

Is that part Dangerous?



The technical standards for in-service vehicles are based closely on the Australian Design Rules. The problem is that the ADRs are not intended to be replacement part standards. Rather, they are standards applicable to complete vehicles. For example, the brake ADRs specify some design requirements and stopping distances. There are no individual standards for brake actuators or brake drums or linings, so these parts are not labeled as ADR compliant. Operators want value for money when purchasing replacement parts. The parts must be of adequate quality so that they are not dangerous and maintain the compliance of the vehicle. But how can this be assessed? Here is some guidance:

1. If failure of a part could cause a crash or injure someone then it should only be replaced with a genuine (original) part. For example, this applies to coupling king pins, sway bars, tyres and steering arms.
 2. If the part is important to the legal status of a vehicle, then it should be replaced with a genuine part or a part that will maintain the status. For example, this applies to brake actuators and tail-light assemblies.
 3. If the operation of the vehicle depends upon a part then replacing it with an inferior part is risking economic loss and not worth the risk.
- Some parts meet recognised standards

and are marked or plated. This applies to glazing, lights, reflectors, seatbelts, tyres and mechanical couplings. Sometimes parts are marked as complying to standards when they may not, for example, air brake hoses are often marked because they have the wall thickness and diameter in, for example, an SAE standard but they have never been fully tested.

In Australia most truck replacement parts do not need to meet a technical standard, even if an applicable standard exists. There is no supervision of replacement-part quality by state road agencies so it is up to the buyer to beware. The truck operator should ask some basic questions of the part supplier such as: What standard does the part comply with? Who tested it? Is the part used on a new vehicle that has an ADR compliance plate? Are written installation instructions provided (for example, what bolt torques apply)? For safety-critical parts, does the part have a unique serial number and does the supplier occasionally perform quality testing to ensure continuing quality performance?

The answers to these questions might help the purchaser assess the likely quality. Part manufacturers and suppliers should keep a technical file for each part (or family of parts). This is a private file that

contains information sufficient to prove that the part is adequately designed, manufactured and tested. Manufacturers who don't have an adequate technical file are taking a risk. The Trade Practices Act requires that parts sold are fit for the intended purpose. Ensuring that replacement automotive parts have adequate quality is a concern for governments in other countries. The Americans have a DOT marking requirement on some types of parts

(such as wheel rims and some brake parts). The manufacturers have to register the part with the federal regulator. The Europeans apply ECE Regulation 90 to replacement brake linings. Linings must be tested in comparison with the genuine lining. Australian regulators, however, have not gone down the replacement parts domain. It is not perceived to be a major problem. Maybe the new National Heavy Vehicle Regulator will take it on.

But there are serious concerns with the quality of some safety-critical or safety-important parts. The photo above shows a failed cast suspension pedestal which is a non-genuine part. It has casting porosity and broke whilst in service. A second photo above shows ECE E45 markings on tail lamps that are sold in Australia. But Australia has not signed the international protocol that is needed for this to be valid.

Brake lining test standards are a particular risk for truck operators. Because brake linings are important to ADR brake performance, changing from the genuine linings brings in a new risk. If the vehicle is ever involved in a serious crash and brake performance is a factor, the truck operator might be called on in court to justify the choice of brake linings. It happened in a case I was involved in.

ARTSA has developed a Replacement Parts Code of Practice that gives guidance to our members. It can be found at www.artsa.com.au.

By Peter Hart
Chairman of ARTSA



This non-genuine cast aluminium suspension pedestal has failed because of casting porosity. Parts that could cause a crash if they fail should always be genuine or certified acceptable.



The Australia government has not signed the international protocol that allows E45 certificates to be issued.