Statement on Compliance of CMG Products to CEN/TS 45545-2 and Technical Specifications for Interoperability (TSI)

The European Rail Agency (ERA) is driving the requirement for the interoperability of trains across Europe. In 2008 the Rail Directive 2008/57/EC was published covering both high speed (HS) and conventional rail (CR) train. The ERA is responsible for publishing Technical Specifications for Interoperability (TSI) which contain mandatory requirements to meet the requirements of the rail directive. If an EN standard is published in these documents it will be mandatory to comply with that standard by law. Compliance checked by a notified body will be valid throughout the EU

There is no published TSI for conventional trains and therefore these trains MUST meet the national requirements as shown below
The TSI regulation for high speed trains has been published and specifies the CEN/TS 45545-2 document.

However until this becomes an EN standard compliance to CEN/TS 45545-2 is NOT required
Compliance testing MUST continue to be assessed to any of the following 5 European fire test performance standards specified.

UK
BS6853

France
NF-F 16-101 / NF-F 16-102

Germany
DB 5510:2009 (including additional toxicity test)

Italy
UNI CEI 11170:2005 Part 3

Poland
PN-K-02511 March 2000

1. When will the new standards become mandatory?
DD CEN/TS 45545-2 was published in May 2009
The TS means that it is a Technical Specification – it is an interim document only. It has been published to allow manufacturers and test houses to gain experience with the proposed standard and assess their products and equipment for future testing when it becomes an EN standard. Train builders and operators have begun a transitional period as they start to familiarize themselves with the requirements of CEN/TS 45545-2. Many are now asking for reports on the level of approval achieved by equipment to the new document.

2. What fire properties will be required for conduit used on European rail equipment?
The fire properties of conduits installed on future European railway vehicles will be specified in Part 2 of CEN/TS 45545. The essential reaction to fire properties detailed in Part 2 are aimed at limiting the fire growth through the train if an ignition event occurs and to provide sufficient time for passengers and staff to reach a place of safety. In addition to satisfactory reaction to fire performance for flame spread, tests for rate of heat release, smoke and toxic gas generation will also be required.

3. What testing and certification of products will be involved?
All conduits for rail applications will need to be type-tested to the fire tests specified for their application as specified in CEN/TS 45545-2. Notified Bodies to the rail industry will require test certification from an official fire laboratory for rail products after the TSI Directives become mandatory.

4. What fire tests will be required for conduit?
CEN/TS 45545-2 specify EN and ISO fire test methods that are proven for structural, furnishing and electrical products.
Two of the standards are already used on existing rail fire standards applied to our conduits.
These are:

ISO 4589-2	**Limiting oxygen index**
NFX70-100	**Toxicity Index test**

There is a new test for smoke levels using the European Smoke Chamber EN ISO 5659 and a new test for rate of heat release

EN ISO 5659-2	**Smoke obscurity**
ISO 5660-1	**Cone Calorimeter rate of heat release**

Not all tests will be required for all products and will depend on their scope of use.

5. What product performance levels will be required?
There are three hazard levels of reaction to fire performance HL1, HL2 and HL3. These levels are related to the risks associated with the operational category of the vehicle and to the location of the product on the vehicle. There are four operational categories for rail vehicles and four design categories, the design categories are A - automatic trains, D - double decked vehicles, S - sleepers and N - standard vehicles (all other).
There are also different requirements for equipment depending on whether it is for interior or exterior use. HL3 requires the highest level of performance.

The specified limits for conduits for each level are as follows:

Category	Specification	Interior	Exterior
HL1	Oxygen index	>28%	-
	Rate of heat release	-	<90kW/m2
	Toxicity CIT	<1.2	-
	Smoke Ds Max	<600	-
HL2	Oxygen index %	>28%	-
	Rate of heat release	-	<90kW/m2
	Toxicity CIT	<0.9	<1.8
	Smoke Ds Max	<300	<600
HL3	Oxygen index %	>32%	-
	Rate of heat release	-	<60kW/m2
	Toxicity CIT	<0.75	<1.5
	Smoke Ds Max	<150	<300

6. What Level do our existing products achieve?
These estimates are based on existing test results

Condui	Interior R23	Exterior R24
PEEK	**HL3**	**HL3**
PR	**HL3**	**HL3**
CP	**HL2**	**HL2**
PA	**HL1**	**HL2**
PI	**HL2**	**HL3**
LFH-SP	**HL3**	**HL3**

This means that our products can continue to be used on the areas of the trains where they are currently specified to be used.

In conclusion
It is too early to be testing to the CEN/TS 45545-2 standard and quoting results. These are not admissible to demonstrate conformance with required fire levels since this is a technical specification and not a standard. Customers should be advised to request certification for and continue to use the proven and trusted existing European fire testing standards. Once the document is published as an EN standard (EXPECTED 2012) compliance will be mandatory but manufacturers will have a period of grace to obtain compliance on their products.

- NO COMPLIANCE TO A TS STANDARD CAN BE CLAIMED
- TESTING TO THE TS IS UNRELIABLE AND UNPROVEN AND SHOULD NOT BE USED AS A BASIS TO SHOW COMPLIANCE AGAINST FIRE REQUIREMENTS
- RELIABLE AND PROVEN CURRENT EUROPEAN / NATIONAL STANDARDS **MUST** BE USED FOR FIRE RISK ASSESSMENTS ON ALL TRAINS OPERATING IN EUROPE

The strategy for testing of our Conduits to CEN/TS 45545-2
Many of the tests specified in part 2 have already been carried out on CMG conduits by Bodycote WarringtonFire. Bodycote WarringtonFire is an approved body for this type of testing. We will work with WarringtonFire to ensure that all of our products will meet the required performance levels specified in the CEN/TS 45545-2 document and ensure there is no change to the classification of our products.

It must be stressed that any testing to the CEN/TS document may become invalid if there are any significant changes to the publication before it becomes an EN standard. At this point in time, due to inconsistencies with test results on smoke analysis, there are some significant changes expected before full publication in 2012.

We will maintain our existing European fire testing approvals until the CEN/TS 45545-2 document is published as an EN standard. All of our existing test results e.g. oxygen index remain valid and admissible for compliance approval without the need for further testing.

Once the standard is published we will ensure that all of our products have been fully tested any comply with the new norm

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