

MgO Magnoboard® Building Board for the 21st Century

50% Less CO2 emissions from production compared to Portland Cement Based Boards.

MgO Magnoboard® is a Magnesium Oxide (MgO) and Magnesium Chloride (MgCl) based construction board that out performs cement based boards and regular gypsum plasterboard. This is due to its superior performance characteristics and environmental benefits, including 100% water resistant, high fire resistance, excellent acoustics and exterior and interior applications.

As a natural mineral, Magnesium is considered the 8th most abundant resource on earth, forming 2% of the Earth's crust by weight. It is also the 3rd most plentiful element dissolved in sea water. It is therefore suggested that there is enough Magnesium spread around the world to make enough MgO drywall for centuries.

MgO Magnoboard® does not contain any organic solvents, formaldehyde, asbestos, oils or other toxic substances that can have a negative impact on the environment and waterways. As such, saw dust from MgO Magnoboard® can safely be disposed of in landfills. Off-cuts of MgO Magnoboard® can be re-ground and re-used back at the production factory.

Every year an amazing 1.7 billion tonnes of Portland cement is produced worldwide. It is no secret then that the production of cement contributes significantly to the increasing level of CO2 emissions because of the enormous amount of energy required to raise the temperatures inside the cement kilns to 1450°C, in order to roast the calcium carbonate. Consequently, 7 - 10% of the total man-made CO2 emissions are a result of the manufacturing of cement.

The production of Magnesium Oxide on the other hand converts easily from Magnesium Carbonate at around 650°C, thus halving the energy consumption. Whilst the 'roasting' process of manufacturing 'eco-cements' produces more CO2, during setting and hardening a process called carbonation reabsorbs the majority of this from the air. In construction terms, a tonne of eco-concrete can end up absorbing up to 0.4 tonnes of CO2.

The Carbonation process also forms Magnesium carbonate crystals that increase the strength of the MgO Magnoboard®, unlike calcium carbonate crystals that have the opposite effect in a conventional concrete mix of Portland cement and water.

Where the MgO Magnoboard® excels is through its unrivalled all round performance characteristics. On a 70mm metal stud partition system with 75mm thick insulation, A single 10mm MgO Magnoboard® either side of the metal stud, giving an overall partition thickness of 90mm, will provide up to 3.5 hours fire resistance and 46 Rw dB. Achieving similar performance with a single stud and gypsum plasterboard partition system is unknown where fire rating is concerned, where at best only 2hrs can be achieved. As for the acoustics, this can be achieved but not without increasing the overall wall thickness and increasing the number of plasterboard layers either side. Both of which will result in either a loss of premium floor space for the client and increased labour costs for the installation contractor.

Testing on other single stud and MgO board partitions have also provided up to 5 hours fire resistance, making them ideal in multi storey buildings such as offices and apartments for escape routes and Shaftwall, or dividing walls in commercial units.

Cement based boards are used as the sheathing component in the EIFS and SIPS systems. It is also used in partitions, particularly where there is high moisture content such as bathrooms and kitchens as compared to gypsum plasterboard; the physical state of a cement-based board is not affected by water and therefore has good water resistance. However they still require a surface finish to be applied such as ceramic tiles, render coat or skim plaster, in order to be decorated. Like cement-based boards, MgO Magnoboard® is water resistant. It also shows no structural change even after a 25 year freeze/thaw cycle. However unlike cement-based boards, the MgO Magnoboard® has a smooth finish one side that can be taped and jointed ready for decoration, and a rougher side for tiling.

The standard sizes of the MgO Magnoboard® are 900*1220mm or 1220*2440mm and 3 – 22mm in thickness.

For further information on the MgO Magnoboard®, please contact MgO Limited on tel:01920 823703 or email: info@mgoltd.com

MgO Limited will also be exhibiting the MgO Magnoboard® on stand 2106 at the forthcoming ecobuild & futurebuild show. The show is taking place at Earls Court, London from 03rd – 05th March 2009.