

Date: 26 March 2021	Document: ESR for spread of fire Slide 7	Project: Revision of Furniture & Furnishing (Fire) (Safety) Regulations FW/6_21_0006
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Template for comments and secretariat observations

MB/ NC ¹	Line number (e.g. 17)	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment ²	Comments	Proposed change	Observations of the secretariat
JM AUE /7					Problem 1: How slowly furniture should burn is not specified.	Problem 1 solution: Specify 'slowly' giving consideration to existing Regulation to ensure there is no contradiction for products in scope of both. The rate of spread of flame could be aligned with requirements already used in UK and European standardisation: 30 mm/s.	
WS- B					Problem 2: What determines "slowly".	Problem 2 solution: Define "slowly".	
SM BFM					Problem 3: ESR allows for furniture to ignite but must do so slowly	Problem 3 solution: .Slowly needs to be defined including the 'spread' area over time	
TH NBF					Problem 4: <u>Challenge – How to demonstrate compliance</u> The aim is to ensure that the finished product meets a level of ignition resistance and a low spread of fire. We recognise that other furniture items such as sofas present a challenge as they have several different material configurations within the same product, and it is not possible to always conduct	Problem 4 solution: Mattresses & Bed Bases currently are tested in a way to ensure the final item offers a level of ignition resistance and spread of fire is also measured. BS 7177 tests are conducted on either the finished product or a small-scale sample that is representative of the finished product. This demonstrates the combination of materials put together meets as a final item.	

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TH NBF			ESR 1&2 Ignition Prevention & Spread of Fire		<p>final item testing / represent the full item on a single test rig (BS 7176).</p> <p>However, mattresses, bed bases and headboards are less complicated in this respect and it is possible to conduct testing on items / samples that a representative of the finished product.</p>	<p>Headboards could be tested using the method in BS 7176 which allows for the actual materials to be used for the test.</p> <p>Sofas etc... probably still needs to be some form of component testing to demonstrate the cover materials are ignition resistant and low spread of fire to ensure the manufacturer can assemble? Perhaps BS 7176 method of test for domestic level which uses a standard test material – but not the non-FR foam in the current regs – perhaps fibre and foam which was previously identified as a current worst case scenario.</p>	
				Problem 5	<p>Problem 5</p> <p>Challenge – Headboards</p> <p>Headboards are currently tested to the same requirements as sofas rather than the same as beds.</p> <p>This means that the headboard would generally need to be treated with a higher level of FR chemicals to pass the schedule 5-part 1 match test than a mattress or bed base that is tested to BS 7177.</p>	<p>Problem 5 solution:</p> <p>Move headboards to the same standard as mattresses / beds so that the test is representative of the final item.</p> <p>This would allow for a reduction in the level of FR chemicals used whilst still demonstrating a level of resistance to ignition and spread of fire.</p> <p>This would also provide a route for an interliner to be used with a synthetic cover (provided it met the test requirements) and this could even remove FR chemicals if a wool interliner was able to be used. It would allow for design and construction using materials to ensure compliance in addition to the alternative route of using chemicals (which would be reduced from the current regime).</p>	
TH				Problem 6		<p>Problem 6 solution:</p>	

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NBF					<p><u>Challenge – Divan bases</u></p> <p>For domestic level, the divan base is tested on the top surface for cigarette and match resistance.</p> <p>In reality, a mattress is positioned on top of the divan / bed base and therefore we are applying FR chemicals to pass a test that does not represent real life situation as an ignition source is unlikely to settle on the top of such a product</p>	<p>Consider removing the test on the top surface of a divan / bed base so that the bed base is out of scope for domestic level.</p> <p>2019 statistics indicate that 2.5 million divan bases were sold in UK which could be a good reduction in use of FR chemicals for a product where the test area is covered by the mattress placed on it.</p> <p>However, this would still apply if the bed was a type where the mattress and base were combined and could not be separated?</p>	
NBF		ESR 1&2 Ignition Prevention & Spread of Fire			<p>Problem 7:</p> <p>Challenge - Mattresses</p> <p>Single sided mattresses that are specifically designed with little or no filling materials on the underside are currently subject to the same test requirements as the sleeping surface.</p> <p>This means potential use of FR chemicals to pass the test – when the product will not usually be slept on / used on this surface.</p>	<p>Problem 7 solution:</p> <p>Remove the requirement to test the non-sleeping surface side of the mattress where it is clearly designed and labelled that it cannot be used as the sleeping surface?</p> <p>This could allow for a reduction of use of FR chemicals on this non-sleeping side of the product?</p>	
		ESR 1&2 Ignition Prevention & Spread of Fire			<p>Problem 8:</p> <p>Challenge – Mattresses</p> <p>Mattresses are tested for ignition resistance and spread of flame as a finished product, but then the product is covered in bedding materials (bed linen, duvet covers) that are not tested to any requirements.</p>	<p>Problem 8 solution:</p> <p>Can BEIS OPSS share any information on fire data so consideration can be made as to whether we should include mattresses – or just regulate the foam filling?</p>	

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TN SAT RA					It seems we are engineering a product (with or without FR chemicals) to meet requirements that in real life is not the way in which the product would be used, and it is a shame to be engineering in this way when the main risk is probably the bedding and not the mattress?		
					Problem 9: Problems: No definition of "Furniture" (upholstered only?)	Problem 9 solution: How slowly?	
TN SAT RA					Problem 10: Solutions to: Define the scope of "furniture"	Problem 10 solution: Specify the burn rate required to be classed as "slowly"	
PJW FRE TW/ ORK					Problem 11: "if furniture does ignite it must burn slowly" The use of 'spread of fire' is in risk of being seen as "black humour" when the length of time for smoulder ignition to transit from smoulder to flame (StF) can be measured in hours. See BRMA booklet from 1980's: "...the substantial percentage of UK casualties in the early morning, 00.00 to 05.00 hours is a strong indication of smouldering ignition." That is exactly some hours after the ignition		

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					<p>source was "placed" (TV closed down at 10:30 in those days)!!!</p> <p>How slow do we need UPH to burn?</p> <p>However, there is clear scientific evidence that this delay period between smoulder ignition starting and fires being discovered is exactly the time when the most serious threat to life is found.</p> <p>Smoke and Toxic Fumes (STF) remains the main killer in domestic fires involving UPH.</p> <p>One of the principal reasons for the introduction of the FFR was the fact that when open flame ignition occurs the fire can develop rapidly provided sufficient air supply is available. (It also burns more completely and thus with lower toxicity)</p> <p>Fundamentally, fires in UPH tend to develop into life threatening scenarios where escape is more important than "burning slowly"</p>		
KK CIA					<p>Problem 12:</p> <p>If furniture does ignite, it must burn slowly</p> <p>The ESR cannot be used on its own for legislative compliance and enforcement purposes. While we agree that a requirement for a slower rate of spread is desirable, the stated conditions, namely "must burn slowly" is clearly not measurable and would need to be described in performance terms.</p>	<p>Problem 12 solution:</p> <p>must burn slowly" is clearly not measurable and would need to be described in performance terms.</p> <p>The BS 5852:2006 standard under review is best to substantiate the ESR not only for ignition prevention, but also for spread of fire. Here, the increasing energy inputs of the butane flames (sources 2 and 3) allow the simulation of the energy situation at very beginning of the spread of fire. The wooden cribs (sources 4 to 7) with their</p>	

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						<p>higher energy inputs simulate conditions in the more advanced stage of the spread of fire.</p> <p>All these ignition sources are also suitable to simulate open flames from electrical failure in IT equipment (chargers, mobile phones, tablets, laptops, etc.), the use of which has grown exponentially in recent years. They are universally applicable, simulate very well the development of the spread of flame and are highly recommended as a means to substantiate this ESR for legislative compliance and enforcement purposes.</p> <p>As such, our proposal is to revise the standard BS 5852:2006. It is an excellent tool to implement fire scenarios as a basis for the ignition prevention and spread of fire ESR. There is no need to reinvent the wheel by creating new fire tests.</p>	

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