

For Information - BS EN 12767:2019, Breakaway Safety

Dear Members of ARTSM,

In late 2017, I was asked to represent ARTSM on the BSi B509/10 committee for Breakaway safety (Passive Safety) & was subsequently appointed Chair of this committee by British Standards in July 2018. Our first meeting was held in October 2019 where it was very quickly found that we were in quite a bit of trouble...

For reasons unknown, the UK's group hadn't met since November 2013 & as such, the main body of the standard had gone in a completely different direction to the concept of what Passive Safety is really all about; they had gone in the direction of just protecting the occupants of an errant vehicle & have written the standard based around this premise

In short, it appears that the main drivers & architects of the new standard were the Test Houses of Europe & they've managed to incorporate a lot of things that aren't really relevant into this new document: -

1. three speed classes (50, 70 and 100); - **Same as before**
2. three Backfill types (standard aggregates (S), special (X) and Rigid (R)) — **Why, providing the product to be tested is affixed firm to ground, the medium in which it is held there is completely irrelevant??**
3. three energy absorption classes: high energy absorbing (HE), low energy absorbing (LE) and non-energy absorbing (NE); - **Same as before**
4. five occupant safety classes (from A to E) – **There used to be 4...**
5. two modes of collapse for support structures (Separation mode (SE) and No separation collapse mode (NS)) – **Why the detail? Sign Supports will generally break away, High Energy absorbing lighting columns aren't likely to separate...**
6. three direction classes (single-directional (SD), bi-directional (BD) and multi-directional (MD)) – **Completely irrelevant, is it passively safe or isn't it??**
7. two classes of risk of roof indentation (0 or 1) – **Really not sure why this is in, if the roof deformation is less than 4" it's class 0, greater than 4" its class 1, this means that you could totally squash the roof during testing & it could pass, theres no actual "failure" point..?**

All this coupled with the fact that they have also now laid down additional testing procedures that are **none** mandatory, the only mandatory testing being the same as in the 2007 version of the standard, suggest that vested interests came into play when the main body of the standard was composed...

Testing of a Passive Structure costs in the order of £30,000 ex VAT per test cycle, which encompasses both a High Speed Test & Low Speed Test where a product has to pass both parts (excludes none harmful structures such as plastic bollards or chevrons) before gaining the necessary certification from the Test House & I can't think of any Commercial organization that would go to this additional expense unless they would gain a strong competitive advantage by doing so; so adding additional test procedures especially in these trying times is completely irrelevant & nonsensical

To my mind, Passive Safety is all about the wider environment of roadside infrastructure, not just about the occupants of an errant vehicle - there are plenty of other standards that the motor industry work to that can take care of that side of things.

What I mean by the wider environment is that an engineer should look at the wider surroundings of a potential Installation;

1. is the installation *actually* required, if not don't put it up
2. can the installation be moved so that it isn't placed in a position where its likely to be struck eg behind a barrier? If not, consider Passive over Traditional offerings
3. Is there any other infrastructure close by that could be considered a hazard, for example not placing a Passive sign assembly directly in front of a standard steel lighting column or a bridge pier perhaps...?

& the list goes on....

With just 7 months from the UK committee finally meeting up again in October 2018 to the initial planned publication of the standard & bearing in mind committee members are all part time & volunteers with day jobs that need to be done, we simply didn't have any chance to argue the case with our European partners for what Passive Safety is really about

The main European Committee responsible for writing the standard comprises 36 member nations, all with different types of roads, different expectations & wider political aspirations where other things are deemed more important than simply determining whether a highway support structure is Passive or not...

The only way we could overcome this obstacle of not being able to influence the main body of the Standard was to vote against it; this then allowed us the opportunity to write a supporting document, the UK National Annex, that allowed us to put in the freedoms & discretions that are needed to allow engineers to specify performance classifications that were actually achievable & deliverable by manufacturers & suppliers

For considered reference, of the 36 member nations with voting rights, 20 nations voted for the standard in its entirety, 15 nations abstained & the UK was the only country that voted against.

To comply with European Procurement rules (Part of the Four Freedoms), over the last 15 or so years, we've gone away from Prescriptive standards, to Performance Based standards, where engineers need to specify the *exact* performance level of the product they wish to use in a particular application or scenario. The way these new standards are written is that everything written into each standard is now measurable.

You simply can't account for every single eventuality or possibility that a product may encounter during its working life with these standards & an engineer should look at things with a sense of perspective & engineering nous.

I know some members have mentioned about the use of Solar Panels & signlights on Passive Structures, or VAS or VMS signs – when a manufacturer tests a passive product, they will not test with this additional equipment, simple reason is there just isn't a requirement to do so in this standard & with the costs mounting up as described previously, nobody would even contemplate adding additional infrastructure to a test piece if there was any possibility that the test piece could fail by adding the additional kit.....

In the real world though, fitting additional equipment can be a requirement. This is the reason for the term “lightweight” used in the NA – as a committee, we can’t simply specify a maximum weight that can be added, 5kg, 10kg, 50kg or whatever because the combination just hasn’t been tested & the onus is therefore upto the engineer to make an educated engineering judgement about the suitability of such a combination of equipment for a particular application. What I may think of as lightweight could be completely different to that of someone else.....

The bigger problem for industry is the changes to DMRB that was first reported about 18months ago to the membership. Highways England are trying to remove as much guidance & instruction as possible from the standards employed for a couple of reasons; 1) not to stifle innovation & 2) so that the engineer can “engineer” a solution to a particular need

As manufacturers & suppliers we all want a rule book in order to know what to make & compete on an even playing field. My own personal fear is that relaxing standards & removing guidance will lead to a complete “dumbing down” & inferior products being potentially used.

That coupled with the fact that there is a general lack of knowledge (apathy perhaps??) about what is right & wrong within the engineering community right now - my current personal favourite is Series 1200 of Manual for Contract for Highway Works (part of the DMRB) that still specifically references BS873 that was withdrawn in 2005. “That standard was withdrawn & replaced by BS EN 12899-1:2007” – “Don’t care, I want BS873....”

One thing I can assure members of ARTSM is that we’ve done our best – the standard is most definitely not ideal but it really is the best thing that we could have ever done given the timescales at our disposal....

Ian Thomas, 17th September 2019