



These batteries from EN-registered manufacturers comply with EN 50342

Power players

John Wickersham explains why it's important to buy a good leisure battery – and how it works differently from a car-starter unit

A LEISURE battery performs two functions. On the one hand it has to produce a supply of 12V DC power. On the other, it smoothes out irregularities in the output derived from a built-in charger.

This second function explains why a leisure battery is needed in a caravan's low-voltage system. But do you need to buy a high-quality product? That depends on your personal needs.

PATTERNS OF USE

Owners use caravans in very different ways. Some exclusively choose sites that offer 230V hook-ups in order to receive the power they require. A site supply not only runs mains appliances – it also powers the charger that couples-up to the leisure battery. This, in turn, runs 12V components such as interior lights, a heater fan and so on. In this arrangement, most batteries fulfil the requirement.

That's not the case, however, if you don't want to depend on 230V supplies. After all, hundreds of the Club's delightful Certificated Locations don't have hook-ups at all. Similarly, motor caravanners often have impromptu 'stopovers', and if you want self-contained independence, a good leisure battery is essential equipment.

LEISURE/STARTER BATTERIES

Unlike a vehicle starter battery, a leisure battery has to provide power for extended periods – often to the point when it's virtually 'flat'. It then has to be recharged until it's 'topped-up' once more. This relentless pattern is referred to as 'deep cycling' and a starter battery doesn't last long when used in this way.

In contrast, starter batteries have to produce a sharp burst of power, but that's replenished as soon as the engine is running. Different tasks call for different products and car batteries **do not** perform well as leisure batteries. Conversely, standard leisure batteries aren't good for starting engines.

To cope with a life of deep cycling, 'lead acid' leisure batteries have to be made in a particular way. This is explained in the Club's technical leaflet, *Lead Acid Batteries*. From an electrical standpoint, 'wet' leisure batteries are notable performers, and that's what most of us use.

A more expensive product, the Absorbent Glass Mat (AGM) battery, is different in that each cell within is filled with extra soft, compressed glass mat that absorbs all the sulphuric acid electrolyte for safety and ease of handling. Air is drawn out of the casing as well and a

pressure-release valve is fitted. An AGM product typically costs twice the price of a standard 'wet' leisure battery; it can also start engines or drive a motor mover with consummate ease.

Gel batteries are expensive, too, but offer a safety benefit – when inverted, the gel electrolyte doesn't leak out. These are ideal on vehicles that might tip over but from an electrical performance viewpoint, gel batteries are seldom any better than 'wet batteries'. However, the fact that sealed gel batteries don't employ a ventilation tube is a bonus when installed in some types of motor caravan.

AMPHOURS

As explained on p80 of the Club's August 2010 *Magazine*, the period for which a leisure battery can yield power before needing a recharge is expressed in Amp hours (Ah). So a 110Ah battery provides power for longer than a 65Ah battery, though it takes more time to recharge. The technical information leaflet explains this in detail.

UNHAPPY CUSTOMERS

For most caravanners, a standard 'wet' lead acid leisure battery is fine – provided it's not merely a re-labelled starter battery (as already mentioned,

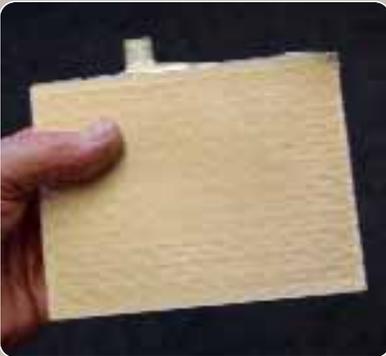
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Polypropylene containers are divided into six separate compartments ('cells'), each of which creates 2.1 Volts



Plates use a grid of lead, and on a leisure battery this is stiffened with antimony; calcium is used in car batteries



A grid is coated with lead oxide paste which tends to become detached with repeated charging and discharging



Plates are held in a micro-porous separating 'envelope'; glass fibre mat helps press the lead oxide firmly in the grid

conventional starter batteries soon break down when submitted to deep cycling).

However, some members have claimed that starter batteries re-labelled as leisure batteries are now being sold. Eager to investigate this further, a group of electrical experts recently conducted some tests.

LABELLING

Immediately apparent was the fact that battery labels are sometimes misleading. For example, one product described as the '110' model carries 'small print' elsewhere stating that it offers a 90Ah performance. Marketing strategies like that are unwelcome.

Also be aware that a battery's output is affected detrimentally when several high-consumption items are used simultaneously. This is explicitly indicated on leisure batteries that comply with EN 50342 and three Ah figures are given on the battery label shown above.



Fortunately, new EC labelling requirements came into force in June 2010 and distributors apparently have 18 months to replace labels that contain unclear information.

PRODUCT TEST

To evaluate actual Ah performance, the research team bought eight brand new batteries for practical tests. Two were EN-compliant products, six

were popular products bought directly from caravan dealers.

Each product was fully charged before undergoing an industry-recognised 'drop test' (sometimes called a 'discharge test'). A sophisticated machine is set to create an identical current demand (Amps) for each product on test. It continues until a battery's voltage drops to 10.5V. The time that this takes is shown on a panel.

Since this was a pilot study, results await ratification and are still confidential. However, the two EN 50342 products were the only batteries that exceeded the Ah rating marked on their labels. The other products fell below their claimed Ah performance and one of the costliest batteries that purported to offer 100Ah, only achieved 55Ah.

INTERNAL INSPECTIONS

With acknowledgement of health and safety requirements, each product was then cut open to inspect its cell construction. This provoked some serious concerns. Apart from the two EN-compliant products, they bore all the characteristics of starter batteries. Despite their 'leisure battery' labels, they contained surprisingly thin lead plates and there was an absence of glass fibre packing – features normally seen in starter batteries.

THE FUTURE

While there are some well-made leisure batteries presently on sale, this pilot investigation suggests that the credentials of some products are most disappointing. This undoubtedly merits further investigation. Certainly, if your caravanning activities depend on having a generous supply of battery power, you want an assurance that a product achieves the claims on its label. ■

BUYING A NEW BATTERY?

So, if you need a new battery, what should you look for? We can't categorically say that all EN 50342-marked batteries are good, and certainly wouldn't suggest that all others are bad. However, this limited study seems to imply that looking for this new marking is worthwhile.



For safety reasons owners must not cut open a case themselves