



FIRE RESPONDER

Ed Higginson reports on new ideas for those handling call outs to fight small fires

When it comes to sourcing the right body for an emergency response there are many suppliers across Australia able to provide a broad range of options. Although the choice of designs might appear endless, the materials used in their manufacture are usually limited to steel, aluminium or fibreglass.

An Australian business that is a well-known supplier of specialist equipment to the emergency services and heavy industrial sector has launched a new light truck body made from an alternative material that it believes will challenge the current market and impress everyone that takes a look.

PT Hydraulics can trace its origins in Australia back 70 years to a business known as Ritch Engineering, which turned into SBX Power Hydraulics. PT Hydraulics was created in 2003 when the management team bought out the previous existing business and set it on course to become a well-known and trusted brand in its field.

Until recently the company has comprised of four divisions, with PT Rescue focusing on the emergency services offering a wide range of specialist tools such as the jaws of life, vehicle lifting airbags, fire-fighting hoses, environmental foams, plus much more. PT Industrial supports the mining, power companies and industrial sector, with PT Rail working with the rail industry and PT Hire supplying equipment across all three other areas.

PT Hydraulics has now launched its fifth division. PT Bodies will focus on the development of vehicle bodies, initially concentrating on the customer base of PT Rescue, but quickly expanding across all divisions of the company, plus looking at potential new markets as they become available.

During a recent trip back to the UK, the manager of PT Hydraulics, Stuart Coulton, came across a compact fire-fighting ute, set up with an impressive body made from polypropylene. As a seasoned fire fighter himself, and after years as a fire chief in the UK, he quickly appreciated the

benefits and scope that this product could offer the Australian market and set about bringing the range of bodies over to be evaluated for his own client base.

So, what makes the material so special? Polypropylene has been around since 1951 and is the second most popular synthetic plastic in use today. Polypropylene features in everyday products such as clothes, building construction, automotive parts and even polymer banknotes. For the vehicle bodies, polypropylene is the highest grade available and comes in solid plastic sheets that can be easily cut to individual requirements.

The bodies are made to order, with customer requirements being modelled on state-of-the-art CAD software to ensure the body design is fit for purpose, and, most importantly, strong. Once approved for construction, the body is laser cut from 15 mm polypropylene sheets for the floor and 12 mm sheets for the walls. This is plastic welded together to form an extremely strong body that can be mounted directly to the vehicle chassis, without the need for a sub-frame.

This form of construction produces a much lighter body weight, some 20%-25% lighter than a comparable steel or aluminium body, which ultimately benefits fuel economy and vehicle payload potential. With some forms of fabrication it is not unknown for a completed body design when fitted to a vehicle to already be near to its gross weight limit or maximum carrying capacity before being loaded. The new polypropylene designs herald a shift to plastic as a strong and lightweight material that is much more advantageous than alternative, heavier materials.

As a result of these new materials and designs the manufacturer is so confident of the final options available that it has backed the product materials with a 10-year



warranty. This warranty continues to apply even when an existing body is transferred onto a replacement cab/chassis during its working life.

Stuart explains: "PT poly bodies are extremely durable and have a superb resistance to impact due to their strength and flexibility. In most low-speed impacts there is little or no damage as the polypropylene absorbs the impact and springs back into its original shape.

"At a higher speed the plastic eliminates the shock transfer through the body keeping damage to a minimum. Polypropylene will not crack, corrode or suffer from stress fractures associated with driving on corrugations of the Australian outback roads. Our bodies are so strong they can withstand the impact of a sledgehammer, try that on a steel or fibreglass body!"

After seeing photos of a vehicle overseas that had been involved in a severe rollover, it was impressive to see that although the ute's cab was written off, there was little damage in the body itself, allowing it to be transferred to a new vehicle for future use.





Polypropylene has been used for making vehicle bodies in the UK for over 10 years now and has proven to be a viable alternative to established production materials. Over time, the product has proven itself repeatedly and has grown in popularity, with one business building nearly a 100 units a year.

When compared to traditional materials, the new polypropylene designs provide reductions in weight, plus improved heat resistance. The material is not prone to cracking like GRP, nor does it corrode like metal. It can withstand a variety of aggressive chemicals, plus it is 100% recyclable. It also has better sound insulation, which helps when small generators or pumps are mounted inside the body. The manufacturer is also confident that pricing will be comparable to similar designs using traditional materials.

When it comes to repairing the product in the event that it is damaged during its life, the manufacturer states it is as easy as simply cutting out the affected area and plastic welding a new piece in place. Since their availability on the market in Australia and New Zealand, PT Bodies has placed units into various fire and rescue teams for full evaluation and claims they have been received with good feedback to date.



"The emergency services have embraced these new compact bodies that are a lot more compact and versatile than a traditional fire truck, plus easier for off-road use. There is also a demonstration fire-fighting body fitted to a Mercedes Sprinter cab/chassis currently working its way around the country for trial purposes, with PT Bodies confident it will gain a lot of interest," said a company spokesperson.

"Over the years, the advantages of small compact vehicles with go-anywhere capabilities have proved extremely valuable. Mainly seen in the small CFA utes or paramedic's cars, these types of vehicles are becoming more commonplace and PT Bodies expects that this trend will increase," the spokesperson added.

Although the initial focus has been with PT Rescue's existing customers in the emergency services, coupled to its existing range of specialist products, the company can also see a wide scope of emergency response and work vehicles that would benefit from the expanding product range. These include applications such as where a compact body is required to carry heavy equipment, pumps, compressors, hydraulics, etc.

As well as fire-fighting and rescue teams, the current product range covers industries such as the utilities sector, mobile workshops and delivery vehicles. The company's in-house design team can facilitate any bespoke design for the trade wanting a specialised layout for shelving and tools whilst still wanting to maximise the payload. Other alternative options include a personalised ute body design for camping and touring applications. **D**

