

IZODUO

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ANDGROUP is founded in 1992 by Dr. Huseyin Luleci. IZODUO is the latest extension of this firm. IZODUO is a new, environmentally conscious brand that has entered the market in 2010.

IZODUO is manufactured as a monoblock wall element which consists of 4,5 cm thickness of pumice-cement slabs at outside and 11 cm thickness of EPS in inside.

IZODUO is an ecological building block that brings out a big package of added value to the market in terms of properties such as sound insulation, thermal insulation, strength, durability combined with economical advantages.

This building block is all made of natural materials and it is 100% recyclable. Additionally, End of life cycle material can be added to the production line, which is another perspective in terms of recyclability. Besides raw materials, an environmentally friendly production process is another part of the "green" concept of IZODUO. Some facts such as not containing radioactive and toxic substances, no fuel oil usage during production, reduced CO<sub>2</sub> emission are some examples. In addition, the rate of waste during the production of IZODUO is 0%, which is superior with respect to other products. Through the content of the raw materials and environmental production techniques it is possible to produce high insulated wall blocks; thus, it is easy to decrease the usage of energy resources and air pollution.

IZODUO represent outstanding characteristics in terms of thermal insulation and fire resistance which are improvements in the construction sector. A single 20 cm IZODUO has a heat-transmission coefficient (U) value of 0.27 W/m<sup>2</sup>K and this value ensures energy- saving both in heating and air conditioning of the buildings. This U value is superior compared to other construction materials. Other materials, such as aerated concrete can achieve this value at a dimension of 60 cm. In confidential addition to thermal insulation property, due to the volcanic structure of IZODUO, high fire resistance is achieved. It does not have only non-flammable feature but also keeps its shape and size at high temperatures which provides fire safety for the buildings.

Mechanical properties of this building component are also promising. The compressive strength of IZODUO block is much higher than the traditional wall elements and observed as 30 kg/cm<sup>2</sup>. This property is also an indication of the high durability of this composite building block. Additionally, since IZODUO has a lightweight advantage, this brings improvements in the design and static of the construction. The extent of 20x20x40 product's unit weight is approximately 8.5 kg and it is much lighter compared to its competitors.

Furthermore, houses and buildings are typically constructed to be not only robust and secure, but also to keep the noises coming from outside noises and moving into the house or building. Therefore, soundproofing is another aspect in the design of buildings and materials with high sound insulations are preferred. IZODUO, in terms of sound insulation, shows advantageous characteristics and it is found out that it can absorb the sound of 60 dB easily.

Another aspect of building bricks is the water absorption defined as amount of water that a brick can absorb is measured by the cold water absorption test. The results of water absorption tests are used by the brick manufacturer for quality assurance. According to the standards, the capillary water absorption's value of IZODUO observed as 20.63 gr/m<sup>2</sup>sn<sup>0.5</sup> that prevents moisturizing and microorganisms growth on the wall surface.

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In terms of economics, IZODUO has several advantages on the overall construction cost and energy consumption. Heat losses in buildings mostly originated from the walls. (40% heat losses from walls). And it is known that 23% of energy consumed in buildings is due to space heating. With these data, it is certain that with the superior thermal properties of IZODUO, a significant energy saving will be achieved.

Additionally, IZODUO is a lightweight wall element with its superior features. Due to flat and smooth surface, the plaster costs decreases and so blister and cracks on the end-layer is eliminated. Moreover, due to its straight and smooth surface it is easy to build fast and accurate walls with sufficient plaster. Hereby, it provides labour and site savings dramatically. Furthermore, IZODUO with its high thermal properties covers the buildings like thermos. This characteristic results in a decrease in the overall cost of a building through eliminating the cost for additional insulation.

Additionally, besides the mono-block wall element, other types of IZODUO can be used in constructions. Some examples are the lintel and corner blocks produced. These components provide advantages in terms of labour and makes door and windows framing much easier. Also,

corner blocks produced with IZODUO eliminates the problems in terms of thermal and mechanical properties encountered at the corners of the wall.

IZODUO is manufactured in Eskisehir, Turkey. The plant was established in 2009 and there are currently 100 workers in the plant. In addition to our final product, IZODUO plant is also environmentally conscious, aligned with the strategy of our firm. Unlike most of its competitors in the market Izoduo produces mono-blocks with no waste in the production line and no toxic waste in the production process. Furthermore, Izoduo's components do not contain fertile soil necessary for agriculture.

Izoduo is delivered by trucks or ships according to location of the customer.