



EN 13445 "Unfired pressure vessels" Maintenance Help Desk (MHD) Question form

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|--|-------------------------------|--|------------------|-----------------------------------|
| Request reference number (to be filled by MHD): (2014)-01-07 | | Date: 2021-04-14 | | |
| Please fulfil the following | | | | |
| Part: EN 13445-1 | Issue: 2014 | Page N/A | Subclause N/A | National Standard Reference -- |
| Subject: Clarification on the correct way to reference the use of EN 13445 as a complete harmonized standard on PED Declarations of Conformity / Certificates of Conformity. | | | | |
| Type of request: <input checked="" type="checkbox"/> Technical clarification <input type="checkbox"/> Technical comment <input type="checkbox"/> Editorial correction <input type="checkbox"/> Translation correction | | | | |
| From : Company:Hartford Steam Boiler UK Limited Name:Gavin Edley Postal address: 9 th Floor, Chancery Place 50 Brown Street Manchester M2 2JT United Kingdom | | e-mail:gavin_edley@hsb.com phone: +44 7483 926929 | | |
| <input type="checkbox"/> Manufacturer | <input type="checkbox"/> User | <input checked="" type="checkbox"/> Other (please specify): UK Approved Body (ex. Notified Body) | | |
| Question/comment: In referencing the complete use of EN 13445 as a harmonised standard, how should this be listed on a Declaration of Conformity / Certificate of Conformity. To reference every single part individually with date references leads to a very convoluted, and unnecessarily complex certificate. However, to list EN 13445-1 only with dated reference, does not necessarily give the correct reference for the other parts. The current EN 13445-1:2014+A2:2018 still contains dated references for the other parts which are not in line with published UK Designated Standards/EU Harmonised Standards. If in the future undated references are used, what approach is to be applied where the EN13445 standard date reference in the UK Designated Standards/EU Harmonised Standards list does not match the latest published edition (as UK designated standards/EU harmonised standards are not necessarily the latest editions) <u>Proposed answer(s):</u> * In the interim (until EN 13445 is published as a standalone edition that can be referenced): Reference to the General Part, EN 13441-1, with date (e.g. EN 13445-1:2014+A2:2018) only, should be acceptable as a reference that EN 13445 has been applied as a complete harmonised standard on a Declaration of Conformity / Certificate of Conformity | | | | |
| Answer from the MHD (to be filled by MHD): Out of the scope of the maintenance help desk Please contact your national committee for advise | | | | |



European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

**To be sent to EN 13445 Maintenance Help Desk
secretariat:**

EN 13445 MHD secretariat c/o UNM
Standardization Office on behalf of AFNOR
F 92038 Paris La Défense Cedex – France
e-mail: en13445@unm.fr

** Please note that question with proposed answers will be dealt with as priority.*



EN 13445 "Unfired pressure vessels" Maintenance Help Desk (MHD) Question form

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|--|--|--|--|-----------------------------------|--|
| Request reference number (to be filled by MHD): (2014)-02-10 | | | | Date: 201X-04-14 | |
| Please fulfil the following | | | | | |
| Part: EN 13445- | Issue: 2014 | Page 42 | Subclause B.3.2 | National Standard Reference -- | |
| Subject: | | | | | |
| Type of request: | | | | | |
| <input checked="" type="checkbox"/> Technical clarification | | <input checked="" type="checkbox"/> Editorial correction | | | |
| <input checked="" type="checkbox"/> Technical comment | | <input type="checkbox"/> Translation correction | | | |
| From : | | | | | |
| Company: TÜV Technische Überwachung Hessen GmbH | | | e-mail: lars.diehl@tuevhessen.de | | |
| Name: Lars Diehl | | | phone: +49 151 18966877 | | |
| Postal address: Hans-Böckler.Straße 4, 35440 Linden (Germany) | | | | | |
| <input type="checkbox"/> Manufacturer | <input checked="" type="checkbox"/> User | <input type="checkbox"/> Other (please specify): | | | |
| Question/comment: | | | | | |
| <p>1. The Subclause B.3.2 the thickness from components together with the description of the specimen geometry of the Charpy-V-notched specimen there is some confusion in discussions with manufactures. The trouble is that the standard the specimen size on the one hand describes with "thick" and on the other hand with "wide". In reference to ISO 148-1 the Charpy-V-specimen has a height and a width. Furthermore, the geometry in B.3-1 and B.3-2 is described in different ways (10x7,5 vs. 7,5x10), which also leads to confusions</p> <p>2. Do I always need to shift the impact test temperature when a sub sized specimen is tested and/or when I have to use table B.3-2 or can table B.3.1 also used for sub sized specimen?</p> <p>Examples:</p> <p>Plate 10 mm, specimen geometry 10,0x10,0 mm: Table B.3-1 Tube 10 mm, specimen geometry 10,0x7,5 mm: Table B.3-2</p> <p>Plate 20 mm, specimen geometry 10,0x7,5 mm: Table B.3-2 Plate 20 mm, specimen geometry 10,0x10,0 mm: Table B.3-1 Plate 5 mm, specimen geometry 10,0x5,0 mm: Table B.3-1</p> | | | | | |
| Proposed answer(s): * | | | | | |
| <p>1. Clear description of the specimen and separation of thicknesses from components and height and width of the specimens</p> | | | | | |
| Answer from the MHD (to be filled by MHD): | | | | | |
| <p>1. The wording of EN 13445-2 will be reviewed for consistency with ISO 148-1. The examples given above is correct. EN 13445-2, Table B.3-2 should be amended.</p> <p>2. If Table B.3-2 is used, lower impact test temperature must be applied.</p> | | | | | |



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**To be sent to EN 13445 Maintenance Help Desk
secretariat:**

EN 13445 MHD secretariat c/o UNM
Standardization Office on behalf of AFNOR
F 92038 Paris La Défense Cedex – France
e-mail: en13445@unm.fr

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EN 13445 "Unfired pressure vessels" Maintenance Help Desk (MHD) Question form

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|--|----------------|--|--|--|--|
| Request reference number (to be filled by MHD): (2014)-02-11 | | | | Date: 2021-05-21 | |
| Please fulfil the following | | | | | |
| Part: EN 13445-2 | Issue: 2014 | Pages 38, 39, 40 | Subclause Figures B.2-9, B.2-10, B.2-11 | National Standard Reference -- | |
| Subject: | | | | | |
| Type of request: | | | | | |
| <input type="checkbox"/> Technical clarification | | <input checked="" type="checkbox"/> Editorial correction | | | |
| <input type="checkbox"/> Technical comment | | <input type="checkbox"/> Translation correction | | | |
| From : | | | | | |
| Company: Inspecta Tarkastus Oy | | | e-mail: juha.purje@kiwa.com | | |
| Name: Juha Purje | | | phone: +358 50 52 51 180 | | |
| Postal address PO Box 7, 00441 Helsinki, Finland | | | | | |
| <input type="checkbox"/> Manufacturer | | <input type="checkbox"/> User | | <input checked="" type="checkbox"/> Other (please specify): Notified Body no 0424 | |
| Question/comment: | | | | | |
| The titles of Figures B.2-9, B.2-10 and B.2-11 are not consistent with the text of Table B.2-14. This has caused confusion among some readers. | | | | | |
| The titles of Figure B.2-9 specify $R_e = 385$ MPa, Figure B.2-10 specify $R_e = 465$ MPa and Figure B.2-11 specify $R_e = 550$ MPa | | | | | |
| But in table B.2-14 the specified minimum yield strength values are $R_e \leq 385$ MPa $R_e \leq 465$ MPa $R_e \leq 550$ MPa | | | | | |
| Proposed answer(s): * | | | | | |
| The text of titles of Figures B.2-9 to -11 shall be $R_e \leq 385$ MPa, $R_e \leq 465$ MPa and $R_e \leq 550$ MPa | | | | | |
| Answer from the MHD (to be filled by MHD): | | | | | |
| The proposed answer is correct. The Titles of Figures B.2-9, B.2-10 and B.2-11 will be modified | | | | | |
| To be sent to EN 13445 Maintenance Help Desk secretariat: | | | EN 13445 MHD secretariat c/o UNM Standardization Office on behalf of AFNOR F 92038 Paris La Défense Cedex – France e-mail: en13445@unm.fr | | |

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EN 13445 "Unfired pressure vessels" Maintenance Help Desk (MHD) Question form

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|--|-------------------------------|---|--|--|--|
| Request reference number (to be filled by MHD): (2014)-03-57 | | | | Date: 2021-04-01 | |
| Please fulfil the following | | | | | |
| Part: EN 13445-3 | Issue: 2014 | Page 592 / 600 | Subclause B.6 / B.8 | National Standard Reference EN 13445-3:2014+C5:2019 | |
| Subject: | | | | | |
| Type of request: | | | | | |
| <input checked="" type="checkbox"/> Technical clarification | | <input type="checkbox"/> Editorial correction | | | |
| <input type="checkbox"/> Technical comment | | <input type="checkbox"/> Translation correction | | | |
| From : | | | | | |
| Company: Kiwa Inspecta AB | | | e-mail: jacob.persson@kiwa.com..... | | |
| Name: Jacob Persson | | | phone: +46104793516 | | |
| Postal address: P.O.Box 30100 SE-10425 Stockholm. | | | | | |
| <input type="checkbox"/> Manufacturer | <input type="checkbox"/> User | <input checked="" type="checkbox"/> Other (please specify): NoBo | | | |
| <p>In EN13445-3 annex B the denomination "bounded variable action" is used without any definition, and has the partial factor $\gamma_Q=1,0$. Unbounded variable actions has $\gamma_Q=1,5$, acc. to table B.8-1. There is a need to clarify if it is in line with the overall safety of EN13445 to classify loading from pipe expansion on vessel nozzles as bounded variable action, and use $\gamma_Q=1,0$.</p> <p>In some other standards (Eurocode) "bounded actions" are used for a wide range of loads, such as wind load and snow load. This brings risk of misunderstanding EN13445. (In Eurocode all variable actions have a partial factor $\gamma_Q=1,5$).</p> <p>Question/comment: Which partial factor shall be applied on nozzle loads from piping, when performing a GPD analysis according to EN13445-3 Annex B?</p> <p>Proposed answer(s): * Loads from piping thermal expansion on vessel nozzles shall have partial safety factor of $\gamma_Q=1,5$, because there is no natural limit to the load.</p> | | | | | |
| Answer from the MHD (to be filled by MHD): | | | | | |
| The proposed answer is incorrect. Thermal expansion is normally bounded. It is the responsibility of the designer to determine whether the load is bounded or unbounded. WG 53 in charge of part 3 will try to find an explanation to help the user of the standard. | | | | | |
| To be sent to EN 13445 Maintenance Help Desk secretariat: | | | EN 13445 MHD secretariat c/o UNM Standardization Office on behalf of AFNOR F 92038 Paris La Défense Cedex – France e-mail: en13445@unm.fr | | |

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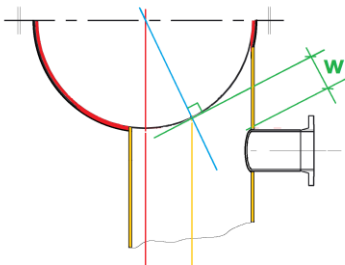
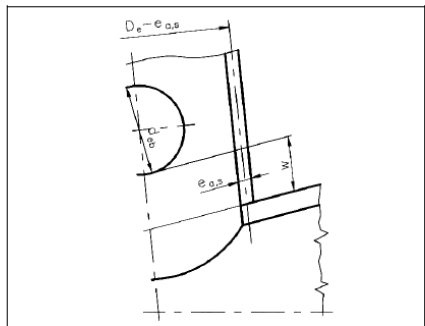


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|---|--|--|--|--|--|
| Request reference number (to be filled by MHD): (2014)-03-58 | | | | Date: 2021-05-28 | |
| Please fulfil the following | | | | | |
| Part: EN 13445-3 V4 | Issue: 2014 | Page 602-603 | Subclause B.8.3 | National Standard Reference English | |
| Subject: | | | | | |
| Type of request: | | | | | |
| <input checked="" type="checkbox"/> Technical clarification | | <input type="checkbox"/> Editorial correction | | | |
| <input type="checkbox"/> Technical comment | | <input type="checkbox"/> Translation correction | | | |
| From : | | | | | |
| Company: Cetim | | | e-mail: philippe.rohart@cetim.fr | | |
| Name: Philippe ROHART | | | phone: +33 3 44 67 47 94 | | |
| Postal address: Avenue Felix Louat, Senlis, FRANCE | | | | | |
| <input type="checkbox"/> Manufacturer | <input checked="" type="checkbox"/> User | <input type="checkbox"/> Other (please specify): | | | |
| Question/comment: | | | | | |
| Annex B.8.3 deals with progressive plastic deformation. | | | | | |
| Application rule 2 and 3 require a model with stress/strain concentrations. This is the kind of model usually employed for fatigue analysis (a local failure mode), and it looks surprising for progressive deformation (a more global failure mode). | | | | | |
| Could you please justify why these application rules require such a model ? | | | | | |
| <u>Proposed answer(s):</u> * | | | | | |
| Answer from the MHD (to be filled by MHD): | | | | | |
| Progressive plastic deformation requires model with stress/strain concentrations, because it is a local failure mode rather than a global failure mode. | | | | | |
| To be sent to EN 13445 Maintenance Help Desk secretariat: | | | EN 13445 MHD secretariat c/o UNM Standardization Office on behalf of AFNOR F 92038 Paris La Défense Cedex – France e-mail: en13445@unm.fr | | |

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| | | | | | |
|--|--|---|--|---|--|
| Request reference number (to be filled by MHD): (2014)-03-59 | | | | Date: 2021-06-09 | |
| Please fulfil the following | | | | | |
| Part: EN 13445-3 | Issue: 2014 | Page 130 | Subclause fig. 9.7-8 | National Standard Reference French edition | |
| Subject: | | | | | |
| Type of request: | | <input checked="" type="checkbox"/> Technical clarification | <input type="checkbox"/> Editorial correction | | |
| | | <input type="checkbox"/> Technical comment | <input type="checkbox"/> Translation correction | | |
| From : | | | | | |
| Company: Sté de Usines Quiri et Cie | | | e-mail: christian.friedrich@quiri.com | | |
| Name: Christian FRIEDRICH | | | phone: ++33(0)3 90 20 04 39 | | |
| Postal address: 6 rue Denis Papin, F-67120 DUTTLENHEIM | | | | | |
| <input checked="" type="checkbox"/> Manufacturer | <input checked="" type="checkbox"/> User | <input type="checkbox"/> Other (please specify): | | | |
| Question/comment: | | | | | |
| <p>The aim is to specify how to measure the value of w defined in figure 9.7-8 of EN13445 3:2014, in the case of an opening in a cylindrical envelope, close to the junction with another cylindrical envelope having a different and more precisely non-concurrent axis.</p> <p>Proposed answer(s): *</p> <p>Measure w as shown in the figure below:</p> | | | | | |
|  | | |  | | |
| Figure 9.7-8 — Ouverture dans une enveloppe cylindrique, proche de la jonction avec une autre enveloppe cylindrique ayant un axe différent | | | | | |
| Answer from the MHD (to be filled by MHD): | | | | | |
| <p>The proposed answer is not correct. w is the distance measure at the mid thickness of the cylinder from the edge of the nozzle to the closest discontinuity.</p> | | | | | |
| To be sent to EN 13445 Maintenance Help Desk secretariat: | | | EN 13445 MHD secretariat c/o UNM Standardization Office on behalf of AFNOR F 92038 Paris La Défense Cedex – France e-mail: en13445@unm.fr | | |

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| | | | | | |
|---|--|--|--|--|--|
| Request reference number (to be filled by MHD): (2014)-03-60 | | | | Date: 2021-06-16 | |
| Please fulfil the following | | | | | |
| Part: EN 13445-3 V4 | Issue: 2014 | Page 474-524 | Subclause 18 | National Standard Reference English | |
| Subject: | | | | | |
| Type of request: | | | | | |
| <input checked="" type="checkbox"/> Technical clarification | | <input type="checkbox"/> Editorial correction | | | |
| <input type="checkbox"/> Technical comment | | <input type="checkbox"/> Translation correction | | | |
| From : | | | | | |
| Company: Cetim | | | e-mail: philippe.rohart@cetim.fr | | |
| Name: Philippe ROHART | | | phone: +33 3 44 67 47 94 | | |
| Postal address: Avenue Felix Louat, Senlis, FRANCE | | | | | |
| <input type="checkbox"/> Manufacturer | <input checked="" type="checkbox"/> User | <input type="checkbox"/> Other (please specify): | | | |
| Question/comment: | | | | | |
| <p>Clause 18.4.4 provides requirements related to NDT and inspection for fatigue-critical regions.</p> <p>Clause 18.10.5 provides requirements related to welding flaws. Acceptance levels apply to Fatigue critical areas, defined by its damage 'D' and a criterion 'Dmax', defined in equations 18.10-8, 18.10-9 and 18.10-10. These equations are similar to equations in the definition 18.2.17.</p> <p>'Dmax' is defined as a function of 'neq', which is defined in Clause 5.4.2 as the number of equivalent full pressure cycles.</p> <p>As a consequence, if a pressure vessel is subjected to cyclic loads whose nature is mainly non-pressure (thermal, alternate bending, ...), therefore its neq would be low, it may have no fatigue critical areas according to current definitions, and some requirements (related to welding flaws, NDT, ...) may be not mandatory.</p> <p>Question : what was the objective of this set of rules ?</p> <p><u>Proposed answer(s):</u> *</p> <p>Proposed answer 1 : These rules aim at imposing requirements where cyclic loads are mainly from pressure origin. For other cases, EN 13445-3 does not want to impose any requirements, and the user is free to impose its own requirements, based on its experience. Therefore, an informative note may be added to underline this possibility.</p> <p>Proposed answer 2 : These rules aim at imposing requirements, no matter the origin of cyclic loads. Therefore, neq should have a more specific definition in Clause 18, so that it can take into account every cyclic loads, no matter its origin.</p> | | | | | |



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Europäisches Komitee für Normung

Answer from the MHD *(to be filled by MHD):*

There is a new amendment ready for formal vote, which solve the problem. Dmax is equal to 0,5 in any cases.

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e-mail: en13445@unm.fr

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EN 13445 "Unfired pressure vessels" Maintenance Help Desk (MHD) Question form

| | | | | | |
|--|-------------------------------|--|--|-----------------------------------|--|
| Request reference number (to be filled by MHD): (2021)-03-01 | | | | Date: 2021-10-13 | |
| Please fulfil the following | | | | | |
| Part: EN 13445-3 | Issue: 2021 | Page 363 | Subclause 16.4.7.1 | National Standard Reference -- | |
| Subject: | | | | | |
| Type of request: | | | | | |
| <input type="checkbox"/> Technical clarification | | <input checked="" type="checkbox"/> Editorial correction | | | |
| <input type="checkbox"/> Technical comment | | <input type="checkbox"/> Translation correction | | | |
| From : | | | | | |
| Company: P3 Engineering..... | | | e-mail:W.Stikvoort@P3Engineering.nl..... | | |
| Name: Walther Stikvoort..... | | | phone: +31592347088 | | |
| Postal address: Rotterdamseweg 183C 2629 HD Delft ; The Netherlands..... | | | | | |
| <input type="checkbox"/> Manufacturer | <input type="checkbox"/> User | <input type="checkbox"/> Other (please specify): Software developer + Pressure Vessel Design Engineering Services | | | |
| Question/comment: Correction of the following typo: | | | | | |
| Replace equation (16.6 - 18a) with (16.4 - 18a) | | | | | |
| Proposed answer(s): * | | | | | |
| equation (16.6 - 18a) should be (16.4 - 18a) | | | | | |
| Answer from the MHD (to be filled by MHD): The proposed answer is correct. The modification will be done in the next version | | | | | |
| To be sent to EN 13445 Maintenance Help Desk secretariat: | | | EN 13445 MHD secretariat c/o UNM Standardization Office on behalf of AFNOR F 92038 Paris La Défense Cedex – France e-mail: en13445@unm.fr | | |

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