

Body beautiful

While truck manufacturers insist they do all they can to make life easy for bodybuilders, mounting bodies is not always as simple as some might like. And that's just the start: other concerns include the body structures themselves and in particular their weight, aerodynamics, speed of assembly and longevity.

"Ideally, chassis should have nothing protruding above the side members from the back of the cab to the rear of the vehicle," confirms Iveco product director Martin Flach. "We certainly try to ensure that wires and tubes don't get in the way... However, air intakes and exhausts are bigger than they were." Then there is Euro 6. "Something bodybuilders must avoid is mounting the body so close to the exhaust that the DPF [diesel particulate filter] can't be removed for cleaning or a service exchange."

The extra weight imposed by Euro 6 also means that rigid bodybuilders are under pressure to cut kilos to compensate and allow payloads to be maintained. "Euro 6 has added 50–100kg to the weight of a typical 18-tonner, compared with Euro 5.

There's more to bodybuilding than the headline imperatives of weight reduction and aerodynamics imply. Steve Banner talks to some of the experts

And OEMs using EGR [exhaust gas recirculation] also need bigger, heavier cooling systems," agrees Flach.

But it's not just about 18-tonners. With Euro 6 extending to lighter vehicles, the struggle to contain chassis weights has become increasingly fraught at 3.5 tonnes, too. For Andrew Dodge,

managing director at bodybuilder Lawrence David, one solution has been moving to all-bonded box bodies at that weight, using bonding agents similar to those in aviation to minimise fasteners.

"We're also making extensive use of foam-impregnated panels rather than their heavier GRP equivalents. And we're fitting column tail-lifts with platforms that double as the rear closure. That means we can save the weight of a rear roller shutter door," explains Dodge. The result? "We're currently building bodies on a couple of low-height 3.5-tonners that should be able to handle a 1,260kg payload."

Don-Bur is another constantly looking at light-weighting, and group marketing manager Richard Owens claims this bodybuilder has shaved 500kg off the unladen weight of an 18-tonne curtainsider.

Measures it adopts vary depending on the nature of the body and its intended operation. "In some cases we can do away with the subframe and all bearers apart from those at the front and rear," says Owens, explaining that the body floor can be glued to the chassis rails. However, that would not be practical for a brewer's dray, given the battering its floor would need to take.



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“Other lightening measures include fitting alloy side rails and bearers,” suggests Owens. However, Schmitz Cargobull technical director Derek Skinner reminds operators that specifying aluminium, instead of steel, may mean doubling its thickness to retain strength. His company looked at several materials – including aramid fibres – with an eye to weight reduction, but cost and difficulties with repairs limited their appeal.

OUTSIDE THE BOX

“For 3.5-tonners on local delivery work we’ve fitted a smaller fuel tank to save weight – 40 litres, say, rather than 80,” muses Dodge. “We’ve also taken the passenger seat out.” And Owens adds that lighter panels are an option, although there’s a price to pay. “You can use polypropylene honeycomb Omnia panels but they are 60% more expensive than GRP,” he explains. “They’re also quite flexible so you may need stiffening strips for an 18- or 26-tonner, although not at 7.5 tonnes.”

While 60% extra on the price of panels may cause operators to wince, many are now prepared to pay for lightweight, strong bodies. “They want to save fuel and, if they can increase payload, they

CLOCS AND FORS COMPLIANCE

Compliance with FORS (Fleet Operator Recognition Scheme) is increasingly impacting rigid body designs.

The bronze standard requires side underrun protection on trucks grossing above 3.5 tonnes, and signs must be mounted on the rear to warn other road users not to get too close. Class V and VI mirrors must also be installed.

Meanwhile, the silver standard mandates the elimination of blind spots as far as possible, through the use of direct and indirect driver vision aids and alerts. It also obliges operators to fit devices that issue an audible warning if a truck is reversing or turning left.

“We’re putting in systems that cause all the lights down the side of a truck to flash depending on whether the driver is turning left or right,” comments Lawrence David managing director Andrew Dodge. “We’re installing Jimmy Beam downlights, too.”

As well as projecting an illuminated footprint to make it easier for drivers to see obstacles in close proximity at night, they can act as a highly visible ‘keep clear’ area.

may be able to make more deliveries,” observes Owens.

What about aerodynamics? Most accept that aero interventions on rigid bodies are far more debatable than on trailers, essentially because the former are generally used on short-haul, urban work where speeds don’t merit side-skirts, boat-tail fairings, etc. Nevertheless, if the duty cycle is mixed and includes some dual carriageway and urban motorway work, there may yet be an argument.

“Profiling the rear of the body can have an impact on the height of the rear door aperture unless you’re building on a low-height chassis. But there is nothing to stop you profiling the front or fitting an air diffuser,” comment Owens. “Remember though that if you put too much of a curve in the roof you can lose pallet capacity,” counters Dodge.

But for operators delivering early in the morning and late at night in urban and suburban areas, another factor is also increasingly attracting attention – noise. In the running are PIEK-approved tail-lifts, white-noise reversing systems, noise-deadening coatings for load floors, internal buffers on body sides and front bulkheads, and roller shutters with nylon rollers.

“It’s also worth noting that composite panels can soak up more noise than standard GRP,” suggests Owens. That said, he is less enthusiastic about bonding rigid bodies, if only because adhesive setting speeds can hamper adjustments. “Bolting is also preferable, certainly so far as curtainsiders are concerned, because it allows them to flex,” he advises.

Skinner also favours bolting subframes, rather than welding them. He also argues that bolted constructions do not necessarily impose a weight penalty. But Dodge takes another view: “While bolted construction does make bodies simpler to repair, the bonded panels we fit are quite easy to replace and the silicone-based bonding agent flexes, too,” he says. [TE](#)