



BODY WORKS

IF YOU DON'T KNOW YOUR ABS FROM YOUR MONOCOQUE, LET **JOHN WICKERSHAM** UNCOVER THE SECRETS OF YOUR BODY

SOME owners don't pay a lot of attention to the way their caravan or motorhome bodies are built. Only when there's a need for accident repairs or there's a damp problem does the matter assume importance.

Unfortunately, some caravans look notably impressive in a showroom but turn out to be hard to repair. Shiny ABS front panels on caravans are an example. Get a small crack on a high kerbstone and many dealers don't even try to effect a repair. They'll fit a complete replacement front moulding instead and you'll get a four figure bill. So let's consider plastic panels first.

Plastic mouldings – ABS and GRP

Several caravan manufacturers have had to replace front panels under warranty because the products failed in normal use.

The mouldings were made in acrylic capped ABS plastic whose gauge may have been too thin for the job. That's a concern, because most caravan fronts are now made in this material.

Identifying the type of plastic

- **GRP** (often called 'fibreglass') is usually rough on the reverse, unseen face.
- **ABS** plastic is normally shiny on both faces although dark bumpers on some commercial vans have a textured finish. I've always preferred glass reinforced plastic (GRP) mouldings. Dozens of boat builders and auto repairers can produce first class repairs on damaged GRP panels.

Oddly enough, ABS plastic can also be repaired, but few caravan repairers seem prepared to tackle the job. Achieving a good colour match is one of the reasons given.

However, fewer caravans are being built

using GRP mouldings. Sadly, in my view, Avondale no longer fits GRP one-piece roofs; but the Swift factory is one of the few that still has a GRP manufacturing facility.

I'm pleased the material still retains a prominent place in coachbuilt motor caravan construction, although that is changing, too. I recently tested a 2005 Pilote Reference motor caravan and vertical ABS mouldings were installed adjacent to the cab doors. To my surprise, cracking was evident around the pin fixings holding them in place.

Not that I dislike the material, it looked fine on my Honda CBR600 motorcycle. It's also used for body panels on several Ford cars and vehicle bumpers. In these applications it's thicker than items like caravan fronts, A-frame fairings and the side skirts fitted on motorhomes such as the Knaus Sun Ti and the Dethleffs Esprit.

1 The stunning, graphic-embellished blue sides of this 2005 Sun Ti might be quite costly to repair

2 Most new caravans are fitted with an acrylic-capped ABS plastic front; few manufacturers fit GRP panels

3 The ABS upright panel along the rear of this cab door had cracks around some of its fixings

4 Acrylic-capped ABS plastic fairings on caravans are often dreadfully flimsy





5

5 Side skirts and the moulded rear light panel on this Dethleffs model are made in ABS plastic

6 This new Kon Tiki Vogue is clad in GRP sheet which can be repaired by skilful plastics specialists

7 If a replacement ABS panel is unavailable, damage like this can be repaired – and it's not difficult

8 Replacing a damaged panel on an Airstream caravan would be a job for skilled panel beaters

Getting replacement mouldings

When a model of caravan becomes obsolete, obtaining replacement panels may involve trips to breakers' yards. Alternatively a repairer like V & G near Peterborough can take the remnants of broken ABS or GRP panels, create a mould and build a replica moulding in GRP. It's costly, but the finished product is often stronger than the original.

On barely visible side skirts, wheel spats or rear spoilers, I've patch-repaired ABS using Sikaflex 512 adhesive sealant and a surface-filling compound. For more permanent results, it's better to use purpose-formulated ABS repair kits but these cost around £100.

Sheet GRP panels

Not only are polyester resins used to make GRP mouldings, they can also be used to manufacture thin GRP sheet. The Abbey Domino launched in 1995 was probably the

first caravan to be clad in this impact-resistant body skin instead of sheet aluminium. Today it's also used on several motor caravans like Swift and Bessacarr models, and skilful specialists can repair localised damage.

Monocoque body shells

In some caravans (eg the Voyager Vector) and motorhomes (eg Auto-Sleepers Clubman, Mobilvetta Kimu), a GRP monocoque shell is used. Like a hen's egg, the single-moulded structure achieves remarkable rigidity.

Monocoque seam-free construction is also weather-resistant and leaks are only likely around poorly sealed windows, doors and ventilators. In fact, the stylish new Voyager Vector caravan is warranted against water ingress for 25 years! The latest Mobilvetta Kimu motorhome's one-piece living 'pod' is similarly free of seams.

Aluminium skin

The traditional cladding material for caravans and coachbuilt motor caravans is pre-painted sheet aluminium. Unfortunately, most products built this way are riddled with holes because dozens of screws puncture the skin in order to retain aluminium rails and trim strips. When their bedding sealant fails, leaks usually start.

Extrusion rails are typically screwed in place at wall junctions – which means puncture holes – and I much prefer bonded-plastic cover trims as shown on the Pilote Reference and used on the late Swift Royale motorhomes.

When a sheet aluminium clad caravan receives accident damage, the normal repair strategy is to bond a complete new panel on top of the old one – you can't knock out



6



7

Further information

Bradleys (ABS repair products)

Tel: 01728 745200

V & G Caravans (near Peterborough) Tel: 01733 350580

Sika Ltd (Sikaflex 512)

Tel: 01707 394444

dents in aluminium because it stretches. However, a few repairers are skilful enough to carry out patch repairs on flat aluminium sheet. There's also the Danish HBC system which entails making a mould to replicate a stucco surface, a small patch is then cast from the mould, bonded over the damaged area and painted to match.

I imagine it's far more involved (and costly) to carry out accident repairs on an Airstream caravan. You can neither knock out a dent nor paint over a bonded patch. Presumably a new panel has to be riveted in place of the damaged original one – a job needing special skills.

Cast aluminium components

Sometimes an aluminium casting is used to form a rigid side skirt, especially on motorhomes. Swift, Mobilvetta and others have fitted these recently and they're less flexible than ABS plastic mouldings. If a section gets damaged, repairs are seldom feasible so a replacement part is needed.

Conclusion

I've omitted camper-van conversions because their steel bodies are easily repaired at a car body shop. That's not the case with the other body-types mentioned and repairs sometimes involve long waits for parts to arrive.



8