GYPROCK®

Everything else is just plasterboard

OPTIMISED CORE™

The secret to a **stronger, lighter board**

CSR

OPTIMISED CORE™ Optimising plasterboard performance-to-weight ratio

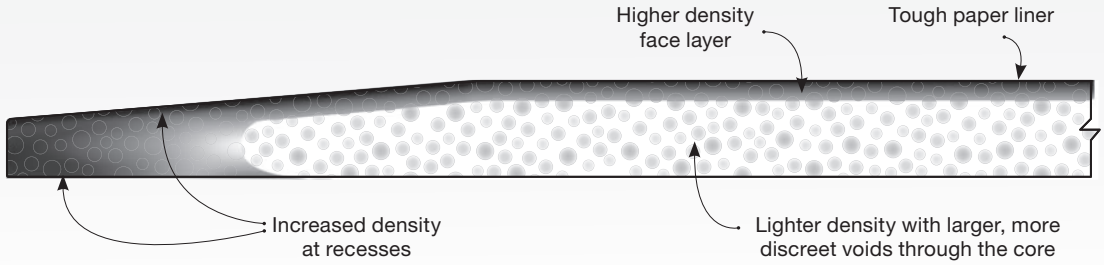
Optimised Core™ technology is the next step in the evolution of Gyprock® and represents another first from the plasterboard market leader in Australia.

Plasterboards manufactured with the new Optimised Core technology have an advanced performance-to-weight ratio, meaning greater breaking strength in a substantially lighter board. Optimised Core plasterboards continue to exceed the performance requirements of AS2588.

What is the Optimised Core secret?

Plasterboard is made by first mixing a plaster slurry with a generated foaming agent to create a mix which is wrapped in a heavy-duty liner paper and then oven dried.

Optimised Core technology manipulates the characteristics of the plaster mix, focusing density at the face of the board with a less dense structure throughout the rest of the core.



Gyprock Plus™

10mm residential plasterboard

Gyprock revolutionised the Australian plasterboard market in 1992 with the introduction of Controlled Density technology (CD) which provided dramatic improvements to plasterboard performance and set a new benchmark for standard plasterboards across the industry.

Optimised Core technology is another major advancement for Gyprock, delivering greater strength, lighter weight and other substantial performance and handling benefits.

Gyprock Plus is the latest plasterboard to benefit from Optimised Core technology and thicker face paper, replacing Gyprock's Standard 10mm plasterboard which is predominantly used in residential applications. There is no change to Gyprock standard 13mm plasterboard.

Gyprock Supaceil™

10mm plasterboard for ceilings

The original Gyprock Supaceil was launched in 1991 as a 10mm plasterboard designed specifically for ceilings, spanning to 600mm centres. Supaceil provided an alternative to 13mm plasterboard and delivered a board with reduced weight and thickness, without compromising on strength, due to the formulation, paper and inclusion of glass fibres to reinforce the core.

Optimised Core™ technology has enabled us to improve Supaceil even further. Gyprock Supaceil was the first plasterboard in Australia to feature Optimised Core technology plus a stronger, thicker face paper.

Exceeding Australian Standards

Optimised Core technology has provided the means to reduce board weight while improving breaking strength without compromising performance to Australian standards requirements.

PERFORMANCE CRITERIA	EXCEEDS REQUIREMENTS OF AS2588
Bending strength	✓
Edge hardness	✓
Nail pull resistance	✓
Bond strength in tension	✓
Sag (humidified deflection)	✓

Both Gyprock Plus and Gyprock Supaceil are officially certified under Australian Standard AS2588

Product benefits

Now, Gyprock's standard wall and ceiling boards benefit from Optimised Core technology:

- **Stronger** – more robust with better breaking strength for improved handling and installed performance
- **Lighter** – easier to lift for better sheet manoeuvrability and improved flex
- **Significantly improved score and snap** – for crisp edges and cleaner cuts

The science behind Optimised plasterboard

Optimised performance-to-weight ratio is about achieving high levels of performance in a lighter weight plasterboard to make lifting and handling easier and more efficient.

How can something lighter be stronger?

Nature shows us examples of cellular structures that provide exceptional strength and rigidity such as the honeycomb structures in bee hives. Man-made structures such as these are used where high levels of strength and flex are desired in a lightweight structure, such as the wings of a plane.

The requirement for strength in a plasterboard lining material is not uniform throughout and therefore more complicated to achieve with reduced density. For example, there is a difference between the strength required at the face of a plasterboard, to that needed at centre of the core. Recesses also need a different level of strength to cater for fasteners, providing bracing strength and to prevent breakage during lifting.

For manoeuvrability and handling, plasterboard needs to be able to bend without breaking and not be brittle. It needs to be easy to score and snap, with clean cuts and square edges.

Gyprock's technical experts were able to design the ideal plasterboard core structure to provide the greatest strength where it is most needed.

Creating this structure is achieved through the tightly controlled chemical and mechanical processes of Optimised Core technology.

The structure of the core is manipulated to meet strength requirements by focusing density where it is needed, while removing weight by a reduction in density at the core.

The stronger, thicker face paper assists with bending strength and helps to ensure a crisper score and snap.

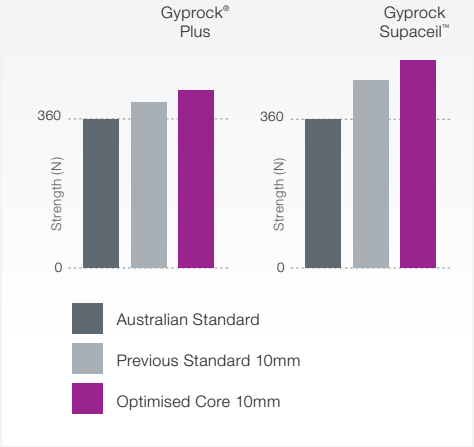
The end result is a stronger, lighter plasterboard with better manoeuvrability, lifting and handling.

Key Features

Stronger

Optimised Core™ technology has allowed us to reduce the weight of Gyprock Plus and Supaceil further and improve plasterboard strength with no compromise on quality. These test results for both boards compared to the previous standard products show a marked improvement in machine direction breaking strength. Production consistency is also greatly improved.

Additionally, Supaceil™ benefits from its glass fibre reinforcement to achieve the strength and sag resistance required for a 10mm ceiling plasterboard.



Testing performed at the CSR National Research Centre – a NATA accredited test facility.

Lighter

Gyprock 10mm plasterboards have become the most popular plasterboard choices for residential installation. Optimised Core technology has allowed us to optimise the weight of Gyprock Plus and Supaceil while increasing the strength of the board. The weight advantage of installing lighter boards is a valuable benefit for installers with easier and faster lifting and installation. This is particularly important for ceilings.

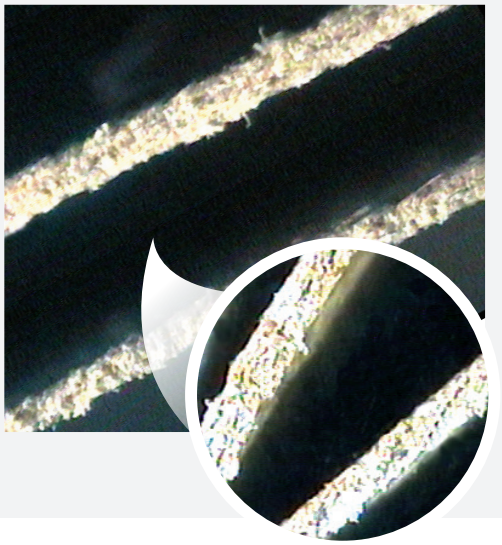
OLD GYPROCK STANDARD 10MM		GYPROCK PLUS 10MM
6.5kg/m^2	→	5.7kg/m^2
ORIGINAL SUPACEIL		**NEW SUPACEIL**
7.2kg/m^2	→	6.1kg/m^2 (6.5kg/m^2 in WA)

Thicker face paper

Both Gyprock Plus and Supaceil are lined with a superior face paper, approximately 30% heavier than standard.

The thicker face paper contributes to the strength of the board and produces a crisper score and snap experience with cleaner cuts and squarer edges.

Field trials with the stronger, thicker paper rate paintability as excellent.



Responding to customer feedback

CSR Gyprock® has maintained a market leadership position by responding to customer feedback with product and service innovations that are carefully thought through and thoroughly tested both in laboratory conditions and in the field.

Gyprock regularly conducts research to ensure that our products are consistently at the forefront of the industry and meet the high expectations of our customers.

There are some fundamental customer attitudes to 'what makes for quality' and 'what makes for performance' that have remained consistent:

- **Plasterboard core**
  - Not too heavy
  - Able to flex but not break
  - Good strength
- **Face paper**
  - Strong paper
  - Not completely smooth but not rough
  - Paper doesn't tear
- **Working**
  - Quick to install with minimum rework
  - Easy and crisp to cut with no tearing
  - Some flex when fixing

The key message that our customers tell us it that no single point is the deciding factor – it's about getting the balance right across a range of attributes and delivering a product that maintains its quality over time.

When Gyprock set out to develop a technology that would enable the production of a reduced weight plasterboard, it was imperative that these key attributes were not detrimentally impacted.

Specific customer research, aimed at better understanding attitudes to a lighter weight plasterboard, was conducted to help refine our development objectives. Some common points came through strongly:

- A 10-15% reduction in board weight would be seen as an advantage, however only if overall performance was not compromised
- Greater than 15% reduction in board weight in a single step was seen as excessive and raised concerns about product quality
- A lighter weight board with other long-term performance benefits was seen as a positive

The introduction of Optimised Core™ technology allows us to produce plasterboards that have a direct impact on many of these key research findings.

By reducing board weight and improving the strength of the plasterboard without increasing the price, Gyprock has achieved dramatic improvements in line with the expectation of our customers.

Independent customer research conducted in 2012, 2013 and 2014.

Manufactured for Life warranty

As with all Gyprock® products, Gyprock plasterboards that feature Optimised Core technology are Manufactured for Life and designed to achieve optimal performance when part of a CSR integrated system. Gyprock continues to lead the market with premium quality products which are the preferred choice of plastering professionals.

Full warranty details can be found at **www.gyprock.com.au/warranty.**

Australian made and owned

For more information about Optimised Core™ technology, Gyprock Plus™ and Gyprock Supaceil™ call 1300 306 556 or visit www.gyprock.com.au

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