AL MANARATAIN

AL MANARATAIN COMPANY AND ALI AL SHAAB GROUP W.L.L.

المنارتين

شركة المنارتين و مجموعة علي الشعب ذ.م.م

INSULATION BLOCKS (With Expanded Polystyrene)

What is Expanded Polystyrene?

As per chemical terms, it is a themoplastic viz styrene. Styrene is produced from benzene and ethylene, and polymelisation is accomplished in the presence of catalyst. As small beads, containing blowing agent which is expanded by treatment with steam.

Expanded polystyrene is a closed cell cellular material with a very low weight and compratively high standard. It is immune to water, moisture and most chemicals. It is physiologically harmless and neutral in taste.

Highlights of Expanded Polystyrene:

- Low K-value made it excellent thermal insulation material.
- Compared to weight, it has high strength.
- It is economical compared to other insulation materials.
- Has very low water absorption.
- Does not encourage insects or pest life.

Physical Properties:

- Density: 20 – 24 Kg/m^3
- Thermal Conductivity : 0.037 W/M^2 C^0
- Water abosorption : Polystyrene is unaffected by moisture.

Building Insulation Requirements:

The buildings must be insulated to prevent excessive heat absorption and thereby reduce the cost of HVAC systems installed. This ensures occupants of maximum comfort with low noise level and reduce air movement. The expanded polystyrene has very low thermal conductivty compared to most of commercial insulation materials.

ماهو البوليستيرين؟

لن نتعرض في هذا التعريف للتركيبة المعقده للبوليستيرين. ولكنه ببساطة شديدة عبارة عن مادة بلاستيكية بالإضافة الى سيترين. والسيترين يتم إنتاجه من تفاعل البنزين. الإيثيلين والبوليميليزيشن في وجود مواد منشطة. البوليستيرين عبارة من مادة خلوية مغلقة خفيفة الوزن. تقاوم الرطوبة والماء ومعظم الموارد الكيميائية. من الناحية الفيزيائية. البوليستيرين مادة غير ضارة وليس لها طعم ولا رائحة كما أو المواد العضوية لاتؤثر في.

مميزات البوليستيرين :

- معامل التوصيل للحرارة قليل مما يجعلها مادة ممتازة في مقاومة الحرارة.
- مادة البوليسيتر تعتبر مادة قوية مقارنة بوزنها.
- البوليستيرين مادة سعرها إقتصادي مقارنة بالمواد الأخرى العازلة للحرارة.
- نسبة إمتصاصها للماء قيلة جداً.
- المواد العضوية والبكتيريا لاتستطيع الحياة على البوليستيرين.

الخواص الطبيعية للبوليستيرين :

- الكثافة
- معامل التوصيل للحرارة
- البوليسيترين لايتأثر بالرطوبة والماء

متطلبات العزل الحراري للمباني :

ما يوجب إستخدم البوليستيرين كعازل حراري لمنع إمتصاص المباني لحرارة الشمس وذلك لما يتميز به البوليسترين بقلة توصيله للحرارة والمقارنة توضح ضرورة إستخدام البوليسرين كمادة عازلة لما سيوفره من إستهلاك للطاقة كنتيجة لتخفيض إستعمال أجهزة التكييف وأيضاً فإنه تبعاً لذلك سيوفر الهدوء والراحة والسكينة لشاغلي المباني.

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هاتف : ١٧٥٩٤٥٩٥ ٩٧٣+. فاكس : ١٧٥٩١٢٦٧ ٩٧٣+

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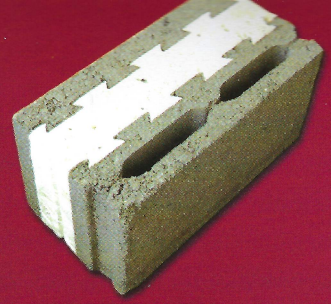
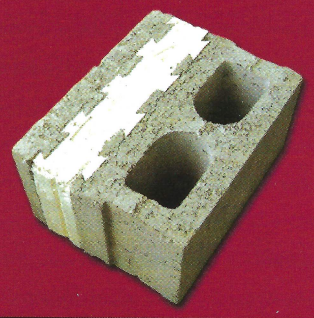
وفر من فاتورة الكهرباء بإستخدام الطابوق العازل للحرارة

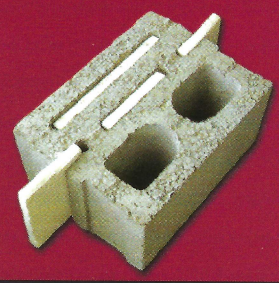
Reduce Electricity Consumption by using Insulation Blocks



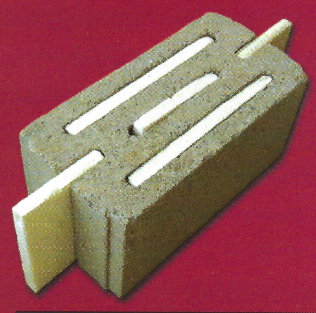
8" Sandwich Block
400 x 200 x 200 mm
Ave. Weight 19.00 kg.
U-Value : 0.375 W/m^2C^0



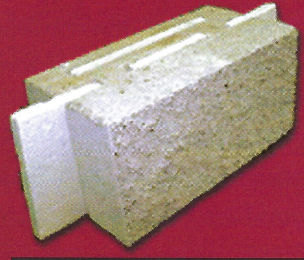
12" Sandwich Block
400 x 300 x 200 mm
Ave. Weight 31.00 kg.
U-Value : 0.420 W/m^2C^0



12" Slotted Type
400 x 300 x 200 mm
Ave. Weight 26.00 kg.
U-Value : 0.620 W/m^2C^0



8" Slotted Block
400 x 200 x 200 mm
Ave. Weight 22.80 kg.
U-Value : 0.640 W/m^2C^0



8" Slotted Split Block
400 x 205 x 200 mm
Ave. Weight 27.00 kg.

IMSI®

Integrated Masonry Systems International, Ltd.

Unique Block Shape

IMSI® Insulated Reinforced Masonry System performs better because of the unique shape of its concrete masonry unit. The double-core configuration combines with reduced and lengthened thermal pathways, yielding high thermal values while allowing for structural reinforcing. CFC-free polystyrene insulation inserts insulate while wheather-resistant surface bonding cement provides a maintenance-free surface.

INTRODUCTION

Reinforced Masonry

The IMSI® System's use of normal rebar and grout provides designers and engineers with structural integrity not found in other insulated masonry assemblages. The dual-core, three-wall block design offers great reinforcement opportunity with conventional method without sacrificing thermal performance.

Fully Insulated

Snug-fitting insulation inserts made from non-toxic, fire-safe polystyrene are placed in every open wall core. Blocks are stacked and insulation installed in all cells except those left open for reinforcing rebar and grout.

Finished with "Rock Hard" IMSI® Structure/Coat® Surface Bonding Cement

IMSI® Structure/Coat® Surface Bonding Cement provides weather-resistant, structually sound and impermeable surfaces assuring lasting beauty and low life-cycle costs. Mortarless construction method uses fewer sub-contractors allowing high field production and ease of application.

MAINTENANCE FREE WALL PAY FOR THEMSELVES YEAR AFTER YEAR

High Thermal Values

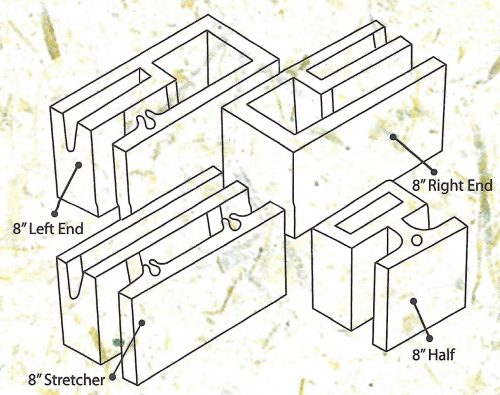
IMSI® combines the thermal resistance of insulation with the advantages of concrete masonry thermal mass and thermal lag. The unique IMSI® block shape is designed with an Extended Thermal Path to limit thermal transfer through the wall.

Thermal performance has been determined from engineering and laboratory analysis for values that accurately relate to real-world climatic conditions. Performance values of 19 for the 8-inch unit and 30 for the Max 12® 12-inch unit are achieved.

Research reveals that masonry reacts to temperature changes significantly slower and to a lesser degree than conventional, light-weight wall systems. This characteristic, called Thermal Mass or Thermal Lag, inherent in masonry walls, allows a more thermally efficient and comfortable living or work space.

Extensive Full-Scale Testing

Extensive structural testing on the IMSI® Insulated Reinforced Masonry System has provided reliable design data. Wall sections of different sizes and configurations have been tested in

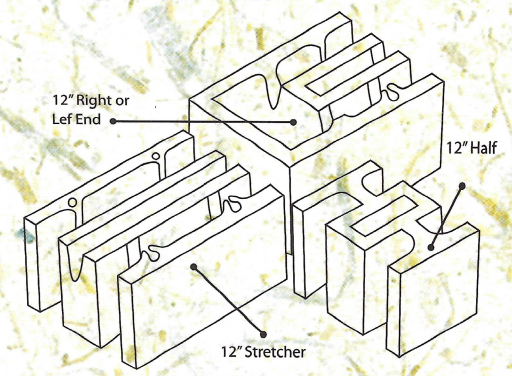


various ways according to the Acceptance Criteria for Concrete and Concrete Masonry Wall Systems, International Conference of Building Officials (I.C.B.O), 1987.

The results of this full-scale destructive testing program demonstrated the IMSI® Wall System performed with predictable results consistent with reinforced masonry, allowing architects and engineers to design with confidence.

Rapid Mortarless Construction

The IMSI® Insulated Reinforced Masonry System uses motarless, dry-stacked construction techniques according to the specifications of ASTM C 946, Standard Practice for Construction of Dry-Stacked, Surface Bonded Walls.



Max 12®

Elimination of mortar between each unit helps masonry contractors achieve high field productivity.

Simply, the IMSI® System works like this: on top of an accurately placed footing, the first course of block is laid in a bed of mortar of Structure/Coat® to establish a true and level course. Subsequent courses are laid without mortar between or beneath the block, and insulation inserted. Reinforcing grout and rebar are placed as appropriate course levels are reached. Should units become out of true, shimming realigns the wall. After floor and roofing systems are installed, interior and exterior walls are surface bonded inside and out with IMSI® Structure/Coat®.