



BTG[®]

AUTOCLAVED AERATED CONCRETE



"We Lighten the World"

www.betongyapi.com

BETONG
BUILDING TRADE INC.CO.



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AUTOCLAVED AERATED CONCRETE



BETONG BUILDING TRADE INC. CO., founded by the four companies serving to our public in Building and Textile sectors in Gaziantep, has begun to manufacture on a field of 100.000 m² of which 20.000 m² is a closed area in OSMANIYE ORGANIZED INDUSTRIAL SITE in order to meet the needs in our country and foreign countries in the year 2014.

BETONG BUILDING TRADE INC. CO., established by the usage of the latest technology by the Turkish and German consortium, has a capacity of annual production of 460.000 m³.

There is production of plain wall blocks, doweled wall blocks, heat insulating plates, lintel, light filler block, reinforced products and wall glue in our facility.

IT IS THE CONSTRUCTIONAL
COMPONENT OF **BETONG** INC. CO.



AUTOCLAVED AERATED CONCRETE



BTG Autoclaved Aerated Concrete is preferred in all single and multi-floor buildings due to its economy, quality, comfort, speed, high heat and sound isolation, earthquake safety and resistance to fire, and it brings down the cost because it soothes the building load and it is commonly produced and used around the world.

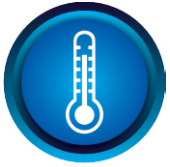
BTG Autoclaved Aerated Concrete provides all materials in it from the nature. It does not include radioactive or toxin materials. It is produced without using agricultural soil. It does not contaminate the environment during production and usage. Thus, it is environment friendly.



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BTG Aerated Concrete Properties and Advantages



It provides a high heat isolation!

Because nearly 84% of its volume is composed of dry air, it provides a much higher heat isolation when compared to traditional construction materials. **BTG autoclaved** aerated concrete has the highest power of heat isolation among the present wall materials. Its heat conductivity value (lambda) is 0,11 ($\lambda = W/mK$). Walls made of the materials like brick, stone and pumice concrete can reach the isolation power provided by the **BTG autoclaved** aerated concrete only with additional materials and costs.



It provides energy saving!

Providing a high energy saving is one of the characteristics of **the BTG autoclaved aerated concrete**. The cellular structure of **the BTG autoclaved aerated concrete** provides a much higher heat isolation when compared to the traditional construction materials. Buildings constructed with **the BTG autoclaved aerated concrete** provides a sufficient heat isolation in the walls in one section for four climatic zones.



It is fire resistant!

The BTG autoclaved aerated concrete provides a high safety against fire. Due to its formation, it is classified as A-1 nonflammable construction material. It is resistant to degrees up to 1200 °C. It can be used in the construction of fire walls. Because it prevents the fire transition between places, it provides life and property security by preventing the fire from spreading. **The BTG autoclaved aerated concrete** does not give off any smoke or gas causing loss of life during the fire.



It is earthquake resistant!

The BTG autoclaved aerated concrete does not compromise on its strength. Due to its lightness, it reduces the total load of the building and provides an earthquake safety.



It is economical!

Because **the BTG autoclaved aerated concrete** is a light construction material and does not place a burden as much as other construction elements, it reduces the dead load of the buildings and provides saving from iron and concrete in statistical calculations.



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It provides sound isolation!

The BTG autoclaved aerated concrete provides a great sound isolation due to the high sound absorption formed by its porous structure.



It is strong!

The BTG autoclaved aerated concrete is produced in various resistance classes by its technology. Because there is no volume change, it prevents wet shrinkage cracks on walls.



It is environment friendly!

The BTG autoclaved aerated concrete is made out of pure organic materials. **The BTG autoclaved aerated concrete** does not only reduce energy needs in heating and cooling, but also reduces the CO2 emission by ensuring the usage of less energy during production and positively acts in the struggle against the climate change.



It is easily processed!

Due to its feature of easy processing, **the BTG autoclaved aerated concrete** does not diminish as cuttable by a saw. It is possible to open an installation channel, open, carve and bore a junction socket.



It is in millimetric degrees!

It is possible to perform a smooth and sensitive cutting with the cutting machines of high technology during the production of **the BTG autoclaved aerated concrete**. Its smooth surface eases the labor and reduces the cost by decreasing the plaster weight and waste.



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BTG Autoclaved Aerated Concrete Product Range

A. Unreinforced products

A.1. Plain wall blocks

G1/400
G2/400
G2/500
G3/500
G4/600



A.2. Doweled wall blocks

G1/400
G2/400
G2/500
G3/500
G4/600



A.3 Light filler block

A.4. Heat isolation plate

C. Supplementary products

C.1. Wall glue

D. Subsidiary materials

D.1. Autoclaved aerated concrete hand tools



Plain Wall Blocks

Plain Wall Blocks are the building materials used as packing materials in the inner and outer walls of reinforced concrete, steel, wood and prefabricate buildings and as bearing materials in the inner and outer walls of the masonry constructions. It is produced in 60 cm in length and 25 cm in height and in intended thicknesses.



G1/400

Technical Specifications

Feature	Explanation	Value	Unit
Product Dimensions		60	cm
		25	cm
		7,5-40	cm
Heat Conductivity Value	λ^*	0,11	W/mK
	λ^{**}	0,13	W/mK
Pressure resistance		15	kgf/cm ²
Dry Unit Volume Weight		400	kg/m ³
Fire class		A1 (Nonflammable)	



G2/400

Technical Specifications

Feature	Explanation	Value	Unit
Product Dimensions		60	cm
		25	cm
		7,5-40	cm
Heat Conductivity Value	λ^*	0,11	W/mK
	λ^{**}	0,13	W/mK
Pressure resistance		25	kgf/cm ²
Dry Unit Volume Weight		400	kg/m ³
Fire class		A1 (Nonflammable)	



G2/500

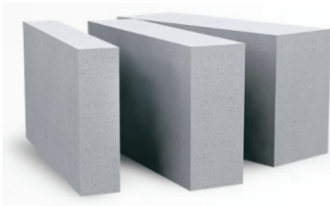
Technical Specifications

Feature	Explanation	Value	Unit
Product Dimensions		60	cm
		25	cm
		7,5-40	cm
Heat Conductivity Value	λ^*	0,13	W/mK
	λ^{**}	0,16	W/mK
Pressure resistance		25	kgf/cm ²
Dry Unit Volume Weight		500	kg/m ³
Fire class		A1 (Nonflammable)	

λ^* : The real heat conductivity of the material measured under laboratory conditions

λ^{**} : The heat conductivity calculation value according to TS 825.

Plain Wall Blocks



G3/500

Technical Specifications

Feature	Explanation	Value	Unit
Product Dimensions	Length	60	cm
	Height	25	cm
	Thickness	7,5-40	cm
Heat Conductivity Value	λ^*	0,13	W/mK
	λ^{**}	0,16	W/mK
Pressure resistance		35	kgf/cm ²
Dry Unit Volume Weight		500	kg/m ³
Fire class		A1 (Nonflammable)	

λ^* : The real heat conductivity of the material measured under laboratory conditions

λ^{**} : The heat conductivity calculation value according to TS 825.



G4/600

Technical Specifications

Feature	Explanation	Value	Unit
Product Dimensions	Length	60	cm
	Height	25	cm
	Thickness	7,5-40	cm
Heat Conductivity Value	λ^*	0,13	W/mK
	λ^{**}	0,19	W/mK
Pressure resistance		50	kgf/cm ²
Dry Unit Volume Weight		600	kg/m ³
Fire class		A1 (Nonflammable)	

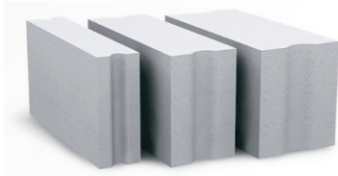
λ^* : The real heat conductivity of the material measured under laboratory conditions

λ^{**} : The heat conductivity calculation value according to TS 825.



Grooved Wall Blocks

Click-fit Wall Blocks are also used in all of the buildings' inner and outer walls as in the Plain Wall Blocks. Because it reduces the consistence of vertical heat bridge during the bonding, the thermal insulation feature increases. Bonding becomes easier and workmanship faulty decreases. Because there is no need to use glue in vertical joints, glue waste also decreases.



G1/400

Technical Specifications

Feature	Explanation	Value	Unit
Product Dimensions	Length	60	cm
	Height	25	cm
	Thickness	7,5-40	cm
Heat Conductivity Value	λ^*	0,09	W/mK
	λ^{**}	0,11	W/mK
Pressure resistance		15	kgf/cm ²
Dry Unit Volume Weight		400	kg/m ³
Fire class		A1 (Nonflammable)	



G2/400

Technical Specifications

Feature	Explanation	Value	Unit
Product Dimensions	Length	60	cm
	Height	25	cm
	Thickness	7,5-40	cm
Heat Conductivity Value	λ^*	0,11	W/mK
	λ^{**}	0,13	W/mK
Pressure resistance		25	kgf/cm ²
Dry Unit Volume Weight		400	kg/m ³
Fire class		A1 (Nonflammable)	



G2/500

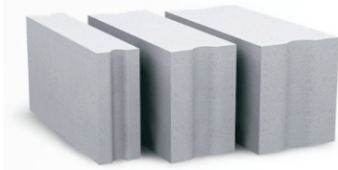
Technical Specifications

Feature	Explanation	Value	Unit
Product Dimensions	Length	60	cm
	Height	25	cm
	Thickness	7,5-40	cm
Heat Conductivity Value	λ^*	0,13	W/mK
	λ^{**}	0,19	W/mK
Pressure resistance		25	kgf/cm ²
Dry Unit Volume Weight		500	kg/m ³
Fire class		A1 (Nonflammable)	

λ^* : The real heat conductivity of the material measured under laboratory conditions

λ^{**} : The heat conductivity calculation value according to TS 825.

Grooved Wall Blocks



G3/500

Technical Specifications

Feature	Explanation	Value	Unit
Product Dimensions	Length	60	cm
	Height	25	cm
	Thickness	7,5-40	cm
Heat Conductivity Value	λ^*	0,13	W/mK
	λ^{**}	0,16	W/mK
Pressure resistance		35	kgf/cm ²
Dry Unit Volume Weight		500	kg/m ³
Fire class		A1 (Nonflammable)	

λ^* : The real heat conductivity of the material measured under laboratory conditions

λ^{**} : The heat conductivity calculation value according to TS 825.



G4/600

Technical Specifications

Feature	Explanation	Value	Unit
Product Dimensions	Length	60	cm
	Height	25	cm
	Thickness	7,5-40	cm
Heat Conductivity Value	λ^*	0,13	W/mK
	λ^{**}	0,19	W/mK
Pressure resistance		50	kgf/cm ²
Dry Unit Volume Weight		600	kg/m ³
Fire class		A1 (Nonflammable)	

λ^* : The real heat conductivity of the material measured under laboratory conditions

λ^{**} : The heat conductivity calculation value according to TS 825.

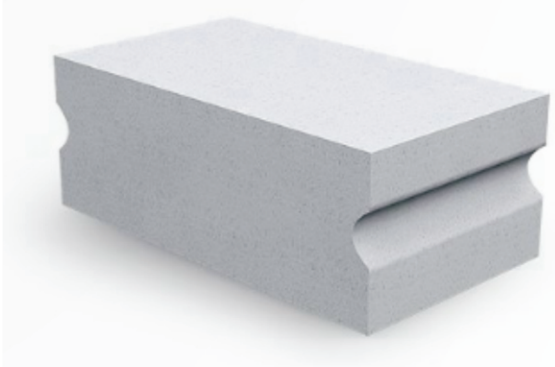




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Light Hollow Blocks



Besides providing perfect sound and thermal isolation, **BTG gas concrete** light filler blocks also provides fire safety precautions in buildings because it is an 'A1 class nonflammable' product. It also saves concrete thanks to its portative form and the cuttable feature in intended dimensions and angles. It eases plaster works thanks to its plain surface and reduces the costs by decreasing plaster wastes and the burden of the building. The problems in hanging the weights like lusters to ceilings disappear thanks to its strong structure.

Technical Properties of Light Hollow Blocks

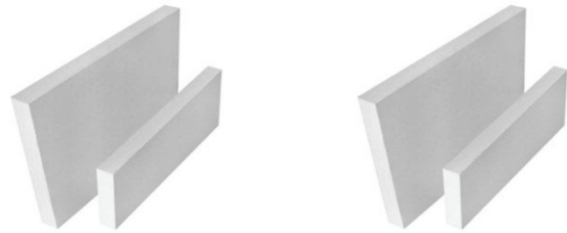
Feature	Explanation	Value	Unit
Product Dimensions	Width	40-50	cm
	Length	60	cm
	Height	20-45	cm
Heat Conductivity Value		0,082	W/mK
Dry Unit Volume Weight		Maxlmum 250	kg/m ³
Fire class		A1 (Noncombustible)	





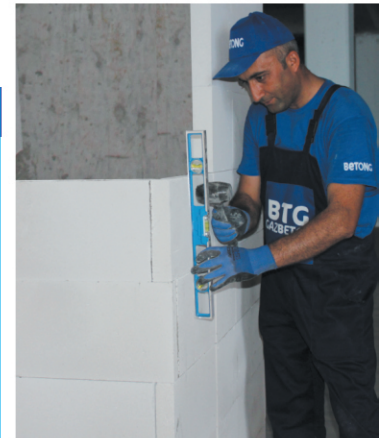
Heat Insulation Boards

BTG gas concrete heat insulation boards are used for the thermal insulation of columns, beams and slabs of structures. They also provide protection against fire.



Technical Properties of Heat Insulation Boards

Feature	Explanation	Value	Unit
Product Dimensions	Length	60	cm
	Height	25-50	cm
	Thickness	5-7,5	cm
Heat Conductivity Value	λ^*	0,09	W/mK
	λ^{**}	0,13	W/mK
Pressure resistance		25	kgf/cm ²
Dry Unit Volume Weight		300	kg/m ³
Fire class		A1 (Nonflammable)	





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BTG Gas Concrete Bond Adhesive

It is an adhesive which is specially developed for gas concrete structure materials. The gas concrete adhesive provides blocks to adhere each other and since thickness is 3 mm during this operation it forms minimum level of heat bridge. The adhesive is prepared by adding a certain amount of water (approximately 1 unit of water for 3 units of adhesive) to adhesive dust which is available as 25 kg packages and then mixing it by rotary drill. The adhesive should be prepared according to the need. It should be mixed frequently and it should not be used by adding water into it in case it dries. The adhesive should be used in about 4-5 hours once it is prepared.

BTG Gas Concrete Adhesive Consumption

BLOCK THICKNESS (cm)	7,5	8,5	9	10	12,5	13,5	15	17,5	19	20	22,5	25	30
GAS CONCRETE ADHESIVE kg/m ²	1,12	1,26	1,34	1,48	1,84	1,98	2,20	2,56	2,78	2,92	3,28	3,64	4,36



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Water Suction and Vapor Diffusion

Since its texture is formed of closed pores, **BTG Gas Concrete** sucks water much slowly and with lesser amounts compared to materials with "capillary texture".

Since its vapor diffusion resistance is low, it can easily remove water which it sucked in shallowly.



Earthquake Safety by BTG Gas Concrete

It's a solid material with low density (350 - 400 kg/m³).

It reduces the amounts of adhesive and plaster materials used.

It reduces the total weight of structure.

It reduces "horizontal earthquake load" of structure.

Preferring gas concrete during design phase provides economic advantage.





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Gazbeton Fireproof

BTG gazbeton:

- Class A1 "fireproof" construction material.
- High level for fire safety
- Due to its mineral composition, it is classified as non-combustible building materials.
- It resists temperature up to 1200 degrees Celsius.



BTG gazbeton, other features used in the manufacturing process include the measurement of fire resistance for building materials "made for fire safety test standards".

BTG gazbeton Structures equipped with fire resistance walls will fight fire significantly.



GAZBETON Hand tools

BTG gazbeton uses the following hand tools during implementation in order to facilitate and accelerate the construction.



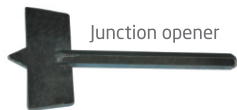
Handsaw : BTG gazbeton uses this tool to cut, modify and smooth the blocks easily and with desired size



Glue Blender : BTG gazbeton uses this tool to mix the glue. Attached at the end of a low - speed drill. Water is used with the glue to form a homogeneous Mixture.



Glue Trowel : BTG gazbeton uses this tool to weave glue on blocks to leave thin layer without spaces, ensuring the coverage of all surfaces.



Junction Opener : BTG gazbeton uses this tool for the junction between walls and block. A drill attached at the junction opener should be used



Plastic Hammer : BTG gazbeton uses this tool to hammer blocks lightly. It is used to allow adjustment of blocks.



Render : BTG gazbeton uses this tool to render the blocks to allow precise measurement of their surfaces



Channel Opener : BTG gazbeton uses this tool to enables opening channels in the walls constructed with the desired diameter and depth.



Goniometer : BTG gazbeton uses this tool to facilitate measuring and cutting corners of blocks.



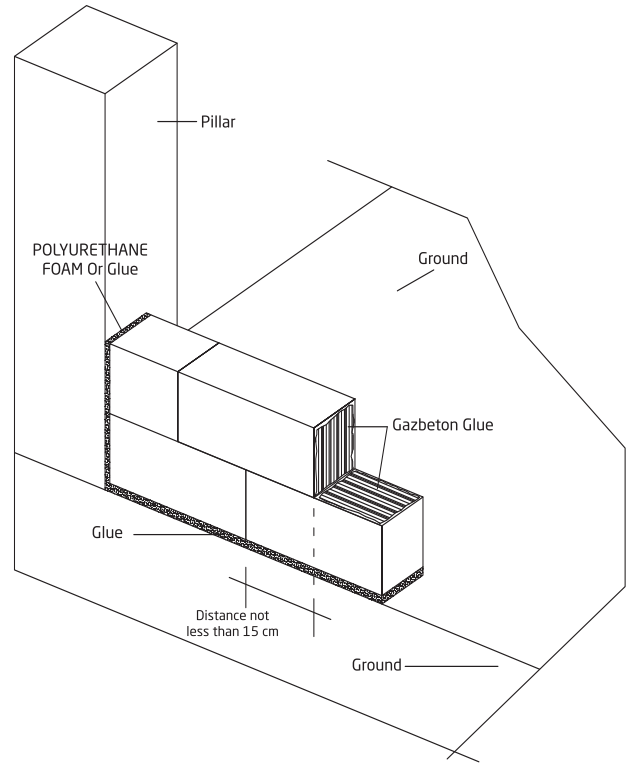
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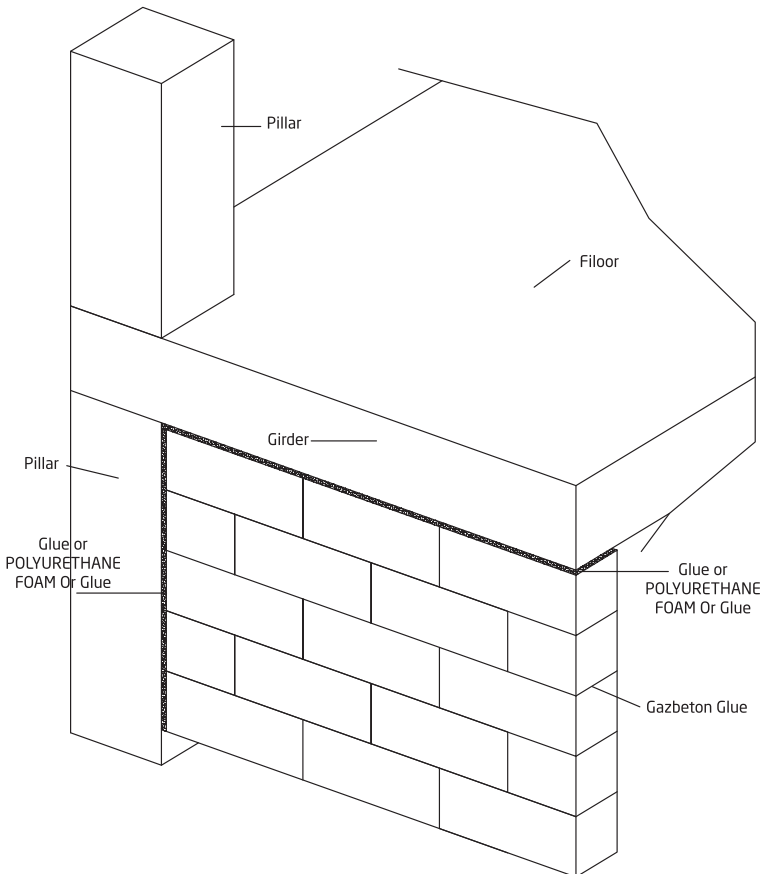
Application

General rules when constructing a wall:

- * There must not be spaces between the blocks and any pillars in the construction of the internal wall.
- * Apply the glue on all of the block surfaces; you must fill-in the blanks fully.
- * As shown in the picture, overlay distance between blocks should be at least 15 cm. The most appropriate overlay distance is half of the block length
- * Joint width should be between 1 to 3 mm.
- * Small block parts must not be used side by side on the wall.
- * Blocks should not be built in a vertical direction.
- * Water isolation application starts with the height of 30 cm. from the ground.



General rules when constructing a wall:



- * It is necessary to use POLYURETHANE FOAM between the wall and the pillar with no spaces left.
- * It is necessary to clean the surfaces between the walls and pillars before filled with polyurethane foam.
- * You must leave an additional 1-2 cm gap between the wall and girder; you should fill it with foam.
- * You should not use wooden wedges between the walls and the girders.

Gas Concrete Block Wall Practices



Preparation for bonding

Before starting for bonding at least 1 day before, plastic packages must be opened and let the block products take the air. The blocks must be examined, if there are wet ones, they must not be used until their surfaces get dry.

Preparation of Gas concrete bonding glue

Put a scale of water into a clean container or mortar board. While adding 2.5 scale of dusted glue to the water slowly, the mixture is being blended permanently by glue stirring bar until there are no bubbles left. In order to get strong glue, this operation must be done by low-speed hand grill. The mixture must be used 15-20 minutes later and it must be consumed after 4-5 hours later. The glue must be prepared in accordance with need, often stirred and it must not be used by adding water to the drying glue.

Cutting of gas concrete blocks

The usage of gas concrete blocks by cutting them in required measures is easy and practical. For this operation, one needs to have gas concrete saw and miter. The required measure is marked on the block by meter, gas concrete miter is fixed to the marked place and then the block is cut properly and carefully by gas concrete saw.



Bonding the first line

BUILDING SOIL MIXTURE must be used between wall and wall ground.

- * Before practice, the ground must be cleaned
- * Making the first line horizontally and vertically balanced by creating a leveling coat with building soil mixture.
- * If the height of the subbasement is less than 30 cm from the ground level, water isolation must be practiced.

The mixture rate of building soil mixture

- * 1 scale of cement - 1 scale of pulverized lime - 6 scales of fine sand



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Gas Concrete Block Wall Practices



Practicing Gas concrete Bonding Glue

If there are dust and pieces on the surface of the block, they must be cleaned up in order for the blocks to stick each other well. Glue hoe suitable for block thickness must be used. Horizontal and vertical surfaces must be all covered with glue and ebullient glue must be cleaned up whenever it happens. Joint thickness must be about 1-3 mm.



Editing Gas Concrete Blocks

After fixing the blocks, they are edited by light rubber mallet beats and then they are sent to scales.



The process of gas concrete blocks

In the walls bonded with **BTG gas concrete**, thanks to the easy process characteristic of gas concrete; carving, puncturing, grating and opening installation channel can be done easily. Installation canal must be opened in pipe width fixed to it by the help of canal opener. Boat and plug places must be opened by the help of boat opener bar and drill.





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Laboratory

All experiments, tests, controls and R&D studies in relation with TS EN 771 - 4 (Gas Concrete Masonry Units), TS EN 12602 (Gas Concrete Prefabricated Units) and TS EN 998 - 2 (Gas Concrete Adhesive) standards can be conducted by means of cutting-edge technology equipments within the body of BTG GAS CONCRETE Laboratory.

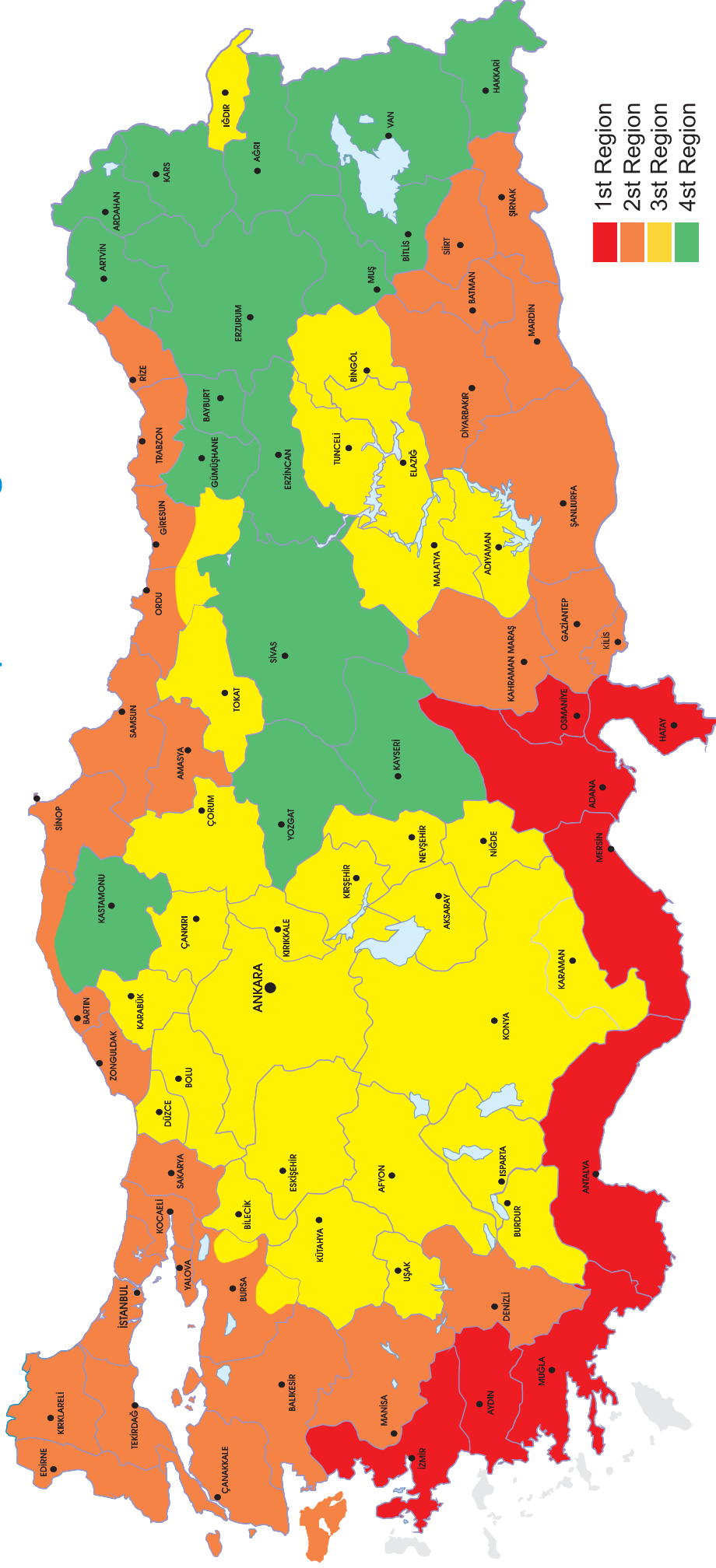




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Gas Concrete Values with respect to Regions



Appropriate wall thicknesses calculated in accordance with four climate regions defined in TS 825 are summarized as eco-block and G2/400 comparison table by the study carried out by Istanbul Technical University

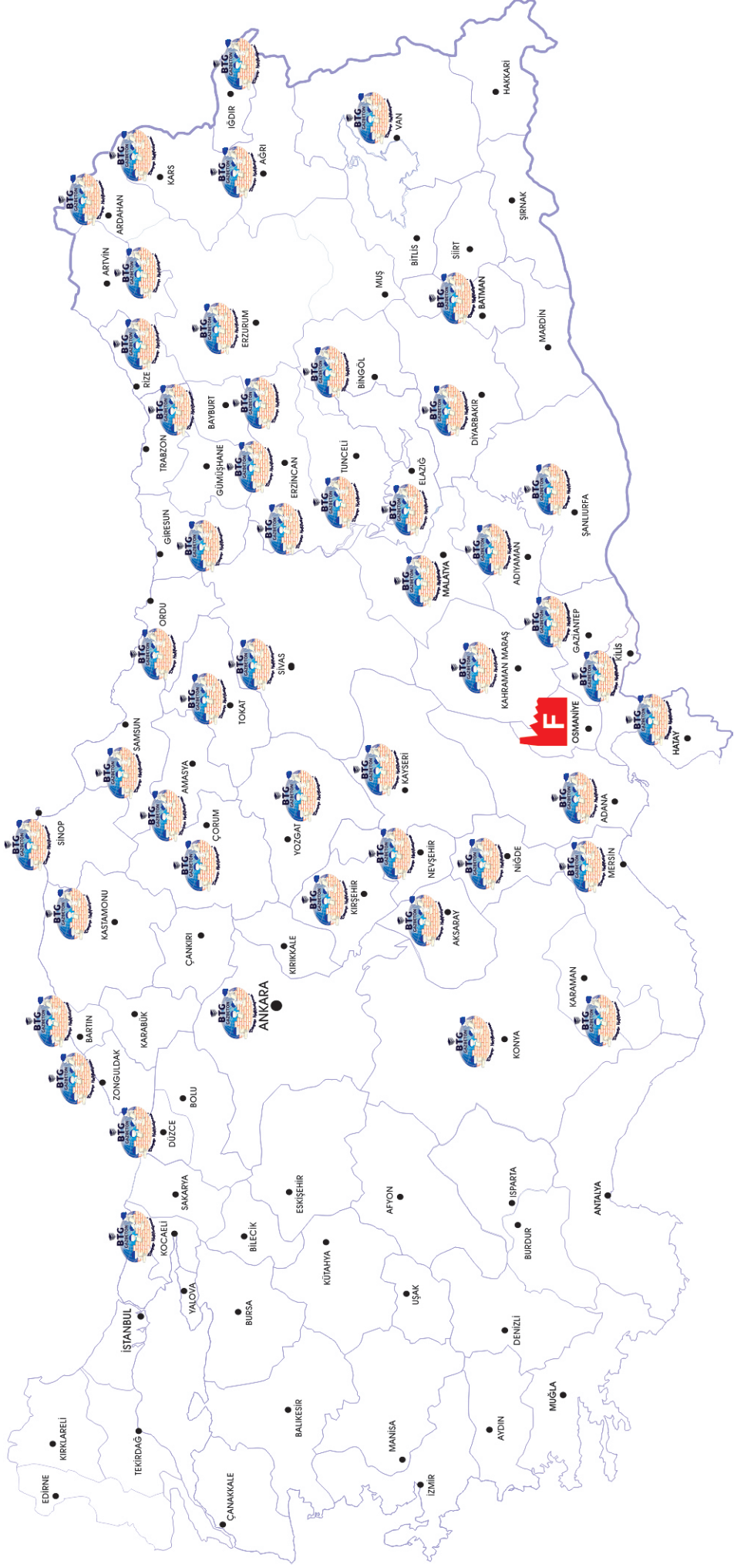
	U WALL (W/m ² K)			
	1st Region	2st Region	3st Region	4st Region
G2/400	0,70	0,60	0,50	0,40

	GAS CONCRETE EXTERIOR WALL THICKNESSES IN REGIONS			
	1st Region	2st Region	3st Region	4st Region
G2/400	17,5	20,0	25,0	32,5



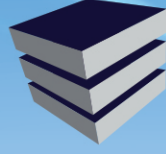
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OUR REGIONAL DEALERS IN TURKEY



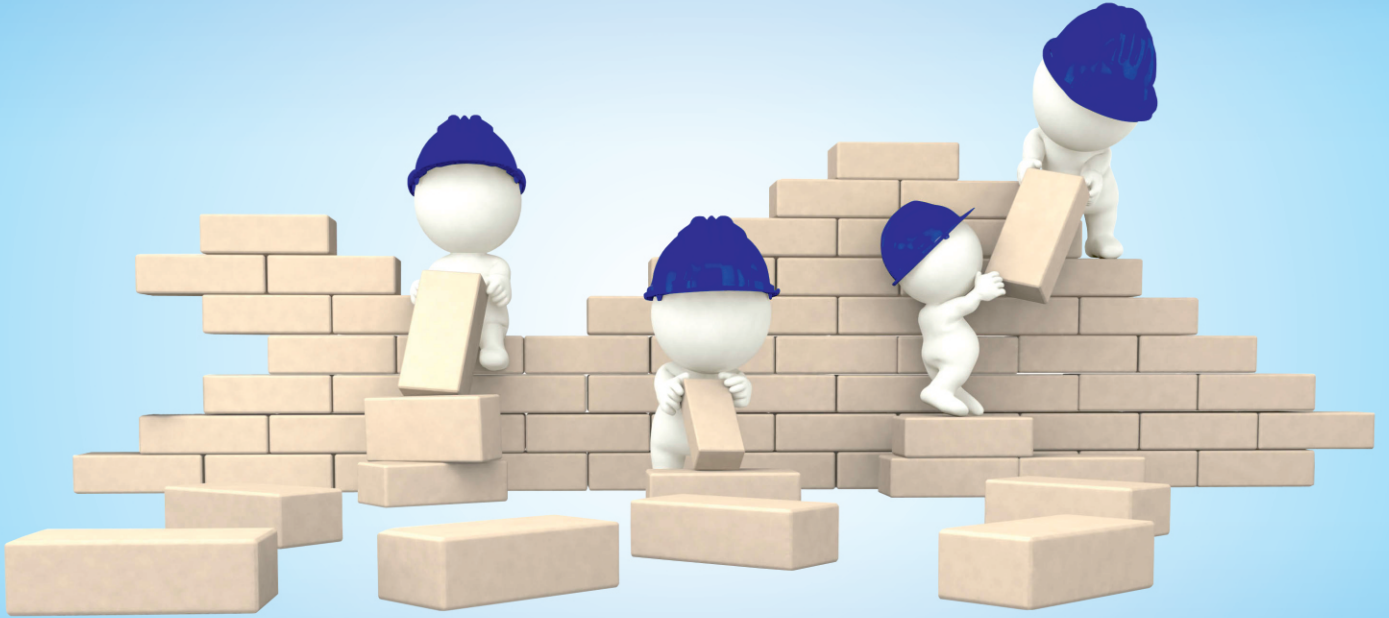
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