Comment				Comment summary	Suggested resolution	Comment is an observation (suggestion)	Comment is substantive (objection)	EASA comment disposition	EASA response
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1	*Flight design GmbH*	3.	6	General Note 1: **The extent of comments should not obscure the fact that I wholeheartedly support the generation of this CM, and that the proposed language already covers a huge majority of aspects that are long-since awaited to be clarified. As TC applicant I fully appreciate that this CM is completed in fastest time and issued to the public. Thank you for the effort put into this!** General Note 2: Several of the comments refer to a Whitepaper created as part of the ASTM F44 efforts. Any time when the comments relate to the Whitepaper, this refers to the following document: „Composite Structure Certification Method for General Aviation Aircraft on the Basis of Methods Identified by AMC CS-VLA", Version 2; 03-Dec-2014; prepared by O. Reinhardt as element of the Part 23 re-write / ASTM F44 General Aviation Industry Standards process. This document is already available to the Author of the CM, therefore not separately attached as part of the comments.	Consideration of some of the aspects described in the Whitepaper as part of the CM, see other comments for more specific input.	YES		Noted	The ASTM F44 activity is yet to be finalised. The CM is a living document and may be amended accordingly.
2	*Flight design GmbH*	3.1.1	6	Experience with other Authorities reading this Memo has shown that it would be advisable to express even more clearly, that the aspects that are to be defined are case dependent.	Proposal: "The material has to be specified ... on raw material level. The factors to be defined have to be selected case dependent, on the basis of their influence to the properties of the component to be produced. Aspects to be considered as candidates are fibre type, seizing, form, grade, ..."			Partially accepted	Additional text added to 'Purpose and scope', see section 1.1 of the certification memorandum.
3	*Flight design GmbH*	3.1.1	6	There is one further significant aspect that should be discussed here as well. Some materials are available on the basis of aerospace norms (LN norms), but by far not all of the materials typically used. In some cases the fibres are still conforming to a LN norm, but not the weave. In many areas both do not conform to a generic LN norm. Information on acceptability how this case is handled would be very helpful. Typically this is done by reference to a material manufacturer specific specification. A definition of the parameters equivalent to the scope and content of the LN norms will not be supported by the manufacturer.	Further explain, what are acceptable criteria to define, which parameters really need to be kept, and which ones not, in order to be able to have suppliers at all, on an affordable basis.			Not accepted	EASA agrees with the intent of the comment. However, EASA considers the existing text adequate addresses the issue, i.e. the need to identify the supplied level of material data, refer to specifications, and finally to establish the engineering properties in the (limited) test pyramid relative to the this information.
4	*Flight design GmbH*	3.1.3	7	"Only after ensuring that stabilized and controlled manufacturing processes are in place, the production of test specimen and prototypes can begin." Especially for new companies this is a big hurdle they are often not in a position to manage. To expect a PO-capable setup in place before being in a position to manufacture test articles to support compliance demonstration is just not affordable for these	A valid alternative can be to utilize existing composite manufacturers or workshops that have this experience. These shops can work along the processes to be defined as part of the proposed type design. The produced components can be used to demonstrate compliance. Only when the new PO setup is finally really done - "just in time" to start serial production, some specific reference tests can be applied that demonstrate, that the new			Partially accepted	Note: See response to comment no. 1 regarding F44.

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				companies. One part is the investment in staff, time and money to install the setup and train the persons, the other big portion is to keep this setup alive while the aircraft is still in the certification process, long before a serial production, hence aircraft delivery, hence return on invest can start.	production setup is capable to provide comparable or better quality that the setup that was used to produce the compliance demonstration test articles. Please refer to the whitepaper generated as part of the F44 work towards compliance demonstration for composites on VLA aircraft for more details of a possible way. It is proposed to clearly include this option also in the CM.				
5	*Flight design GmbH*	3.1.3	7	"… but the DOA needs to identify the critical processes where quality of production has an effect on the airworthiness of the final product, considering items such as: …" Fully agree with the intent. Same as with the earlier comments I propose to make explicitly clear that the list of items below is lots of things to consider, but the list of aspects finally to defined in a specific case is selected from this list (or may include other aspects beyond this list) on the pure basis of what is of relevance for the specific design to be certified.	Same as with the earlier comments I propose to make explicitly clear that the list of items below is lots of things to consider, but the list of aspects finally to defined is selected from this list (or may include other aspects beyond this list) on the pure basis of what is of relevance for the specific design to be certified.	YES		Noted	"such as" does not imply that you have to meet all items or that the list is exhaustive. Note: see also response to comment no. 2.
6	*Flight design GmbH*	3.2	8	One key aspect is missing in the list of items below, that has caused repeated discussions in the past. The CM defines - fully correct - that in case of composite materials, material specifications as well as production process definitions and quality assurance steps are to be defined as part of the Type Design, hence get certified with the aircraft. This is the direct input to the PO. There have been repeated discussions in the past with authorities responsible for the PO, that the definitions made have not been adequate. Getting clarification from this CM, what must be considered as minimum, would be extremely beneficial for all parties involved, also and especially including international validation of EASA TC's from this range. What I am explicitly missing is: - Material specification level of detail (opposed to the FAA AC definitions often used for higher performant CS-23 aircraft), see comments given above. - Adequate Quality Assurance procedures. This has different facettes, see resolution proposal for this comment.	Established practice for bigger and higher performant aircraft with significantly higher cost of the structure is, to run a significant number of qualification tests with raw materials, before the material is released for production. The purpose of this approach is to ensure, that no part is produced out of material that might have properties below spec. The effort for the detailed incoming goods inspection tests is justifiable, as the price for a unusable produced airframe structure is very high. Established practice in small airplane production is to run a very coarse and simple incoming goods inspection of the material. This is compensated with some simple method tests on the finished component, like traveller sample testing in short beam bending, static load tests every xx components with deflection measurement, determination of the bending Eigen frequency of a produced component, or similar. The total amount of testing is drastically reduced compared to the other approach, consequently also the cost for testing and specification. The risk taken is that every once in a while a component might be found not useful. This risk is well justifiable, given the low value of the composite structure of a small aircraft. The CM should clearly express the intended suitability of this approach, which is well established and proven practice. This would eliminate the basis for later discussion in PO level. Examples of this approach are identified in the VLA composite Whitepaper generated as part of the F44 work.			Partially accepted	Expectation is below what is required by AMC 20-29. EASA could accept a systematically rationalised and reduced approach relative to larger airframes, e.g. the incoming material problem is similar to the 'small quantity' problem airlines have, ref. AC 43-214. This relies more upon transportation and paperwork discipline than incoming material testing etc. However, the CM is probably not the correct document in which to develop this level of detail. EASA suggests that this discussion be developed in the context of the F44 activity. See also response to comment no. 1 and no. 2, ref. F44.

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7	*Flight design GmbH*	3.2.1	8	The information in this chapter is all correct and valid information. What is missing with respect to material properties is that AMC to VLA allow for a process of compliance demonstration without use of any design allowables. In this case, full substantiating load tests are required. The approach has specific implications on what is needed instead in order to ensure a consistent production, later on.	The details are well defined within the Composite Whitepaper as developed within F44 activities. Propose to include this variant as well.			Partially accepted	Confirmed in CM that compliance can be shown through testing. Related discussion added to para. 3.2.1 See also response to comment no. 1, ref. F44.
8	*Flight design GmbH*	3.2.1.2. list item 2)	9	Unclear from what is stated here, how the IDAFLIEG data (reference (9)) line up in this list. This is an issue, especially as the information on materials and design principles is quite coarse for these data. There are also no equivalency test procedures defined. Nevertheless, the data are widely used in the discussed category of aircraft.	It is proposed to explicitly describe how these design allowables are considered in relation to the others listed here.	YES		Noted	Reference for IDAFLIEG included under point 3, section 3.2.1.2, is provided as an example of the diverse range of successful and recognised approaches adopted by the small aeroplane industry. It is not considered appropriate to develop the proposed level of discussion in this CM.
9	*Flight design GmbH*	3.2.1.2.	9	"In any cases it is essential to demonstrate that the chosen approach is fully understood and applicable on project level." Under this headline, the CM speaks also explicitly of design allowables. Usability of design allowables is linked to successfully conducted equivalency tests. Understanding of the approach is therefore only part of the game.	Enhance wording to cover the full scope.	YES		Partially accepted	Text added to 3.2.1.2 to make clear that the use of the available databases only forms part of the certification process and each database is different.
10	*Flight design GmbH*	3.2.2	9	"… structural items have adequate safe lives, when …" It is an old discussion, what is expressed with "adequate safe-life". This CM would be the right place to record, how this is in practice translated. Common practice on VLA- alike aircraft is, to consider "adequate safe-life" as the interval of 6.000 hrs between scheduled major structural inspection. When the inspection is completed with no remaining defects, the structure qualifies for the next 6.000 hrs, and so on. This is well justified by the field experience with these aircraft, and by the discussions conducted in the relevant task groups of F44. These discussions did confirm that, when testing for the cold ultimate factor safety of 2,25, as defined in AMC-VLA, the knock-down on stress level at safe load is always that much, that (for conventional materials like HT carbon and E glass with Epoxy resin, as referenced in AMC-VLA) you are on the stress level of out-runners with infinite life, as determined in all the various material qualification programs.	Include definition that practice on VLA- alike aircraft is, to consider "adequate safe-life" as the interval of 6.000 hrs between scheduled major structural inspection. When the inspection is completed with no remaining defects, the structure qualifies for the next 6.000 hrs, and so on.			Noted	EASA is familiar with this discussion. Noting that this subject is under discussion in the F44 activity, EASA will respond and amend this CM accordingly. See also response to comment no. 1, ref. F44.

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11	*Flight design GmbH*	3.2.2	9	In the absence of a detailed structural analysis the measurement of stress levels during structural tests can be accepted. Points for measurement with expected critical stress levels should be identified before and the rationale behind should be clearly described." Please refer to the Whitepaper generated as part of the F44 effort. Use of special factors according to AMC-VLA is another valid means to demonstrate that no stress concentrations are present. By significantly raising the load levels during ultimate load tests to an ultimate factor of safety of 2.25 during ambient temperature test, as indicated by AMC-VLA, the stress levels are raised in a way, that possible stress concentrations would manifest as (local) damages.	Propose to add this option here as well. This includes the related explanation of the effect of the different special factors, when considering the individual requirements / aspects. The Whitepaper has this illustrated.			Noted	EASA is familiar with this discussion. Noting that it is under discussion in the F44 activity, EASA will respond and amend this CM accordingly. See also response to comment no. 1, ref. F44.
12	*Flight design GmbH*	3.2.3.3 "Shared Database, 'A'-'B'-Values"	11	From the language used here, the complete relationship is not yet clear. It is not the pure fact that you have the shared databases identified, that qualifies you to use the related special factors. The special factors are not valid just as it is NCAMP or ANF / AFF values. One part is related to the material specification, so linked to the basis of the shared database. But the other part of the special factors is valid only when you can demonstrate a production quality (defined by the process) that meets at least the one that was achieved when generating the shared database values. Only when you can show by the related equivalency tests that your specific quality level meets the same quality levels, this can be justification to use the special factors related to these specific design allowables.	This relationship should be explained clearly, to avoid misunderstandings or over-interpretations.	YES		Accepted	Refer to section 3.2.1.2, text amended to make clear that different databases achieve different objectives and that the limitations should be understood and the associated operating procedures followed.
13	*Flight design GmbH*	3.2.3.3 "LBA-Approach"	11	What is the position when using IDAFLIEG values?	Explicitly define IDAFLIEG values in that respect (reference (9))	YES		Not accepted	The IDAFLEIG example is quoted as an example of a successful approach which has previously been accepted. See also response to comment no. 8.
14	*Flight design GmbH*	3.2.3.3 "LBA-Approach"	11	"For the ultimate load testing under 54°C an additional safety factor of 1,15 was found sufficient to take environmental (temperature and humidity), material and production variability and stress concentrations into account when all conditions of the specific material and process have been met." Similar like with the comment above, the use of the 1.15 is not acceptable just because you decide to select the material values. The link that qualifies your specific production quality level to the use of this value must be expressed.	The link that qualifies your specific production quality level to the use of this value must be expressed.	YES		Partially accepted	EASA agrees with the intent of the comment. Note added to make clear that the factors exist relative to each database and should not be mixed with other database approaches without substantiation.

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15	*Flight design GmbH*	3.2.3.3 "No statistical Data"	11	"A test factor following EASA AMC VLA 619, based on the coefficient of variation the manufacturer is able to show for the component, can be used." This part of AMC VLA has caused a lot of confusion in the past, especially by Authorities other than EASA. AMC VLA 619 defines these two factors - 1,2 and 1,5, that you can select to use without any further showing. But it also provides the table that links demonstrated coefficients of variation. By this table, you can end up with factors worse than 1,2. This automatically leads to the discussion, how do you justify the plain usage of 1,2 without further showing it is conservative, as the table implies that with further showing you might end up with a worse factor? Ideally, the table in AMC VLA would list the lower values than 1,2 for narrow coefficients of variation, and from a certain factor of variation onwards it accepts to use 1,2, constantly.	As AMC VLA is not in discussion as part of this exercise, defining this reading of the AMC here within the CM would be extremely helpful, to avoid this confusion in future.	YES		Noted	EASA is familiar with this discussion. Noting that it is under discussion in the F44 activity, EASA will respond and amend this CM accordingly following the conclusion of the F44 working group. Alternative approaches to the AMC VLA 619 are provided in the CM and maybe appropriate for some applicants. See also response to comment no. 1, ref. F44.
16	*Flight design GmbH*	3.2.3.3 Table 1	11	The table explains the picture only in part.	It is proposed to enhance the table in a similar way as shown in the Whitepaper, properly explaining the multiple use of the special factors with respect to static and fatigue substantiation.	YES		Noted	EASA is familiar with this discussion. Noting that it is under discussion in the F44 activity, EASA will respond and amend this CM accordingly. See also response to comment no. 1, ref. F44.
17	*Flight design GmbH*	3.2.4	12	„… extensive testing in combination with detailed limitations for design principles and material and process definition …" Unfortunately, the reference provided with (9) (IDAFLIEG values) does not provide any information on design principles and material process specifications. While for everyone deeply involved in the matter it is clear what is considered, the written definition is missing (outside of ANF or AFF), and should be provided.	As it will be difficult to provide this in this CM, and industry standard might be requested to consolidate this information?	YES		Noted	EASA agrees with the intent of the proposal. EASA is familiar with this discussion. Noting that it is under discussion in the F44 activity, EASA will respond and amend this CM accordingly. See also response to comment no. 1, ref. F44.
18	*Flight design GmbH*	3.2.5	13	"In practice a Tg value of the composite material of at least 27,8°C above the maximum operating temperature is considered acceptable." This is significantly above established practice for sailplanes and VLA aircraft. This CM makes repeatedly reference and accepts the database values and material selection done in compliance with the RHV specification. This RHV specification requires usability of the resin for the temperature range -55°C ... +54°C. This is rather unspecific, However, in the template to be used to specify the materials, RHV translates this with a required minimum Tg of 67,5°C (Page 8 of RHV issued Jan. 1999). This equates to 13,5°C above the maximum operating temperature, so about half of the value quoted here (which is taken from much more conservative FAA AC material).	In order to stay consistent with the established practice to accept RHV, supported by field experience, the RHV margin should be quoted in this CM.			Partially accepted	Text amended to make clear that the default margin is 27.8C, whilst a lesser value may be justified.
19	*Flight design GmbH*	3.3.3 Reference (9)	14	The CM does not identify, on what level the value of this database is to be considered. The CM only refers to NCAMP, ANF and AFF values	. It should be clearly expressed, wherever applicable, what are the effects when using this database.	YES		Noted	See response to comments no. 12 and no. 14.

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20	*European Sailplane Manufacturers*	3.2.1.2	7-8	The recognition of these databases and previous research done by working groups such as AFF and ANF is highly welcome. Due to the different approaches of NAAs in former time and EASA nowadays, there is (was?) an immanent risk of invaluating more than 50 years of research work, experience and proven practices.		YES		Noted	This work has also been recognised in EASA CM-S-004.
21	*European Sailplane Manufacturers*	3.2.1.1	8	Part of such working groups as AFF or ANF is the continuous monitoring of the applicability and quality of their standards. For example, the compatibility of materials within an otherwise quite permissive approach may be discussed, not immediately leading to decisions, but making group members aware of potential risks. Experiences are collected and may lead – in the worst case – to revocation of previous decisions. Therefore care should be taken. Not anybody, who has got access to documents by chance, is fully entitled to take advantage of the information, if he is not ongoing part of the establishing group.	On page 8, between ".. behaviour!" and "3.2.2. Fatigue" add "Due to the need for continuous advancement and care of such databases, it is necessary to demonstrate that ongoing access to the database is available to the applicant. In case of non-public databases established by industry related working groups, this requires to be member of this working group."	YES		Accepted	AFF/HFF – can only be used if part of a working group. Applicants will be asked if they have the latest copy of the handbook – i.e. Check their membership. Also see response to comments no. 12 and no. 14.
22	*European Sailplane Manufacturers*	3.1.3	6	typo	.. procedures **a**nd initiate ..	YES		Accepted	
23	*European Sailplane Manufacturers*	3.2.2	9	The meaning of the following words does not become clear to me: "..and need to conservatively address damage accumulation." ("needs"?)	Make a full stop after ".. the old one" and start a new sentence.	YES		Accepted	
24	*European Sailplane Manufacturers*	3.2.2	9	Maybe there has not been a successful demonstration of the constant amplitude testing concept in the area of small aircraft, yet. But I was told, the wind turbine industry has taken much advantage of this concept. There seems no reason to ban this concept in principle. But yes, it may need more research work to show conservative ways how to do it. Constant amplitude tests were a successful means in small specimen tests, e.g. when a new finish had to be certified on glass fibres for spar caps. Since these tests simply compared load cycles of old material and new material, load spectra were not involved. Therefore damage accumulation could not be applied.	**Without further research,** constant amplitude testing is only accepted for relative testing to demonstrate that a new or replacement material is as suitable and durable as the old one**. Except from tests on specimen level, it** need**s** to conservatively address damage accumulation.	YES		Accepted	Add before start of sentence: "Currently, constant amplitude …".
25	*European Sailplane Manufacturers*	3.2.3	9	I cannot see, why I should not make tests in advance, if I take the risk, that it will not be accepted. But even if, in total the project can be accelerated, since most load tests are of small nature, and have already been done in similar manner several times.		YES		Accepted	'Certification' added to text.

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26	*European Sailplane Manufacturers*	3.2.3	9	There is the requirement of finishing the certification within 3 years, if not updates of the applicable CS are to be imposed. Therefore the term "well in advance" is much to imprecise. It is suitable to fuel expectations of advanceness, which can thwart the project at will.	"When test witnessing is requested by EASA, the schedule must be agreed between EASA and applicant."	YES		Not accepted	Past experience has shown applicant have notified the agency at too short notice of testing taking place.
27	*European Sailplane Manufacturers*	3.2.3.4	11	Does „design change" cover, if e.g. processes within the POA are changed? In section 3.1.3 much weight is put on items, which effect the quality of the product. The intention of section 3.2.3.4 is probably to prohibit testing the same design again and again until it holds. But sometimes such self-evident sentences have other effects not anticipated.		YES		Partially accepted	Text amended.
28	*European Sailplane Manufacturers*	3.2.4	11	The recognition, that bonding philosophies, different to those of CS25 aircraft, have been successfully applied for decades, is well appreciated.		YES		Noted	
29	*European Sailplane Manufacturers*	3.2.5	12	This sentence does not make sense: "For other bright colours or colours schemes a test temperature of 54°C is only acceptable when [..] or when the test temperature is determined according to EASA AMC VLA 613(c) or by representative test.	"For other bright colours or colours schemes a test temperature of 54°C is only acceptable when it can be demonstrated that the temperature of the main structure in operation is below 54°C**. Otherwise the test temperature has to be determined** according to EASA AMC VLA 613(c) or by representative test."	YES		Partially accepted	Text amended.
30	*European Sailplane Manufacturers*	3.2.5	12	It is not clearly described what test temperature the factor of 1,25 replaces, when applied to a test at lower temperature. (The preceding half sentence discusses other than 54°C test temperatures). Compression strength of CRP flanges is not only a question of sufficient distance to the T_G. Even with sufficient distance to the T_G, the E-Module of the matrix degrades with increasing temperature, which in course reduces the compression strength. In my experience, a factor of 1,25 cannot cover more than the difference between 23°C and 54°C for the compression strength of carbon flanges. For other materials, such as sandwich foams, it seems quite difficult to specify such a temperature factor of safety, applicable to any design. Maybe this has to be regarded, too.	".. by representative test. If the test cannot be performed at **the test temperature of 54°C,** an additional factor of 1,25 must be used unless a lower temperature factor (established on specimen level) is available and agreed upon with the Agency."	YES		Partially accepted	Text added after …1,25 may be used to cover the difference between room temperature and 54°C... Clearly specifying what temperature is the baseline value.

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31	*European Sailplane Manufacturers*	3.2.5	12	Due to the thoughts developed in the preceding comment I would change to a whole different wording:	Replace: "If the test cannot [..] available and agreed upon with the Agency." with: "If the test cannot be performed at the required temperature, an additional safety factor must be established and agreed upon with the Agency. This factor can either be established a) if on specimen level, then for all materials involved, or b) with structural tests on a comparable (materials, structural concepts, load levels, dimensions) part, which is tested at the required temperature and at the intended test temperature."	YES		Partially accepted	Text amended
32	*European Sailplane Manufacturers*	3.2.5	12	A distance to the T_G is specified with 27,8°C. This pretends a high accuracy. In contrast, DSC measurements provide Onset, Average, Turning point and Endpoint values, which in an example I have at hand are 6°C apart. Is there a specification what exactly is meant with T_G?		YES		Noted	i) 27,8C does not pretend to be a high accuracy this corresponds to 50F. ii) The Tg value in the accepted norms (DSC, TMA, DMA) being proposed are generally accepted by the Agency, see ASTM.
33	*European Sailplane Manufacturers*	3.2.2	9	Research in the sailplane community (including members of the ANF group) and in the wind turbine community has shown, that constant amplitude testing might indeed result into very useful fatigue data, even if no load spectra testing has been conducted in parallel. Admittedly such tests need special care during definition, execution and analysis. Nevertheless the wording "*Constant amplitude testing is only accepted for relative testing to demonstrate…*" is too restrictive.	Less restrictive wording is proposed: "*Constant amplitude testing is **as one possibility** accepted for relative testing to demonstrate…*". or "*Constant amplitude testing is **acceptable** for relative testing to demonstrate…*	YES		Partially accepted	Text amended.
34	*European Sailplane Manufacturers*	3.2.3.3, Table 1	10	The described approach of the LBA for the demonstration of structural strength of aircraft components suggests indeed a special factor of 1.15 to be demonstrated in the static test. But this factor is not used to cover environmental effects and production variability, but does indeed cover the influence of possible stress concentrations which might degrade the fatigue strength. Environmental factors are included in the RHV material tests and the required static test temperature and variability is included in material allowables and the basic safety factor.	Correct the wording in the sub-chapter "LBA Approach": "*…an additional safety factor of 1,15 was found sufficient to take **the possible effect** of stress concentrations into account…*"	YES		Accepted	Text amended.

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35	*European Sailplane Manufacturers*	general	all	Feedback from the sailplane manufacturers community is very positive to this proposed Certification Memo. This memo gives a good summary of the status quo and helps hopefully applicants to put the different ways to show compliance against regarding requirements into the proper historical and technical perspective. Furthermore this CM will also eliminate the need for the applicant to justify facts and certification approaches when confronted with persons not familiar with such historical developments or communities. Therefore the intent and the content of this CM-S-006 is highly appreciated.	- none -	YES		Noted	
36	*European Sailplane Manufacturers*	3.2.6	12	It is important and fully correct to point out, that the requirements of CS23.573 regarding damage tolerance and the resulting "fail-safe" philosophy are not applicable the aircraft in the scope of this CM. Nevertheless the final sentence does not fully cover the intent of the CM and the philosophy of LSA / VLA / sailplanes.	Modified wording is proposed: *"When implemented properly, this Certification Memorandum should ensure **that the used** materials and processes **result into a structure,** that is tolerant against undetected damages and build-in defects during production. "*	YES		Partially accepted	Text amended.
37	*European Sailplane Manufacturers*	3.2.1.2 3.3	7 13	In the chapter about "Use of existing material data and shared databases" several examples are listed (NCAMP, HFF, LBA/ANF). In the "List of Documents" under (9) the so called "idaflieg values" are listed. We suppose that in 3.2.1.2 these idaflieg-values should be listed and referenced – especially so as nowhere in the document a reference to (9) is to be found.	Introduce in 3.2.1.2 a reference to (9) in the list of usable material data bases.	YES		Partially accepted	Text amended.
38	*European Sailplane Manufacturers*	1.1 3	3 5	In the chapter about "Purpose and scope" the applicable categories of aircraft (LSA / VLA / ELA1 aeroplanes / sailplanes" are listed. We fully support this list as indeed much of the "composite philosophy" of VLA was a direct result from work done in the sailplane (ANF) sector and because LSA is a direct development from the VLA concept. In the aeroplane communities in Germany in parallel the AFF concepts were developed and of course ANF and AFF had many similar approaches and concepts due to the fact that both groups overlapped in persons and companies involved. Today we feel that this CM properly and laudable brings these concepts into the right context. Nevertheless we would consider it to be appropriate that two statements would be added: 1) It should be possible and fully acceptable that (especially between sailplanes and LSA and VLA) the regarding requirements and	Introduce regarding wording in chapter 3.	YES		Not accepted	i) In general this is not accepted, this can only be done in special cases, to be agreed upon at a project level. Once the applicable CS has been identified it needs to be conformed to in its entirety (no "cherry picking"). ii) The applicability of CS 23 is clearly defined for the type of aircraft falling into this category.

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				approaches to show compliance should be interchangeable without being considered to be “cherry picking”. 2) It should be at least indicated that he less stringent approaches of the sailplane /VLA / LSA communities could be a good base for certification of CS-23 aeroplanes at minimum in the definition of ELA1, but perhaps also for the only slightly larger and still rather non-complex ELA2 categories.					
39	*Diamond Aircraft Industries GmbH*	Abbreviations	4	Consider adding "EKDF" and "KDF" (used in Table 1 on page 10) to the list of abbreviations.				Accepted	Text amended.
40	*Diamond Aircraft Industries GmbH*	3.1.1 6th line	5	Consider replacing "seizing" (which should be spelled "sizing") with "coating" for consistency throughout the document.				Partially accepted	Both sizing and coating used, noting that both terms are used in industry.
41	*Diamond Aircraft Industries GmbH*	3.2.2	8	Sources for fatigue spectra: consider adding document DOT/FAA/CT-91/20 "General aviation aircraft-normal acceleration data analysis and collection project." This document includes spectra for Part 23 airplanes which may be a useful guideline for VLA as well.				Accepted	Additional reference added.
42	*Diamond Aircraft Industries GmbH*		10	“LBA approach,” 3rd paragraph: It may be helpful to mention that the 54 °C assumption requires a white paint finish.				Accepted	Text amended.
43	*Diamond Aircraft Industries GmbH*		10	“LBA approach,” last sentence: Should “temperature” be deleted from “(~~temperature and~~ humidity)?” Temperature is not accounted for by the factor of 1.15, but by testing at 54 °C.				Accepted	Deleted temperature. The 1.15 issue is also addressed in response to other comments.
44	*Diamond Aircraft Industries GmbH*		10	“No statistical Data:” The factor of 1.5 to account for moisture and temperature is likely to cover structures with bright paint, but unlikely to cover structures with dark paint finish.				Accepted	Text added… factor of 1,5 for specimens with white surfaces tested …
45	*Diamond Aircraft Industries GmbH*		10	“No statistical Data:” sentence *“For structures cured at room temperature without any heat treatment it may be assumed that the completed structure is fully moisture conditioned.”* Please clarify whether “structures” means the test article(s) only or whether it also refers to serial production. If only the test article(s) are meant, then this sentence should be deleted, as there is no correlation between the omission of the post-cure and moisture conditioning. Depending on the type of resin and manufacturing/storage conditions, one or the other could be more adverse.				Noted	As the test article is produced in accordance with the serial production process this sentence is valid for both.

Comment				Comment summary	Suggested resolution	Comment is an observation (suggestion)	Comment is substantive (objection)	EASA comment disposition	EASA response
NR	Author	Section, table, figure	Page						
46	*Diamond Aircraft Industries GmbH*	Table 1, Line 1	10	("A/B hot&wet Shared Database"), last column ("Test hot"): It appears that humidity is not accounted for here. Consider taking it into account either by testing in a hot *and humid* environment or through a "moisture factor."				Accepted	Text changed to 'moisture conditioned' specimen.
47	*Diamond Aircraft Industries GmbH*	Table 1, line 2	10	("LBA"), 3rd column ("Env.") and 5th column ("Test cold"): An environmental factor of 1.25 is shown here. Is there an LBA reference for this factor?				Noted	This factor is taken from AMC-VLA 613 C.
48	*Diamond Aircraft Industries GmbH*	3.2.4 2nd paragraph	11	Beside choosing conservative allowables, it is essential to ensure adequate fracture toughness (resistance to crack propagation).				Noted	This is covered by the conservative bonding.
49	*Diamond Aircraft Industries GmbH*		12	2nd paragraph: If the additional factor of 1.25 was meant for bright colors (please clarify), it will be sufficient. A dark color will cause temperatures in the region of 72 °C, and is thus likely to require a higher factor. It may also be helpful to note that metallic paint finishes absorb more heat due to the greenhouse effect of the transparent top coat.				Accepted	Text amended accordingly.
50	*Diamond Aircraft Industries GmbH*		12	3rd paragraph: Consider specifying "tg" more precisely as "wet tg."				Accepted	Text amended accordingly.
51	*Diamond Aircraft Industries GmbH*	3.2.7 2nd paragraph	12	A change of material specifications or processes subsequent to certification cannot only lead to a design change, but is also likely to require structural re-evaluation.				Accepted	Text amended accordingly.