

## Aussie Magnets

### Units of Magnetism

Measuring the strength of an invisible force is difficult. Throughout our website you'll see a number of different scales used to measure the strength of a magnet. Each of these measurements have their advantages and disadvantages, and can interpret the same magnet differently.

So, which unit is most important to you?

### Pull Strength

The approximate, calculated amount of force required to remove the magnet from a piece of un-coated 3mm mild steel. It's also the maximum amount of weight the magnet will support when attached to the same steel.

e.g. 452 grams, 14kg

Thicker metals will increase the pull strength, whereas thinner metals will decrease the pull strength of the magnet. You should consider the material you will be attaching your magnet to when evaluating the required pull strength.

Allowances should be made for any coatings (such as powder coating, paint, vinyl, plastic, etc.) which may affect the strength of the magnet.

At Aussie Magnets, all pull strengths are measured against 3mm mild steel. The strengths we list are mathematical calculations only, and will almost always be higher or lower depending on your application!

As such, pull strength measurements should be used as helpful guides only; they should not be explicitly relied upon for product/project design purposes. We advise customers to engage qualified product design engineers, or conduct their own testing, to determine the suitability of any magnetic product prior to use.

Read more about 'Pull Strengths'...

### Grade

A balance of the thermal properties of the magnet with the maximum potential energy.

e.g. N38, N42, C8

Rare Earth and Ferrite magnets are available in different grade specifications. Generally, a higher grade offers more strength at the same size, but its thermal properties tend to decrease, meaning that the magnet cannot withstand high temperatures before losing its magnetism.

For most purposes a higher grade is desirable, except where operating temperature is critical.

Read more about 'Grades'...

## Gauss

A surface measure of the magnetic flux density per square centimeter.

e.g. 3000 gauss

Take care when using gauss – it's possible for a tiny magnet and a large magnet to have exactly the same gauss reading. Why? Because Gauss is measured per square centimeter and is a measure of the potential of the material, rather than the strength of the individual magnet.

Higher grade magnets have a higher potential and hence, a higher gauss reading, explaining why some of our larger magnets have a gauss less than our smaller magnets - it's because our smaller magnets are of a higher grade, allowing us to pack more strength into a smaller size.

<https://aussiemagnets.com.au/knowledgemanager/questions.php?questionid=9>