

## COMMENTS HANDLING DOCUMENT – VERSION 4 – DECEMBER 11, 2020

In the following table are all written comments received during the project assembled. An explanation to the columns used are as follows:

Column 1 – N°: Numbering of comments

Column 2 – Body Reference: The body who have given the comment

Column 3 – Comment on document: A reference to which document the comment belongs

Column 4 – Paragraph/Figure/Table: A reference to which part of the document the comment belongs

Column 5 – Comment: The comment received

Column 6 – Proposed change

Column 7 – Answer by the consortium: A short description on how the comment has been handled

The answers given by the consortium in this document are valid for the time they were written, but the answers may change during the course of the project.

The table below lists the comments that have been handled after the publishing of Version 3 of the Comments Handling Document, dated November 18, 2020.

N°	Body Reference	Comment on document	Paragraph/ Figure/ Table	Comment	Proposed change	Answer by consortium
340	EAE	Tender 2019  Assessment method Dr rev1  Inception report  Stakeholder webinar 2	Ch 1 and app.1 Ch. 4.6.  Ch. 3.2.  Ch. XX  Page XX	In the technical implementation of the project (Dr rev1 Assessment method, Inception report and 2nd webinar stakeholder), there were significant deviations from the basic parameters specified in Tender 2019 Chapter 1, for example, for the fire load (density, wood species [calorific value], mass, volume, etc.). The changes made are not comprehensible, the necessary transparency of a public tender is no longer given here in its technical implementation. The reason for this paradigm shift has	Justification of the unpublished changes made in the project work compared to the research approach (tender 2019). This has already been in comments to the tender 2016 clearly criticized.	The aim of the project is not to keep the original BS and DIN methods, but to develop a new test method, which is based on the BS and DIN methods. Thus changes will be made in order to harmonize these two methods into one. Since there are some differences between BS and Din with respect to several features, such as cross sectional size of sticks for the wood cribs, ignition procedure, start time of the test, measurement positions and failure criteria, as far as possible these will be harmonized to one common way to perform tests. The aim is to have approximately the same acceptance level as the ones used with the BS and DIN methods, and in order to achieve this we strongly rely on representatives from the Member States and stakeholders to provide with the data needed

				been based on the contract between the EC and the consortium.		in order to calibrate the new method towards the BS and DIN methods. We have asked around to get access to calibration test data, as well as round robin results, obtained with the BS and DIN methods, but so far with very little success. In the end we have to build the method on the knowledge that we have access to. Therefore we encourage everybody to help with relevant information and data which can help us to develop the best possible method.
341	EAE			The original thermal loads of the facades, which were set in the tender, are substantially changed in a way that goes beyond the exclusive fine-tuning of the test methods required in the tender. The changes of the two stress models are fundamental, since they influence the burning behavior of the fire load and thus its energy release. This is the development of a new test method and not the improvement (robustness) of the one already published in the tender 2019.	Retention of the thermal loads of the test methods specified in tender 2019	It is not a purely question about thermal load. The question is about how the fuel source exposes the test specimen to heat. There are several knobs available to turn in order to have a specific heat exposure. We can work with density, wood crib weight, specific surface of the wood crib, ventilation, wood crib geometry, and probably also other parameters in order to calibrate the heat exposure to the test specimen. As stated in comment 340 above, the aim is to harmonize the BS and DIN methods into a new test method and this will require some changes, but we still have the possibility to achieve approximately the same end result, but with a simpler and more cost effective method.
342	EAE			According to inception report, the tests for improving the robustness of the fire load (fine-tuning) are to be carried out in a single test laboratory. However, this is not the end of the variation of the test parameters. The subsequent large-scale fire tests (initial tests) are to take place in several test institutes. Here, however, the parameters determined to be robust	In order to produce reliable results, especially in original fire tests, robustness, repeatability and reproducibility must be proven one after the other. The fine-tuning of the "robustness" of the thermal stress (fire loads etc.) must be completed and	What you describe is correct, and we would have appreciated if the project could have the budget and time to perform the whole chain of tests and evaluations. This is unfortunately not the case at present. We are limited to a few tests, and will try to make the best out of this. There probably is a lot of valuable data available from previous studies and commercial tests that could give valuable information to the present project. We have asked, several times, for help with information from calibration tests, round robins and when of value also from

				<p>should only be used as a starting point for further variations. At the same time it is intended to vary the environmental parameters. In the "classical" approach, usually the first test method is developed in a single laboratory. With the then unchangeable parameters, the repeatability of the method is determined in calibration tests without test specimens in the same laboratory. Only then is the reproducibility of the calibration tests (including the basic thermal stress of the façade by the test fire) verified in a first round robin test of different laboratories. After evaluating these data, a second round robin test with uniformly defined test specimens follows. A simultaneousness and superposition of these procedures as provided for in the inception report prevents the finding of a reliable test method in view of the large number of parameters acting in a "free" fire. The financial and temporally very limited budgeting of the research project should not provide any justification for such a procedure.</p>	<p>published at least before the start of the investigations of other significant changes, such as the 2nd opening, as otherwise the effect of these measures on the fire behavior of façade claddings cannot be estimated.</p> <p>The previous evaluations of our building products should not be changed.</p>	<p>commercial tests, but so far with very little response.</p>
343	EAE	Tender 2019, App. 1		<p>The mandatory 2nd opening shall be arranged in such a way that a part of the sample above the combustion</p>	<p>It is not possible to mix both fire scenarios, flat facade and facade with</p>	<p>A test method is a model of reality, in more or less details. The aim with the present method can never be to represent real buildings, since there will always be details</p>

			<p>chamber opening has a representative window opening, while an adjacent part of the sample has no representative window opening. The performance of the part of the continuous system area above the combustion chamber will be representative of the system performance under the scenario underlying DIN 4102-20 and BS 8414 series. The performance of the system around the representative window opening will be representative of the system performance under the alternative scenario.</p>	<p>window above, because neither of the two scenarios can be mapped in a way that does not affect the other. The approach is comparable to testing an ETICS with two different insulations with their dividing line in the middle of the fire chamber. Both scenarios can only be tested separately, a "simultaneous" test in one test is not possible.</p> <p>In order to be able to evaluate the building products of the EAE, two separate tests - one test with and one without a second opening - are therefore necessary for both thermal stresses. It can be assumed that this also applies to other facade claddings.</p>	<p>that differs from the reality. The aim is thus to gain relevant information in the test which can show how the system may behave in a real fire. Details that are considered to affect the behaviour in case of fire shall thus be present, and that is the reason why the secondary opening is present, the mounting and detailing of the façade system at openings can be of great importance regarding the fire spread and robustness of the system. Furthermore, it is a request to make the testing as cost effective as possible, and therefore we are with the proposed position on the secondary opening able to cover both the flat surface between openings and the details around openings in one test.</p> <p>We have not got any relevant information that shows that this methodology would not work. It is only commented, without any evidence in any form, and as long as no relevant information is presented we will continue as described in the ToR.</p>
344	EAE		<p>The size of the representative window shall be 1.2 x 1.2 m and the lower edge shall be 1.5 m above the lintel of the fire chamber. There is no published experimentally based derivation for this arrangement, the determination seems arbitrary.</p>	<p>Either scientifically comprehensible derivation of a real "representative" window opening, which covers all architecturally possible windows with regard to their construction, material</p>	<p>See comment 343 above.</p>

					design, size, shape and distribution on the building or examination of a concrete object scenario according to one of the stress models.	
345	EAE			The aim of the second opening is to include the special details around the openings of the façade system, i.e. the details where features such as windows are to be installed in practice. This goal can only be achieved if the window design is included in the fire test, including the contribution of the window to the fire.	To clarify the influence of connection details of window openings on exterior wall claddings, it is not necessary to implement a second opening in the facade. The formation of these connection details is much more effective at the fire chamber, where the highest thermal stress is undoubtedly present.	It is certainly possible to test the detailing of the façade system around openings without having a window present. The same is relevant for the detailing at the secondary opening as it is around the opening of the combustion chamber, where we certainly never have a window.
346	EAE			The wood species originally named in the tender - Pine (Pinus Silvestris) for large exposure and Spruce (Picea Abies) for medium exposure - shall be unified. The definition of the wood species is also connected with its calorific value and the basic fire behavior. The restriction to one type of wood leads to changes in the thermal stress of the facade.	Retention of the original wood species according to tender 2019. The additional work for the testing agencies is manageable and the costs of the project would be reduced.	We will test both species, and after the wood crib tests has been performed decide on the requirements of wood species and other characteristics of the wood crib. It may even be so that both pine and spruce can be used, but the tests will give the answers.
347	EAE	Tender 2019	CH 4.5	The wood density ranges originally specified in the tender of 400 - 650 kg/m <sup>3</sup> for pine and 450 - 500 kg/m <sup>3</sup> for spruce are to be changed.	The original density ranges for the two types of wood should be retained, otherwise a significant change in	See comment 341 above.

		Draft rev. 1 Assessment report	<p>According to the draft rev1 assessment report, a common density of 400 kg/m<sup>3</sup> is targeted for both wood species. This density is part of the density report for large scale exposure in the 2019 tender, but not for medium exposure. In one species, wood of lower density burns much faster than wood of higher density. Thus, the peak of the heat release of the test fire shifts significantly earlier in time, may increase and temporarily longer flames may occur in case of natural ventilation. Both effects considerably impair the thermal stress on the facade. If the volume of the wood remains the same, as is still assumed in the large scale exposure, there will naturally be significant changes in the mass of the wood crib and thus in the total energy, which according to EN 1991-1-2 Annex E, E22 is simplified here as the product of the mass of the wood and the net heat of combustion.</p> <p>It should also be noted that the specified unified density of 400 kg/m<sup>3</sup> ± 25 kg/m<sup>3</sup> lies far outside the "medium" densities of the two named wood species and is therefore difficult to obtain on the market.</p>	<p>the original thermal stresses can be expected, which would go far beyond fine-tuning.</p> <p>Also, it is generally recommended to determine the mass of both wood cribs in the test program.</p>	
--	--	--------------------------------------	---	---	--

348	EAE	Tender 2019  Inception Report	CH 4.5.1  Task 2.2.	<p>According to the inception report, the mass for medium exposure of <math>30 \pm 1.5</math> kg, which was previously set in the 2019 tender, is to be increased to <math>33 \pm 1.5</math> kg, i.e. by 3 kg or 10 %. This increase in the fire load mass is expected to result in a corresponding increase in thermal exposure above the level originally set in the 2019 tender. In the published test program, no comparative test with 30 kg is intended.</p> <p>The changes made contradict the inception report Task 2.2 which states: "Compared to the Invitation to Tender, the table has been only modified regarding the timber specie for the medium heat exposure in order to keep the original national test methods". In the table 2.2. of the inception report for the large exposure, the mean density of the pine tree to be applied is <math>525 \text{ kg/m}^3</math>. The geometric dimensions of the bars result in a wood volume of <math>0.75 \text{ m}^3</math> for this exposure model and thus a wood mass of 393.75 kg for the air-conditioned wood crib. Furthermore, the 2019 tender precisely specifies the cross-section, length and number of sticks of each wooden crib. For the medium exposure</p>	<p>The average wood masses (30 kg and 393.75 kg) used so far should be left for both medium and large exposure, since any change is associated with substantial changes in the thermal load on the facade.</p> <p>In a test program that is intended to fine-tune the robustness of the originally agreed stress models, the original level must first be determined, taking into account all details (mass, density, ventilation of the wooden manger, cross-section of the sticks, length, stacking method, wood-air ratio, surface roughness), since all these factors can have a significant influence on the test fire. Subsequently, parameter studies can be performed. Without the determination of the actual base level, no comparability is possible. It is therefore suggested to proceed according to this principle,</p>	See comment 341 above.
-----	-----	-------------------------------------	---------------------------	--	--	------------------------

				<p>these were 40 planed sawn softwood sticks with the dimensions of 40 ± 2 mm x 40 ± 2 mm x 500 - 10 mm. The sticks to be tested according to the inception report should have 47 (±2) mm square in all 3 tests, i.e. they are enlarged. A test with 40 x 40 mm sticks is not planned.</p>	<p>otherwise it is difficult to relate the achieved results.</p>	
349	EAE			<p>For the estimation of the possible fire behavior of test specimens and also for the comparison with available test results according to the underlying national standards, knowledge of the finally determined thermal stress in all details is a mandatory requirement. At the same time, it should be possible to check the market availability of these wooden cribs.</p>	<p>When and to what extent will the results of the wood crib tests be published? Is this publication to include the final determination of the wooden cribs and their installation on the test rig? We ask for information on possible sources of supply for these wooden cribs.</p>	<p>The results will be published as soon as they have been quality checked. At present we estimate to publish the wood crib test report in January 2021.</p> <p>We would also like to remind everybody that decisions on how to proceed in the project will be done shortly after the wood crib tests has been analysed, and it is therefore important for Member States and stakeholders to provide relevant information, that is scientific based, which may have an impact on the decisions to be made. We do not rely on verbal information, or statements like "this is what we have done in the past".</p>
350	DIBt (Germany)	MBA discussion paper on EXAP rules for facades	Ge	<p>The wish of MBA to have EXAP rules for facades with regard to test results of the coming European test method is comprehensible. However, from German point of view, development of EXAP rules is out of the scope of the project.</p> <p>In addition, experiences with the concerned test method are needed as precondition for the development of EXAP rules, even if experiences from other</p>	<p>Development of a guidance document for EXAP rules of façade tests should be delegated to CEN/TC 127. There seems to be the right place for such work as analogously done in the past for other fire test methods.</p>	<p>Agree that the work on EXAP is outside the scope of the present project. Although, it is important that the work on EXAP is started because it is a vital part of the assessments to be made and thus necessary to have in place as soon as possible after the test and classification method is published.</p>

				façade test methods are available. The specific of a certain test method may have a profound affect on test results and their extended application		
351	DIBt (Germany)	Assessment method draft version 2 11-2020	ge	It would be helpful to have a clear statement the current project is understood as pre-normative work and the final report of the project will serve as basis for a transfer of the results of the project work to a European standard by CEN	Please give a information to the SG (perhaps at on of the next meetings) on the intended handling of the work results after finishing of the project.	This is correct. Under the CPR, the standardization is mandated to European Standardization Organisations (in this case CEN). This process will be started with a standardization request from the Commission to CEN. The testing methodology and the related classification will be considered in this context and provided to the standardizer to be used in their work.
352	DIBt (Germany)	Assessment method draft version 2 11-2020	ge	The document needs a further revision. As result of the SG enquiry any provisions related to "assessment of floor-to-external-wall-junction" should be deleted.	Please check and delete provisions regarding assessment of the floor-external-wall-junction through the entire document	Any further work on the floor to façade junction will be stopped. The existing material will however be kept in the document so it still will be available for eventual future work.
353	DIBt (Germany)	Assessment method draft version 2 11-2020	4.4	To ensure airtightness of the supporting construction a mineral rendering should be used as surface layer of the wall.	Please add a mineral render surface coating of the supporting construction to ensure airtightness of the wall.	We will have a look on the question and evaluate whether this extra measure is necessary or not. So far we have not found any evidence on the importance of airtightness of the rig, and thus we have not required any extra measures for this. One important factor when developing the method is to make it simple to use and to exclude details that make a test more expensive, and that could potentially limit the number of testing facilities being able to perform these tests.
354	DIBt (Germany)	Assessment method draft version 2 11-2020	4.6.2 2 <sup>nd</sup> para	As presented at the last SG meeting sticks of 47 x 47 mm cross section were used for the tests of the medium exposure wood crib. This is in contradiction to the	It is strongly recommended to repeat the wood crib test with sticks of a cross section 40 x 40 mm.	The work on wood cribs is ongoing. The aim is to have the same cross-sectional dimensions of the sticks in the medium and large heat exposure tests in order to simplify the setup for the laboratories, and to keep the costs for tests as reasonable as possible.

				<p>dimensions as prescribed in the draft test and assessment document (version 2).</p> <p>In the Inception Report (page 14, last para) several assumptions were made how changes of the stick dimensions may affect the fire characteristics of the medium wood crib, but no clear answer can be given on this question.</p> <p>Therefore, if intended to modify the dimensions of the sticks for the medium wood crib, it is necessary to clarify the level from where investigations start. This is absolute mandatory to have a basis for comparison between the original wood crib coming from the DIN 4102-20 standard and the modified wood crib and as demonstration that this modification has no significant impact on the exposure level (temperatures, heat fluxes, height of the flame plume, size of the direct exposed surface etc.).</p>		<p>We will also look on suitable cross-sectional dimensions that are commonly used in Europe so it will be easy to find material on the local market.</p>
355	DIBt (Germany)	Assessment method draft version 2 11-2020	7.2	<p>The sense of the secondary opening continues questionable, in particular for the medium exposure test level. This test level only serves to determine the contribution of a external wall cladding to the vertical and horizontal fire spread. But it</p>	<p>Thus, the need for consideration of the secondary opening should be re-checked after evaluation of the wood crib tests, in particular for the medium exposure level. In addition, it</p>	<p>The project will continue as defined in the inception report regarding the secondary opening. We will also make sure that the text in the method clearly states, and with examples, on how to mount and design the test specimen at the combustion chamber.</p>

				doesn't deliver useful information on the fire impact and the behavior of an opening above the fire room in case of a real room fire.	should be prescribed that any relevant features around openings should be considered in the area of the fire source chamber (except the window itself).	
356	DIBt (Germany)	Assessment method draft version 2 11-2020	9.1.1	As pointed out several times in the past (including the 1 <sup>st</sup> project), it is completely declined to install the thermocouple in front of the surface of the test assembly through drilling wholes from the back side of the test rig. According to our German test experiences this way of thermocouple installation lead to damages of the surface of the test assembly and affects the test results significantly. Therefore, this clause needs to be revised accordingly.	Thermocouples in front of the surface of the test assembly shall be installed from the front side, e. g. by using wires hanging from the top of the test hall. More information may be available from German test labs (e. g. MFPA Leipzig).	The way to mount thermocouples, both in front of the test specimen, as well as within the system, is part of the studies made. We will look into different alternatives, and give examples on how to mount the thermocouples in a safe and good way.
357	DIBt (Germany)	Assessment method draft version 2 11-2020	9.1.3	It is fully understandable that it is difficult to install thermocouples in thin, non-combustible cladding boards. However, installation of thermocouples is always needed in insulation layers, even if made of non-combustible material. Due to melting (e. g. glass wool, foam glass) or smouldering processes fire spread may occur in the original insulation layer which requires the need for thermocouples inside this layer.	Please clarify that the provision in the current clause doesn't relate to insulation layers made of non-combustible material.	Our intention has been to minimize the number of mandatory thermocouples in order to keep the cost down for the tests. Therefore we don't have any requirements on measurement of temperature in non-combustible materials. If some evidence show that it may be important to also measure temperature in non-combustible materials, we have to reconsider this.

358	DIBt (Germany)	Assessment method draft version 2 11- 2020	9.4	This clause must be part of the test method, because assessment of smouldering is mandatory required by German regulations.	Keep the clause inside the test and assessment standard.	The information we have got is that there are no regulatory requirements on smouldering, and also that there is another test method available for determination of smouldering. If there are regulatory requirements in Germany, we would need information on these requirements in order to introduce the needed measurements in the method. There were some discussions on smouldering in the previous project, but we did not get any clear information on the current status.
359	DIBt (Germany)	Assessment method draft version 2 11- 2020	10.5	What is understood as acceptable impact of any burning of the test specimen when extinguishing the fire source? More detailed information is needed.	As alternative solution (at least for the medium exposure test), remove the wood crib from the fire chamber by using a trolley for the complete crib assembly and rails in front of the test rig before extinguishing the crib far away from the test assembly.	This is part of the study to see how the extinguishing of the wood crib shall be done. The question is relevant, but it is not such a simple task if we also shall be able to measure weight of falling parts in front of the combustion chamber.
360	DIBt (Germany)	Assessment method draft version 2 11- 2020	10.5.5	Extinguishing of visible burning of the test specimen can only be done after a sufficient observation time which has to be defined yet. Due to requirements of German regulations for certain application, an external wall cladding must be self-extinguishing after end of the test exposure within a defined time-period.	Thus, it should be prescribed that extinguishing of the test specimen itself, can just be done after the end of an observation time (e. g. 60 minutes after start of the test).	This is how it is defined right now, and no changes has been proposed.
361	DIBt (Germany)	Assessment method draft version 2 11- 2020	10.8.3	Why are the criteria for thermocouple failure made less strict? Germany totally disagrees to this modification.	Replace the failure criteria regarding temperature by the following:	The failure criteria is based on each individual thermocouple and not that three thermocouples shall pass the limiting temperature. It may be a misinterpretation.

				<p>For example, exceeding of the 500 °C limit at three thermocouples on the main wing (as one possible failure criterion) means to have at least a 1 m wide flame plume in the height of the thermocouples and the peak of the flame plume probably reach or exceed the top edge of the test rig. Therefore, this amendment is a heavy-weighting dilution of the failure criteria in comparison to those currently used for DIN 4102-20 tests and probably lead to assessments being more unsafe with regard to the regulatory requirements than in the past.</p>	<p>If exceeding of the limit temperature is registered at any one of the thermocouples for a defined time period (e. g. no longer than 30 seconds), it has to be evaluated as failure.</p>	<p>Chapter 10.8.3 deals with invalidation of a test, i.e. during which circumstances the test no longer can be used for a classification. Regarding thermocouples we must accept that some malfunctions during a test may occur.</p> <p>The criteria for failure are to be determined and fine-tuned to give a similar level of safety as the current DIN and BS methods, see also comment 341.</p>
362	DIBt (Germany)	Assessment method draft version 2 11-2020	11.1	<p>Assessment of fire spread only on the basis of temperature measurements is not acceptable from German point of view. Further aspects have to be considered for the assessment of fire spread.</p> <p>In addition, duration of continued burning of the test specimens after end of the exposure time is another relevant criterion. If the test specimen is still visible burning at the end of the observation time, it has to be evaluated as "failed" with regard to fire spread.</p>	<p>In addition to temperature , further pass/fail criteria have to be introduced as basis for the assessment of fire spread, e. g.</p> <ul style="list-style-type: none"> <li>- height of the visible flame plume,</li> <li>- visible lateral flame spread</li> <li>- size (height / width) of the burned area (on the surface as well</li> </ul>	<p>The aim is to use measurements as far as possible for assessment of the performance, and only use visual observations in case it is not possible to measure a specific feature. Flame spread is measured with thermocouples, and this is in our opinion sufficient. We are considering introducing a second row of thermocouples closer to the top of the rig, with which we can evaluate extensive flame spread, or high flames. In the BS method there is a requirement that the flames shall not reach the top of the rig, and it is this performance that can be detected with these thermocouples. It shall also be noted that in chapter 12, point i) it is stated that visual observations shall be made on flame spread, and in point j) that any changes shall be reported (it is further described in chapter 10.6)</p>

					as inside) of the test specimens, continued visible burning after the end of the exposure time for a defined duration.	
363	DIBt (Germany)	Assessment method draft version 2 11-2020	13	The listed parameters for direct application of test results are partly questionable and need to be reviewed and discussed in details later on, if more experiences with the new test method are available. For example, the possible replacement of a combustible insulation by another doesn't only depend on the reaction to fire class of the insulation, but also on other parameters (type of the material, type of production process, organic content, density, thickness etc.).	Therefore, this clause should be removed from the final document. The matter can be discussed and solved later in a separate document to be drafted e. g. under CEN responsibility.	Agree. The field of application is a very large question it will not be possible to cover this in the present project.
364	DIBt (Germany)	Assessment method draft version 2 11-2020	14	The idea to have a simple classification system based on the assessment of fire spread (using only temperatures as sole criterion for that) and falling parts seems to be absolute inappropriate to reflect the various requirements of Member State regulations.	Thus, the proposed scheme for a classification system should be replaced by a matrix of criteria which may be relevant regarding regulatory requirements of the Member States and their presentation in the test report. Further information regarding these requirements and the criteria referring to this should be given in separate annexes with	This question was discussed several times in the previous project, and the outcome at that time was to keep the classification system simple. Although, from the project team point of view we can easily change this, if that is a wish from the Member States. We will deliver a test method with which a number of measurements can be made, and potentially all these measures could be used in the classification system.

					"national determined / required parameters" (cf. last comment, too).	
365	DIBt (Germany)	Presentation of results of wood crib tests for the medium wood crib, given by Roman Chiva at the informal SG meeting on 1 <sup>st</sup> December 2020		As already commented above regarding the draft documents "assessment method" the cross section of the wood sticks used in the tests differs from the provisions of the draft test /assessment document as well as from the origin source DIN 4102-20. The reason for that given in the meeting (use of same sticks for both the medium as well as the large crib) are not sufficient as sole criterion for this significant change.	If no comparable data are available for the origin medium wood crib as for the modified medium wood crib, as good scientific practice, the wood crib test should be repeated with the same medium crib but with sticks with a cross-section 40 x 40 mm to evaluate that the change of the cross-section size of the sticks has no significant influence on the fire characteristics of the medium wood crib (e. g. heat release, temperatures, heat fluxes on the surface of the test rig etc.).	In order to make a comparison we have to get material from tests performed with the original method. We have asked for data from calibration tests but so far we have not got anything. Since at least the DIN method is used in different laboratories, we assume that some round robin tests have been performed, and reports on these would of course be of great value. Therefore we encourage each Member State and stakeholder to provide us with data, reports or other information so we get some material that can be used to compare this new method with historical results.
366	DIBt (Germany)	Oral proposal of Lars Boström at SG meeting 1 <sup>st</sup> December 2020	ge	From German side strong reservations and objections exist regarding this proposal. At the end of the current work the developed test method must cover all relevant aspects which are needed to demonstrate compliance of a tested façade (kit, system etc.) with the regulatory requirements of those Member States where it shall apply.	As alternative to the proposal of Lars, the test standard should be developed in such way that tall relevant aspects are directly implemented in the main document. For example, the test standard could contain normative annexes with provisions for the consideration of	Agree that the general method shall include all mandatory details. Although, there is still a question whether floor to façade junction, and also smouldering, are requirements that shall be addressed in the general standard.

				<p>The proposal may lead to a situation where tests are performed in accordance with the main standard, but the results are not usable, because certain aspects were not considered which are relevant for the application in Member States.</p>	<p>national determined / required parameters (similar as currently used in the Eurocodes). This approach would already allow to consider all relevant aspects and parameters (being relevant for the subsequent application of the façade/kit/system) when planning the test(s).</p>	
367		SG 2020-12-01		<p>How will the test and the classification method presented in the final report be applied across Europe?</p>		<p>The testing method under the development in the project has to be seen in the context of the CPR. This means that after finalising this (project) phase the Commission have to make a standardisation request to CEN for harmonised method for façade fire performance testing including a classification system. Once the testing standard is available the respective essential characteristic (with this testing method) can be inserted into the relevant product standards. On this basis the MSs can set requirements for the products. The project as such does not cover MS level regulatory approaches/rules for facades built "in situ".</p>
368		SG 2020-12-01		<p>We propose that all comments and questions shall be uploaded to the RISE project website within 14 days after receipt to achieve transparency (with name and date of submission) in the comment handling document.</p>		<p>Comments and questions will be dealt with as promptly as possible. Although, it is not possible to ensure that they are uploaded on the project website within 14 days. The project team will do their best to give answers to comments/questions but under the present circumstances with a pandemic, and the available financial budget in the</p>

					project we must compromise on our efforts in the project. Right now, it is of great importance that we can run the wood crib tests and get the necessary results which are crucial for the coming activities in the project.
369		SG 2020-12-01		Comments from stakeholders and Member States which cannot be answered by the consortium from now on have to be passed on in the original wording 1:1 to the steering group (not filtered or rephrased by the project team) for transparency reasons.	This is already the case. E.g. all comments received for the questionnaire have been annexed to the summary document (anonymously) that was circulated to the Steering Group. As regards comments handling document (CHD) all comments received are copied into the CHD, without any changes. Although, in some cases we have also received some additional information attached to the comments, and this information has not been copied into the CHD. It is however clear from the comment if there is some additional information.
370		SG 2020-12-01		How has the evaluation of the answers of the Steering Committee members to the questionnaire been carried out (weighting of votes?) and what has been the basis for the final decisions?	After receiving the answers they have been clustered into groups presented in the summary document and during the Steering Group informal meeting 1.12.2020. In this way it was possible to see the direction on the opinions.  Rigid "weighting of votes" is not relevant for this project as the best way forward depends on the level of convergence of positions in the light of the issues to be addressed. This is a case-by-case assessment. For example in relation to question about SG involvement in the project the comments were relatively scattered. It was however possible to define a solution that will cover (we believe) most of the needs, i.e. "formal" meetings combined with "informal meetings".

						The position on the way forward in relation to execution of the project has been taken on the basis of the feedback received by the Commission and the project consortium. The way forward has been communicated transparently to the SG.
371		SG 2020-12-01		Will it be possible for stakeholders or representatives of Member States to follow the tests by physical presence or livestream (for transparency reasons)?		If possible this will be arranged. Physical presence may be problematic due to the pandemic, and the national/regional restrictions. It is also a confidentiality question when tests are performed on test specimens delivered by industry, and thus we have to respect eventual requirements from the sponsors of the tests. We will also look into the possibility to witness the tests on livestream. At present we have not examined whether livestream is possible at all labs that will perform tests, but we will look into the issue.
372		SG 2020-12-01		How can be ensured, that the classifications from tests with the current test procedures are comparable to the results achieved with the new assessment method?		This can only be shown if the project team get access to test reports from tests using the BS or DIN methods and these systems are tested with the proposed method. We will work on the fire source in order to get approximately the same heat exposure to the test specimen as in the BS and DIN methods, and that should ensure that the loading is similar.
373		SG 2020-12-01		The selection of the test samples for the real tests should not be taken based on possible funding but only on a technical basis.		The project is underfinanced from the start, and the project members are already heavily sponsoring the work. The project budget does not cover the costs for material, transportation and mounting of the test specimens to be used in the experimental round robin. Therefore, it is important that also the industry take their responsibility in the work. The project is mainly done for the industry to simplify and harmonize the trading between the Member States. Although, the technical basis is of course of great importance we need help with results

						from previous tests as well as the test systems that are similar to those tested in the past.
374		SG 2020-12-01		Identification of deviations from the draft test method to the terms of reference need to be marked and explained in detail. Justification of deviations is essential to achieve transparency.		The project team will do their best to have a transparent procedure in the drafting of the assessment method. As far as possible we will show the changes made from the previous versions, and also give the arguments for those changes. A version in word format of the draft assessment method with comments is available on the homepage to download.
375		SG 2020-12-01		Strengthening the role of the Steering Group (i.e. the role of the Steering Group should be more than a reporting platform bringing together expertise of all parties of the SG, and not excluding additional meetings between experts of the project team and specific industry related issues)		Please see answers to comments 369 and 370 above.
376		SG 2020-12-01		The question (in the questionnaire) only referred to the medium test, why not referred to both		The discussions on the secondary opening has mainly been on the medium heat exposure test, i.e. there has not been any objections towards the secondary opening for the large heat exposure test. That is the reason why the question only has been addressed on the medium heat exposure test.
377		SG 2020-12-01		On what basis will it be possible to re-assess the use of the secondary opening in the medium scale test after having done the tests only with a secondary opening – will there be additional tests without this opening?		There will not be any tests performed within the scope of the present project without a secondary opening. The results from the round robin test series will be a possible way to address the question, but this requires that we can perform tests on systems already tested with the BS and/or DIN methods where we can have access to test data from the previous tests.

378		SG 2020-12-01		I'm surprised from the result. In the past only 4 MS voted for the medium exposure level. The vortum of these MS regarding the secondary opening should be weightet higher than other votes of MS / Stakeholders, prefering the large exposure level.		<p>The first phase of the project arrived into two proposals as a potential testing method: "proposed methodology" which was developed on the basis of BS and DIN testing methods; and an "alternative method" which was developed during the project.</p> <p>After the first phase of the project the Commission consulted the Member States about their preferences in order to inform the next step in the process. In this consultation the majority of the MSs had a position that the further development is to be based on the "alternative method", i.e. the method currently in the focus of the project (with medium and large exposure tests) which included a secondary opening.</p>
379		SG 2020-12-01		Can the regulations and criteria for curtain walls provided which are relevant to assess?		The assessment method looks on fire spread on and within façade systems as well as falling parts. Neither of these are addressed in the current fire resistance standards for curtain walls. Although, for curtain walls made of non-combustible materials (A1, A2) it is always possible for the regulators in the Member States to accept these systems if they have regulations on fire spread. It is however not possible to classify regarding falling parts based on the current classification systems in place.
380		SG 2020-12-01		Can informal meetings make decisions, where these need to be made in between two formal meetings		Decision having impact on project execution will be taken on the basis of the input received from the SG. It makes no difference if this is in the context of "formal" or "informal" meeting or even on the basis of written consultation.
381		SG 2020-12-01		Is there any specific reason for the anonymization of replies?		No specific reason. The individual inputs in the summary document was decided to be anonymized because we failed to ask for permission in advance to circulate the individual answers so that the source can be identified. This will be the modus operandi

						also in the future unless all participants indicate that they wish the sources to be identifiable.
382		SG 2020-12-01		droplets, pooling?		Yes, burning droplets and pooling will be addressed in the method. A single burning droplet will not be considered as a failure, it must be a bit larger fire and it must have a certain duration in time. The requirements have not yet been decided, although there is a first proposal in the current draft of the assessment method.
383		SG 2020-12-01		Seems that 2nd opening, curtain walls included or not, etc. are the higher priority topics, compared to falling parts. The latter seems to be rather controversial, and should for that reason not delay the general progress of the project.		The project will follow the plan and cover both the secondary opening and falling parts. This will not lead to any delays in the project.
384		SG 2020-12-01		Not sure whether it is foreseen in the agenda : do you have a revised timeline for the project? (I understand there is some delay because of the pandemic) How and when will the decision about the test samples be taken? Will there be enough time for each decisions?		There is a delay in the project, partly due to the pandemic but also due to some technical issues in the initial tests. Even if the time schedule was pressed from the start of the project, there was some extra time for unforeseen obstacles. We can now also see that further delays is to be expected if more discussions are to be held with the steering group on decisions to be made before we can proceed with the coming steps in the test program. It is difficult at present to estimate how much delay is to be expected. At present we hope that all initial tests will be carried out during the winter and ready in Q1, 2021, and that the experimental round robin can start directly after the summer 2021.
385		SG 2020-12-01		We support full transparency on who said what		Point taken and noted, please see also the answer to comment 381 above.
386		SG 2020-12-01		In general, all information used to support the decision in		We agree with the point on transparency and we facilitate this with several approaches

				<p>this project should be shared transparently. It is also the case for parallel test programmes: if such programmes are run confidentially they should not be considered by this project. Only the information about specific materials and formulations may be considered confidential.</p>		<p>(e.g. all documentation available on project website, addition of "informal" SG meetings, comments handling document). How the results from potential parallel testing programmes can be brought to wider disclosure depends on the (parallel) project and the information to be shared.</p>
387		SG 2020-12-01		<p>Will informal meetings be held to finalise the selection of the specimen to be tested and to approve the final version of the test and assessment method will be used for the RR</p>		<p>That is the plan at present. An informal meeting will be held after the wood crib tests have been performed, and a decision is to be made on the fuel source to be used in the next steps. A meeting will be held after the initial tests have been done where we will decide on how to perform the round robin tests, as well as on which façade systems to be included in these tests.</p>
388		SG 2020-12-01		<p>Doesn't the delay in finalisation of the wood crib test delay all subsequent phases.</p>		<p>Yes, the delay in the wood crib tests will certainly affect the time plan. Although, we will try to tighten up the remaining part of the project as far as possible to minimize the delay of the total project. It is however important that we do not hurry up only in order to keep the initial dead line, but we have to ensure that we can deliver a good final product that is acceptable for industry and the Member States.</p>
389		SG 2020-12-01		<p>What is meant with "parallel test programmes"?</p>		<p>Our understanding is that "parallel test programmes" referred to potential other projects in the field running in parallel with our project.</p>
390		SG 2020-12-01		<p>Why would single company information be confidential? If it is scientific data it cannot be confidential. Also for single company data there needs to be proper justification for non-</p>		<p>Most of the façade tests that have been performed in the past have been done for clients, and are thus confidential. Since there is very little information available from open projects on the fire performance of different façade systems it is difficult to find historical data that is of value in the present project.</p>

				transparency. What are these criteria?		There are some results available, i.e. the tests performed at BRE after the Grenfell fire, but those tests only cover some specific facade systems and the BS 8414 method. If data from commercial and confidential tests can be used in the project, it is possible to make better decisions and judgements on different aspects. It is however important that enough transparency can be achieved when using data from commercial tests. Some parts of the information given in test reports from commercial tests can still be confidential, i.e. material specifications and design, and the data is still valid and usable.
391		SG 2020-12-01		I don't think it should be accepted that a company requests to keep fully confidential information that is shared for the purpose of this project. Of course the information about the product formulation is commercially sensitive and should be confidential, but the rest should be disclosed. Great if you can learn from parallel testing programme, but not if they are fully confidential.		See comment 390 above.
392		SG 2020-12-01		Will the comments handling document be made available as XLS-sheet with categories allowing for filtering and sorting?		We will make the CHD available in Excel format as well. We aim to have it published on the web in December 2020.
393		SG 2020-12-01		It would be useful to disclose the source of the replies also to understand the involvement of MSs in this exercise. Let's keep in mind that 15 of them have not replied to this last consultation		Please see also answer to comment 381 above.  It is also important to remember that after the phase 1 of this project the Commission asked from the Member States about their preferences between the "proposed method" (i.e. the option based on BS and DIN

					standards) and the "alternative method". In this consultation the clear preference was on the "alternative method" and this is the reason why this project (phase 2) concentrates on the finalisation of the "alternative method".  The reason for asking "again" about the features already covered with the "alternative method" was that in the consultation mentioned above the preferences were expressed for "method as a whole" and therefore it was considered important to reconfirm some items that still seem to raise questions.
394		SG 2020-12-01		Is the burning of the crib after the extinguishing time used in the current standards used only for analysing the cribs or do you want to do that also for the real tests?	In the assessment method the fire in the wood crib shall be extinguished after a certain defined time. This is not done in the wood crib tests that we are performing right now since we need information on the time the wood crib is stable and not falling apart. This is also important for getting more information about the burning characteristics of the wood cribs.
395		SG 2020-12-01		Would you argue that (in wood crib tests) part of the temperature differences could be attributed to differences in local or global "collapse" of the crib? If so, would e.g. a "thermally thin" racking help to keep the crib upright (and in doing so reduce scatter in HRR, and consequent thermal load on the facade)?	The differences in temperature between the high density and low density wood cribs does not depend on local collapse in the first part of the test. The difference is due to the difference in density and the geometry of the wood crib (the high density wood stick crib had fewer sticks in order to have the same total weight of the wood used).
396		SG 2020-12-01		Why were sticks used with a cross section 47 mm x 47 mm? Standard DIN 4102-20 prescribes a cross-section of about 40 mm x 40 mm.	The aim is to have the same cross-sectional dimensions for the medium and large heat exposure tests. Presently the dimensions in the DIN and BS methods are 40 x 40 mm <sup>2</sup> and 50 x 50 mm <sup>2</sup> respectively. We are also

					looking for a standardised dimension that is easily accessible in most Member States.
397		SG 2020-12-01		Are there more information available regarding the assembly of the medium crib, in particular to nailing of the sticks to each other?	More information will be given in the reports to be published on the wood crib tests. A first report on the tests with a medium heat exposure will be published this year.
398		SG 2020-12-01		I guess Lars just answered my question on the crib? Collapsing occurring more during heating phase and HRR development, and less during decay (although I've seen collapsing cribs in earlier stages as well ;- )	See comment 395 above.
399		SG 2020-12-01		Will heat fluxes on facade at different heights be analysed?	Yes. Measurements are made with plate thermometers at different positions and these measurements can be used to calculate the heat flux. In the initial tests to be performed later in the project also heat flux gauges will be installed at some positions.
400		SG 2020-12-01		This is a very interesting proposal (dividing the standardisation into main and complementary standards), but it would need a bit of reflexion, what is the deadline to provide input on this?	We do not have a deadline. We will now divide the assessment method into two parts, one dealing with the main test, and one dealing with additional measurements such as smouldering and façade to floor connection.
401		SG 2020-12-01		Which MS representatives are meant regarding the FSE questionnaire - the members of the Advisory Group Sub-Group Fire?	Indeed, Member State representatives of the AG Sub-Group Fire have been approached by the JRC in relation to FSE questionnaire.
402		SG 2020-12-01		There was a statement on developing EXAP rules?	Please note that EXAP considerations are not in the scope of this project. As this will be anyway needed at some stage, a presentation was made during the first SG meeting. Following this a discussion paper (prepared by Roy Weghorst) was circulated to the SG

					members for their comments. Unfortunately only one input has been received this far. The objective here is to kick-start discussions and knowledge harvesting so that some degree of common understanding on EXAP rules could be developed in parallel to the project at hand.
403		SG 2020-12-01		It relates to the latest presentation by Lars	See comment 400 above.
404		SG 2020-12-01		Is there also a thought on developing rules for CWFT: classified without further testing.	This is outside the scope of the project, and thus it is not considered. CWFT can be a possible solution, but we also have to remember that we already have a classification system where you can establish whether materials are non-combustible or not. There is thus a possibility for regulators to define in the building codes whether proof from the façade assessment method is needed or not.
405		SG 2020-12-01		When will the report on wood crib tests be available?	The full report the wood crib tests will be available after the tests have been performed, and is estimated to be published in February 2021. Although, we will try to publish intermediate reports as well, and a report on the tests already done with the medium heat exposure will be available in December 2020.
406		SG 2020-12-01		Do you think, that measure the mass loss of the timber crib by a weighing load cell platform with an accuracy of $\pm 1\%$ throughout the combustion period is necessary? It seems, that repeatability (HRR and mass loss) after wood cribs tests is promising and this step and instrumentation are unnecessary details and they make the test more	At present the aim is to have a robust measurement to show that the heat exposure to the test specimen is within certain limits, i.e. a measurement of the load applied to the test specimen.

				expensive and complicated. We propose to omit this measurement from the methodology.		
407		SG 2020-12-01		It would be better to keep using of plate thermometers during the tests (instead of heat flux meters). We have also some experience with heat flux meters, which are more susceptible to damage during such a test, complicated for preparation and possible repairs after the test and we think results are very similar and sufficient accuracy, therefore it is much more comfortable to use the plate thermometers for the laboratory.		We agree. Although, in the initial tests that are performed within the project both heat flux gauges and plate thermometers will be used. The aim is then to move to plate thermometers only.
408		SG 2020-12-01		Combustion chamber for the large fire exposure should be enlarged due to dimensions of the wood crib, falling parts of the tested façade could have negative influence on the wood crib and whole test course.		This is something that is discussed in the project team. It is true that falling parts may damage the wood crib, when thin test specimens are tested, i.e. when the wood crib extends beyond the outer surface of the test specimen. Another effect by having a fixed location of the wood crib is that the fire exposure to the vertical surface of the test specimen will be dependent on the thickness of the specimen.