

Certification, not everything is what you expect of it.

Certification

In 1999, the VPAM (Vereinigung der Prüfstellen für Angriffshemmende Materialien und Konstruktionen, www.vpam.eu) a society of testing facilities for attack resistant materials and constructions, has drawn up a standard¹ on how to test completely armoured vehicles (BRV). Previously, the older standards EN1063 and EN1522 were used but only relate to the materials used to armour a vehicle, not the way they have been applied. The BRV has been updated in 2009. The ERV² has been added in 2010.

Certifying authorities like the Beschussamt München, Mellrichstadt and Ulm print a disclaimer on their certificates. To illustrate the extent of the certificate I now put small-print in large-print: ***The applicability of this document is limited to ten years beginning with the day of testing. It will expire prematurely, if an alteration or modification to the manufacturing process, materials and/or quality management system could impact the product conformity. This document is only valid with signature and official seal. Only the original has an embossed coat of arms. The duplication in extracts is only allowed with written approval of the Beschussamt ****. On the location of the * is the location of the Beschussamt.

Specification in tenders

The VPAM-standard is more and more used by organizations to refer to when buying armoured vehicles. Specifically NGO's and GO's fall back on these standards since the certificate relieves them from their own judgement on the quality and integrity of the armoureding. But not all is what it seems.

More and more pressure is put upon suppliers of armoured vehicles to reduce their prices. This is a side-effect from tendering for these vehicles. The focus lies more on price since the integrity, and hence the "quality" as an armoured vehicle, appears to be guaranteed by the certificate. Manufacturers tend to move (parts of) their production off-shore to countries with lower wages and hence lower cost.

Extent of the certificate

The main point is stated in the sentence: ***it will expire prematurely, if an alteration or modification to the manufacturing process and/or quality management system could impact product conformity.*** Moving the production (partly) off-shore is such an alteration to the manufacturing. When the vehicle is first manufactured in the production facility in for instance the EU and the sample for the certification is from that factory, a vehicle produced in the middle- or far-east will not be the same.

Craftsmanship can be different, production will be different, and quality control will be different. That is why the certificate is void for those vehicles. It is the specific combination of: vehicle model, type and generation, manufacturing site of the sample, manufacturer and management (quality management system) that is covered by the certificate. The ten years relates more to the change in model than to ageing of the vehicle. A face-lift however is not a change in model. The latter occurs when so many changes have been done to the body and chassis of a vehicle that its outer and inner shape is different from its predecessor. That is also why a certificate is only valid for that specific vehicle. You could expect that the manufacturer is capable of manufacturing any vehicle in that armoureding class, but it is not proven.

Other standards

A quality management system like ISO9001 will give a large amount of certainty that all vehicles produced in one plant will be identical and hence, the certification sample is a proper representation of the vehicles produced by that factory. How will this be when production is transferred off-shore? Even when that site has an ISO9001 certificate, is the reproduction capability of that site identical to the original plant and is the vehicle the same? Is the moral the same? Are QC-documents filled in because it needs to be done and do they tell the truth?

¹ BRV2009 Bullet Resistant Vehicles – VPAM,

² ERV2010 Explosion Resistant Vehicles – VPAM

ISO9001 has the next surprise: Any company can choose which primary processes of the company she wants to certify and lay down in ISO9001 worthy procedures. Does the ISO9001 certificate presented represent the manufacturing processes, or only the sales and after-sales processes? Nobody asks, nobody wonders, I have learnt in tender-processes.

Another standard often used is the Stanag (Standard Agreement of NATO). More specifically the Stanag 4569 Allied Engineering Publication AEP-55. This has 3 volumes: Volume 1, kinetic energy and artillery threat (ballistic); Volume 2, Mine threat; and Volume 3: IED threat. BRV2009 covers the same intent as Vol 1, ERV covers the same type of threats as Vol 2 and 3. Also here, when changing design, production process or QA-system, the certificate should be considered void.

Best practice

Well, then how to distinguish good from bad? First of all, the principal of the tender should verify that all documents belong together: ISO9001 relates to production, certificate relates to same production-site and vehicle type, and no “exemptions” are listed in the certificate that the principal does not want. You also want to check if modifications have been performed during shooting. When punctures or passes occur, a weak-spot can be altered, strengthened. These are the points you want to check on a site visit during production of your ordered vehicle.

The next step is specifying explicitly that the vehicle bought must be produced by the supplier on the site presented with the ISO9001 certificate and the VR-certificate. Non-compliance should be ground for cancellation.

When ordered, the principal should visit the manufacturing site announced on very short notice (unannounced is even better but sometimes problematic due to large distances and the risk of a useless trip). This will avoid a vehicle being shipped quickly from the off-shore manufacturing site to the original site. Then write down the chassis-number of the vehicle(s) presented as intended for the principal. Best is to aim for somewhere near the end of the armouring process, this will enable checking of the modifications I mentioned earlier. Then do the final inspection on the vehicle on manufacturer’s site and check the chassis-number(s). This will confirm if it is the same vehicle as seen in the production. When delivered to principal’s site, the last check will assure that it is again the same vehicle as seen in final inspection.

The above written process will enable principal to get certainty that he will get a vehicle produced in the plant which has been certified, and that the manufacturer is not selling him a vehicle that is said to be produced in that plant but actually came from the off-shore site or even worse has been bought from someone else.

Other thoughts

The next thing to bear in mind is that certification of a vehicle is expensive. You have to “sacrifice” a completely armoured vehicle which is rendered useless other than as an exhibition item. So when a new manufacturer shows up with a certified vehicle shortly before a model change is taking place you have to be careful. It will take a manufacturer large number of sales to earn back his investment in the certificate. This is also a reason for buying “of-the-shelve” vehicles. Watch the news on TV and you see which one is the current main-stream model. Buying something different will ensure you will pay for the certification within the contract.

Principals trusting the paperwork presented could find themselves being fooled. Only when someone gets shot inside a car that was believed to be bullet proof to that calibre, is when the shit will hit the fan. An extensive investigation will start and soon will present the real birth certificate of the vehicle. For the victim it is too late, for regret as well. An *economically most advantageous vehicle* could turn out to being a very expensive one.

Want to know more? Please contact me on info@reijnen.org.

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