

Magnesium Oxide Board--a Gypsum Board Substitute for Wallboards



Nov 2007---I was doing considerable web searching for a product to use to substitute for sheetrock and any other brand of gypsum board. Building in a hurricane zone is reason enuf to avoid anything that melts or mildews. Amazingly the trade magazine, "Walls and Ceilings" came the next day. In it was an article on Magnesium oxide building materials being imported from Asia and it sounded like a great substitute for Sheetrock. The article, "MgO or Magnesium Oxide" [by Robert Thomas](#), gave a lot of details and specifics. Several of the importers and distributors of Magnesium oxide boards in the USA had purchased ads in that issue.

In the article, Thomas says:

"Magnesium oxide board "MgO board" is a factory-made, non-insulating sheathing board product. It can be used for a number of applications including wall and ceiling linings, fascias, soffits, tile backing and underlayments. It is made of magnesium oxide, a type of mineral cement, and is commonly called simply "MgO" (pronounced emm-gee-oh) due to its chemical composition of magnesium (chemical symbol Mg) and oxygen (chemical symbol O). Think of MgO as a type of sheathing board--sort of like drywall or cement board--but with much-improved characteristics such as fire resistance, weatherability, strength, resistance to mold and mildew, and so on. MgO is available in many forms, and for building construction comes in various thicknesses and sheet sizes. It also comes in various grades, such as smooth finishes, rough textures, and utility grades. It is white, beige or light gray in color, and has a "hard" sound when rapped with your knuckles--somewhat like portland cement board. There are dozens of companies that make MgO board, most of which are in Asia. There are several large producers, but most are small local manufacturers who serve a region.

Not much MgO is used in North America so far, but no doubt will become much more widely used in the future."

"The use of MgO goes back many centuries, almost to the Pyramids. It was originally used to make mortars for masonry construction. Nowadays, in many countries, MgO is often used for mortars. In North America, portland cement is used most of the time. "

"MgO boards are harder than drywall, and are somewhat like the portland cement board used in bathtub enclosures. MgO is 'worked' in a manner like a combination of drywall and cement boards. It can be scored and snapped, although it is stronger than drywall and requires a bit more effort. It can be cut with a power saw, drilled-through and fastened like other similar boards."

"Like any sheathing board, MgO board can absorb water but its performance is unaffected. Thus it can be used indoors and outdoors, and in damp locations, such as showers. Like portland cement based sidings, if MgO is used outdoors in an exposed location, it needs some form of coating, such as paint. MgO can be used structurally--as in bracing for walls--and also semi-structurally, such as an underlayment for flooring."

Now after having purchased, stored, and installed Magnesium oxide wall boards, I can truly say that it is a great product. I decided to go with [Magnum Board](#). Dealing with them was a really nice experience. My guess is that North America will embrace MgO as a building material in the near future. The benefits are great and other than it being an imported product, there does not seem to be a down-side to it. People living in coastal regions, in the areas recently hit by might hurricanes, would do well to investigate MgO boards and consider using it for their interiors in ceilings, walls, floor underlayment, and exteriors as siding, window trim, soffits, etc. The benefits are many over wood and gypsum products.



Here are some of the things about MgO that I discovered:

All 101 stories of Taipei 101, currently the tallest building in the world, use their exact brand of MgO sheeting on the inside and outside of all the walls, fireproofing beams and as the subfloor sheathing.

Most people do not know that MgO based mortar and soil brick stabilizer, is used extensively on The Great Wall of China, and in many places, has outperformed, and even outlived some of the stone. The Great White Mountains in China that The Great Wall follows, are said to contain enough MgO to replace all of the drywall and plywood on the planet, at the current consumption rate, for 800 years. (This according to Substance Products in Austin, TX.)

MgO Sheeting is the "official" specified construction material of the 2008 World Olympics buildings in Beijing...a project costing over 160 billion dollars. Over 8 million square feet of MgO Sheeting is installed in Asia.