



Pro-mag™ Magnesium Board for Cold Formed Steel Construction

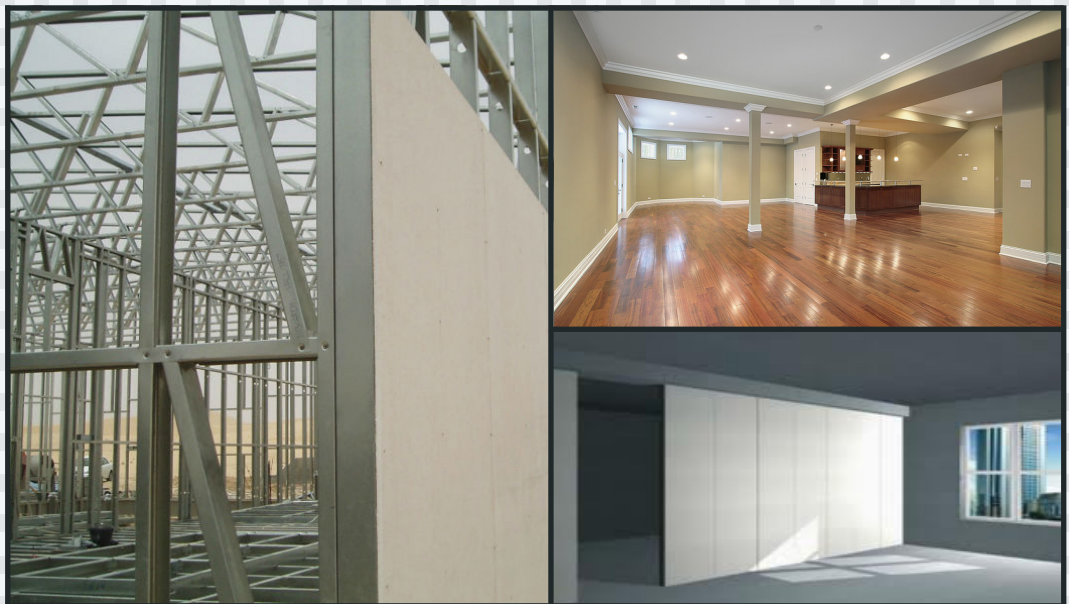
Complies with;

UL 055 and ASTM A rated for Fire-resistance

ASTM G-21 - Mould and bug free

ASTM D-5628 Impact-resistance

STC - Rated 53-54



FRAMECAD® Pro-mag™ Magnesium Board



Building Products and Supply Chain Logistics for our Global Customers

FRAMECAD® has been successfully serving the world's building industry for more than 25 years. Our expert team combines the know-how from over 900 combined years of global experience. FRAMECAD® puts this experience to work to help our customers succeed.

With FRAMECAD® Certified Building Products and world class supply chain logistics, you can turn architectural inspiration into commercial reality much faster and more cost effectively than ever before.

FRAMECAD® Building Products specialises in developing and supplying global customers with materials that are fit for purpose, tested, designed and engineered by our in-house engineers and technicians that enable modern methods of construction.

Our focus has always been on developing practical building products and solutions that streamline the steel framed building design and build process, cutting production time and delivering a better end result.



FRAMECAD® Pro-mag™ Magnesium Board

FRAMECAD® Pro-mag™ Magnesium Oxide Board (MGO)

FRAMECAD® Pro-mag™ Magnesium Oxide Board (MgO) is a fire proof and a thermal insulation building material. It can be used for a number of applications including wall and ceiling linings, exterior cladding, fascia's, soffits, tile backing and flooring underlay.

MgO Board is non-combustible and can achieve fire ratings as high as 4 hours given the correct installation. It can be used for sound studios, schools, public areas, movie theatre's, train and bus partitioning, boat partitioning, shopping centres and any area where the fireproof function is necessary.

FRAMECAD® Pro-mag™ Magnesium Oxide Board is:

- Non-combustible Class A Building Material
- Breathable and porous for strong coating and adhesive bond
- For ALL Residential, Commercial, Industrial and Institutional Construction
- Excellent acoustic dampening material with higher density and elasticity
- Refractory material for infrared radiation (heat) assisting to reduce loss of energy when heating or cooling by reducing conductivity.
- Non-hazardous, natural, non-toxic and disposable as crushable clean fill.
- Stronger and more rigid to allow thinner material to do the same job
- Easier to work with using all types of hand tools and wood working equipment but also can be cut with quick score and snap faster than drywall

Manufacturing

FRAMECAD® Pro-mag™ Magnesium Oxide Board is a light weight energy-saving building panel with non-asbestos fibre that is treated by high temperature and a high pressure autoclave process, according to ISO 9001.

- Ratings and testing:
- Fire-resistant (UL 055 and ASTM-Tested and A-Rated)
- Waterproof (Freeze/Thaw-Tested for 36 months)
- Mould/fungus/bug free (non-nutritious to mould, fungus, insects ASTM G-21)
- Impact-resistant (ASTM D-5628)
- Silica/asbestos free
- STC-Rated 53-54



FRAMECAD® Pro-mag™ Magnesium Board

Applications

Pro-mag™ Magnesium Oxide Board is widely used primarily as wallboard alternative to conventional gypsum-based drywall. MgO boards can be scored and snapped, sawed, drilled, and fastened to light gauge steel framing.

- It can be used for interior or exterior applications.
- Magnesium Oxide board is a good example of the advances made in construction materials to meet changes in building codes for safety and durability.

Sizes and packaging

Metric Dimensions

Application	Thickness (mm)	Width (mm)	Length (mm)				Approximate Packaging Per 20' container
			2400	2700	3000	3600	
Soffit / Ceiling	4.5	1200/1220	●	●	●		900 Sheets
Ceiling / Lining	6	1200/ 1220	●	●	●		900 Sheets
Lining / Cladding	9	1200/1220	●	●	●		710 Sheets
	12	1220/1220	●	●	●		530 Sheets
Exterior Siding (Wood Grain)	9	210/310				●	2000 Sheets
Flooring	18	1200/1220	●	●	●		355 sheets

Imperial Dimensions

Application	Thickness (inch)	Width (Feet)	Length (Feet)				Approximate Packaging Per 20' container
			8'	9'	10'	12'	
Soffit / Ceiling	3/16"	4'	●	●	●		900 Sheets
Ceiling / Lining	1/4"	4'	●	●	●		900 Sheets
Lining / Cladding	3/8"	4'	●	●	●		710 Sheets
	1/2"	4'	●	●	●		530 Sheets
Exterior Siding (Wood Grain)	3/8"	4'				●	2000 Sheets
Flooring	11/16"	4'	●	●	●		355 sheets

FRAMECAD® Pro-mag™ Magnesium Oxide Board is available in a range of imperial and metric dimensions. If not listed as above please contact us with your inquiry.

NOTE: FRAMECAD® Pro-mag™ Magnesium Oxide Board 6mm (1/4") and 9mm (3/8") also available with a tapered edge (TE) or square edge (SE). Either touch fit or leave a maximum gap of 2mm between boards which is later filled using a filler.



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Physical Properties

Item	Parameter	Item	Parameter
Density (kg/m ³)	1.12 x 1000	Heat conductivity W/m/K	0.15
Moisture absorption rate	11	Combustion -Resistance Class 1	Above 3 mm
Swelling %	0.34	Flexibility	Good
Bending strength	15.4 MPa	Sound resistance	40 dB
Compressive stress	3.98 MPa	Mould and insect	Resistant

Fire Resistance

Pro-mag™ Magnesium Oxide Board is non-combustible and can achieve fire ratings as high as 4 hours given the correct installation. It can be used for sound studios, schools, public areas, movie theatre's, train and bus partitioning, boat partitioning, shopping centres and any area where the fireproof function is necessary.

When FRAMECAD® Pro-mag™ Magnesium Oxide Board is used in conjunction with FRAMECAD® LGS Light Steel Framing there are two very significant advantages.

1. LGS Being non-combustible, when fire burns through the linings it will not spread within the framing cavity, whereas this is a major cause of hidden fire spread in timber framing.
2. Steel Framing does not increase the fire load. Timber is combustible and there is at least 20kg of timber per square metre of floor area in a timber framed house. This is 75% of the design fire load of a houses content, which means that a timber framed house is carrying at least 1.75 times the fire load of a steel framed house. The higher the fire load, the more severe the fire.

Therefore it is not surprising that fire case histories show steel houses perform very well in house fires, with little or no damage to the framing structure. Furthermore if steel framed members are not visibly distorted they can be left in place, cleaned and if necessary recoated. If they are distorted then they need to be replaced.

When FRAMECAD® Pro-mag™ Magnesium Oxide Board is used for Fire Rated Systems the stud spacing must not exceed 400mm c/c (center to center) and nogs 800mm c/c. Refer to Clause 6.4 in the Fire and Acoustic Design Manual for further guidance on fire rating.

The steel framing must be suitably coated to satisfy the Durability requirements of clause B2 of the New Zealand Building Code (NZBC) and other applicable building standards.

Item	Index	Unit
Fire Resistance	A2-s1, d0 based on BS EN 13501 -1 +A1:2010 Classification	Does not burn, emit smoke with an open fire.

FRAMECAD® Pro-mag™ Magnesium Board

Storage and Handling

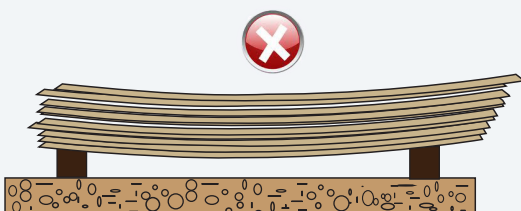
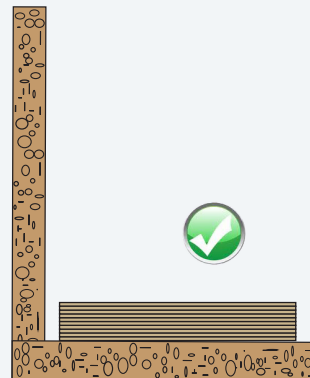
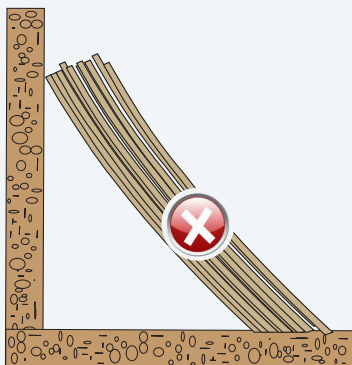
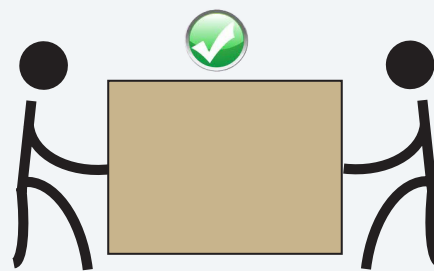
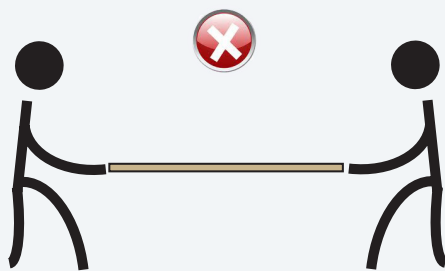
It is the responsibility of the builder to ensure that the product meets aesthetic requirements before installation.

FRAMECAD® will not be responsible for rectifying obvious aesthetic surface variations following installation.

FRAMECAD® Pro-mag™ Magnesium Oxide Board sheets must be stored flat on a smooth surface. Precaution should be taken that edges and corners are protected from damage.

Ensure that all sheets are stored under cover and kept dry. If Sheets become wet they must be dried prior to installation.

Carry sheets in the vertical position as this will avoid bending and possible breakage.



FRAMECAD® Pro-mag™ Magnesium Board

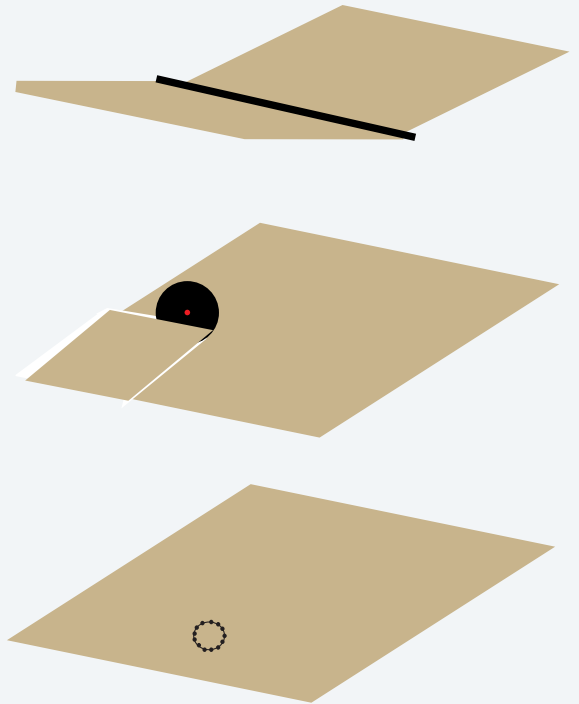
Cutting FRAMECAD® Pro-mag™ Magnesium Oxide Board

Pro-mag™ Magnesium oxide board sheets can be cut very easily with a carbide tip knife.

For rough cuts, place the Pro-mag™ Magnesium oxide board sheet rough side up, scour along a straight line with the knife, then snap along the scoured line. Pass the knife again along the other side to separate the two sheets to get a clean cut.

Finer cuts are achieved by using power tools such as circular saw, jigsaw, bench top saw, etc. (Please note the section of Health and Safety Practices regarding dust)

Service holes may be created using drills, hole saw, or jig saw.



FRAMECAD® Pro-mag™ Magnesium Board

Installation - For Cold Formed Steel Frames

FRAMECAD® Recommend the following Fastenings to install FRAMECAD® Pro-mag™ Magnesium Oxide Board.

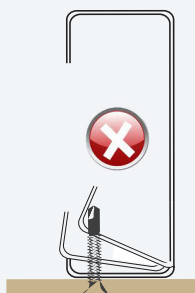
SPECIFICATIONS	Exterior	Interior	Interior
FRAMECAD Part #	030151 (Loose)	001848 (Loose)	002088 (Collated)
Name	X-Drive Thin	Phillips Bugle	Phillips Bugle
Gauge	10g (4.8mm)	6g (3.5mm)	6g (3.5mm)
Head Type	Countersunk (CSK)	Bugle	Bugle
Drive Type	X-Drive #1	Phillips #2	Phillips #2
Tip Type	Drill Point (DP)	Drill Point (DP)	Drill Point (DP)
TPI	15	20	20
Length (mm)	25mm	32mm	32mm
Speed Recommendation (RPM)	2500	2500	2500
Coating Class AS3566.2 2002	3	N/A	N/A
Salt Spray Results (hours) ASTM B117	1000	24	24
Kesternich Results (cycles) DIN 50018 2.0L	15	N/A	N/A

For further details on the FRAMECAD® Fastening Range please refer to the FRAMECAD® Fastenings Catalogue.

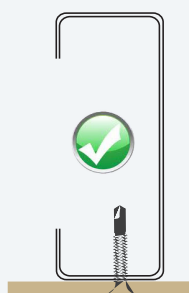
FRAMECAD® Pro-mag™ Magnesium Oxide board is typically installed on a C section size of:

89mm x 41mm x 0.75mm / 0.95mm / 1.5mm / 1.55mm

When fixing to FRAMECAD® C sections fastenings should be fixed as close as possible to the web side of studs to ensure screw engagement. FRAMECAD® Magnesium Oxide Board must be placed firmly against the frame when fixing to ensure breakout does not occur on the back.

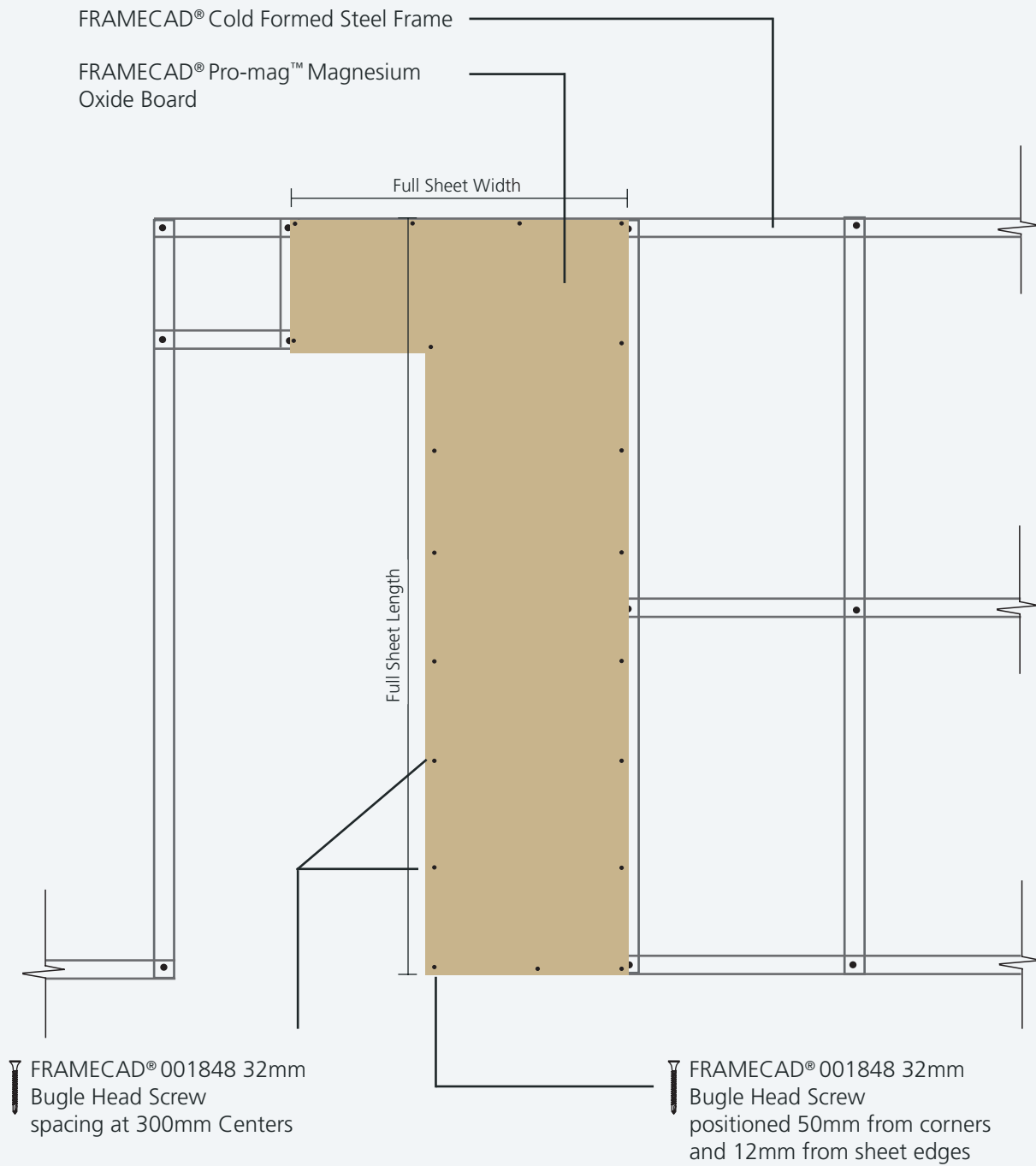


Screw located too far from web, causing bending of flange and a loose fixing of the cladding

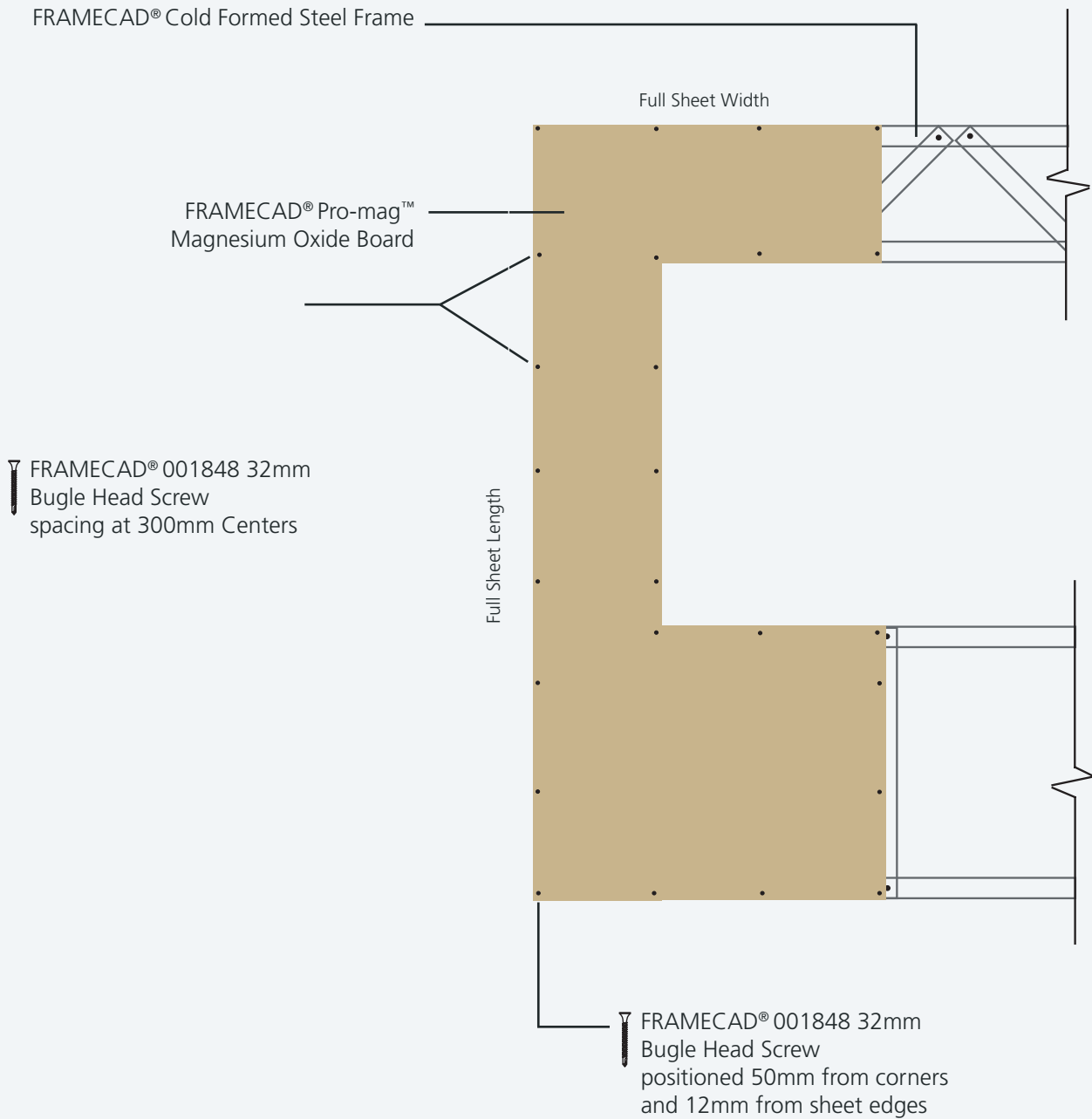


Screw located close to the web, ensuring a tight fix to the cladding

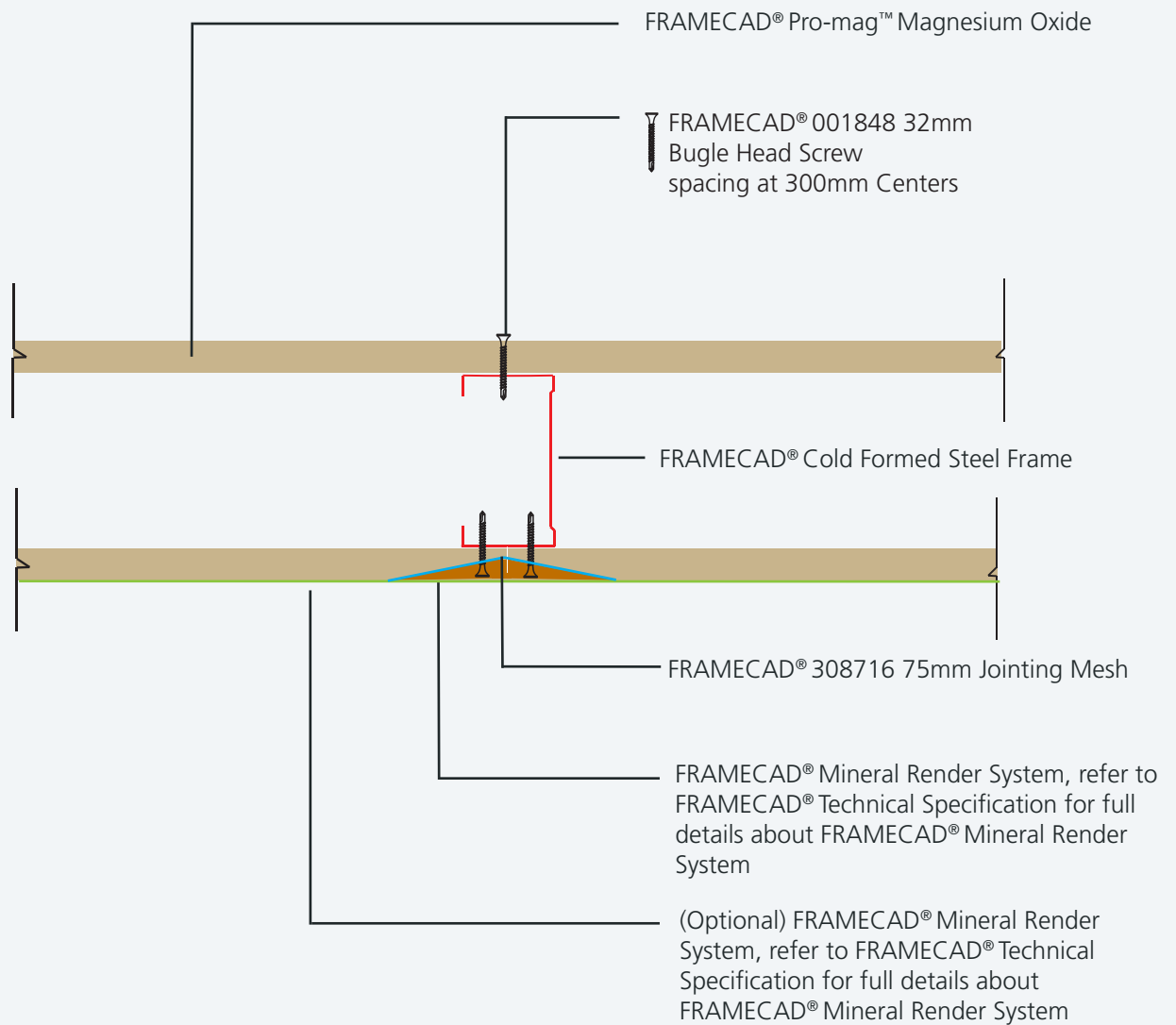
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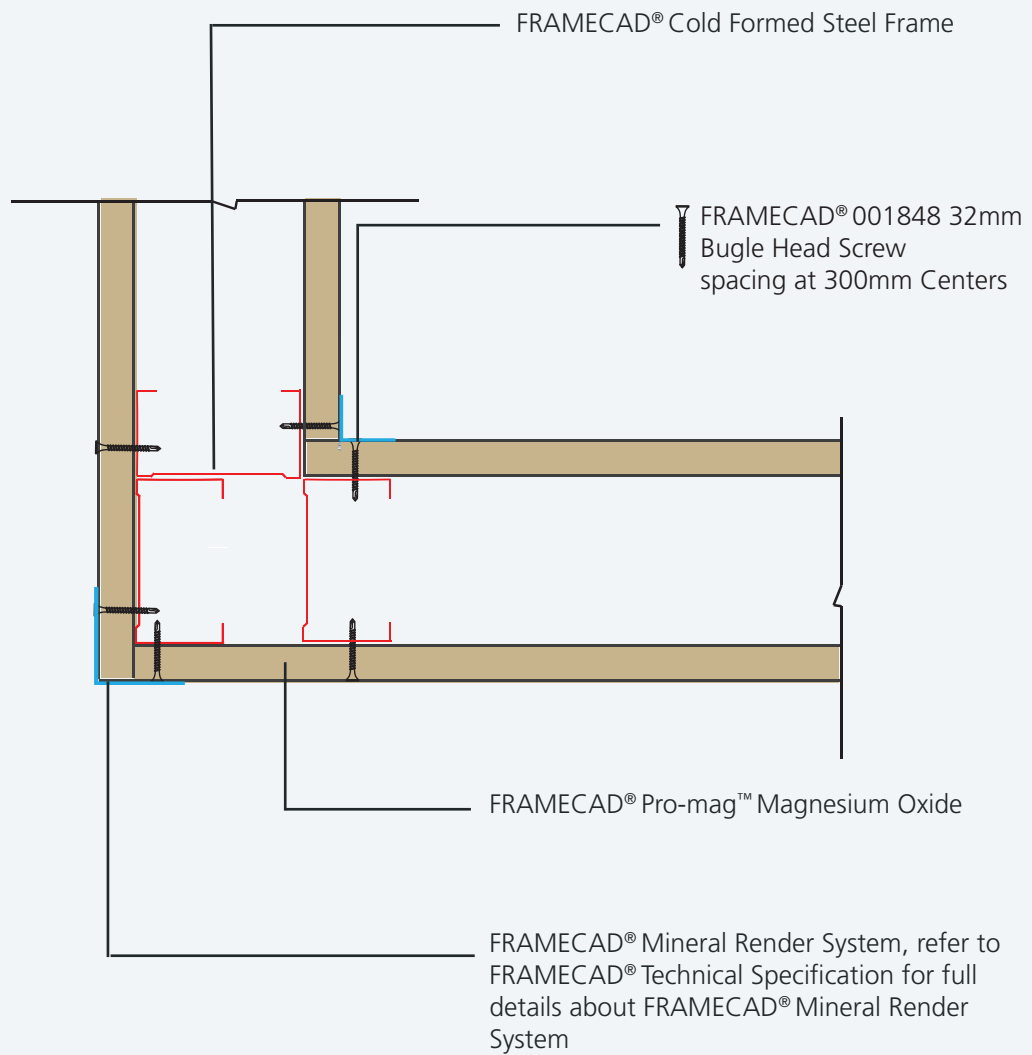
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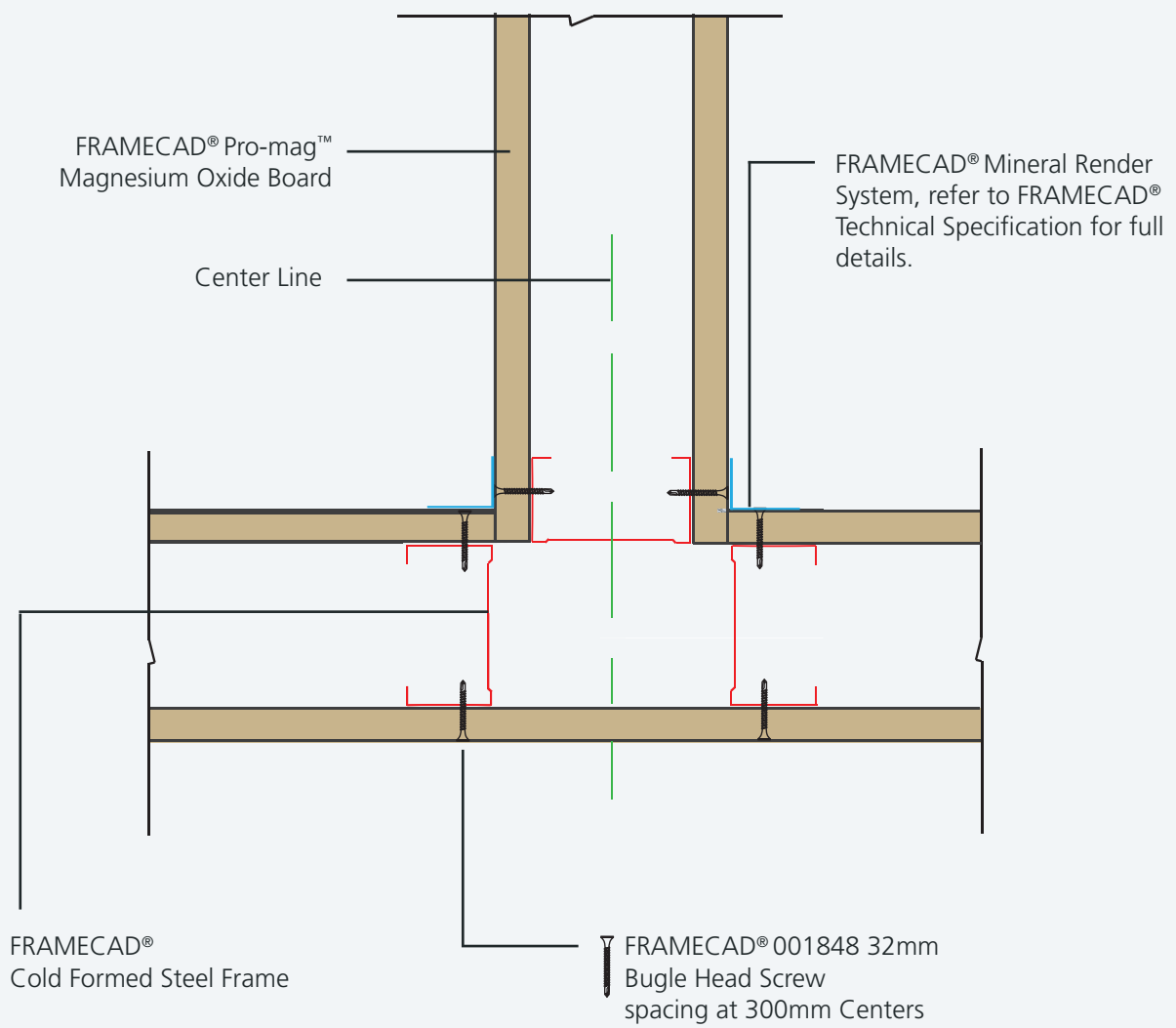
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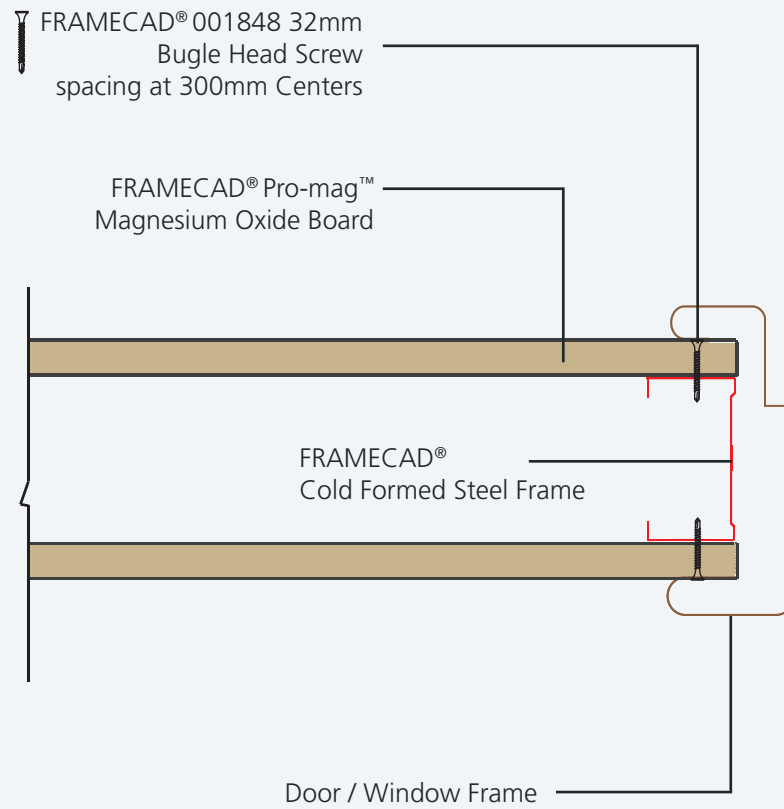
FRAMECAD® Pro-tech Magnesium Board



FRAMECAD® Pro-mag™ Magnesium Board



FRAMECAD® Pro-mag™ Magnesium Board



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Maintenance

Maintenance is the responsibility of the specifier to determine. The extent of any maintenance will be determined by the geographic location and exposure of the building.

FRAMECAD® recommends the following;

- Wash exterior surfaces every 6-12 months
- Reapply paint finish as necessary
- Ensure all joints, flashings and sealants are maintained to ensure any means of moisture entering beyond the exterior cladding are stopped.
- Clean gutters and pipes and overflows as needed
- Prune back vegetation so that it is not touching the cladding

Note: FRAMECAD® do not recommend the use of a Water Blaster



Health and Safety

FRAMECAD® Pro-mag™ Magnesium Oxide Board consists of a mixture of perlite powder, chloride and magnesium oxide, surrounded by two layers of mesh.

Pro-mag™ Magnesium Oxide Board does not emit volatile organic compounds, lead and cadmium. It does not contain asbestos, formaldehyde or other harmful substances.

Swallowed: Unlikely to occur, however swallowing plaster dust and or debris may result in symptoms of acute indigestion.

Eye: Excessive dust may cause eye irritation.

Skin: The dust, particularly in association with heat and sweat, can cause irritation, but it is not absorbed through the skin.

Inhaled: Inhaled dust may cause nasal, throat and lung irritation, symptomatic through excess mucus and coughing.



First Aid

Swallowed: Give copious amounts of water to drink. Seek medical attention as soon as possible.

Eye: Flush thoroughly with flowing water for at least ten minutes. If symptoms persist, seek medical attention.

Skin: Wash thoroughly with soap and water.

Inhaled: Remove to fresh air.





This document is current as at May 2014 and supersedes all previous versions of the FRAMECAD® Pro-mag™ Technical Guide.

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