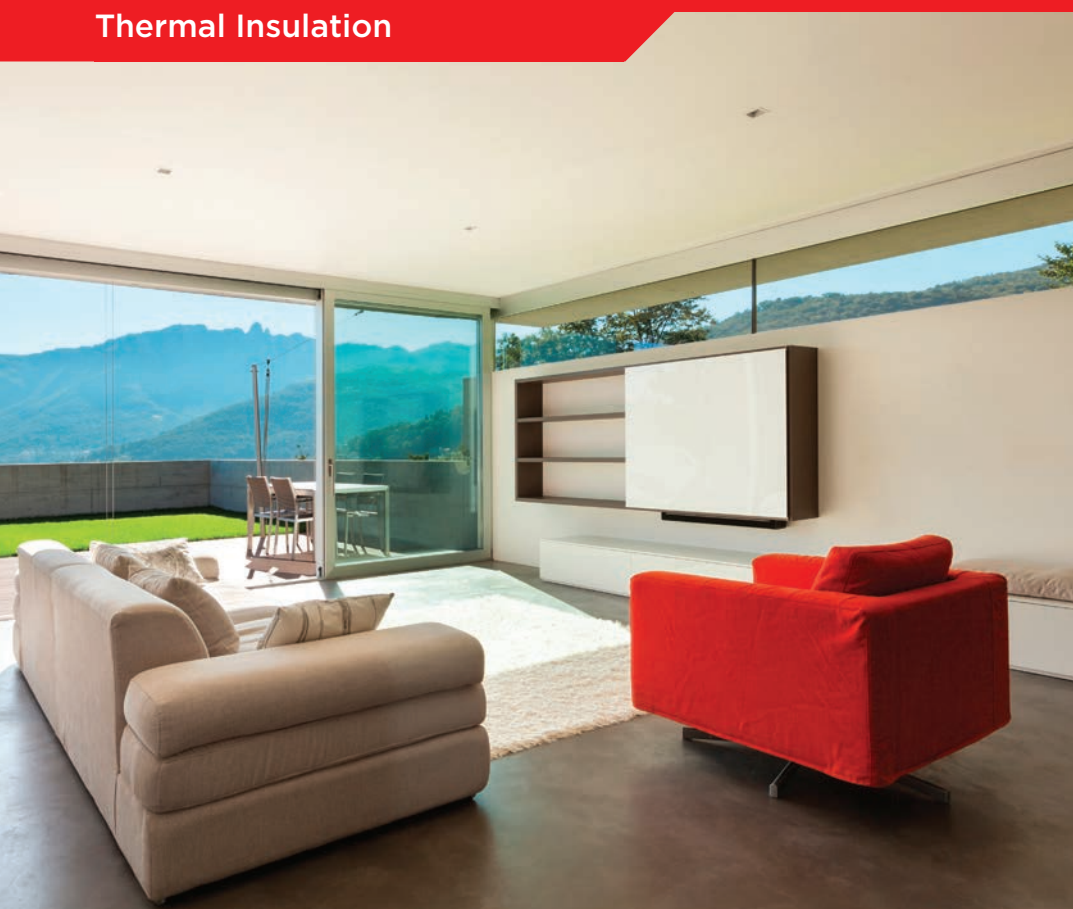


Thermal Insulation



Vetonit

External Thermal Insulation Composite System

- What are the benefits of a thermal insulation system?
- Which thermal insulation material to choose: XPS, EPS or RW?
- Elements of an External Thermal Insulation Composite System
- SAVETO Thermal Insulation Systems



What are the benefits of thermal insulation systems?

The development of construction technologies in recent years has made it possible to build large-scale buildings with exceptionally bold and innovative designs. Simultaneously, the increase in the size of buildings has led to an urban boom, further expanding the size of cities.

The concentration of so many people in one place causes significant energy problems related to the power supply of these buildings. Just 20-30 years ago, the approach to solving this problem was to increase power capacity. However, the drastic rise in energy prices has required construction innovators to seek new approaches to solve this issue.

It was the rise in energy prices that made the idea of External Thermal Insulation Composite Systems (ETICS) so important. This idea was later expanded.

Ecological step

Energy production is a sector with a significant negative impact on the environment. Every step taken to reduce energy consumption directly benefits nature and also helps your monthly budget.

Increases comfort

An insulated building has a microclimate that is substantially more beneficial to people. It can best be described with the word "comfort"—no sudden temperature fluctuations, limited outside noise, and a tranquil environment.

Increases the value of the building

An insulated home has a higher value in the real estate market. The main reasons for this are that it saves homeowners money and provides comfort and relaxation.

Is paid off as an investment

Thermal insulation of a building can reduce energy costs by 30-40%. In practice, this means that the cost of insulation can be recouped within five years. In the industry, this payback period can be as short as 1 to 2 years.

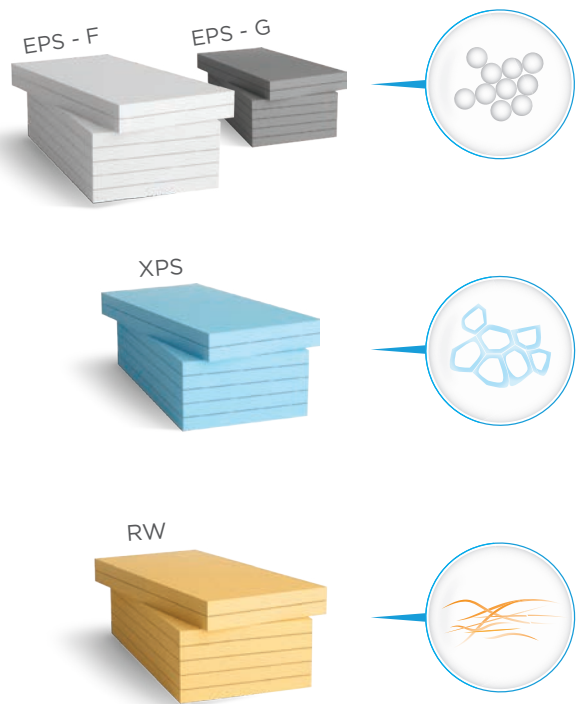
Which thermal insulation material to choose: XPS, EPS or RW?

Thermal insulation systems are mainly performed using three types of thermal insulation boards:

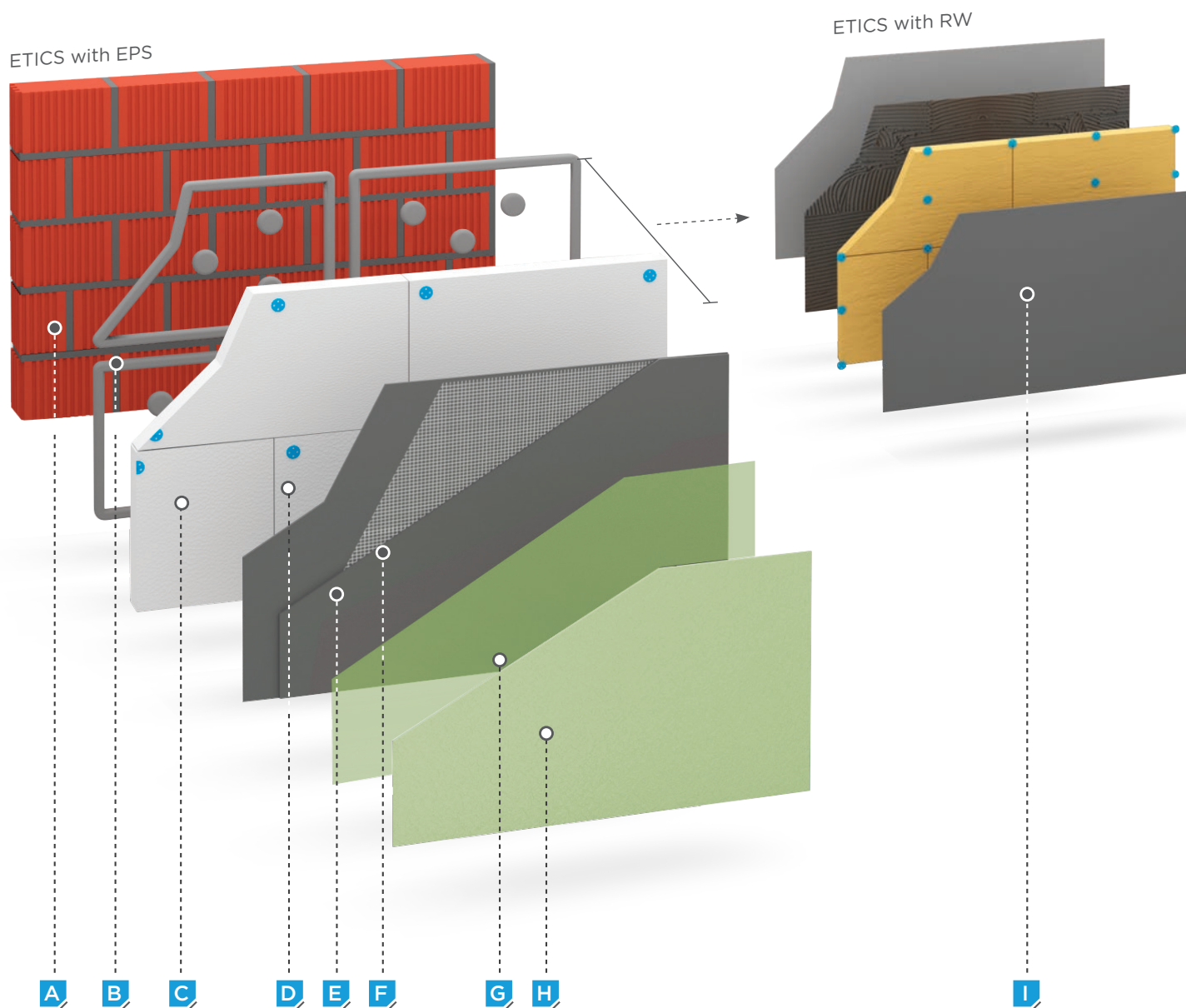
XPS (Extruded Polystyrene), EPS (Expanded Polystyrene) or RW (Rock Wool). Each of these materials has its advantages and disadvantages, and its purposes. Different materials can be combined depending on the needs and specific requirements, such as strength, soundproofing, incombustibility, etc.

Criteria for comparing these materials include:

- **Thermal conductivity of the material λ :** The lower the value, the better the material insulates.
- **Density:** Generally, an increase in density results in decreased thermal insulation properties, but it is important for mechanical resistance.
- **Water absorption:** Indicates the percentage of water that could be absorbed by the total volume of the material.
- **Water vapour transmission rate:** Poor transmission can lead to condensation and mold.
- **Compressive force at a 10% change:** Indicates the force required to achieve a 10% deformation from the initial parameters; softer materials deform more easily.
- **Coefficient of linear expansion:** Indicates the possible size changes of the insulation boards over time.
- **Price:** An important criterion, but thermal insulation should be considered a long-term investment.



Elements of an External Thermal Insulation composite system

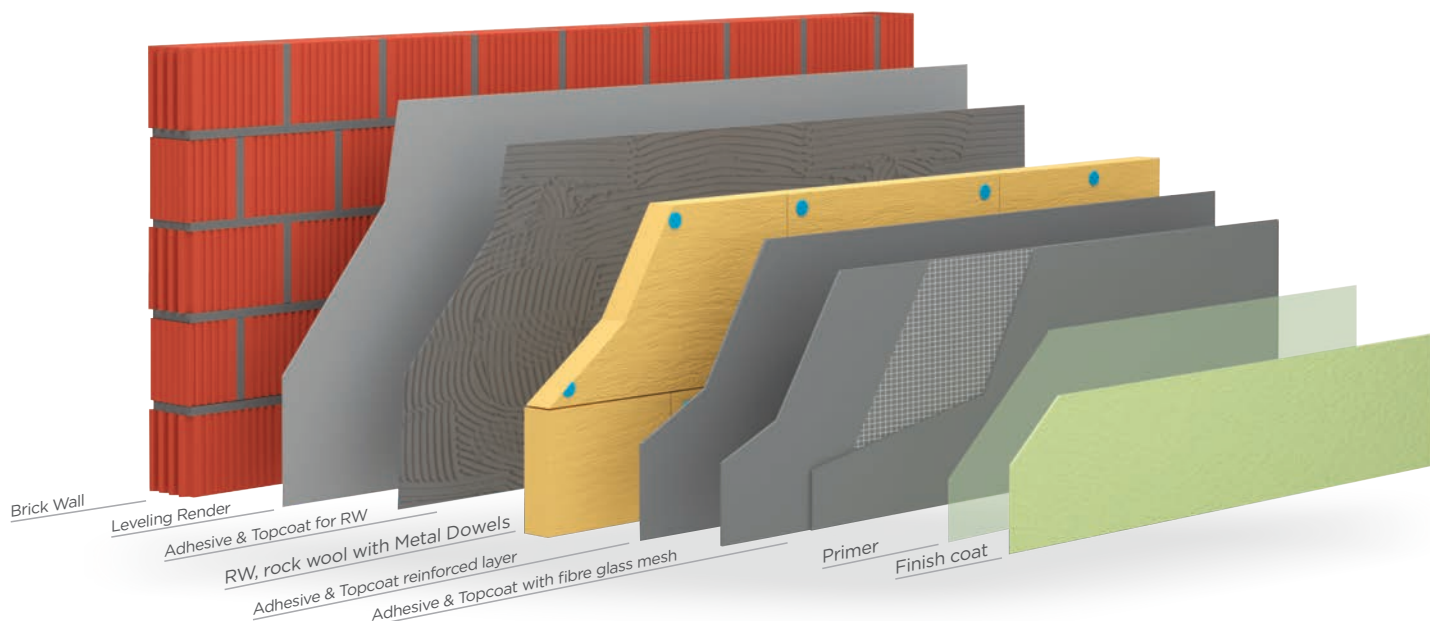


Elements of insulation detail

- | | | |
|--|--|---|
| A Substrate | D Insulation boards Dowels (plastic or metal). these can be disregarded when the building is three floors or less, depending on wind load calculations. | G Primer: Applied depending on the finishing system |
| B Adhesive applied over the bottom sides of insulation boards | E Bodycoat | H Finish coat from Vetotouch range |
| C Extruded Polystyrene (XPS), Expanded Polystyrene (EPS), or Rock Wool (RW) | F Fibreglass mesh | I ETICS with RW (Rock wool)
Rock Wool is applied to the prepared substrate, with adhesive applied using a notched trowel. Before applying the main body coat layer, an additional reinforced layer is applied over the Rock Wool. |



Vetonit Insulation System MAXeffectiv



Advantages

- Fire resistant EIFS/ETICS assembly
- Reduces energy consumption for cooling and heating
- Prolongs structural life expectancy and prevents early concrete aging
- Excellent noise insulation parameters

System Description

Vetotherm MAXeffectiv system is an externally insulated finishing system (EIFS) that is composed of a superior adhesive that bonds insulation boards to the substrate (Vetotherm Ultra), the mineral wool boards (Vetotherm RW), a base coat built up from the same superior adhesive (Vetotherm Flex) while being reinforced with a glass fibermesh and a top coat from Vetonit's Vetotouch product range. The system is fire-resistant and once applied will provide a thermally insulated envelope on all sun facing facades that enables efficient and economic use of energy while maintaining internal weather at a comfortable level for the inhabitants.

Products used in the system

Leveling and Gluing Insulation Boards



Premix Plaster SF

Fiber Reinforced Sprayable Premixed Plaster

Fiber Reinforced Sprayable Premixed Plaster. The product is used on block walls, concrete substrates and fair-faced concrete when using **Spatter Dash SB** as a scratch coat.



Vetotherm Ultra

Cementitious Based Adhesive and Base Coat For Eifs / Etics

Cementitious-based adhesive and base coat for EIFS/ ETICS. **Vetotherm Ultra** is a high-performance, polymer-modified Portland cement-based mortar finish coat designed as both an adhesive and top coat for **Vetotherm XPS/EPS** (ETICS) panels. **Vetotherm Ultra** also provides synthetic stucco finishes and adhesive for expanded and extruded polystyrene insulation boards as well as mineral and rock wool boards.



Vetotherm RW

Rock Wool

Rock wool is a natural and ecological material obtained by heat treatment of basaltic rocks. The strongest advantages of RW are its incombustibility, superior vapor permeability, soundproofing, and practical non-aging. If you want to achieve maximum results not only in terms of thermal insulation but also in terms of soundproofing and a comfortable microclimate, then use mineral wool.

Anchoring



Vetotherm ACD

Metal Nail Dowel for Eps

A dowel with a metal nail for additional mechanical strengthening of the thermal insulation system with slabs of Rock wool.

Reinforcement



Vetotherm Mesh

Fibre Glass Reinforcing Mesh

The fiberglass mesh is used for the reinforcement of plaster. The strength of the thermal insulation system and its resistance to accidental impacts, such as hail, largely depend on this mesh. The fiberglass mesh is alkali-resistant and designed to last a very long time in conjunction with our products.

Priming



Vetobond AB432

Acrylic Polymer Cement Modifier & Bonding Agent

A universal acrylic based primer that promotes bonding with all types of cementitious, acrylic, and silicate substrates.

Decorating

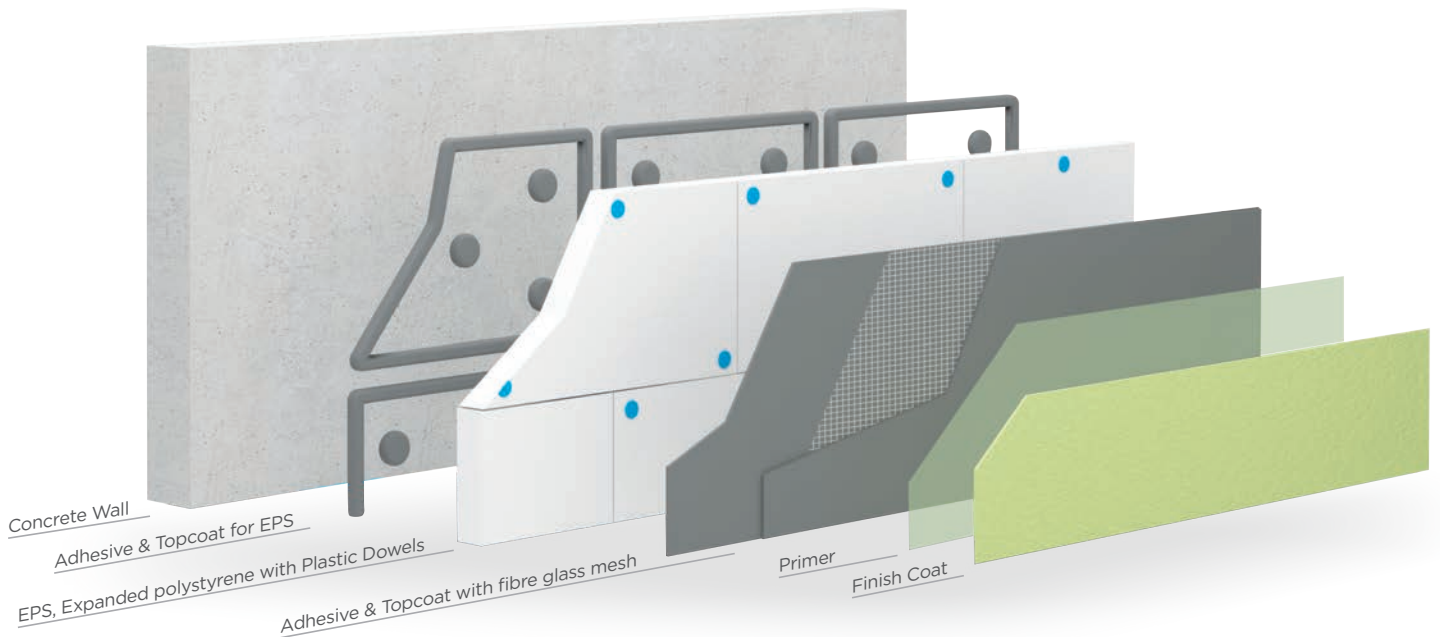


Vetotouch Range

Vetonic's decorative product range that offers a latitude of finish textures and basis.



Vetonit Insulation System E1



Advantages

- Providing a thermal insulating envelope to structures while eliminating heat bridges
- Prolongs structural life expectancy and prevents early concrete aging
- Reduces energy consumption for cooling and heating

System Description

Vetotherm E1 system is an externally insulated finishing system (EIFS) that is composed of a superior adhesive that bonds insulation boards to the substrate (Vetotherm Flex), expanded or extruded polystyrene boards (Vetotherm EPS/XPS), a base coat built up from the same superior adhesive (Vetotherm Flex) while being reinforced with a glass Fiber-mesh and a top coat from Vetonit's Vetotouch product range. Once applied, the system will provide a thermally insulated envelope on all sun-facing facades, enabling efficient and economical use of energy while maintaining a comfortable internal climate for the inhabitants.

Products used in the system

Gluing Insulation Boards



Vetotherm Flex

Cementitious Based Adhesive
And Base Coat for Eifs / Etics

Vetotherm Flex is a high-performance, polymer-modified Portland cement-based mortar finish coat designed as both an adhesive and a top coat for Styrofoam panels (XPS/EPS) in ETICS. **Vetotherm Flex** also provides synthetic stucco finishes and adhesive for expanded polystyrene insulation boards. It is ideal for embedding fiberglass mesh fabric where required. **Vetotherm Flex** is supplied as a dry powder in pre-weighed bags, ready to use on-site, requiring only the addition of clean water to produce easily workable mortar. **Vetotherm Flex** can be applied in thicknesses up to 5 mm.



Vetotherm EPS

Expanded Polystyrene

EPS-F, Expanded polystyrene represents an artificial polymer with an open structure of spherical particles filled with air. This is one of the most common thermal insulation materials in modern construction.

Anchoring



Vetotherm ACD

Plastic Nail Dowel for EPS

A dowel with a plastic nail is used for additional mechanical strengthening of the thermal insulation system with slabs of EPS and XPS.

Reinforcement



Vetotherm Mesh

Fibre Glass Reinforcing Mesh

The fiberglass mesh is used for the reinforcement of plaster. The strength of the thermal insulation system and its resistance to accidental impacts, such as hail, largely depend on this mesh. The fiberglass mesh is alkali-resistant and designed to last a very long time in conjunction with our products.

Priming



Vetobond AB432

Acrylic Polymer Cement Modifier
& Bonding Agent

A universal acrylic-based primer that promotes bonding with all types of cementitious, acrylic, and silicate substrates.

Decorating



Vetotouch Range

Vetonit's decorative product range that offers a latitude of finish textures and basis.

HEAD OFFICE IN SAUDI ARABIA
Saudi Vetonit Co. Ltd. (SAVETO)

Riyadh

P.O. Box - 52235

Riyadh - 11563

2nd Industrial City

Tel: (+966) 11 265 3334

E-mail: info.riyadh@saveto.com

Jeddah

P.O. Box - 40668

Jeddah - 21511

Industrial City, Section 5

Tel: (+966) 12 637 6001

E-mail: info.jeddah@saveto.com

Dammam

P.O. Box - 76135

Dammam - 31952

2nd Industrial City, St. No. 85

Tel: (+966) 13 899 5784

E-mail: info.dammam@saveto.com

for more information visit our website
saveto.com