greeng INNOVATION

Green Engineering

Construction & Insulation & Arts

INFORMATION ABOUT OUR COMPANY AND OUR PROJECTS

3

Presented by Bülent Gürakın

www.greenginnovation.co

Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

INFORMATION ABOUT OUR COMPANY AND OUR PROJECTS

Our company is a small company established in 2019 as an R&D company. Before; We have gained significant experience in design and material development in ceramic production since 1996. During this period, we carefully followed the innovations in our industry and the construction industry. However, the current techniques we used to solve the problems we encountered while producing ceramics were inadequate to solve the problems we encountered. For this reason, we have had continuous research and development studies in order to overcome the difficulties that we encountered from the first years.

Thanks to these researches, experiences and following scientific developments, we have made many innovations in the ceramic industry. Later, we completely changed the ceramic logic and developed a new ceramic production technique as an alternative to classical ceramic. For many years, we have used this technique successfully in our own business.

In the examinations we made at the Istanbul construction fair in 2015, we saw that the insulation issue in the construction sector could not be solved in a healthy way with today's materials. Based on these observations, we put the material we developed back into the R&D process in a way to meet the needs of the construction industry. As a result of our own resources and three years of effort, a material with super abilities, whose features are described on our site and not yet described, has emerged. In 2019, we established Greeng Innovation Limited to make our project an official project and to carry out R & D studies with the support of KOSGEB. We officially successfully completed our project regarding the main materials and usage areas on December 20, 2020.

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

The project we have completed has revealed new usage areas related to this project and new production techniques that can be developed depending on our material.

This invention, which will radically change the dynamics of all construction and some other industrial sectors on a global scale, will undertake many more innovations in the future with the features it hides in its structure, especially with its practical use and environmental advantages, it will be the "construction and industrial material of the future". We anticipate that this invention will solve many environmental problems in harmony with the environment without leaving a carbon footprint in the future.

The project is based on our professional experience, and has reached this stage as a result of our very good knowledge of ceramic and ceramic materials, an extraordinary devotion and transfer of financial resources. In our project, which is protected by two patents and four additional patents, the usage techniques and mechanization of the material are also patented.

You can find preliminary information about our projects related to the material we have developed in this document.

Below is a list of our new projects that have emerged depending on our finalized project.

In this document, in order

DOCUMENT ABOUT OUR COMPANY AND THE MATERIAL WE DEVELOPED

THE USE OF THE MATERIAL AND ITS CHANGED FORMS AS ECOLOGICAL CONSTRUCTION MATERIAL

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

greeng INNOVATION

Green Engineering

Construction & Insulation & Arts

GreGRC CONSTRUCTION TECHNIQUE USING OUR MATERIAL AND ITS DIFFERENT FORMS

USING OUR MATERIAL AS AN ALTERNATIVE RAW MATERIAL IN THE CERAMIC INDUSTRY

USING OUR MATERIAL AS AN INDUSTRIAL RAW MATERIAL INSTEAD OF SYNTHETIC RESINS

THE USE OF TWO FORMS OF OUR MATERIAL FOR THE PROTECTION OF ARMORED VEHICLES

You can examine the presentations arranged on their subjects.

The projects we are working on are large and global. Therefore, it is not possible to finalize these projects with the means of our company. Therefore, we are looking for research institutes, universities, official and semi-official institutions, environmental organizations, foundations, non-governmental organizations, environmentally sensitive investment funds, media organizations and companies with strong infrastructure that will carry all products to the market with production plans.

We laid the foundations of the main project. Together, we can raise the structure and achieve an extraordinary success.

eco technology

Presented by Bülent Gürakın

www.greenginnovation.com

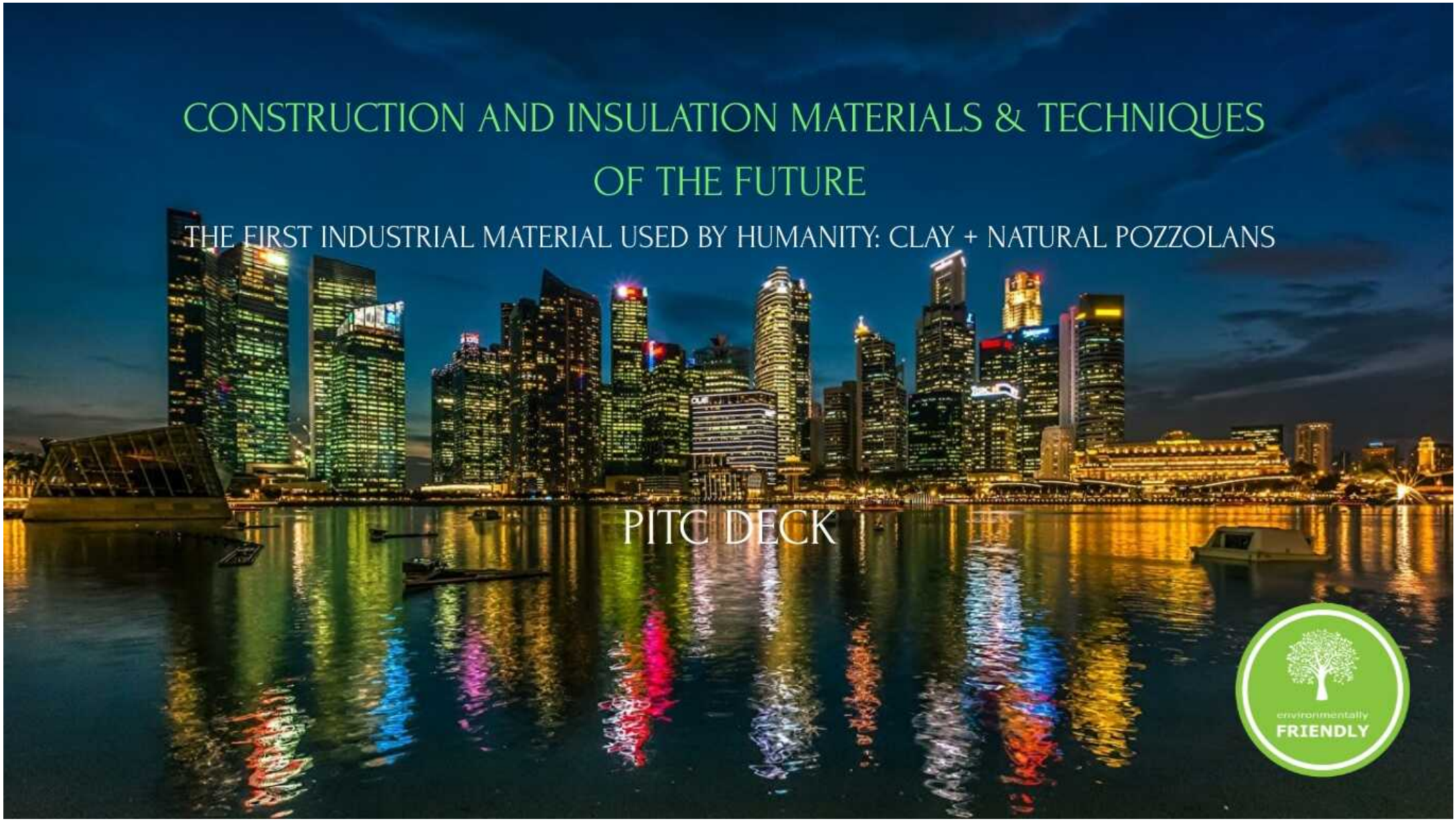
Mail: blntgrkn@gmail.com

greeng INNOVATION

Green Engineering

Construction & Insulation & Arts

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com


CONSTRUCTION AND INSULATION MATERIALS & TECHNIQUES
OF THE FUTURE
THE FIRST INDUSTRIAL MATERIAL USED BY HUMANITY: CLAY + NATURAL POZZOLANS
PITC DECK
environmentally
FRIENDLY

greeng Green Engineering INNOVATION Construction & Insulation & Arts

Proje yöneticileri

Founder & Manager

BÜLENT GÜRAKIN

Co-Manager

BARTU GÜRAKIN

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

PİTCH DECK İÇERİĞİ

1. THE MAIN PROBLEM WE FOCUS ON THE SOLUTION
2. THE RESULTS WE WANT TO REACH
3. CONNECTED PROBLEMS
4. FOCUSING ON SOLUTION
5. GREENG INNOVATION SOLUTIONS
6. GLOBAL MARKET FIGURES
7. OUR PROJECTS
8. OUR EXPECTATIONS

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

eco technology

greeng Green Engineering INNOVATION Construction & Insulation & Arts

THE MAIN PROBLEM WE FOCUS ON THE SOLUTION

Extraordinary energy loss caused by uninsulated buildings:

Today, 90% of the buildings in the world are uninsulated.

1/3 of the energy produced in the world is used in the heating and cooling of the buildings.

Energy production alone is responsible for 40% of the world's carbon emissions.

A standard insulated structure, compared to an uninsulated structure; It consumes 10 times less energy in heating and cooling.

A perfectly insulated building can be heated and cooled with 15 times less energy.

While the annual energy requirement for heating and cooling a building is 30-60 kWh / m2 in Germany, where building standards are based on scientific foundations, it is 250-350 kWh / m2 in Turkey.

Germany is much colder in terms of climate and its gross national product is 9 times higher than Turkey.

This is the picture worldwide, with the exception of a handful of developed countries.

This is a huge paradox.

Unhealthy and environmentally enemy synthetic insulation materials:

The problems created by these materials last for decades in the buildings they are used in, and for centuries in nature after they become waste. The sustainable environmentally friendly materials we have developed are an excellent alternative in this regard.

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

THE MAIN PROBLEM WE FOCUS ON THE SOLUTION

A new generation of construction materials focused on problem solving and bearing these features as an alternative to conventional construction materials that are inadequate in solving problems and new techniques to use these materials:

The construction sector does not leave its carbon footprint only while constructing the building. After leaving the building to the user, it continues to leave this carbon footprint throughout the life of the building, depending on the material and technique used. This adds up to incredible numbers.

Ensuring that the sustainable main material we have developed is used as a problem solver in other industries.

As a result:

The main goal we focus on is; "TO CONTRIBUTE TO THE SOLUTION OF THE ENVIRONMENTAL RISKS THAT THE WORLD FACES BY DEVELOPING NEW, SUSTAINABLE AND NATURAL-FRIENDLY INDUSTRIAL RAW MATERIALS AND TECHNIQUES TO USE THESE RAW MATERIALS".

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

THE RESULT WE WANT TO REACH

New environmentally friendly materials and new techniques using these materials

Although the problem seems very big and unsolvable, the root of the problem in the construction sector is hidden in solving the problem from the very beginning, that is, while the building is being built. With the new materials and construction techniques we have developed, "extremely economical, healthy and comfortable buildings with full insulation, requiring very little energy in heating and cooling, and easily accessible by lower income groups can be built.

At the same time, the materials we have developed can be used as problem solvers in other industries.

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

greeng INNOVATION

Green Engineering

Construction & Insulation & Arts

CONNECTED PROBLEMS

"A shameful 50-year-old story of pollution within a civilization story of tens of thousands of years"

UN AVOIDABLE, PERMANENT ENVIRONMENTAL POLLUTION

Too much profit in a short time + Unconscious overconsumption + Uncontrolled industrial production = rapidly deteriorating ecology

BUILDINGS THAT CONSUME EXCESSIVE ENERGY AS LIVED INSIDE

Obligation to pay very high environmental costs for comfort

PARADOKS = DESTROYING ECOLOGY FOR AN SUSTAINABLE ECONOMY

The last bill all living things paid

LOTS OF CARBON EMISSIONS & CLIMATE CHANGEİ

The bankruptcy of the development story

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

greeng INNOVATION

Green Engineering

Construction & Insulation & Arts

FOCUSING ON SOLUTION

INSULATION AND BUILDING SOLUTIONS IN HARMONY WITH NATURE REQUIRED

An old but renewed perspective

WE ARE VERY CREATIVE BUT IT CANNOT BE REMEDY THAT WE ARE VERY SMART ...

Are the solutions we found rational ..?
Not enough
The result: an ecology that cannot renew itself

THE RIGHT TIP FOR THE SOLUTION

A material without a pollution story for tens of thousands of years: CLAY

Presented by Bülent Gürakın

www.greenginnovation.com

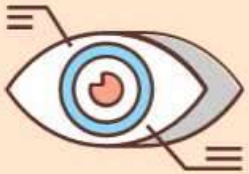
Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

FOCUSING ON SOLUTION

IN OLD TIME PEOPLE WERE NOT SMARTER THAN US BUT MAYBE THE SOLUTION IS HIDDEN IN THE PAST OF HUMANITY

An old but new alternative
= CLAY + POSOLANS



A NEW PERSPECTIVE TO OLD SOLUTIONS WITH INNOVATION

A brand new alternative solution that has been tried and is suitable for human and nature: CLAY + POSOLANS

RESULT: A COMPLETE SUCCESS

Ancient civilizations may be right to prefer clay and natural pozzolan.

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

GREENG INNOVATION SOLUTIONS

CHARACTERISTICS OF THE MATERIAL WE DEVELOPED

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

MATERIAL WE DEVELOPED Clay + Natural Pusolan

OUR MATERIAL HAS TWO DIFFERENT FORMS

"All the materials we have developed are different forms of these two materials."

1

Nonporous Clay + Natural Pozzolan(GreCer)

100% ecological Clay + Natural pozzolana origin, non-porous, compressive strength adjustable from 20 MPa to 60 MPa (it is possible to increase this figure in special forms), showing ceramic properties, resistant to all kinds of natural conditions, resistant to water, A1 class fireproof, environmentally friendly, 1600 - 2500 kg / M3 density industrial material.

2

Porous Clay + Natural Pozzolan(GrePor)

100% ecological, porous, resistant to all kinds of natural conditions, A1 class incombustible Clay + Natural pozzolana origin super insulating capability, 60 - 400 kg / M3 density, 0.020 - 0.15 W / mK insulation coefficient, 100 kPa ', which we developed as a result of our R & D studies. Mineral insulation material with compressive strength from 7 MPa (it is possible to increase these numbers in special forms).

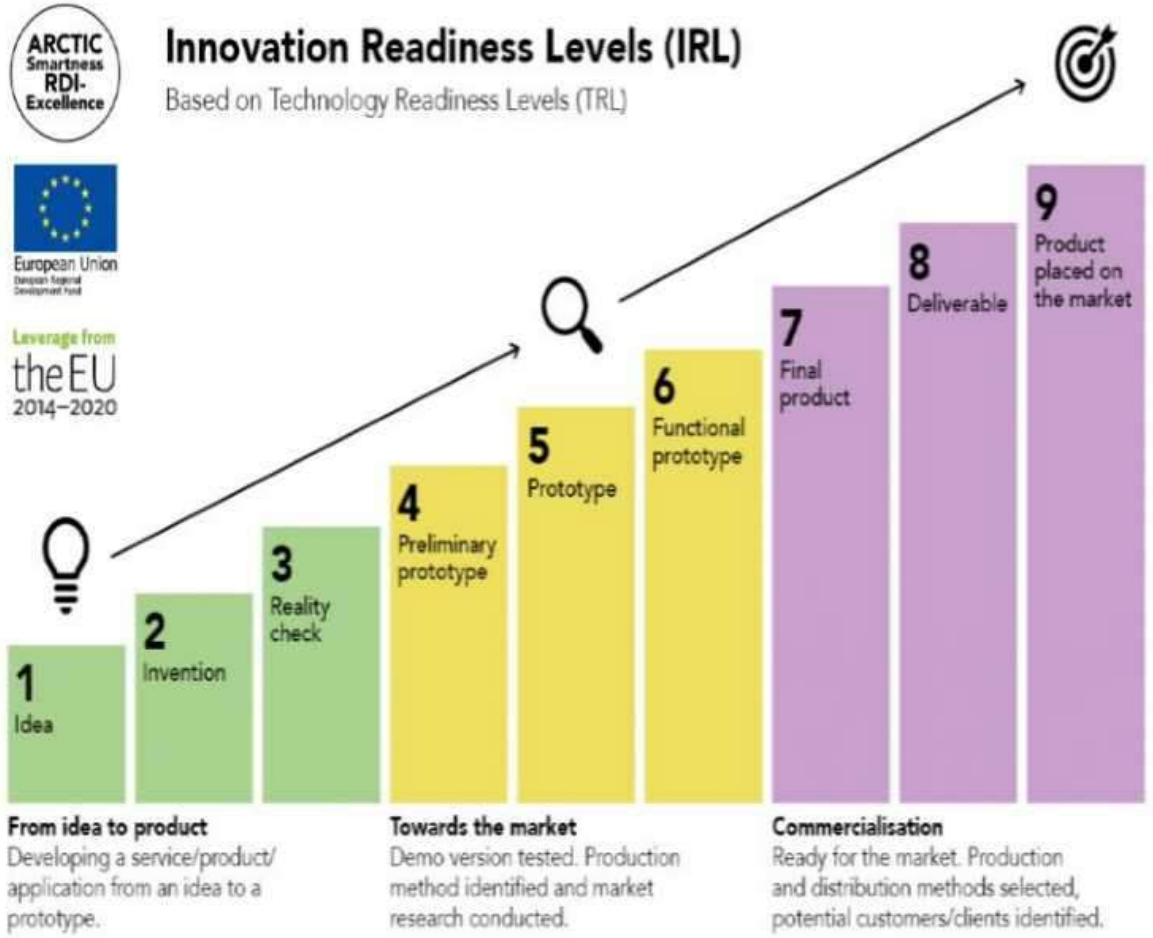
The main feature of our material that makes it "special and unrivaled in its field"

Since both materials (GreCer and GrePor) have the same origins, they can be applied in layers in the same process. In other words, a single product with excellent properties can be obtained by applying an extremely hard surface of the desired thickness and a second layer of the desired thickness with an extremely light, excellent heat and sound insulation ability.

Since both materials come from the same origin, they are molecularly and chemically linked and show the properties of a single layer. They do not tend to be separated from each other by time, climatic conditions, mechanical and chemical effects and have an infinite life.

IT IS A PROJECT THAT HAS BEEN WORKED ON THE PROJECT FOR LONG YEARS, BRING TO TRL 7 LEVEL, READY FOR TRL 8 - 9 LEVELS

The project started in 2015, and in 2018 it turned into an official project and received support from the establishment of the Republic of Turkey KOSGEB. In December 2020, the first phase was finalized with high success. The second and third phases of our project are being prepared for implementation in line with the new data emerging.



OUR MATERIAL IS “ECOLOGICAL AND CARBON FOOTPRINT EXTREMELY LOW BUILDING MATERIAL AND INDUSTRIAL RAW MATERIAL. IT HAS NO COMPETITOR IN THE ECOLOGICAL BUILDING MATERIALS MARKET.

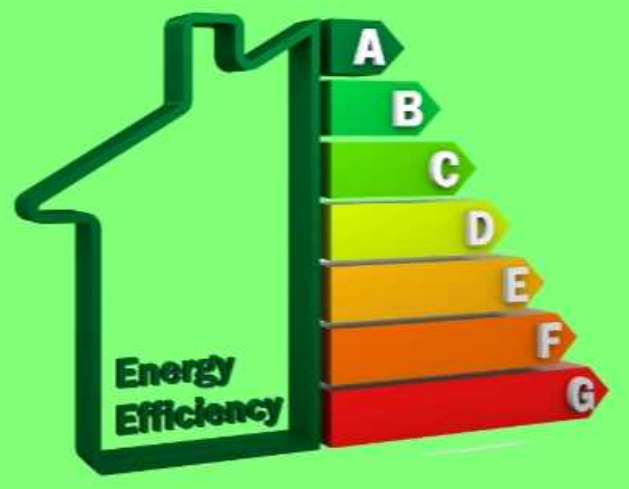
All the negative features that are ignored in all products in the ecological building materials sector (impermeability to water, insufficient insulation values, limited product variety, supply difficulty, need for expertise, very high prices, etc.) have been eliminated as a result of our R&D studies. You can see the product groups we have developed for this market and more on our website at www.greenginnovation.com

THE MATERIAL WE HAVE DEVELOPED IS A 1 CLASS FIREPROOF MATERIAL

Since it consists of only clay + natural pozzolanes, it does not contain any flammable components. It does not trigger fire or release deadly gases.

FURTHER BUILDINGS THAT REQUIRE INSULATION, WARM IN WINTER, COOL IN SUMMER

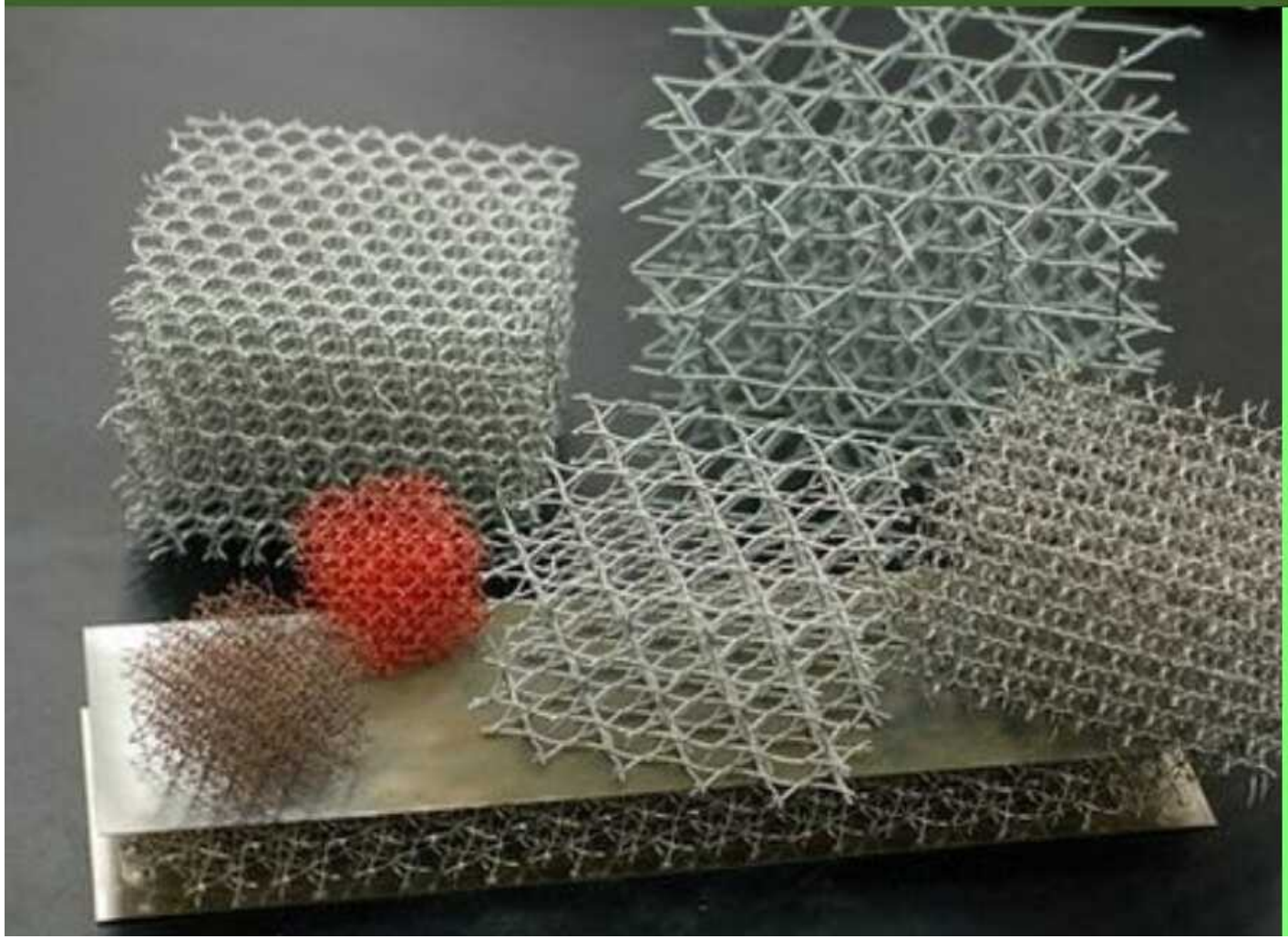
In total, excellent optimum isolation in the constructed structure + lossless with very low energy,
excellent heating & cooling



SIX TIMES LIGHTER AND MUCH HIGHER BUILDINGS

When all three phases of the project are completed, it will be possible to make the buildings to be built with our material extraordinarily light. This feature will bring advantages such as significant economy in construction cost, much less energy consumption as the building does not require insulation, less raw material use and resistance to very severe earthquakes with its flexible structure.

USE MUCH LESS CARRIER ELEMENTS...



Much lighter carbon fiber, glass fiber fibers or carrier materials made of these fibers instead of iron = much less use + economy + very low carbon emission.

VERY LOW CARBON FOOTPRINT ON A GLOBAL SCALE

Extraordinary global economy
when our material is used widely
+ much more
less carbon emission.

EASY ACCESSIBLE COMFORTABLE HEALTHY BUILDINGS FOR LOW INCOME GROUPS

With our material and the Gre GRC building construction technique we have developed, it is possible to build healthy and comfortable buildings that are extremely economical, very fast, healthy, can be heated and cooled at very low cost, and accessible to low income groups.

THE OPPORTUNITY OF ARCHITECTS, CIVIL ENGINEERS TO REALIZE THEIR DREAMS WITHOUT LIMITS

With the extraordinary lightness it provides and the elimination of the size limitation it brings, all classical calculations and systems in the construction and building construction sector will completely change. Impossible designs can be made with classical techniques.

INDUSTRIAL RAW MATERIAL ALTERNATIVE TO POLYESTER AND SIMILAR TOXIC AND ENVIRONMENTALLY ENEMY SYNTHETIC MATERIALS

A special form of our material can be used in many industries as an alternative to polyester and similar toxic and environmentally harmful synthetic resins.

With our material, products such as environmentally friendly and completely ecological water tanks, food rest, fermentation, storage tanks, clean water transport pipes, security huts, kiosks, vehicle and boat parts can be produced much more economically and with 0 damage to the environment.

greeng Green Engineering INNOVATION Construction & Insulation & Arts

OUR PROJECTS

Our main project is a very comprehensive, ambitious project that will fundamentally change many known things. We think that this project is a very important project in terms of environment and sustainability. Our project consists of three main stages.

1 INITIAL R&D PROJECT WHICH WILL DETERMINE THE CHARACTERISTICS, CAPACITY AND CHARACTERISTICS OF THE MATERIAL

We started this project in 2015, made it an official project in 2018 and completed it with full success on 21 12 2020 with the support of KOSGEB.

2 DETERMINING THE MAIN USAGE AREA WHERE THE MATERIAL CAN BE USED MOST COMMON AND DEVELOP A NEW PROJECT THAT INCLUDES APPLICATION TECHNIQUES.

At this stage, we have prepared a new project called "ALTERNATIVE NEW AND REVOLUTIONARY MODULAR STRUCTURE AND CONSTRUCTION TECHNIQUE: GreGRC system (Greeng Glas Fiber Reinforced Ceramic)". The infrastructure, road map and framework of the project have been prepared and it is at the start stage.

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

eco technology

greeng Green Engineering INNOVATION Construction & Insulation & Arts

OUR PROJECTS

3 AS THE THIRD AND THE MOST ADVANCED STAGE, "THE USE OF SPECIAL FORMS OF OUR MATERIAL BY USING OTHER MATERIALS INSTEAD OF IRON IN BUILDING COLUMNS, BEAMS AND OTHER CARRIER SECTIONS AND IN BETWEEN CONCRETE PLATFORMS."

AS A RESULT

With the realization of our second and third projects, all parameters in building construction techniques will change radically, our material can be used instead of concrete and cement, much more economical, lightweight, very low carbon footprint, truly ecological, healthy, comfortable buildings that can be heated and cooled with very low energy. be able to be. At the same time, our material can be used in various industries as a sustainable and ecological industrial raw material.

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

eco technology

Market Size

According to the world bank data; the size of the global construction industry is around 1.7 - 2.0 Trillion US dollars annually

Approximately 40% of this tuft is directly related to our material.

- The material we have developed is much more economical and superior than all classical materials in total.
- Our project needs a fast, robust and rational marketing strategy. We laid the foundations, we can raise the structure together.
- Users will naturally prefer our material when the material is put on the market.

This project is necessary for our world. It is very difficult for us to sustain such a big project alone. To complete the scientific aspect, we need official and semi-official institutions, media support for promotion, and financial resources to finance our work.

We are looking for Universities and Research Institutes, Non-Governmental Organizations, Environment and research foundations, funds and companies with strong infrastructure to carry the project to the market.

For more information, you can visit our website www.greenginnovation.com. Or you can contact us at blntgrkn@gmail.com.

greeng Green Engineering INNOVATION Construction & Insulation & Arts

GREENG INNOVATION ECOLOGICAL BUILDING MATERIALS

greeng Green Engineering INNOVATION Construction & Insulation & Arts

CONTENT

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

eco technology

1 - THE CONCEPT OF ECOLOGICAL BUILDING MATERIALS

Ecological Building Materials refers to materials that increase the sustainability and efficiency of a building structure in terms of design, construction, maintenance and renovation. Ecological building materials either exist naturally or can be recycled and renewed. Green building materials are durable, energy efficient and cause minimal operating and maintenance costs In addition, the increased adoption of green buildings due to the increased awareness of the health and environmental hazards of carbon emissions has supported the growth of the market worldwide. Moreover, the appropriate policies and initiatives introduced by various governments to promote green construction, especially in developed countries, add further momentum to the market.

greeng INNOVATION

Green Engineering

Construction & Insulation & Arts

SOLUTION EXPECTING PROBLEMS

"A shameful 50 year old story of pollution within a civilization story of tens of thousands of years ..."

UNAVOIDABLE, PERMANENT ENVIRONMENTAL POLLUTION

Too much profit in a short time + Unconscious overconsumption + Uncontrolled industrial production = rapidly deteriorating ecology.

ENVIRONMENTALLY HARMFUL INDUSTRIAL RAW MATERIALS DOMINATE THE MARKET

Synthetic origin industrial raw materials with economical prices and suitable solutions for every problem are taking the world towards an irreversible pollution.

PARADOKS = DESTROYING ECOLOGY FOR AN SUSTAINABLE ECONOMY

Wild and uncontrolled production + Environmental, unavoidable pollution + Disrupted ecology = The civilization we created poses a threat to itself.

CLIMATE CHANGE

The bankruptcy of the development story ...

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

greeng INNOVATION
Green Engineering
Construction & Insulation & Arts

1b - SOLITIONS

INSULATION AND BUILDING SOLUTIONS IN HARMONY WITH NATURE REQUIRED

An old but renewed perspective.

PEOPLE WERE NOT SMARTER THAN US IN OLD TIME. BUT MAYBE THE SOLUTION IS HIDDEN IN THE PAST OF HUMANITY

Solution: Clay + Natural posolans.

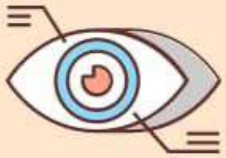
WE ARE VERY CREATIVE BUT VERY SMART WE CANNOT BE TALKED THAT WE ARE

Are the solutions we found rational ..? Not enough ...
The result: a total environmental disaster.

Presented by Bülent Gürakın
www.greenginnovation.com
Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

1b - SOLITIONS



THE RIGHT TIP FOR THE SOLUTION

A material without a pollution story for tens of thousands of years: CLAY.

A NEW PERSPECTIVE TO INNOVATION

A brand new solution suitable for human and nature: CLAY + POSOLAN.

RESULT: A COMPLETE SUCCESS

Ancient people may be right to prefer clay and natural poisons.

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

greeng INNOVATION
Green Engineering
Construction & Insulation & Arts

1c - ECOLOGICAL BUILDING MATERIALS IN THE MARKET

RESTRICTED PRODUCT DIVERSITY

The variety of ecological building materials on the market is far from meeting the requirements of the market.

SALES PRICES ARE VERY HIGH

Meeting the "ecological product" criteria brings high costs.

INSUFFICIENT PHYSICAL PROPERTIES

Products that are described as ecological in the real sense are not resistant to water, climatic conditions, and are insufficient in terms of physical performance.

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

NEGATIVE ASPECTS OF ECOLOGICAL BUILDING MATERIALS IN THE MARKET
(Clay plates, clay plasters, clay-based materials)

1 - Hypersensitivity to moisture and water, sludge in contact with water and moisture.

2 - It requires expensive applications to improve this feature,

3 - Inability to obtain the desired hardness, bending, breaking values under pressure,

4 - Using excessive thickness and material to obtain physical strength and insulation,

5 - Mandatory use of synthetic polymers to increase durability,

6 - Labor and implementation are expensive and difficult. It requires expertise.

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

1d - MARKET EXPECTATIONS

PRODUCT VARIETY TO MEET ALL THE REQUIREMENTS

The market has to respond to increasing and extraordinarily diverse demands. Therefore, the environmental damage caused by products that meet these demands are ignored.

ECONOMIC PRICE, EASE OF APPLICATION AND SUPPLY

The market strictly observes the balance of price, quality, application and ease of supply in all products.

COMPLIANT WITH STANDARDS PHYSICAL PROPERTIES

The market must comply with a number of standards in the products offered to the consumer. It determines its preferences according to these standards.

Ecological building materials on the market cannot meet these expectations of the market for now.

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

greeng INNOVATION

Green Engineering

Construction & Insulation & Arts

2 - GREENG INNOVATION SOLUTIONS

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

2a - MATERIALS WE DEVELOPED

(All materials in the presentation are at the TRL7 stage and have been pre-produced)

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

SOLUTIONS BY THE MATERIAL WE DEVELOPED
(Clay plates, clay plasters, clay-based materials)

1 - Absolutely not affected by humidity, water and climatic conditions,

2 - It is available all over the world, It is a sustainable, economical and capable raw material.

3 - It provides both strength and excellent insulation with its non-porous and porous form.

4 - It also does not require expensive post-application processes, it is easy to work with.

5 - Can be produced in desired physical properties, i

6 - It is not necessary to use excessive thickness, excess material to obtain physical strength,

7 - Synthetic polymers and chemicals are not necessarily used to increase its strength.

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

MATERIAL WE DEVELOPED Clay + Natural Pusolan ORIGIN AND HAS TWO FORMS

"All our Ecological building materials are different forms of these two materials"

GreCer

Nonporous Clay + Natural Pozzolan

100% ecological Clay + Natural pozzolana originated non-porous, very hard, resistant to all kinds of natural conditions, water resistant, A1 class fireproof, environmentally friendly building material with 1600 - 2000 kg / M3 density developed as a result of our R & D studies.

PRODUCTS

Plates - Clay plaster - Decorative Wall Covering Materials - Straw, pike, marsh reed. Combination with natural materials such as bamboo.

GrePor

Porous Clay + Natural Pozzolan

100% ecological, porous, resistant to all kinds of natural conditions, A1 class fireproof, clay + natural pozzolan origin, super isolation capability, 120 - 300 kg / M3 density, 0.040 - 0.050 W / mK insulation coefficient developed as a result of our R&D studies. material.

PRODUCTS

The surface is GreCer and very hard, the back layer is GrePor Decorative Insulation Plates, Foam-form wall laying and repair mortar without thermal bridges. Straw, swamp reed. Combination of natural materials such as bamboo etc.

THE MAIN FEATURE THAT MAKES OUR MATERIAL "SPECIAL AND UNRIVALED IN THE FIELD"

Since both materials (GreCer and GrePor) have the same origins, they can be applied in layers in the same process. In other words, a single product with excellent properties can be obtained by applying an extremely hard surface of the desired thickness and a second layer of the desired thickness with an extremely light, excellent heat and sound insulation ability.

Since both materials come from the same origin, they are molecularly and chemically linked and show the properties of a single layer. They do not tend to be separated from each other by time, climatic conditions, mechanical and chemical effects and have an infinite life.

CLAY WALL PANELS AND CLAY WALL COATING MATERIALS THAT DO NOT REQUIRE PLASTER, PAINT, COATING, AND NOT AFFECTED BY WATER AND ALL NATURE CONDITIONS

It is not affected by water, it is 100% ecological. Its contents consist of completely natural materials such as natural clay, ground brick and tile waste, pike, reed, straw, marsh reed, sawdust, wood fibers and natural pozzolan, depending on the type and characteristics of the product. The surfaces are like stone, marble, brick and designed artistic design. In addition, it does not require workmanship and applications such as plaster, paint, coating. In the forms of non-porous insulation plates made of only our Grecer material, where our Grecer and GrePor materials are used together.

GreCer DECORATIVE MODULAR WALL COATING MATERIALS

Wall covering materials produced from our GreCer material are produced using 0 heat, that is without firing. In addition to its elegance and endless design feature, the carbon footprint it leaves on the nature is almost 0. The superior properties of our material have enabled modular wall covering materials to be made from clay for the first time. It is not possible to capture the resulting wonderful decorative images with other materials.

STABLE AND HIGH ADERANCE CLAY BASED, 100% ECOLOGICAL WALL KNITTING, INSULATION FILLING - REPAIR FOAM WITHOUT A HEAT BRIDGE

GreFoam is an improved version of our GrePor product. It is a specially developed product to knit insulated wall blocks that do not lose their volume with mechanical effect, install insulated wall panels, repair insulation layers and fill between insulation layers. Our product, which is the first in its category, has permanently solved an important problem that cannot be solved in insulation applications with its unique features.

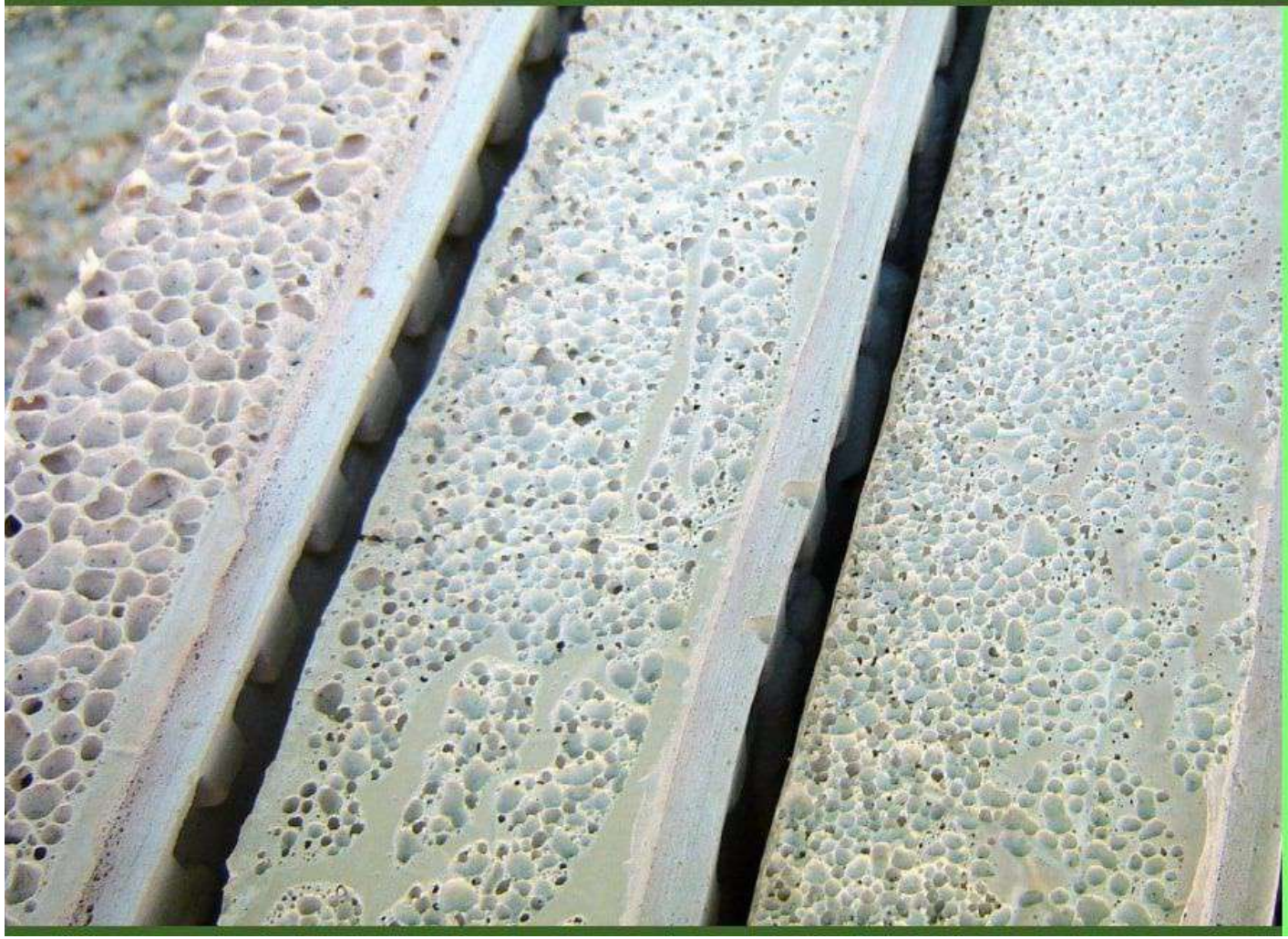
CLAY PLASTER NOT AFFECTED BY WATER, MOISTURE AND OTHER NATURAL CONDITIONS

Clay plaster produced with GreCer is endless against water, moisture and all natural conditions. He breathes. In this way, you can create the ideal and healthiest moisture balance with our products. It is 100% ecological. Its content consists of completely natural materials such as natural clay, ground brick and tile waste, straw, glass fiber and natural pozzolan in some special products, depending on the type and feature of the product. Application thickness varies between 4 - 6 mm and one layer application is often sufficient.

100% ECOLOGICAL CONSTRUCTION MATERIALS PRODUCED BY USING GreCer, GrePor AND, REED, STROKE STRAW, WOOD FIBERS AND NATURAL POSOLANS

Its main features include extraordinary easy application, very high noise, heat insulation values and non-flammability. Thanks to these features, all the negative features of natural and sustainable construction materials have been eliminated and forgotten, abandoned natural resources have been brought back to the economy. With these features, products made of our materials will create a brand new alternative in the market of ecological building materials and classical construction materials in a very short time.

THE FUTURE OF ECOLOGICAL BUILDING MATERIALS MARKET ...



GreCer + GrePor

Clay + Natural posolans + floating porous and very solid + back of the surface is porous and has excellent insulation properties + economic + sustainable + does not pose a threat to the environment =

ECOLOGICAL CONSTRUCTION MATERIALS WE DEVELOP

greeng Green Engineering INNOVATION Construction & Insulation & Arts

THE IMPORTANCE OF OUR MATERIAL FOR THE ENVIRONMENT

The industrial revolution, the rise in the standard of living, the rapid increase in life expectancy and the geometric growing population brought together vital demands and caused an unavoidable consumption and environmental pollution. The market has unfortunately ignored the environment and used unsustainable methods to respond to the demands of this population. Result: The environmental disasters we live in, climate change and unsustainable consumption rupture .... It is not too late yet... We are on the edge of the abyss, but with conscious planning and determination we can return from this point. Turning towards sustainable solutions that needs to be done ... The material we have developed is one of the solution stakeholders in the solution of this deadly problem, which we are faced with, with almost 0 carbon footprint, does not contain toxic components, is sustainable and environmentally friendly, and can respond to the needs of large masses in total.

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

TECHNICAL FEATURES OF THE MATERIALS WE DEVELOP

NON-COMBUSTIBILITY: A1 Fireproof

HEAT TRANSMISSION COEFFICIENT:

It varies between 0.030 and 0.130 W / mK depending on the desired hardness and density.

DENSITY:

M3 per unit weight in terms of the load it brings to the building: It changes between 100 kg / M3 and 1800 kg / M3 depending on the desired hardness and density.

HUMIDITY AND AIR PERMEABILITY

The permeability can be adjusted from 0 impermeability to the desired permeability during production and in accordance with the purpose to be used.

PRESSURE RESISTANCE:

Depending on the desired hardness and density; It varies between 25 kgf / cm2 and 60kgf / cm2.

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

3 - GLOBAL MARKET FIGURES

World annual BUILDING MATERIALS market size is around US $ 6.0 Trillion

World annual ECOLOGICAL BUILDING MATERIALS MARKET is around US $ 300 Billion.

The market for building materials that do not comply with the ecological criteria is around 5.7 Trillion US dollars.

It is inevitable that the "ECOLOGICAL" building material sector, which has only 5% of the world building materials market, will grow rapidly in a very short time with the tendency of climate change to turn into a disaster ...

“ECOLOGICAL” building materials provide buildings with enhanced efficiency and sustainability in terms of design, construction, maintenance and renovation. It does not harm the environment due to its standards, and its carbon footprint is very low. As a result; It is a mandatory choice to "PREVENT GLOBAL DISASTER WHICH WILL CAUSE CLIMATE CHANGE" ..

3a - Countries where demand is concentrated in the world

The "demand for ecological building materials" is unfortunately an indicator of development. The countries that make up this demand are countries that have made environmental legal regulations and have high income levels. The most important of these countries are developed countries such as America, European Union and European countries, Japan and Australia. The economic priorities of developing and undeveloped countries prevent the formation of demand in this regard. Therefore, it is of great importance to evaluate this problem globally for the future of the world.

"ECOLOGICAL" building materials provide buildings with enhanced efficiency, sustainability in terms of design, construction, maintenance and renovation. It does not harm the environment due to its standards, and its carbon footprint is very low. As a result; It is a mandatory choice to "PREVENT GLOBAL DISASTER WHICH WILL CAUSE CLIMATE CHANGE" ...

3b - Market prospects for the near future

Increasing awareness of the adverse effects of traditionally used building materials has prompted governments to take steps on various environmentally friendly and energy efficient building standards. These standards helped improve the overall performance of buildings by setting minimum criteria for energy efficiency and other parameters, thus increasing the demand for green building materials. It is predicted that the market will grow by 10% until 2025. However, as climate change poses a global risk, governments, environmental organizations, non-governmental organizations and international organizations rapidly take new standards and measures, so we anticipate that this ratio will rise much higher, compulsorily and very quickly.

OF THE PRODUCT GROUPS WE DEVELOPED ADVANTAGES IN THE MARKET

IN ADDITION TO THIS PRESENTATION:

1 - Surface appearance can be given in all kinds of colors and textures such as stone, marble, geometric patterns, designed surfaces.

2 - Does not require plaster, paint or coating. If desired, the colors can be made much more vivid with a simple and natural application.

3 - The front surface can be produced as hard and non-porous, and the back s is porous. Buildings where these plates are applied do not require heat, sound, insulation.

4 - Any kind of construction, carrier, pipe, etc. can be placed in it during production.

5 - It can be easily screwed on the wall and construction. the screw holes can be simply matched to the tissue.,

6 - Stone, marble or designed surfaces can be produced in the form of large and modular panels as an alternative to Polyester decoration panels with a thickness of 5-6 mm.

The materials and products we have developed are in TRL 7 stage. For the TRL 8 and TRL 9 phases, we need official, semi-official scientific institutions, the support of environmental organizations to explain their importance, and promotional support for the products to be easily accepted in the market.

We are looking for Universities, Research Institutes, Non-Governmental Organizations, Environment and research foundations, funds and companies with strong infrastructure that will carry the project to the market.

For more information, you can visit our website www.greenginnovation.com.

Or you can contact us at blntgrkn@mail.com.

greeng INNOVATION

Green Engineering

Construction & Insulation & Arts

NEW AND REVOLUTIONARY MODULAR BUILDING AND CONSTRUCTION TECHNIQUE ALTERNATIVE TO CLASSIC GRC TECHNIQUE

PROJECT PRESENTATION

www.greenginnovation.com Mail: blntgrkn@gmail.com

eco technology

GreGRC System
(Greeng Glas fibre Reinforced Ceramic)

EXPECTATIONS OF PEOPLE FROM THE HOUSES AND BUILDINGS THAT SUSTAIN LIVES

1. It is physically sound, not affected by natural conditions. A dry, moisture-free life can be maintained inside
2. Easy and economical in winter conditions, being heated with the least energy possible, not transferring outside cold to inside
3. Being cool in summer conditions, being economical, being able to be cooled with the least energy possible, not transferring the outside heat to inside.
4. The material to be built is easy to find, its features meet the above expectations, and it is economical.
5. Creating an ideal atmosphere in terms of ph, allergens, moisture balance, radioactivity and toxicology.
6. It is suitable for the "building biology" theories that have been developed in recent years.

EXPECTATIONS OF BUILDING MATERIALS USED BY MODERN CONSTRUCTION INDUSTRY TO RESPOND TO THE ABOVE EXPECTATIONS

1. Ideal physical strength properties
2. As high as possibleinsulation values
3. Lower costs
4. Vital values suitable for human health
5. It does not cause any problems for the environment when recycled
6. To be sustainable

PROBLEM

There is no material + technique combination in the market today to meet the above six expectations.

Combinations closest to these criteria necessarily is preferred.

Therefore, many problems are necessarily ignored in terms of environmental and living conditions.

SOLUTION OF THE PROBLEM APPLIED TO BEST METHOD AND TECHNICAL PRECAST " GRC"

Especially in recent years
practical, fast, stylish, easy in the industry
applied and total cost
The economic considering GRC
(Glassfibre Reinforced Concrete), that is, glass fiber reinforced concrete applications have become quite common. This system offers great advantages to its users, especially in multiple constructions with the same appearance, aesthetic constructions that require special design, and technical constructions with application difficulties.

DISADVANTAGES OF THE CLASSIC GRC SYSTEM

It consists only of the shell that provides an architectural view. The shell thickness of at least 1.5 - 2 cm. In the classical GRC (precast) system, the shell thickness of the modular parts must be at least 1.5 - 2 cm. The density of this shell is 2400kg / M3.

The produced shell can be transported with steel construction and can be mounted in its place. It is not possible to carry the shell produced in the classical GRC system in any other way and to mount it to the building.

Steel construction defeats time, rusts, is heavy, difficult to build and expensive. The construction is made of painted or galvanized profiles and angles. Even if the welding places are protected with paint, they can rust over time.

DISADVANTAGES OF THE CLASSIC GRC SYSTEM

The necessity of creating a wall behind the outer shell that creates the image. The outer shell is not a wall. It is created only for the architectural appearance of the building. Therefore, there is an obligation to build a separate wall just behind the shell to form the structure. Therefore, it creates twice as much load on the

Extra space (M2) loss. Apart from the shell, the wall that is also created causes extra space loss. This is a factor that negatively affects the cost in regions where the cost of land is high. It also restricts the user's space forever.

Requires extra isolation. Classical GRC technique is not an isolation solution. For this reason, the building must be insulated against atmospheric conditions with conventional products that are harmful to the environment and have a high carbon footprint. This costs extra

DISADVANTAGES OF THE CLASSIC GRC SYSTEM

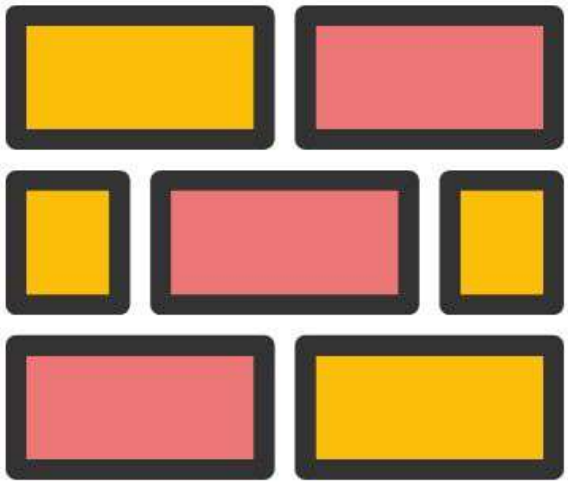
Its raw material is concrete with chemical additives. The pH value of the concrete mixture used in the classical GRC system is around 12 - 12.5. So it is quite alkaline. And this value is well above the comfort limit in terms of human health.

IDEAL SOLUTION WHAT?

THE NEW AND REVOLUTIONARY GREGRC TECHNIQUE (Greeng Glas Fiber Reinforced Ceramic) MEETS THE 6 EXPECTATIONS OF THE CONSTRUCTION INDUSTRY ABOVE.

Environmentally friendly instead of concrete brand new material:

SUPER CERAMIC



An environmentally friendly material with a very low carbon footprint that will eliminate the disadvantages of concrete and preserve the advantages of the classic GRC system. Clay + natural pozzolanes = Super Ceramic

INSTEAD OF CEMENT (CONCRETE) IN THE PROJECTNEW MATERIAL TO USE

- 100% ecological clay + natural pozzolana origin Green Ceramic (GreCer), whose R&D studies have been finalized.

1

Clay + Natural pozzolana origin non-porous, very hard, environmentally friendly, resistant to all kinds of natural conditions, 1600 - 1800 kg / M3 density shell (surface) material

- 100% ecological clay + natural pozzolan origin Green Poren (GrePor), where we have finalized our R&D studies.

2

Clay + Natural pozzolana based foam wall forming material with super insulating ability, 60 - 200kg / M3 density, 0.020 - 0.045 W / mK insulation coefficient shell.

THE MAIN FEATURE THAT MAKES OUR MATERIAL "SPECIAL AND UNRIVALED IN THE FIELD"

Since both materials (GreCer and GrePor) have the same origins, they can be applied in layers in the same process. In other words, a single product with excellent properties can be obtained by applying an extremely hard surface of the desired thickness and a second layer of the desired thickness with an extremely light, excellent heat and sound insulation ability.

Since both materials come from the same origin, they are molecularly and chemically linked and show the properties of a single layer. They do not tend to be separated from each other by time, climatic conditions, mechanical and chemical effects and have an infinite life.

HOW IS THE GreGRC MODULAR WALL FORMED ..?

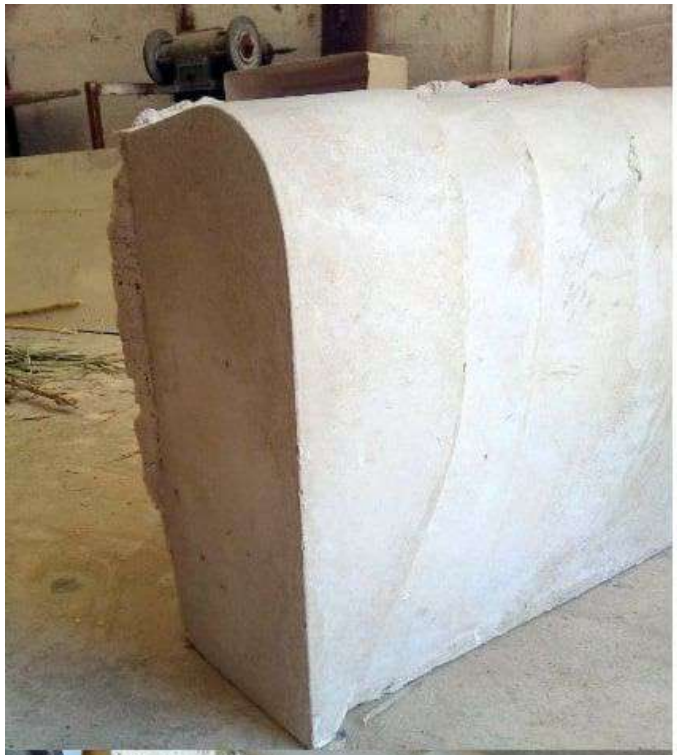
The outer shell that forms the wall surface (GreCer)

With dimensions of 60 x 100 x 30 cm, the side surfaces are 3 - 4 mm, the front main surface is 5 - 6 mm thick, very hard and resistant to all weather conditions, the material can be easily colored (therefore it does not require additional paint) Our Grecer material = Only 4.5 kg

HOW IS THE GreGRC MODULAR WALL FORMED ..?

Mineral foam forming the wall block (GrePor)

GrePor material with dimensions of 130 x 100 x 20 cm: 0.040W / mK thermal conductivity coefficient, 140 kg / M3 density, 280 - 300 kPa pressure resistant block = Only 35 kg



HOW IS THE GreGRC MODULAR WALL FORMED ...

Very thin (3 - 6 mm) and very hard shell (GreCer) + Mineral foam (GrePor) that fills its back and molecularly bonds to the shell in the same process + gypsum plaster or similar application to be applied on the inner surface of the wall as a thin layer

With this feature, with our GrePor + GreCer material, it is possible to make extremely stylish, very light and economical modular panels with very large sizes, desired shapes, and no need for heat sound insulation and paint.

THE NEW AND REVOLUTIONARY GRC APPLICATION WHERE BOTH MATERIALS ARE USED IN THE SAME PROCESS: GreGRC

GreCer + Grepor = 6 times lightweight, fully self-insulated, resistant to very severe earthquakes, very low carbon footprint, extremely economical, candidate to significantly reduce global carbon emissions, the new and revolutionary GRC system:

GreGRC

"GLASS FIBRE REINFORCED CERAMİC"

ADVANTAGES OF OUR GreCer MATERIAL USED IN THE EXTERIOR SHELL THAT MAKES THE SURFACE

1

It is a 100% natural and ecological clay-based material.

It is not affected by moisture and water.Raw materials can easily be found all over the world. Its carbon footprint is almost zero and meets the ecologically sustainable criteria.

2

Excessive thickness and excess material are not required to obtain physical strength

The GreCER shell thickness we envision for GreGRC is around 3 - 5mm depending on the application.

3

Its specific weight is around 1600 kg. This means 1/3 less weight.

The specific weight of the concrete used in the classical GRC system is around 2400 kg. 33% heavier than our material

ADVANTAGES OF OUR GreCer MATERIAL USED IN THE EXTERIOR SHELL THAT MAKES THE SURFACE

4 **It has an extraordinary flexibility.**
While 40x40cm x15mm classical GRC plate can stretch 5mm under pressure, 40cmx40cm x 5mm GreGRC plate can stretch 30mm under pressure.

5 **The pH value is in the range of 7 - 7.5, it is neutral and most suitable for nature.**
necessary, the environment can be adjusted to be acidic or basic using stabilizing materials.

6 **There is no synthetic, toxic or non-natural substance in its structure.**
When it turns into a waste state, it automatically becomes a part of nature. With this feature, it is a candidate to be the only material in the world that can fully meet the "ecological" and "green" concepts.

ADVANTAGES OF OUR GrePor MATERIAL FOR INSULATION AND WALL FORMING, COMBINED WITH EXTERIOR SURFACE SHELL

1

It does not require oven, temperature or technological equipment in its production.

It is simply mixed and applied. It hardens between 4 hours and 12 - 14 hours depending on atmospheric conditions. The carbon footprint is almost zero.

2

It allows for on-site application.

It is simply mixed and applied. It hardens between 4 hours and 12 - 14 hours depending on atmospheric conditions. The carbon footprint is almost zero.

3

In terms of density;

With the additives mixed into it by the user, it can be adjusted by the user from 60kg / M3 to 600kg / M3 depending on demand.

ADVANTAGES OF OUR GrePor MATERIAL FOR INSULATION AND WALL FORMING, COMBINED WITH EXTERIOR SURFACE SHELL

4

In terms of physical resistance;

Depending on the density of the material to be obtained, it is possible to provide physical resistance from 100 kPascals to 4.5 Mpascals.

5

In terms of heat insulation;

Provides insulation properties from 0.030W / mK to 0.14W / mK depending on the material density to be obtained.

6

Adjustable moisture and air permeability

Water resistance and air permeability can be adjusted as desired by the additives mixed into it by the user.

BENEFITS AND BENEFITS OF THE NEW GreGRC TECHNIQUE UNDER THE LIGHT OF THE ABOVE EXPLANATIONS

1

TRL level 6. The goal of reaching TRL 8-9 level in a very short time

The application and development plan prepared with our successful material R&D project, The goal of reaching the industrial stage in a very short time.

2

Exact use of classical GRC machine park and systems

All machines used in the classical GRC system can be used with minor changes. Innovation in the system consists of the materials used and new application techniques.

3

Huge modular parts of much larger size can be produced.

It will allow the production of very large and complex shaped (convex, concave, elliptical, geometric, formless) modular construction panels and parts.

BENEFITS AND BENEFITS OF THE NEW GreGRC TECHNIQUE UNDER THE LIGHT OF THE ABOVE EXPLANATIONS

4

In addition, the need to create interior walls will be eliminated.

Since the modular parts also function as walls, there will be no need to create an additional interior wall.

5

In addition, there is no need for isolation application.

The foam layer applied to the back of the hard shell acts as both a wall and an excellent insulation. Therefore, buildings built with GreGRC do not need insulation. They can be heated and cooled with very low energy.

6

Extraordinary economy & Very low carbon footprint

In addition, the absence of an insulation requirement provides great economy. There is no need to use synthetic materials with very high carbon footprint. In this way, and considering very low energy consumption, it provides extraordinary energy savings and economy in total.

BENEFITS AND BENEFITS OF THE NEW GreGRC TECHNIQUE UNDER THE LIGHT OF THE ABOVE EXPLANATIONS

7

In the GreGRC technique, the application is not made on the basis of shell formation. The ceramic foam layer, which will serve as a shell + inner wall, is applied together. Thus, GreCer and GrePor, which come from the same root as material, are molecularly and chemically linked together to form a single structure.

8

No steel construction is required for self-supporting modular panels and their assembly to the building.

The foam applied inside the shell creates an extremely durable, sound and heat-proof structure (wall). This structure is self-supporting. It is extremely flexible and light. Installation to the building is done by methods that do not create a thermal bridge, by directly screwing the column or table to the concrete, and it is an extremely simple technique. It provides great economy from time and labor.

BENEFITS AND BENEFITS OF THE NEW GreGRC TECHNIQUE UNDER THE LIGHT OF THE ABOVE EXPLANATIONS

9

6 times lighter buildings

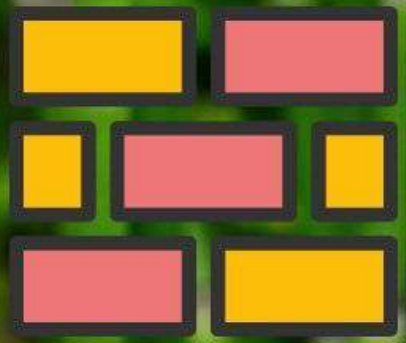
By using the materials used in the GreGRC system in building carriers and floor interfaces (our next connected project), 6 times lighter, very high, self-insulated, very low energy, comfortable and healthy buildings and structures can be built.

10

It is resistant to even very severe earthquakes.

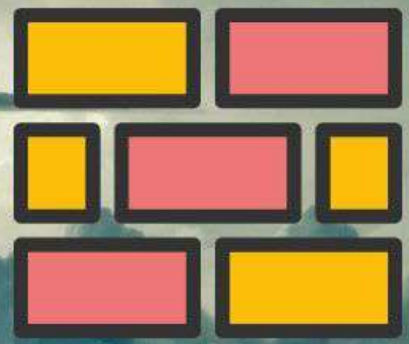
Thanks to its extraordinary flexibility and lightness, buildings built with GreGRC will be able to survive even large-scale earthquakes without any damage. This feature has strategic importance in regions with high earthquake risk.

OPEN TO NEW TECHNIQUES AND APPLICATIONS, MATERIALS, CAN BE DEVELOPEDA FLEXIBLE PROJECT AND STRUCTURE



The project is designed and planned in a way that is open to all kinds of new materials, techniques and applications when necessary. For example; If necessary, materials such as natural jute, linen, hemp, cotton fibers, straw, marsh reed, pike, reed can be used instead of glass fiber to further reduce the carbon footprint. Studies on these are also carried out in parallel.

RESULT



With the GreGRC technique, whose features are described above, it will be possible to build much more economical, more comfortable, much more robust and safe buildings in the near future. In this way, much larger masses will be able to easily access the standards that are considered luxury today and cannot be reached by the lower income group. With all its features, it is a candidate to be the only construction technique in the world that can fully meet the concept of "ecological" and "green".

For more information: You can visit our website at www.greenginnovation.com.


MARKET FIGURES AND
SIZE

WORLD ANNUAL CONSTRUCTION INDUSTRY MARKET SIZE

World annual construction industry market size =
It is around 1.7 - 2.0 Trillion dollars

Approximately 40% of this figure is directly related to the material we have developed.

The material we have developed has superior properties than all other materials and is much more economical in total.

GRC (PRECAST) INDUSTRY MARKET FIGURES

92.14 billion US dollars in 2020

95.76 billion US dollars in 2021

It is foreseen to be 139 billion US dollars in 2028.

WHY IS THE SHARE OF THE GRC SECTOR WITH MANY ADVANTAGES IN THE 2 TRILLION DOLLAR GLOBAL CONSTRUCTION INDUSTRY MARKET IS SO LOW

Although the product has many advantages over conventional concrete, the cost of machinery and molds required for production is extremely high. Therefore, it is anticipated that high initial investment will hinder and inhib overall market growth to some extent.

THE NEW AND REVOLUTIONARY GREGRC TECHNIQUE AND WE DEVELOPEDCAN THE MATERIAL CHANGE THIS CONDITION ..?

Undoubtedly yes ... GreGRC technique, which eliminates the problems that users are hesitant about and offers many new and very attractive advantages, as we explained above, is practical, solution-oriented application techniques, the extraordinary economy brought by the material used and its problem-solving features. We predict that it will peak its share with an extraordinary acceleration.

This project is necessary for our world. It is very difficult for us to sustain such a big project alone. To complete the scientific aspect, we need official and semi-official institutions, media support for promotion, and financial resources to finance our work.

We are looking for Universities and Research Institutes, Non-Governmental Organizations, Environment and research foundations, funds and companies with strong infrastructure to carry the project to the market.

For more information, you can visit our website www.greenginnovation.com Or you can contact us at blntgrkn@gmail.com

eco technology

greeng INNOVATION

Green Engineering

Construction & Insulation & Arts

PRELIMINARY PROJECT PRESENTATION ON THE USE OF THE MATERIAL WITH CLAY ORIGIN, WHICH WE DEVELOPED AS A RESULT OF OUR R&D WORKS, DOESN'T REQUIRE COOKING AND SHOW CERAMIC PROPERTIES WHEN CURED AS AN ALTERNATIVE CERAMIC RAW MATERIAL

greeng Green Engineering INNOVATION Construction & Insulation & Arts

MAIN PROBLEM

ECOLOGICAL REFRACTION CAUSED BY INDUSTRIAL POLLUTION CAUSED BY RAPIDLY INCREASING CONSUMPTION ACCORDING TO THE INCREASING WORLD POPULATION

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

THE OUTPUT OF THE PROBLEM

With the reform and the Renaissance movements, the change in the perspective of humanity towards science, the development of science with giant steps, in parallel with the control of epidemics, the developments in health, hygiene, food processing and logistics have caused an extraordinary increase in the world population in a very short time. Accordingly, with the industrial revolution, the processing of coal and petroleum with modern techniques, the variety of practical and cheap raw materials required by the industry quickly came to the market, and they responded to the raw material needs of the developing industry economically and quickly. This rapidly developing process has led to the rapid abandonment of old raw materials without a pollution story in some sectors. One of these raw materials is Clay. Clay, the difficulty of the production stages, the production requiring skilled labor, the necessity of baking, etc. It has been abandoned in many industries for reasons and has been replaced by petroleum, plastic, synthetic raw materials, which leave behind pollution stories that are very difficult to remove. It has been understood that this is unsustainable with the emergence of environmental problems as the first threat to the civilization we create.

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

CONNECTED PROBLEMS

"A shameful 50-year-old pollution story within a civilization story of tens of thousands of years ..."

UNPREVENTABLE, PERMANENT ENVIRONMENTAL POLLUTION

Too much profit in a short time + Unconscious overconsumption + Uncontrolled industrial production = rapidly deteriorating ecology

INCREASED ENERGY NEEDS OF THE INDUSTRY IN PARALLEL TO THE RAPIDLY INCREASING PRODUCTION

40% of the carbon emission is caused by the flue gases released into the atmosphere while energy is obtained.

PARADOX

Excessive energy need + Carbon emission to produce energy + Disrupted ecology = The civilization we created poses a threat to itself ...

POLLUTION + CARBON EMISSION = CLIMATE CHANGE

The bankruptcy of the development story

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

FOCUSING ON SOLUTION

WE ARE VERY CREATIVE BUT VERY SMART
WE CANNOT BE TALKED ...

Are the solutions we found rational ..?
Not enough ...
The result: an ecology that cannot renew itself

WE MUST REDUCE CARBON EMISSION QUICKLY

Carbon emissions have exceeded the limits that nature can compensate for. In parallel with this, global temperature values have increased by 0.90 degrees in the last hundred years. The critical threshold is 1.5 degrees and the rate of increase continues exponentially.

A NEW PERSPECTIVE TO OLD SOLUTIONS WITH INNOVATION

Researching the potential of clay, which is already a very important industrial material, with today's advanced research techniques can contribute to the solution of the problem.

Presented by Bülent Gürakın
www.greenginnovation.com
Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

FOCUSING ON SOLUTION

NEW SOLUTIONS REQUIRED IN HIGH ENERGY CONSUMPING INDUSTRIES

Metallurgy, Energy, Cement and Ceramic production sectors are the most energy consuming sectors.

AN EXTRAORDINARY AND REVOLUTIONARY SOLUTION

Using a new material that does not require cooking in the ceramic industry may solve some of the problem ...

IT MAY SOUND INCREDIBLE...

The new material, which we have developed as a result of our long R&D studies, is a candidate to be an alternative raw material in the ceramics industry as well as its other extraordinary features.

RESULT: A COMPLETE SUCCESS

It has been observed that the products we have developed will play an important role in solving the problem ...

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

THE NONPOROUS FORM OF OUR MATERIAL SHOWS CERAMIC PROPERTIES WITHOUT COOKING

Our material, which we call GreCer and consists of Clay + Natural pozzolan, shows ceramic properties by curing under atmospheric conditions without the need for heat. Moreover, with this feature, many productions that cannot be made with the ceramic technique due to the high temperature have become possible with this new technique.

COST ELEMENTS THAT CAUSE PROBLEMS IN CERAMIC PRODUCTION

One of the biggest costs in ceramic production; It means that the product is handled many times, waiting for a long time for it to dry. Large spaces are required for this process.

Then the product must be cooked using high cost energy. For this, very high energy consuming high temperature furnaces are used.

In artistic, decorative and kitchen type productions, there is a need for re-workmanship during the coloring and glazing after cooking.

After this stage, the product produced must be re-ordered in ovens and re-fired using high-cost energy.

greeng Green Engineering INNOVATION Construction & Insulation & Arts

GREENG INNOVATİON SOLITIONS

GENERAL FEATURES OF THE MATERIAL WE DEVELOP

Nonporous Clay + Natural Pozzolan(GreCer)

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

Nonporous Clay + Natural Pozzolan

+ It is a completely ecological and natural material. It does not cause any harm to the environment during the production and application stages. It does not cause environmental pollution. It does not smell. The carbon footprint is almost zero.

+ Petroleum is indestructible and non-toxic like synthetic materials. When it is turned into waste, it mixes with nature and becomes a part of nature again.
It is an A1 class incombustible material. It can withstand high temperatures without losing its physical properties.

+ Its raw material is extremely economical. It is available in unlimited quantities all over the world. It requires an extremely easy process to obtain.

+ It does not require oven, temperature, autoclave or technological equipment in its production. It is mixed and applied in a simple way, it hardens automatically in atmospheric conditions for 2 - 4 hours in hot weather and 12 - 14 hours in the coldest weather.

+ Allows for on-site application. It allows the material to be mixed directly where it will be used, pouring it into molds with the desired properties, spreading it on the floor, spraying, and applying its special forms with brush, trowel, spatula and similar tools.

carbon neutral

carbon neutral

carbon neutral

Nonporous Clay + Natural Pozzolan

+ In terms of density,
With the additives mixed into it by the user, it can be adjusted by the user from 1600 kg / M3 to 2500 kg / M3 depending on demand.

+ In terms of physical resistance;
Depending on the density of the material to be obtained, it is possible to provide a physical resistance from 15 MPascals to 60 MPascals.

+ It is not affected by water but breathes. Humidity and air permeability coefficient can be adjusted by the user as desired.

+ It does not stick to the mold, to release it from the mold, such as wax, release agent etc. it does not need substances.

+ Can be colored in any desired color with natural color pigments. It carries this color in its structure forever.

+ It is possible to use several different densities and forms in the same production stages.

NEW AREAS OF USE FOR OUR MATERIAL
AN IMPORTANT FEATURE TO TURN ON

+ Another feature of the material that we think is important is that it shows different physical properties during hardening and final hardening stages. In the first hardening stage, which can be removed from the mold, it can be processed, shaped and brought to the desired dimensions with simple tools and machines or with technological machines such as lathe. This can be done easily in the first few days. However, after a few days, the material reaches a hardness that cannot be processed. After about 10 days, it reaches its final and constant hardness.

After this stage, it transforms into a substance with very high physical strength, whose properties are determined during production.

Various products can be produced by processing parts that have been turned into bars in various thicknesses using the material, and shaped with simple molds, just like processing metal materials by connecting to CNC machines.

This feature can create a new option for the production of some machine and tool parts more economically by using our material instead of gray cast parts in many areas in the industry.

greeng Green Engineering INNOVATION Construction & Insulation & Arts

GREENG INNOVATİON SOLITIONS

USING OUR MATERIAL AS AN ALTERNATIVE IN THE CERAMICS INDUSTRY

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

carbon neutral

carbon neutral

carbon neutral

ADVANTAGES OF NO NEEDING COOKING PROCESS

In order for our material to harden and show ceramic properties, there is no need for heat treatment or cooking
.
Hardening takes place in atmospheric environment, depending on the season and temperature.
It takes place between 2 hours and 1 day.

The high temperature of 1000 degrees during firing prevents the material from curing together with the mold in classical ceramic production, and then the material is removed from the mold. With our material eliminating this process, molds made of all kinds of materials, including plastic molds, can be used in all production stages. This feature brings new and revolutionary advantages for production.

Since it does not require cooking, it can carry various materials such as fiber, fiber, fabric, straw, pike, natural materials, supporting skeletons and constructions in its structure.

The self-hardening of our material without the need for cooking brings with it many advantages that cannot be applied in ceramics.

To give an example: Today, with the development of CNC-based technologies, very sensitive plastic molds can be made. In this way, new production techniques can be developed from bowls, giant flowerpots, electrical armatures to some machine parts by using special multi-molds in the form of our material used for casting.

Currently, the material is used by us in the production of decoration products. You can browse our website www.mitosdeco.com to get ideas.

"With our material, even in the most remote places where there is no electricity, various products and building materials can be produced in accordance with today's building materials standards using simple molds and handcrafts without using any technological equipment.

USAGE IN THE CERAMIC INDUSTRY

By making small changes in the content of our material, it can be turned into vacuum press sludge, and all products such as blocks, perforated bricks and similar products can be produced in a much more complex shape and large size with the advantages of not needing cooking.

By making small changes in its content, it can be used by transforming into forms such as flexible and hard mud, potter wheel mud, liquid casting mud to shape it by hand just like ceramic. Additions, retouching and corrections can be made to the products obtained before they harden.

Its paste can be colored with the addition of paint, and colored coating and pattern processes can be made with special water-based resins.

ADVANTAGES TO THE CERAMICS INDUSTRY

EXTRAORDINARY FEATURE OF OUR MATERIAL: Ability to form a fiber-free form by applying 1 mm to the surface with a brush.

It has been revealed in our preliminary studies that it can achieve much more extreme physical features if it is adapted to the ceramic industry with scientific techniques.

All the products you will see in the pictures and more are made with the material we have developed.

ADVANTAGES TO THE CERAMICS INDUSTRY

ADVANTAGE OF STOP COOKING PROCESS

As mentioned in the content, the high temperature during cooking prevents the material from curing together with the mold in classical ceramic production and then the material is removed from the mold. With our material eliminating this process, molds made of all kinds of materials, including plastic molds, can be used in all production stages. This feature brings new and revolutionary advantages for production. The ceramic bowl you see in the picture is produced with a simple plastic mold and with a very simple method and extremely economically. An unlimited number of products can be produced in desired forms and colors with this technique.

ADVANTAGES TO THE CERAMICS INDUSTRY

In the picture, examples of decorative wall covering bricks with rock wool plate applied with the same technique are seen. Another advantage of this production technique is; It is the opportunity to produce in desired dimensions without size limitation and physical deterioration. In the classical ceramic technique, production cannot be made outside of certain dimensions due to cooking and other workmanship.

ADVANTAGES TO THE CERAMICS INDUSTRY

The Clay Plate seen in photo is 100 x 160 cm in size and was produced without firing. It is resistant to water, all kinds of natural conditions and has an eternal life. As an extra feature, the "rock wool plate" has been molded together during production and combined to become a single product for this plate to have an insulation feature. This type of application is not possible in classical ceramic production.

ADVANTAGES TO THE CERAMICS INDUSTRY

The decorative facing bricks pictured are a good example of a revolutionary product that can be produced without baking. With a simple application during the production phase, "rock wool plates measured in the same dimensions" were added to the ceramic mud and cured together, they became a single product with excellent insulation properties, not affected by water and natural conditions, and with an eternal life. Currently, there is no technique on the market that can produce this product economically and sustainably.

ADVANTAGES TO THE CERAMICS INDUSTRY

In the picture, examples of decorative wall covering bricks with the same technique applied as an alternative to mineral heat insulation plate are seen. Mineral heat insulation plates are a good alternative in insulation with their endless physical and chemical resistance.

ADVANTAGES TO THE CERAMICS INDUSTRY

In the picture, examples of decorative wall covering bricks with the same technique applied as an alternative to mineral heat insulation plate are seen. Mineral heat insulation plates are a good alternative in insulation with their endless physical and chemical resistance.

ADVANTAGES TO THE CERAMICS INDUSTRY

The picture shows examples of stone wool plate with the same technique and decorative wall covering bricks with an alternative mineral thermal insulation plate. Another advantage of this production technique is; It is the opportunity to produce without physical deterioration with much less product thickness. In the classical ceramic technique, production cannot be made under a certain thickness due to cooking and other workmanship.

WHAT CAN BE DONE WITH OUR MATERIAL

Without limitation of size; Plates with any appearance and color such as stone, marble, designed texture, shape ...

In addition to all the explanations, almost all kinds of products produced with the raw materials and techniques used in the ceramic technique can be produced with our material. A small adaptation study is sufficient for this. All the products you will see in the picture and other pictures are high quality products made with our material, technically, physically and visually.

ECO FRIENDLY PRODUCT

WHAT CAN BE DONE WITH OUR MATERIAL

Decorative wall covering bricks in the desired color, shape, and fineness ...

In addition to all the explanations, almost all kinds of products produced with the raw materials and techniques used in the ceramic technique can be produced with our material. A small adaptation study is sufficient for this. All the products you will see in the picture and other pictures are high quality products made with our material, technically, physically and visually.

ECO FRIENDLY PRODUCT

WHAT CAN BE DONE WITH OUR MATERIAL

Decorative wall covering bricks in the desired color, shape, and fineness ...

In addition to all the explanations, almost all kinds of products produced with the raw materials and techniques used in the ceramic technique can be produced with our material. A small adaptation study is sufficient for this. All the products you will see in the picture and other pictures are high quality products made with our material, technically, physically and visually.

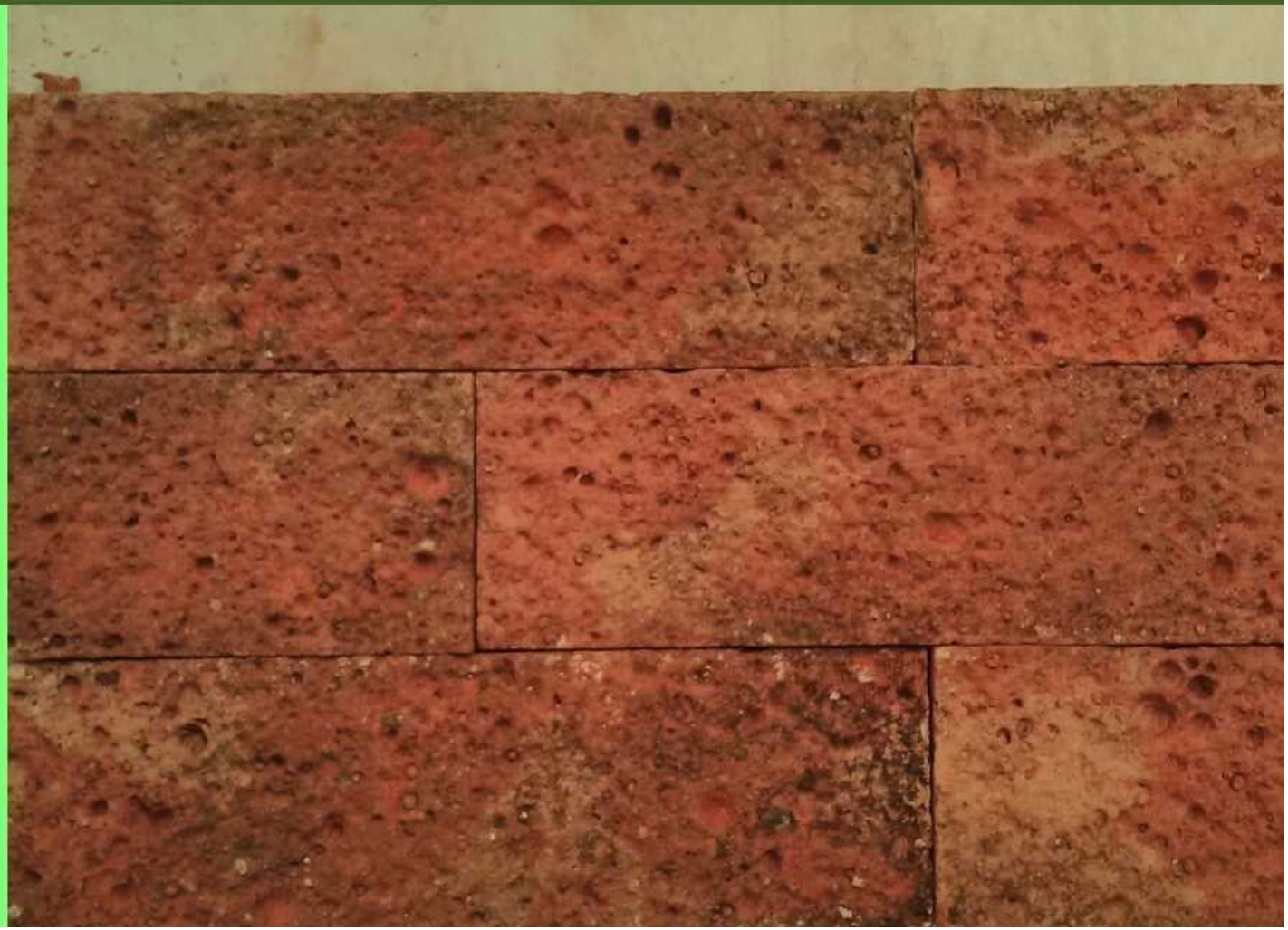
ECO FRIENDLY PRODUCT

WHAT CAN BE DONE WITH OUR MATERIAL

Decorative wall covering bricks in the desired color, shape, and fineness ...

In addition to all the explanations, almost all kinds of products produced with the raw materials and techniques used in the ceramic technique can be produced with our material. A small adaptation study is sufficient for this. All the products you will see in the picture and other pictures are high quality products made with our material, technically, physically and visually.

ECO FRIENDLY PRODUCT



WHAT CAN BE DONE WITH OUR MATERIAL

Decorative wall covering bricks in the desired color, shape, and fineness ...

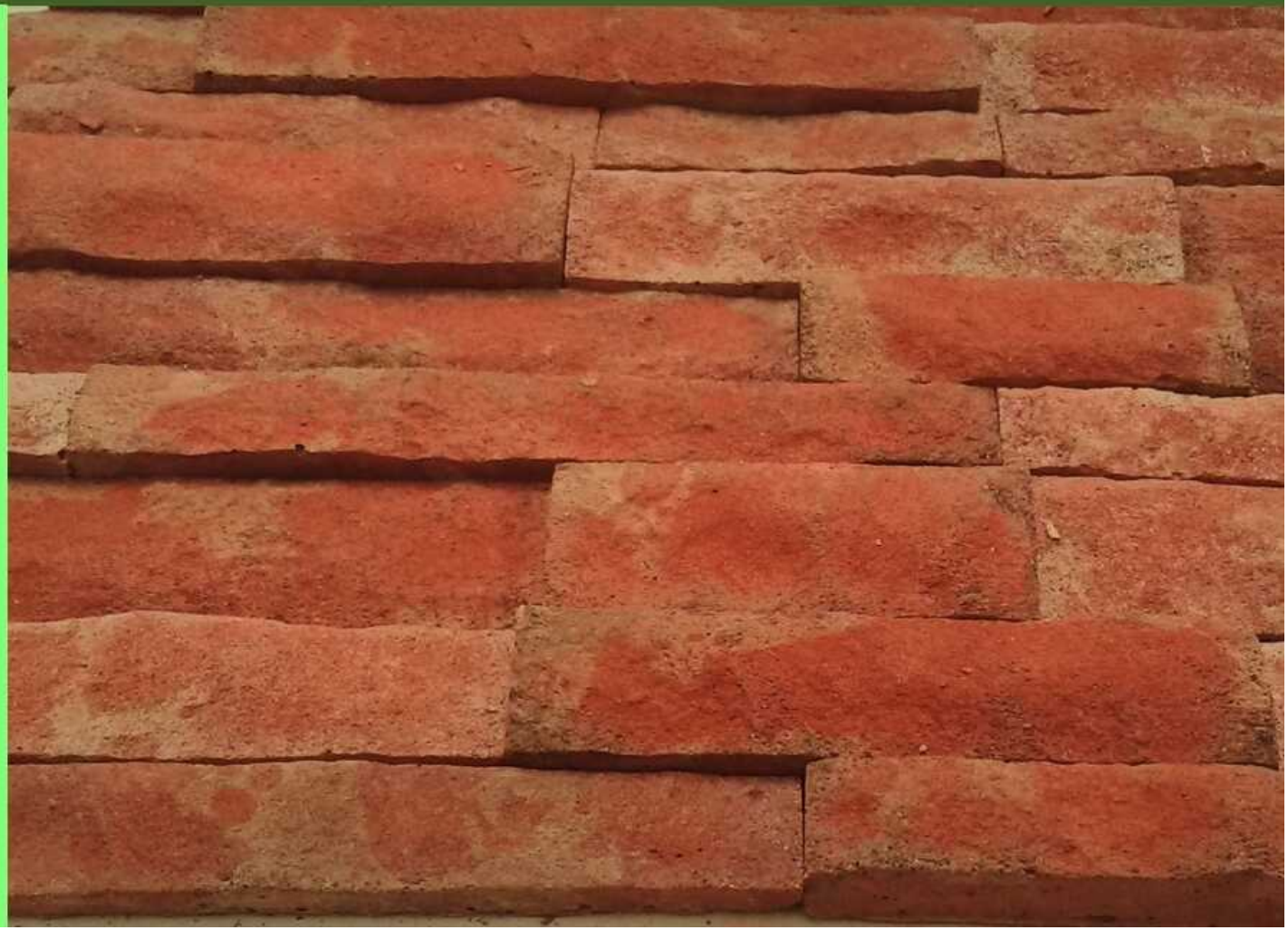
In addition to all the explanations, almost all kinds of products produced with the raw materials and techniques used in the ceramic technique can be produced with our material. A small adaptation study is sufficient for this. All the products you will see in the picture and other pictures are high quality products made with our material, technically, physically and visually.

ECO FRIENDLY PRODUCT

WHAT CAN BE DONE WITH OUR MATERIAL

Modular decorative wall covering materials in the desired color, shape, thickness, glued to the mesh.

In addition to all the explanations, almost all kinds of products produced with the raw materials and techniques used in the ceramic technique can be produced with our material. A small adaptation study is sufficient for this. All the products you will see in the picture and other pictures are made with our material, technical, physical and visual high quality products.



WHAT CAN BE DONE WITH OUR MATERIAL

Modular decorative wall covering materials in the desired color, shape, thickness, glued to the mesh.

In addition to all the explanations, almost all kinds of products produced with the raw materials and techniques used in the ceramic technique can be produced with our material. A small adaptation study is sufficient for this. All the products you will see in the picture and other pictures are made with our material, technical, physical and visual high quality products.

WHAT CAN BE DONE WITH OUR MATERIAL

Modular large-sized decoration panels in the desired color, shape, 6 - 7 mm thin, reinforced with natural fibers.

In addition to all the explanations, almost all kinds of products produced with the raw materials and techniques used in the ceramic technique can be produced with our material. A small adaptation study is sufficient for this.

COST EFFECT

Our material has many forms. The raw material costs used in the production of qualified, high value-added ceramics and the cost figures of our material are almost the same. However, when the total cost elements we explained in detail are calculated, it is seen that an extraordinary cost difference will arise in favor of our material.

In the production of unqualified, low value-added ceramics (brick, tile, block, etc.), the use of industrial by-products, which are considered as waste, as filler, can provide a cost balance, and it is seen that a huge economy can be achieved when the energy and labor and area gains used for cooking are considered.

.

At this point, another very important gain arises.
The wastes used with the material are costly and difficult to dispose of. By using these materials together with our material as filling material, these wastes turn into economic value and the problems in their disposal are eliminated.

THE ADVANTAGES OF USING IN THE CERAMIC INDUSTRY

More than 40% of the cost in the ceramic industry is due to the energy cost.
This cost item can be eliminated by using our material.

In ceramic production, each stage of production takes time, drying the product in large areas to pass these stages, and holding the product to be lined up in the furnace. In order to realize these processes, a very serious amount of covered space is required. With the possibilities of our material, more than 50% of the space requirement can be saved.

One of the other advantages of using the material in the ceramic industry is time / work economy. Considering that each firing period is at least one day in the classical system, it can be easily predicted that the time savings and increase in production will bring a great advantage.

The ceramic industry has to allocate enormous financial resources for the supply, operation and maintenance of cooking equipment. With the elimination of the cooking process, such costs will be eliminated.

As a result;

The Technological Preparation level of my material is TRL7.
For the TRL 8 and TRL 9 stages, only a small adaptation process is required.

By creating the necessary standards of our material and using it widely, a large-scale transformation can be achieved in the ceramic industry in terms of costs. On a global scale, it can be easily said that a huge energy saving will occur with the elimination of cooking. This gain is an important argument for reducing carbon emissions, which is at the critical threshold.
One of the other advantages of using the material in the ceramic industry is time / work economy. Considering that each firing period is at least one day in the classical system, it can be easily predicted that the time savings and increase in production will bring a great advantage.

This project is the first phase of a large-scale project that we have successfully concluded. It is very difficult for us to sustain such a large-scale project alone. To complete it, we need official and semi-official institutions, media support for its promotion, and financial resources to finance our work.

We are looking for Universities and Research Institutes, Non-Governmental Organizations, Environment and research foundations, funds and companies with strong infrastructure to carry the project to the market.

For more information, you can visit our website www.greenginnovation.com. Or you can contact us at blntgrkn@gmail.com


greeng
Green Engineering
INNOVATION
Construction & Insulation & Arts
ALTERNATIVE TO SYNTHETIC RESINS
100% NATURAL A NEW INDUSTRIAL
MATERIAL
environmentally
FRIENDLY

greeng Green Engineering INNOVATION Construction & Insulation & Arts

MAIN PROBLEM

ECOLOGICAL REFRACTION CAUSED BY INDUSTRIAL POLLUTION CAUSED BY RAPIDLY INCREASING CONSUMPTION ACCORDING TO THE INCREASING WORLD POPULATION

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

THE OUTPUT OF THE PROBLEM

With the reform and the Renaissance movements, the change in the perspective of humanity towards science, the development of science with giant steps, in parallel with the control of epidemics, the developments in health, hygiene, food processing and logistics have caused an extraordinary increase in the world population in a very short time. Accordingly, with the industrial revolution, the processing of coal and petroleum with modern techniques, the variety of practical and cheap raw materials required by the industry quickly came to the market, and they responded to the raw material needs of the developing industry economically and quickly. This rapidly developing process has led to the rapid abandonment of old raw materials without a pollution story in some sectors. One of these raw materials is Clay. Clay, the difficulty of the production stages, the production requiring skilled labor, the necessity of baking, etc. It has been abandoned in many industries for reasons and has been replaced by petroleum, plastic, synthetic raw materials, which leave behind pollution stories that are very difficult to remove. It has been understood that this is unsustainable with the emergence of environmental problems as the first threat to the civilization we create.

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

CONNECTED PROBLEMS

"A shameful 50-year-old story of pollution within a civilization story of tens of thousands of years ..."

UNPREVENTABLE, PERMANENT ENVIRONMENTAL POLLUTION

Too much profit in a short time + Unconscious overconsumption + Uncontrolled industrial production = rapidly deteriorating ecology

ENVIRONMENTALLY HAZARDOUS INDUSTRIAL RAW MATERIALS DOMINATE THE MARKET

Synthetic origin industrial raw materials, with economical prices and suitable solutions for every problem, lead the world towards an irreversible solution

PARADOX

Wild and uncontrolled production + Environmental, unavoidable pollution + Disrupted ecology = The civilization we created poses a threat to itself ...

LOTS OF CARBON EMISSIONS & CLIMATE CHANGE

The bankruptcy of the development story

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

FOCUSING ON SOLUTION

WE ARE VERY CREATIVE BUT VERY SMART
WE CANNOT BE TALKED THAT WE ARE ...

Are the solutions we found rational ..?
Not enough ...
The result: an ecology that cannot renew itself

INDUSTRIAL MATERIAL
SOLUTIONS IN HARMONY
WITH NATURE REQUIRED

An old but renewed
perspective

RIGHT HINT FOR SOLUTION ...

A material without a pollution
story for tens of thousands of
years: CLAY

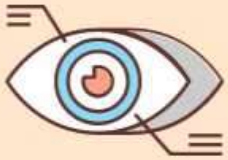
Presented by Bülent Gürakın
www.greenginnovation.com
Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

FOCUSING ON SOLUTION

PEOPLE WERE NOT SMARTER THAN US IN OLD TIME, BUT THE SOLUTION MAY BE HIDDEN IN THE PAST OF HUMANITY

An old but new alternative
= CLAY + POZZOLAN



A NEW PERSPECTIVE TO OLD SOLUTIONS WITH INNOVATION

Researching the potential of clay, which is already a very important industrial material, with today's advanced research techniques can contribute to the solution of the problem

RESULT: A COMPLETE SUCCESS...

Ancient civilizations may be right to prefer clay and natural pozzolan

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

ADVANTAGES OF SYNTHETIC RESINS

For the reasons we mentioned in the introduction, synthetic resins dominate the market and almost all standards are regulated according to these resins. Thanks to their dominance in the market, extensive scientific studies have been carried out on the material and special solutions have been developed for many specific problems. Thus, different variations of these products have been developed and are widely used in the industry. It provides the opportunity to apply with similar tools.

DISADVANTAGES OF SYNTHETIC RESINS

It is of synthetic origin and is not sustainable.

The total cost is very high considering the elimination of environmental and health problems it creates + the unsustainable nature.

Environmental and health costs are invisibly financed by the whole world.

Its price is sometimes manipulated by multinational companies holding oil resources according to global developments, causing serious cost increases and price fluctuations.

Until today, the lack of alternative materials, the features based on practical and scientific studies offered to the user; The toxic environmental effects it created resulted in ignoring the damages it caused to human health during the production and usage processes. These effects are not to be underestimated or negligible.
In the Safety Data Sheet of polyester resin, there are 9 important health risks in the "harmful effects" section and 13 protective precaution items in the precautions section.

Therefore, it has features that pose a great risk to the environment and human health.

greeng Green Engineering INNOVATION Construction & Insulation & Arts

GREENG INNOVATİON SOLITIONS

GENERAL CHARACTERISTICS OF THE MATERIAL THAT CAN BE USED INSTEAD OF SYNTHETIC RESINS

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

Clay + Natural Pozzolan

+ It is a completely ecological and natural material. It does not cause any harm to the environment during the production and application stages. It does not cause environmental pollution. It does not smell. Carbon footprint is almost zero.

+ Petroleum is indestructible and non-toxic like synthetic materials. When it is turned into waste, it mixes with nature and becomes a part of nature again.
It is an A1 class incombustible material. It can withstand very high temperatures without losing its physical properties.

+ Its raw material is extremely economical. It is available in unlimited quantities all over the world. It requires an extremely easy process to obtain.

+ It does not require oven, temperature, autoclave or technological equipment in its production. It is simply mixed and applied. Under atmospheric conditions, it hardens automatically for 4 hours in hot weather and 12 - 14 hours in the coldest weather.

+ Allows for on-site application. It provides the opportunity to apply the special forms with brush, trowel, spatula and similar tools by simply mixing the material where it will be used, pouring it into molds with the desired properties, spreading it on the floor, spraying.

Clay + Natural Pozzolan

+ In terms of density,
With the additives mixed into it by the user, it can be adjusted by the user from 1600 kg / M3 to 2500 kg / M3.

+ In terms of physical resistance;
Depending on the density of the material to be obtained, it is possible to provide a physical resistance from 15 MPascals to 60 MPascals.

+ It is not affected by water but breathes. Humidity and air permeability coefficient can be adjusted by the user as desired.

+ It does not stick to the mold, to release it from the mold, such as wax, release agent etc. it does not need substances.

+ Our material can be colored in any desired color with natural color pigments. It carries this color in its structure forever.

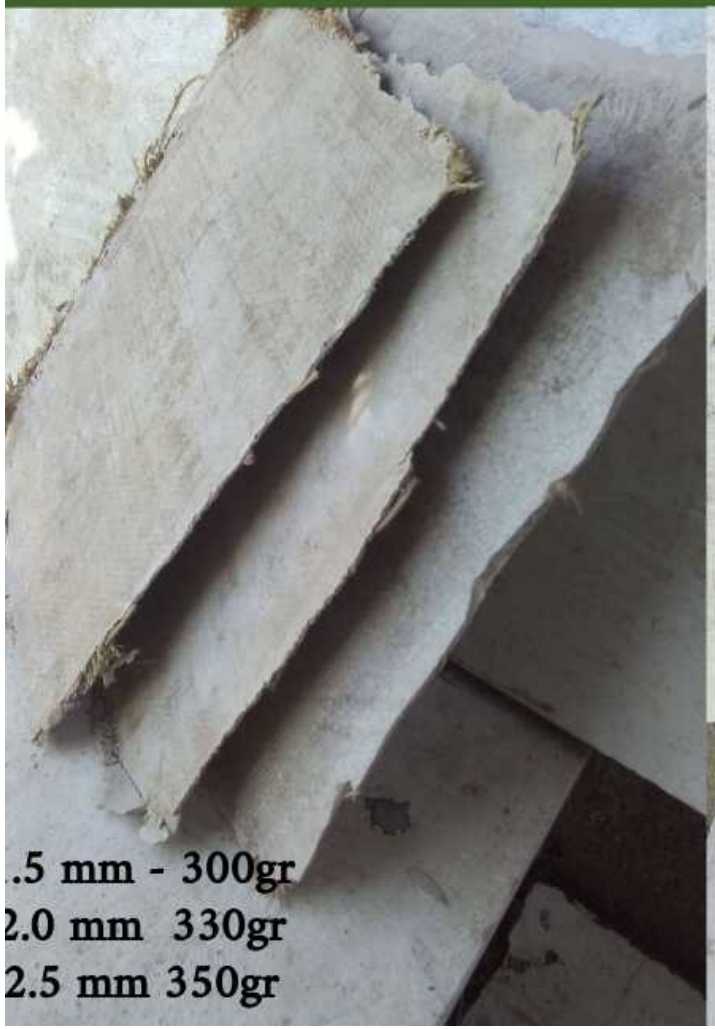
+ It is possible to use several different densities and forms of our material in the same production stages.

NEW PRODUCTION TECHNIQUE ALTERNATIVE TO GRSR APPLICATIONS

By making small changes in the main formula and adjusting the viscosity, layered applications can be made in open molds by using fiber reinforcement, just like in polyester resin applications. Thus, it is possible to produce light and durable products in the form of shells in large volumes.

ECO FRIENDLY PRODUCT

NEW PRODUCTION TECHNIQUE ALTERNATIVE TO GRSR APPLICATIONS



Glass, carbon fiber can be used as fiber, as well as silicone-based or polyester-based fibers used in textiles or special purpose composite fibers that can be produced for this purpose can be easily used. In addition, it can be used instead of glass fiber in jute, hemp, hemp, linen, cotton fibers, yarns and special fabrics knitted from them.

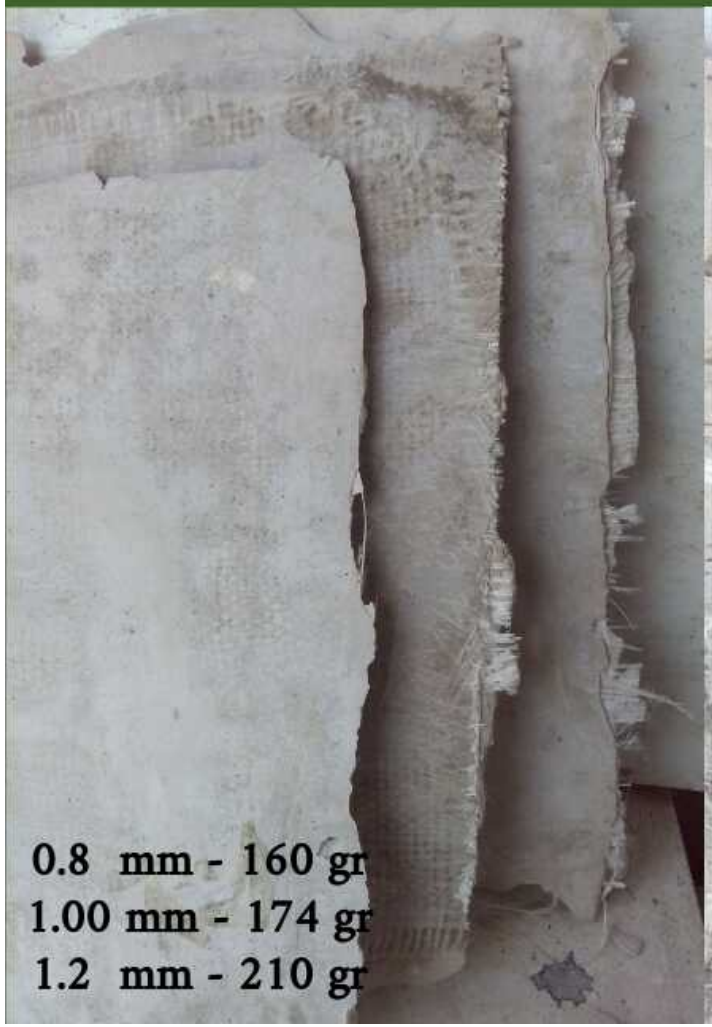
NEW PRODUCTION TECHNIQUE ALTERNATIVE TO GRSR APPLICATIONS

Viscosity adjustment and cleaning of the materials used are done simply by "Water".With this application, which is a new alternative to GRSR applications, the odor, gas, material and environment pollution, extremely harmful effects on human health, etc. Negative factors such as are eliminated.

300 gr/M2 Glas fibre fabric app.
1 Lay.- 2 Lay. - 3 Lay.. 20x 300 cm

1.0 mm - 300 gr
1.5 mm - 311 gr
2.0 mm - 320 gr

NEW PRODUCTION TECHNIQUE ALTERNATIVE TO GRSR APPLICATIONS



Another very important advantage of the applications made with this new technique is that the shrinkage rates after hardening are below 1%. However, in GRP applications, shrinkage after hardening can reach up to 3%, - 6%.

Environmental
Friendly

NEW PRODUCTION TECHNIQUE ALTERNATIVE TO GRSR APPLICATIONS

It has been revealed in our preliminary studies that synthetic resins can achieve their extreme physical properties if they are turned into a project and worked on with advanced scientific techniques. The Technological Preparation level of my material is TRL7.
For the TRL 8 and TRL 9 stages, only a small adaptation process is required.

EXTRAORDINARY FEATURE OF OUR MATERIAL: Ability to form a fiber-free form by applying 1 mm to the surface with a brush.

NEW PRODUCTION TECHNIQUE ALTERNATIVE TO GRSR APPLICATIONS

IN ADDITION TO THE ABOVE FEATURES

It is extremely economical and low cost

Synthetic resins / kg: 1.4 - 5.0 EURO price range

Our material that can be used as an alternative to synthetic resins / kg: 0.25 EURO

WHAT CAN BE DONE WITH OUR MATERIAL

Food resting, stocking, fermentation tanks, large cylindrical containers

According to the results we have achieved as a result of the R & D studies we have successfully concluded at this stage, it is possible to produce and market the following products using the same technique, the same molds, the equipment used in the production of synthetic resins and a very short adaptation study with our material to be used instead of synthetic resin.

ECO FRIENDLY

WHAT CAN BE DONE WITH OUR MATERIAL

According to the results we have achieved as a result of the R & D studies we have successfully concluded at this stage, it is possible to produce and market the following products using the same technique, the same molds, the equipment used in the production of synthetic resins and a very short adaptation study with our material to be used instead of synthetic

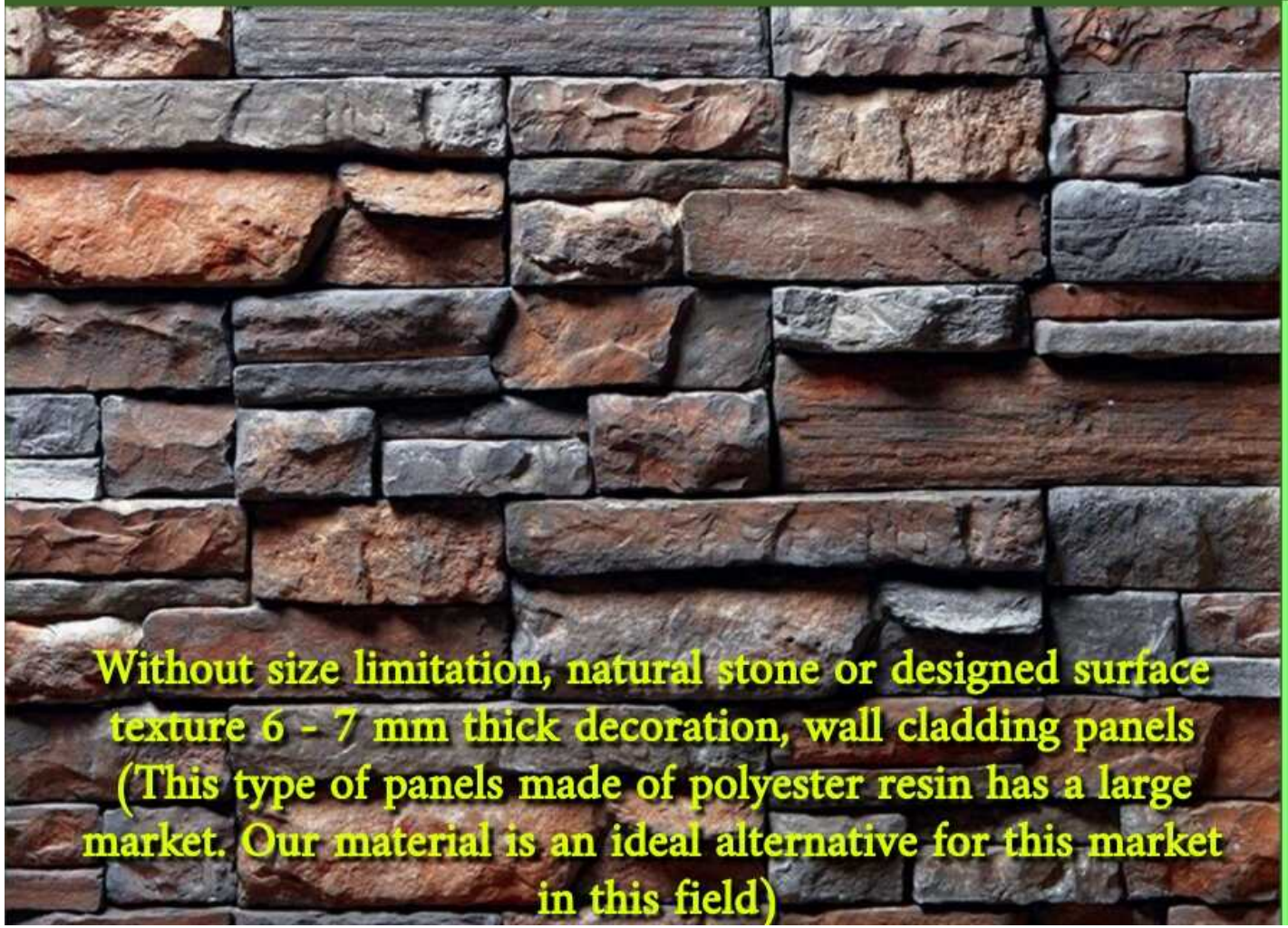
WHAT CAN BE DONE WITH OUR MATERIAL

According to the results we have achieved as a result of the R & D studies we have successfully concluded at this stage, it is possible to produce and market the following products using the same technique, the same molds, the equipment used in the production of synthetic resins and a very short adaptation study with our material to be used instead of synthetic resin.

WHAT CAN BE DONE WITH OUR MATERIAL

According to the results we have achieved as a result of the R & D studies we have successfully concluded at this stage, it is possible to produce and market the following products using the same technique, the same molds, the equipment used in the production of synthetic resins and a very short adaptation study with our material to be used instead of synthetic resin.

WHAT CAN BE DONE WITH OUR MATERIAL



According to the results we have achieved as a result of the R & D studies we have successfully concluded at this stage, it is possible to produce and market the following products using the same technique, the same molds, the equipment used in the production of synthetic resins and a very short adaptation study with our material to be used instead of synthetic resin.

eco technology

THE ADVANTAGES OF THESE PRODUCTS TO BE PRODUCED IN THE MARKET

carbon neutral

1 - A1 Fireproof product certificate

2 - Extremely economical product cost

3 - Possibility to add 100% ecological arguments to product features

4 - Extremely low carbon footprint product range

5 - 0 toxic effect to the environment, producers, users

6 - The feature of being a part of nature immediately when it turns into waste

7 - Supply of healthy drinking water that has not come into contact with toxic substances.

The advantages that are written above and that can be added further, are the features of the products that will be preferred today when the sensitivity to the environment is rapidly increasing, and will become mandatory in the near future.

MARKET FIGURES

100%

According to the 2020 figures; The global synthetic resin market is around 31 Billion US Dollars, with Polyester resins around 12 Billion US Dollars, Epoxy resins around 11 Billion US Dollars, Polyurethane resins around 8 Billion US Dollars.

The material we have developed has much more economical and superior properties than all classical materials in total.

Our project needs a fast, robust and rational marketing strategy. We laid the foundations, we can raise the structure together.

Users will naturally prefer our material when the material is put on the market.

This project is necessary to restore the deteriorating ecological balance. It is very difficult for us to continue this project alone together with our other projects. To complete the scientific aspect, we need official and semi-official institutions, media support for promotion, and financial resources to finance our work.

We are looking for Universities and Research Institutes, Non-Governmental Organizations, Environment and research foundations, funds and companies with strong infrastructure to carry the project to the market.

For more information, you can visit our website www.greenginnovation.com. Or you can contact us at blntgrkn@gmail.com

greeng INNOVATION

Green Engineering

Construction & Insulation & Arts

THE NEW GENERATION, WHICH WE HAVE CONCLUDED IN R & D STUDIES, IS USED FOR THE PROTECTION OF ARMORED VEHICLES OF THE CERAMIC TYPE, "ERA" TYPE, AND FOR SOUND AND HEAT INSULATION OF ARMORED VEHICLES.

greeng Green Engineering INNOVATION Construction & Insulation & Arts

PRE-EXPLANATION

Greeng Innovation Ltd is a small and developing company established to modify clay in ecological isolation and construction materials and to develop ceramic types that do not require cooking. Our company does not have a specific knowledge or infrastructure regarding ammunition, weapon systems, armor and developments in these matters, other than standard resources. However, when we evaluated the results of our R&D studies and made a detailed literature research on the above subjects, the idea that our invention could be a different, practical, quite economical and different method for reinterpreting reactive armor, and a definitive solution for the isolation of armored vehicles arose. Therefore, we would like to underline that this document we have prepared should be evaluated as a "project preliminary study". It is thought that when the solutions we offer and are still hidden in us are transformed into projects and when we have information about the details, other capabilities of our material can be included in the project, and perhaps completely different and very simple solutions can emerge. Therefore, we request that the contradictions, errors and deficiencies that can be seen by the eyes of the subject, but not noticed by us, be ignored for now.

Bülent Gürakın. Greeng Innovation Izolasyon Insaat ve Sanat Ltd Sti Project Manager

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

greeng INNOVATION
Green Engineering
Construction & Insulation & Arts

FAILURES AND PROBLEMS IN THE PROTECTION OF ARMORED VEHICLES

INSUFFICIENCY OF STANDARD ARMOR CAPACITY, ESPECIALLY AGAINST NEWLY DEVELOPED ROCKETS

A simple rocket projectile can destroy a multi-million dollar armored vehicle along with its personnel.

NEED ADDITIONAL PROTECTION AS ADDITIONAL ARMOR

In addition to the existing armor systems of armored vehicles, extra protection systems are required.

NO SYSTEM CAN PROVIDE 100% FULL PROTECTION

In the additionalprotection systems developed, no success has been achieved in providing full protection yet.

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

FAILURES AND PROBLEMS IN THE PROTECTION OF ARMORED VEHICLES

ARMOR DEVELOPED FOR ADDITIONAL SOLUTIONS ARE HIGHLY COST

Although a complete protection is not provided, these systems are very expensive systems.

THESE SYSTEMS NEED CONTINUOUS DEVELOPMENT

Rocket launcher technology is constantly being developed in parallel with the developed defense systems.

LACK OF SOUND AND HEAT INSULATION SOLUTIONS APPLIED TO ARMORED VEHICLES

The existing insulation applications in armored vehicles can be made much more perfect with the material we have developed.

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

AVAILABLE SOLUTIONS AND APPLICATIONS

REAGENT TYPES OF ARMOR USED IN ARMORED VEHICLES

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

ERA (Explosive Reactive Armor)

Explosive reactive armor, namely ERA (Explosive Reactive Armor), is the most widely used armor type among reactive armors. Reactive armors are used primarily in tanks, armored personnel carriers and armored combat vehicles. Explosive reactive armor consists roughly of the explosive sandwiched between two metal plates. If there is any bullet penetration into the metal plate outside of the ERA, the modulator inside it breaks or reduces the effect of the incoming bullet by exploding outward. ERAs also have a disadvantage. If the tank with the ERA on the battlefield is hit, the infantry colliding near it can be damaged.

SLERA (Self-Limiting Explosive Reactive Armour)

Self-limiting explosive reactive armor (SLERA) is a modified explosive structure shaped with the base of the ERA system. SLERA (self-limiting explosive reactive armor) uses explosives with a lower mass than can be considered passive armor. Thanks to the explosive in its structure, SLERA ensures that the explosive penetrating into it is spread in a controlled manner. Although SLERA causes lower performance compared to ERA, it also reduces the effects on vehicle structure. However, SLERA is cheaper and easier to produce.

NERA (Non-Energetic Reactive Armor)

Non-energy reactive armor, namely NERA, has a similar sandwich structure like ERA's, but does not contain explosives. It is usually formed by placing materials such as plastic and aramid between blocks such as borkarbide, alumina, titanium carbide, silicon carbide, which are ceramic-metal formations formed by sintering with HIP (Hot Isostatic Pressing). It is an armor that has a much longer life compared to ERAs, is expensive to manufacture and has high maintenance costs. ERAs are known as disposable reactive armors. NERAs are long-lasting. It can withstand multiple impacts. It needs to be replaced every 5 years and maintenance is expensive

NxRA (Non-Explosive Reactive Armor)

Non-explosive reactive armors, in short, NxRAs, are similar to NERA armors. There is only one structural difference. Polymer is used instead of plastic. As in SLERAs, NxRAs, which are also used by Israel, have more effective protection against high explosive anti-tank (HEAT) ammunition than NERAs. It protects the tanks by reacting to the explosion that occurs after being hit, just like the SLERA's, in a way that affects a much larger surface instead of a very small point. In order to increase the protection, Israel chose to use NxRA at the risk of damage to the armor, so it could protect its tanks better against anti-tank ammunition, but it had a lot of HEAT protection. Because of its orientation, its tanks had to be protected much less against tanks such as Leopard 2A7, M1A2 Abrams, ALTAY against armor-piercing sabot ammunition.

NO SOLUTION

Current solutions cannot fully solve the problem

Today, it is seen that even reactive armored vehicle protection systems, which are considered as the most advanced armor system, cannot provide complete protection against the developed technologies and electronic and electromagnetic methods are used for a definitive solution.

greeng INNOVATION

Green Engineering

Construction & Insulation & Arts

THE SOLUTION MAYBE MUCH SIMPLE THAN THOUGHT

The result is that a new perspective is needed on this issue.The solution may be hidden in very simple applications. However, this requires a skilled and economical material.

Very hard, hybrid available shell

Very light and strong porous layer into which new solutions can be hidden

A new perspective
The perfect combination

Presented by Bülent Gürakın

www.greenginnovation.com

Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

RELATIONSHIP OF THE MATERIAL WE DEVELOPED WITH REACTIVE ARMOR TECHNOLOGY

TECHNOLOGY USED IN EXISTING SYSTEMS

As it is known, especially the first three armor protection systems are used to hide explosives of various strengths (RPG-7, RPG-29, RPG-27 etc.) inside special ceramic plates or ceramic plates used hybrid with metal, and the rocket will be ineffective as a result of the counter-explosion. It is based on the principle of bringing. The production of ceramic plates used for this purpose requires production systems in which high temperature furnaces and high pressure presses are used together. Ceramics carrying the explosive weigh more than 2000kg / M3 (specific gravity 2>) and overload the armored vehicle or tank in intensive use.

Especially in combat conditions, the fuel consumption of each kilogram weight and the armored vehicle or Considering that it reduces the speed and mobility of the tank, it is a fact that this type of extra protection includes some disadvantages as well as the benefits it provides. The lack of an alternative solution to this issue has made it necessary to use these methods as the best solution.

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

PROPERTIES OF OUR MATERIAL

Our company is an R&D company established to develop specific ceramic types that do not require baking, based on their experience in the ceramic industry. Our project, which we started in 2015 and turned into an official project in 2018, was officially finalized successfully on 21 12 2020.

According to the results we have obtained;

1 - Our material is Clay + Natural Pozzolan origin. As a result of our R&D work, it was brought to TRL 7 level.

2 - It has a mineral structure, it does not contain any synthetic, flammable or harmful components.

3 - It is extremely economical from its raw material to processing processes.

4 - It does not need to be fired or heat treated in order to show its ceramic properties.

5 - It is in liquid form. Its application is extremely simple. It is mixed and poured into molds. It hardens spontaneously under atmospheric conditions.

6 - Since it is not cooked, it carries all kinds of assigned materials while preserving their properties.

7 - It forms a whole with hard materials such as Silicon Carbide and Quartz, and it fully reflects the properties of these materials in their physical structure.

The features listed above are the general properties of our material.

As for the main feature that makes our material a "special material":

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

MATERIAL WE DEVELOPED Clay + Natural Pusolan
IT IS ORIGINAL AND OUR MATERIAL HAS TWO DIFFERENT FORMS

"All the materials we have developed are different forms of these two materials"

GreCer
Nonporous Clay + Natural Pozzolan

100% ecological, Clay + Natural pozzolana origin, non-porous, compressive strength adjustable from 20 MPa to 60 MPa (it is possible to increase this figure in special forms), showing ceramic properties, resistant to all kinds of natural conditions, resistant to water, A1 class fireproof, environmentally friendly, 1600 - 2500 kg / M3 density industrial material.

GrePor
Porous Clay + Natural Pozzolan

100% ecological, porous, resistant to all kinds of natural conditions, A1 class fireproof, Clay + Natural pozzolana origin, 60 - 400 kg / M3 density, 100 kPa - 7 MPa pressure resistance (it is possible to increase the values in special forms) Mineral insulation material with an insulation coefficient of 0.025 - 0.10 W / mK.

THE MAIN FEATURE THAT MAKES OUR MATERIAL "SPECIAL AND UNRIVALED IN ITS FIELD"

Since both materials (GreCer and GrePor) have the same origins, they can be applied in layers in the same process. In other words, an extremely hard surface with the desired thickness and extremely light under this surface, with excellent heat and sound insulation ability, without deteriorating the structure of everything desired (no cooking or heat is required for hardening)
A single layer product with excellent properties can be obtained by applying a second layer of desired thickness, which can be concealed.

Since both materials come from the same origin, they are molecularly and chemically linked and show the properties of a single layer. They do not tend to be separated from each other by time, climatic conditions, mechanical and chemical effects and have an infinite life.

greeng Green Engineering INNOVATION Construction & Insulation & Arts

HOW OUR MATERIAL CAN BE USED IN REACTIVE ARMOR TECHNOLOGY ..?

The two-layer, i.e., front surface of which is extremely hard and armored as described above + a porous, light, yet strong, second layer that can store all kinds of weak explosives, chemical substance capsules, assemblies, etc., and is not affected by external influences, just behind it = For armored vehicles an extremely economical and easy to produce protective secondary hood, or shell ...

We have seen in the tests we conducted in 2018-2019 at Muğla Provincial Gendarmerie Command that the 2-2.5 cm thick form obtained by using our material together with composite materials such as Aramid and Kevlar can stop G3 bullets. However, the characteristic difficulties of the ballistics industry caused us to halt this work and shift our project to other areas in order to continue our commercial life. In the evaluation we made upon the successful conclusion of our project, we realized that the capacity and capabilities of our material were much more advanced than the first studies we did in the field of ballistics. That's why we decided to write this preliminary project with the results we obtained.

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

greeng Green Engineering INNOVATION Construction & Insulation & Arts

CAN A DIFFERENT TECHNOLOGY BE DEVELOPED WITH OUR MATERIAL FROM REACTIVE ARMOR TECHNOLOGY ..?

Undoubtedly yes ... With the new possibilities brought by the material we have developed (showing ceramic properties without the need for cooking and using the hard shell + porous layer in the same process = very light, very durable, an economical secondary layer where the desired features can be loaded, the bonnet) rocket launchers could be no longer a threat to armored vehicles. We have some ideas and preliminary work to bring this argument to life.

Our test plate that stops the 2 cm thick Tvaron supported G3 bullet

Presented by Bülent Gürakın www.greenginnovation.com Mail: blntgrkn@gmail.com

USING FOAM FORM OF OUR MATERIAL IN SOUND AND HEAT INSULATION OF ARMORED VEHICLES

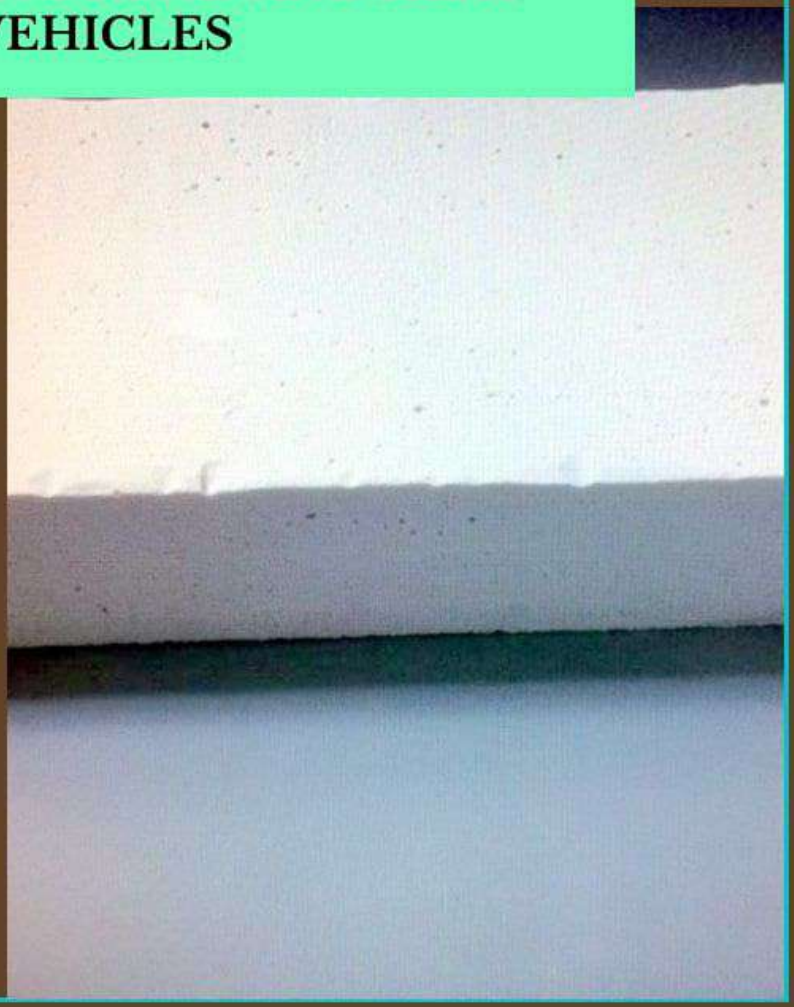
Although the use of our material in reactive armor technology requires a project, the use of sound and heat insulation of armored vehicles does not require a project. Because in the R & D project we have finalized, the isolation issue has been successfully completed and is usable.

The mineral foam form of our material is an extremely economical and permanent solution instead of insulating materials that are not permanent in the long term, harmful to health, need to be renewed and have insufficient physical properties such as expensive ceramic insulation plates, glass wool, rock wool, which are currently used in the insulation of armored vehicles.

USING FOAM FORM OF OUR MATERIAL IN SOUND AND HEAT INSULATION OF ARMORED VEHICLES

Another important feature that makes our material unrivaled is that it is extremely simple to use the material in a mobile manner and it can be used by mixing the components that make up the material and injecting it into the spaces in place. The material swells like polyurethane foam where it is applied and fills all inaccessible spaces without leaving any gaps. In this way, it provides ideal heat and sound insulation that is resistant to high temperature, non-flammable and does not produce toxic gases.

Our material is an unrivaled insulation material in the world with its 80-120 KG / M3 density and 0.035 W / mK - 0.040 W / mK and 135- 190 kPascal compressive strength values.



The materials and products we have developed are in TRL 7 stage. As we mentioned in the beginning, this presentation is a preliminary project draft and should be rigorously reworked with a professional team including experts. We believe that new and surprising solutions can be produced with our know-how and new solution suggestions.

For this reason, we are looking for companies that are official, semi-official and with strong infrastructure that are experts in their fields and open to innovations and extraordinary solutions to support and reshape this project.

Geniş bilgi için www.greenginnovation.com sitesimizi ziyaret edebilirsiniz. Ya da blntgrkn@gmail.com adresinden bizim ile iletişime geçebilirsiniz.