# AGM – Deep Cycle Batteries - Testing using a voltmeter

Firstly and importantly, ensure that the battery is fully charged. After fully charging disconnect all charging systems and loads from the battery (refer to vehicle's user manual) and allow it to rest for approx 3 hours. Afterwards, take a measurement across the battery's poles and refer to the table below.

If the voltage drops quickly to 11V or just below, this indicates a faulty cell.

If the voltage drops quickly to 10.5 V or below, this indicates that it has been discharged too far and has suffered damage.

| AGM BATTERY STATE OF CHARGE | |
|---|---|
| Level | Voltage |
| 100% | 13.00V |
| 90% | 12.75V |
| 80% | 12.50V |
| 70% | 12.30V |
| 60% | 12.15V |
| 50% | 12.05V |
| 40% | 11.95V |
| 30% | 11.81V |
| 20% | 11.66V |
| 10% | 11.51V |
| 0% | 10.50V |

The voltages above are for a "Healthy Battery" that has been at rest (no load, no charge) for 3 hours or more. A battery that is being charged will show an incorrect /higher reading – the voltages while under charge will not tell you anything, the battery must be disconnected and left to sit for a while. For long battery life, voltages should stay in the green zone, occasional dips into the yellow zone are not harmful, but continual discharges to those levels will shorten battery life considerably. Continual or repeated operation into the red zone will drastically shorten the lifespan and could damage the battery permanently. The usable lifespan of the battery will depend on the Depth of Discharge (DOD), the less it is discharged,the longer it will last, as shown in the table below.

## Curves of cycle life