or other special pipeline components can be lined with basalt or EUCOR casts that several times increase their operating life, extend their running time and decrease the costs of maintenance and replacement. EUCOR inserts are suitable for main pneumatic pipelines where pipeline components are exposed to higher stress. Both materials can also be combined, e.g. you can use piping with basalt insert for straight sections and EUCOR insert for bends and other shaped pieces.

Examples of Components with Abrasion-resistant Insert





BASALT TUBES AND SPECIAL CASTS

We manufacture tubes and special products both from basalt and EUCOR, usually using a wooden pattern by sand-casting. An exception to the rule is casting basalt tubes into rotating moulds, i.e. centrifuging, spun casting.

Basalt tubes are manufactured by centrifuging, spun casting except for the smallest diameters. We usually cast half-meter long tubes with wall thickness from 12 to 25 mm, up to 40 mm. The inner tube diameter (nominal inside diameter) ranges from 75 to 700 mm. We manufacture more than two hundred types of tubes with various nominal inside diameters within the aforementioned range. The tubes are usually 500 mm long but we also produce jacking pipes that are 1,000 mm long. The tubes have a smooth internal and external surface. They are divided into three groups with accuracy to one millimetre according to the dimensional tolerance of the inner diameter.



Basalt Tubes



Static casting into sand moulds is the largest group of products in our Company. In addition to pipeline accessories, i.e. bends, reducing pieces and T- and Y-pieces, we manufacture a whole range of various casts: such as products with atypical dimensions or small-batch orders, collectors, nozzles, atypical tiles of large dimensions, small-dimension tubes, radial boards, L-pieces etc.

The range of static production casts, which we continuously expand in relation to the customer requirements, includes more than six thousand types of cast pieces.



Special Basalt Casts

BASALT PAVEMENT

Tiles cast from melted basalt have excellent properties that make them perfect for application in industrial operations, whether mechanically or chemically stressed. They are also often selected thanks to their attractive and unusual look. We produce a wide range of tiles with smooth or slip-resistant surface and various accessories, such as cove tiles or a number of atypically shaped tiles. The colour tone of the tiles is given by the character of the natural material and cannot be changed. Each tile is an original and thus floors paved with our tiles are not only resistant, but also extraordinary and unique.



Smooth Basalt Tiles



Slip-resistant Basalt Tiles



Atypical Basalt Tiles



In addition to the basic tile range, we also manufacture SKID-PAN tiles designed for car polygons. Leading global brands, such as GMC, Ford, Harley-Davidson, Nissan, Toyota, VW, Honda, Isuzu and other car manufacturers as well as leading tyre producers such as Dunlop and Goodyear test their cars or motorcycle on tracks with surface from the basalt tiles.



We supply specially cast stones as a protective lining against carried parts of rocks – stones for the purifying washing-off canals of hydraulic power plants in the Alps.

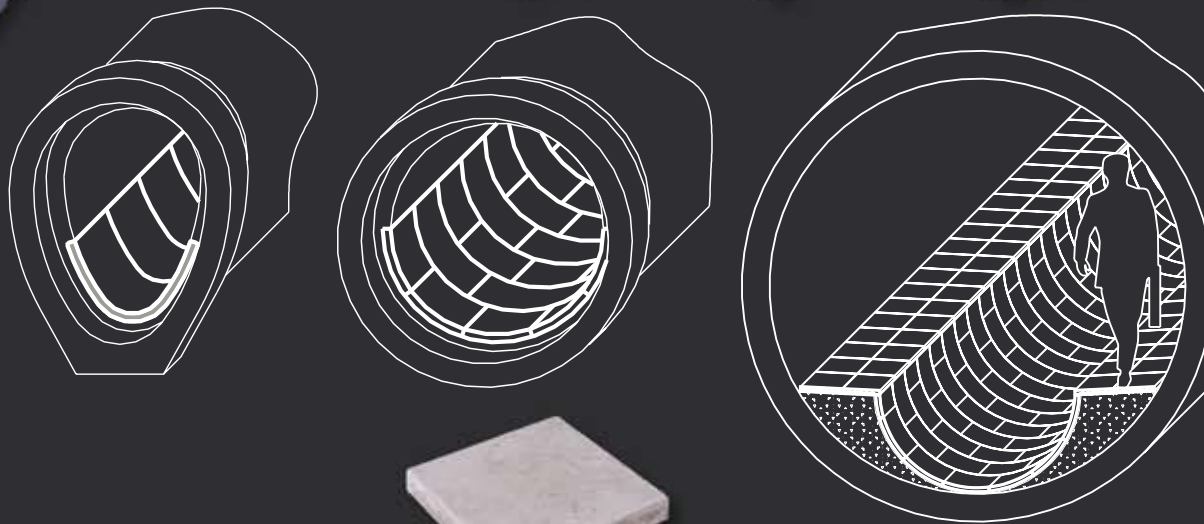
We have developed special materials for placing, gluing and grouting our tiles under the name EUFIX; they respect and underline the specific properties of basalt pavement.



SEWERAGE BASALT COMPONENTS

In cooperation with experts in the field, our Company has developed products that are used in the construction as well as reconstruction of the sewerage network. When compared with other materials and technologies, the use of basalt casts extends the operating life of the sewerage works several times. On the basis of the long-term experience and knowledge of the experts, we have developed special sewerage gutters from melted basalt. The advantages of this solution include high resistance to the abrasion effects of suspended and bottom scour from inorganic materials, low hydraulic roughness and practical inertness of melted basalt towards the aggressive effects of substances contained in the sewage water. Thanks to the ability to manufacture casts of various shapes and dimensions, we can add other products to the gutters that can be applied in the sewerage network, such as sewerage bricks, wedges, split gutters from tubes, radial tiles and other. The melted-basalt tubes also have exceptional compression strength, in addition to other advantages. EUTIT has thus developed heading tubes that can be used during the construction and reconstruction of sewerage systems executed without excavation.

We have developed special volume-compensated binder under the name EUFIX S with an adjusted onset of hardening for placing and gluing sewerage components. We recommend this binder for gluing and grouting our products in the water management.



EUCOR CASTS

Thanks to the high hardness (Level 9 according to Mohs Hardness Scale) and resistance to extremely strong abrasive stress, EUCOR casts are applied under conditions such as pneumatic transport of ground coal, ores, cinder, sand and ash, namely in the pipeline bends. EUCOR casts can also be used as inserts for separators, spiral chutes, en-masse conveyors and so on. The resistance to high temperatures allows their application as glass furnace lining above the liquid mass level, special T-pieces of burner walls and burners, T-pieces for regenerative chambers or coke-oven platforms. It is interesting that EUCOR has both resistance to high temperatures and chemical resistance. Thanks to its high hardness, abrasion resistance and resistance to the effects of slag and cinder, EUCOR can also be successfully used in some metallurgical furnaces.

The liquid mass is cast into sand moulds and the cast pieces are later either divided or processed exclusively using diamond tools. Thanks to its unlimited variability, this production process allows satisfying almost any requirements of customers for the shape of the product.



EUCOR Casts



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