



Boost your Battery Business

Upgrade to Yuasa!



T H E W O R L D ' S L E A D I N G B A T T E R Y M A N U F A C T U R E R

DISCOVER MORE – WHITEPAPER 107

WHAT DIFFERENCE MAKES AN OE QUALITY BATTERY?

COMPARISON OF OE BATTERIES WITH NO-NAME PRODUCTS

Especially amongst end users, misconceptions that all batteries are the same regardless of price or manufacturer are common. Many believe there is no benefit to paying a higher price for a battery. They may also think that labelling accurately indicates specification, battery weight has no effect on performance and private brands are as good as OE manufacturers products.

In truth, none of these statements are correct.

Some importers or manufacturers over specify label ratings, reduce lead content and change acid strength to reduce costs, maintain short term performance and increase the appeal of their batteries.

BATTERY TESTS TO EVALUATE THE QUALITY

An essential factor that determines the quality of a battery is the battery capacity. Battery capacity checks are conducted using BS EN 50342 testing standards. Testing is carried out under laboratory conditions using specialised testing equipment

Cold cranking amperage is a measurement of the maximum current a fully charged battery can deliver at -18°C. It is used to determine a battery's ability to supply high cranking current to start the vehicle's engine and maintain sufficient voltage to power the ignition requirements under severe cold starting conditions.

- To test this, the battery is placed in a forced air circulation cooling chamber until the temperature of the centre cells is -18°C.
- A specified discharge current indicated by the battery's specification label is then applied to the battery for the various stages of the test.

Ampere hour refers to the battery's storage capacity. At 25°C, the battery must achieve greater than 20 hours of discharge time at a given load, down to a cut-off voltage of 10.5 V. (For example, a 60 Ah battery will deliver a current of 3 A for 20 hours.)

- To test this, the battery is placed in a water bath and is maintained at a temperature of 25°C for a minimum soak time of four hours.
- A specified discharge current indicated by the battery manufacturers specification label is then applied.
- The test result is then calculated from the time taken to reach 10.50 volts.
- This test can be carried out a maximum of three times to establish if it can achieve the required standard.

To evaluate different batteries, GS YUASA tested a wide range of the most popular batteries from various non-OE manufacturers. The batteries were then fully tested to EN 50342 standards under laboratory conditions at the GS YUASA test laboratory in Ebbw Vale, UK.



RESULTS AND COMPARISON

A visual inspection of the non-OE brand batteries revealed some serious design and manufacturing concerns. Some of the batteries did not feature a flame arrestor even though the lid has provision for fitment. This poses a serious risk of acid leakage during battery installation. There is also the potential for explosion as there is no protection from external ignition sources entering the battery. Comparative GS YUASA references feature a flame arrestor as standard.

Battery weight is also an indicator of quality. Poor quality low cost batteries will contain less plates and therefore will be considerably lighter. The non-OE batteries were weighed and their average weight compared to that of the equivalent GS YUASA product. The results indicated that the average weight of each non-OE reference was always less than the equivalent GS YUASA product.

The number of plates in each battery cell dictates its performance. Using more plates increases cold cranking and amp hour specification and prolongs service life. The number of plates in the non-OE batteries were compared to that of the equivalent GS YUASA product. The results indicated that for all references GS YUASA products contained more plates per cell.

They also performed BS EN 50342 cold cranking performance tests and ampere hour performance tests on each battery. The results showed that for all references GS YUASA batteries exceeded the label rating in all cases.

Worryingly all the non-OE products tested fell well short of the claimed label rating.

CONCLUSION

If you want to rely on the label rating and value a product that is good in the long term, you are on the safe path with quality batteries.

GS YUASA batteries are precision engineered from premium materials to deliver maximum starting power, superior performance and long life. They deliver exceptional vibration and impact resistance, proven reliability and reduced self-discharge, for up to three times longer life compared to other batteries.