September 2015

Guidance and recommendations for transitioning the UK Intumescent Coatings industry towards the future harmonised European Norm (hEN)

Objective
This guidance document is intended for those companies which are involved with the manufacturing, testing and certification of intumescent coatings in the UK, to provide a roadmap for the transition from current practices, test methods, references and specifications towards the new European standard, EN 16623. This is to ensure that a minimum amount of transition work is needed once the harmonised European Norm is published (and hence leading to CE marking of intumescent coatings). This document, once internally approved, will then be shared with other related associations (e.g. ASFP) and the certification bodies, to seek their support for this initiative and for comment and further development.

Background
The BCF Intumescent Coatings Group, at a regular committee meeting held in April 2015, identified the need for the intumescent coatings industry to have a shared clarification and understanding with regard to the different elements contained within BS EN 16623:2015 ‘Paints and varnishes – Reactive coatings for fire protection of metallic substrates – Definitions, requirements, characteristics and marking’, published 23 February 2015. EN 16623 is expected to eventually become the basis for a harmonised European Norm (hEN), as mandatory CE marking comes into force, as required under the Construction Products Regulations (CPR, EU 305/2011).

Specifically, there is a desire to encourage the introduction and use of this standard throughout the sector, and as preparation, to identify what actions need to be taken with respect to each individual element, to assist with a steady transition of testing and certification, and ultimately pave the way for a smooth conversion to a future harmonised standard.
This document therefore approaches the subject by addressing each of the elements in turn, comparing current practice with that specified within EN 16623.

Specific Detail
The specific sections of EN16623 that we believe need to be considered in this document are sections 5, 6 and 8, and only the relevant sub-sections within (5.1, 5.2, 5.3, 5.4, 5.5, 6.2, 6.4, 6.5, and 8.0):-
The table on pages 4 & 5 has been created by the BCF’s ICG committee, to cover the different issues involved and to provide recommendations for this transition process, which is expected to take place within the industry over the next 3 years. The main recommendations are related to the inclusion of the optional / voluntary additional test data into certificates, and to recognise those companies who carry out the additional test work, perhaps through a symbol or tag on certificates. For clarification, the ICG are not asking for any new test programmes or any mandatory inclusion of the additional 16623 elements into the existing certification schemes.

**Identified Key Points during ICG discussions, related to implications of this transitioning process**

**Current Documents**
The following documents have direct relevance to the UK intumescent coatings industry, and we would expect that, once the industry has completed the transition to a harmonised European Norm, they may require subsequent consideration and review, and possibly revision:-

- ASFP Yellow Book
- Building Regulations relevant to intumescent coatings
- Auditing manuals
- Manufacturers’ declarations
- Certificates
- ETAGs / EADs

Related to this proposed transition, the request from the manufacturers to include non-mandatory elements on certificates is the most significant impact to address at this initial stage. The BCF ICG would welcome the opportunity to support and participate in any revision of the above documentation, as deemed required by the appropriate ownership organisations.
British Standards
It is not expected that existing standards (e.g. BS476, BS 8202-2) will be phased out or altered in light of the introduction of EN 16623 to the EU. These standards are expected to remain in use for regions where EN 16623 will not be introduced (e.g. Asia, Middle East). The use of BS476 in the UK and the majority of Europe is expected to be phased out as EN 16623 becomes the new standard for reference throughout the market sector.

Communicating to the customers and the market generally
There is concern that this proposed activity will lead to the potential for mixed messages and confusion within the market, with regard to the desire to introduce EN 16623 elements ‘early’ to the UK market (i.e. before a harmonised EN is in place), and the status of BS476 certificated products. A general statement will need to be prepared coincidental with the launch of this proposal, to provide an explanation for this activity.

Durability
The group are intending to prepare a separate ICG document, possibly based on the existing ASFP Yellow Book approach to durability, to explain the new durability classification system, and how this relates to the current practice of using the ISO 12944 C1-C5 classifications. The coatings manufacturers will separately consider how to promote the use of the X,W,Y,Z1,Z2 etc. system, on datasheets and literature, and make this a distinguishing feature on product descriptions.

Generic primers and topcoats
The group is concerned about how generic primers and topcoats are being handled within the different standards, and when certificates refer to generic coatings e.g. epoxy primer, PU topcoat. There is an overriding importance for manufacturers to ensure that the correct system recommendations are made to customers, and that they (the manufacturers) retain control of this aspect. There have been warranty issues and claims in the industry due to reliance on statements for generic products without checking with the manufacturers. The updating of the BCF’s IC 002 document will help re-establish the importance of consulting manufacturers for their recommendations. There is also a request to the drafting hEN committee to consider how this may be tightened up.

What happens to the non-CE marked / non-hEN products
The expectation is for all EU destined products to transition to EN 16623 over the coming years, ready for the hEN. The products that will continue to be supplied to non-EU destinations may be CE marked or may not be – they may remain referring to an existing British Standard (e.g. BS476 for the Middle East, or BS8202, as used in Singapore). There does not appear to be a need to actively involve manufacturers in this aspect, the market will ultimately determine the products that will remain on each company’s portfolio.

Third Party Certification voluntary statement
This has a major part to play in several aspects of this transitioning process, especially section 6 of EN 16623. This statement needs to be more widely publicised and used, and non-members of the ICG are to be encouraged to sign up to it. CEPE have actions related to this, the BCF will also take action over the coming months.

This document has been prepared by the BCF’s Intumescent Coatings Group, during the period June – September 2015. All enquiries regarding the content may be sent to the ICG secretary: – Trevor Fielding, Regulatory Affairs Manager at the BCF, trevor.fielding@bcf.co.uk
### Section 5 - Requirements

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<td><strong>5.1 Reaction to Fire</strong></td>
<td>Classifications according to EN 13501-1, guidance for testing in Annex A. National building regs in some countries may stipulate min. requirement e.g. E in Germany</td>
<td>EN 13501-1 still allows for class F (no testing) to be submitted. It would be preferred if products were tested under EN 13501-1 to achieve class E, however it is acknowledged that this is an extra cost to industry. Final hEN will refer to other substrates and will become much more complicated, keep simple for now.</td>
<td>We would like to request that the information on ‘Reaction to Fire’ be included within certificates (perhaps in the optional scope section?), and so recognise those manufacturing companies that test under EN 13501-1 and provide such information.</td>
<td>Request to cert. bodies to discuss how to include, how to introduce additional info. Suggest complete by June 2016?</td>
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<td><strong>5.2 Resistance to Fire</strong></td>
<td>Tested and assessment to EN 13381 parts 6, 8 &amp; 9. Classification according to EN 13501-2 + A1, clause 7</td>
<td>Approved loadings increase significantly in EN 13381 vs. BS 476, so this requires a higher-specified product to be introduced to the market. This will increase overall cost for construction and needs smooth implementation to avoid market distortion. Final hEN will include other substrates, EN 13501 will have to be changed.</td>
<td>No action recommended for now. The industry will only move en masse when this becomes mandatory. Manufacturers and certification bodies recommended to prepare for this as appropriate – no voluntary activity expected at this stage.</td>
<td>No action until the hEN is finally in place.</td>
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<td><strong>5.3 Durability</strong></td>
<td>New classification system X, W, Y, Z1, Z2 etc. Tests may be done on systems with or without topcoats. System-specific results are generated, not product-specific.</td>
<td>This is an important distinguishing feature of intumescent systems. The coatings industry welcomes this new classification system and encourages prompt voluntary introduction into mainstream approvals for intumescents. However the system-specific approach is going to be onerous and costly, and may restrict uptake / progress. Comments on page 3 regarding generic coatings are relevant to this section.</td>
<td>We would like to request that the additional information on ‘Durability’ be included within certificates, and for this to be formally recognised as additional supporting information. The ICG will prepare a separate document on durability, to introduce the new system to customers / downstream users, and distinguish this from current C1 – C5 claims.</td>
<td>ICG document to be issued before end 2015. Request to Certification bodies, to find a way to include new durability info on certificates, by June 2016?</td>
<td></td>
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<td><strong>5.4 Primer Compatibility</strong></td>
<td>General statements on primer suitability and testing approaches to follow. Manufacturers will be expected to use 3rd party approvals process</td>
<td>Current practice differs from EN 16623, but not deemed to be inferior. Link to durability issue, especially regarding generic compatibilities &amp; warranties. ASFP technical guidance notes cover this. Care to be taken with ‘over-use’ of generic primer statements.</td>
<td>Manufacturers must retain control over system recommendations, need to cover themselves in case mistakes are made ref. compatibility. ICG to raise ‘generics’ issue with drafting hEN group to address in the hEN.</td>
<td>ICG to action through Bill Allen. Manufacturers to act independently and through IC 002 update (by end yr)</td>
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<td><strong>5.5 Emission of Dangerous Substances</strong></td>
<td>No additional requirements apparent, national regulations can request documentation</td>
<td>Until progress is made with regard to EU-harmonised indoor air emission legislation etc., there is no new information required. Needs monitoring as legislation is introduced.</td>
<td>No action required at present, pending IAQ legislation through the CPR implementation.</td>
<td>N/A</td>
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### Section 6 - Evaluation of Conformity

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<th>Element</th>
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<td><strong>6.2 Sampling</strong></td>
<td>Samples of coatings are commonly required by certification bodies. This is obligatory for CE marking certificates.</td>
<td>Sample taken for identification, according to Annex D. The manufacture of the batch for Type Testing shall be witnessed by an independent body</td>
<td>The industry has generally moved to providing samples for all conformity testing, although further encouragement for this to become standard practice would be worthwhile. The Type Testing sampling stipulation may not be current practice for all.</td>
<td>All manufacturers to be aware of obligatory sampling requirements, and the need for an independent body to witness the batch sampling for Type Testing. Start to introduce if not already doing so as best practice.</td>
<td>N/A</td>
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<td><strong>6.4 Characterisation of the Reactive Coating</strong></td>
<td>Not required for BS 476, but is required for CE marked products. Should be standard practice during the certification process.</td>
<td>Analytical and physical characterisation minimum standards set out in 6.4.1 and 6.4.2 (Annexes D and E) – TGA, IR etc.</td>
<td>Many current products have undergone physical characterisation, but not analytical. Latter is going to be a new requirement for companies / certification bodies, so will add cost to the procedures. New products and new cert requests generally are following EN 16623 already, in this respect. No intention to retro apply for existing certificated products.</td>
<td>Start meeting the characterisation requirements in EN 16623 - companies to agree with certification bodies on tests, at initial Type Testing stage, repeated during audits. Not necessary to include data on certificate, results to be retained within Quality procedures</td>
<td>Implement immediately with new products and new certification requests (has already been done by many certification bodies)</td>
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<td><strong>6.5 Factory Production Control</strong></td>
<td>FPC practices are already in place on an annual basis. ETAG specifies 2x per year.</td>
<td>Nothing different – EN 16623 retains the need for an annual FPC audit</td>
<td>EN 16623 matches current practice</td>
<td>No action</td>
<td>N/A</td>
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<td>Alternative raw material, formulation and process changes – not under tight control at present, previous voluntary statements cover to a certain extent</td>
<td>Annex F (internal testing without witness) stipulates specific verification performance testing that needs to be done in case of changes</td>
<td>Although this is welcomed in general, there will be issues with stipulating to such specific detail what is required to qualify alternatives, or decide tolerances on recipe quantities. EN 16623 derived from voluntary BCF &amp; CEPE statements, so already in place for most cos.</td>
<td>Encourage all the industry to support the 3rd party certification and other voluntary statements – invite non-members to participate in ICG activity.</td>
<td>Focus for next 6 months.</td>
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<td>Annual audit for fire testing Current practice - leave to the manufacture. Although each certification body has own schedule, there is no common (harmonised) rule in the industry. Annual audit recommended in CEPE doc</td>
<td>Annual fire test audit is a requirement of 16623, as indicated in Annex G</td>
<td>Fire testing annual audit need to be done, certification bodies are already introducing this requirement into their practices. All ICG members are already doing this. However the detail on ensuring differences between batch tickets and formulations is not always picked up, only by the more thorough cert. bodies. (c.f. UL263 approved, quarterly audits).</td>
<td>Signing up to the 3rd party certification statement ultimately links to the voluntary action to audit annually. hEN may not make it mandatory – Annex G may be informative only? Check with drafting group. ICG supports annual audit approach</td>
<td>As above, encourage non-members to sign up to 3rd party cert. statement.</td>
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<td><strong>8 Marking</strong></td>
<td>Currently marking to all except reference to EN. Voluntary for non-CE prods.</td>
<td>Need to include reference to EN 16623 on the label</td>
<td>Difficult to add anything additional to existing labels (space), so activity should focus on marketing, datasheets, product literature.</td>
<td>Develop a specific recognition symbol / mark for products with partial EN 16623 elements tested</td>
<td>Discuss with cert bodies, conclude by June 2016.</td>
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