CEN/TC 267/WG 8 (MHD) « *Maintenance of EN 13480 series* »
Answers to MHD Questions of 2022
on EN 13480-1-2-3-4-5-6 and -8:2017

MHD Question N°	Subjects	MHD answers doc. N°	Subsequent actions	MHD answers to questioners
3-001-2022	12.3.4	N 117	Editorial correction	2022-05-10
3-002-2022	10.2	N 117	Technical clarification	2022-05-10
3-003-2022	13	N 117	Technical clarification	2022-11-29
3-004-2022	13.1.4	N 117	Technical clarification	2022-05-10
3-005-2022	8.3.8/8.3.9	N 117	Technical clarification	2022-11-30
3-006-2022	13.7	N 117	Technical clarification	2022-11-29
3-007-2022	8	N 117	Technical clarification	2022-11-29
3-008-2022	13.11.6	N 117	Technical clarification	2022-11-30
3-009-2022	Annex H	N 117	Technical clarification	2022-11-29
4-001-2022	5.6	N 117	Technical clarification	2022-11-29
5-001-2022	7.2.4.3	N 117	Technical clarification	2022-11-29
5-002-2022	8.2.1	N 117	Technical clarification	2022-11-29
5-003-2022	9.3	N 117	Technical clarification	2022-11-29
6-001-2022	A.3.4.5/A.3.5.5	N 117	Technical clarification	2022-11-29

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

EN 13480 "Industrial piping and pipelines" Maintenance Group Question form

Request reference number *(to be filled by MHD):* **3-001-2022**			**Date: 2021-12-10**	
Please fulfil the following				
Part: EN 13480-3	Issue: 2017	Page	Subclause 12.3.4 (of Amendment A2:2020)	National Standard Reference --
Subject: Errors in symbols				
Type of request:	☐ Technical clarification ☐ Technical comment		☒ Editorial correction ☐ Translation correction	
From : Company: METSTA.. Name: Mika Vartiainen .... Postal address: P.O.Box 10, 00131 Helsinki, Finland..			e-mail: mika.vartiainen@metsta.fi .... phone: +358 40 5441579	
☐ Manufacturer	☐ User	☒ Other (please specify): Standardization organization		

Question/comment:

With the amendment A2:2020 to EN 13480-3:2017, clause 12.3.4 was modified. Two symbols are incorrectly written:

EN 13480-3:2017/A2:2020 (E)

9 Modification to 12.3.4, "*Stress range due to thermal expansion and alternating loads*"

The revised Clause 12.3.4 shall read as follows:

"**12.3.4 Stress range due to thermal expansion and alternating loads**

The stress range, σ_3, due to the resultant moment, M_C, from thermal expansion and alternating loads, e.g. seismic loads, shall either satisfy the following equation:

$$\sigma_3 = \frac{i_{QC} Q_{xC}}{A} + \frac{i \ M_C}{Z} \leq f_a \qquad (12.3.4\text{-}1)$$

where

A is the nominal cross section of the pipe

$= \frac{\pi}{4}(d_o{}^2 - d_i{}^2)$

i_{QC} is the stress intensification factor for axial forces for alternating loads. Unless more precise information is available $i_{QC} = 1{,}0$

iM_C is the weighted range of resultant moment due to thermal expansion and alternating loads which shall be determined from the greatest difference between moments of any two load cases (j and k) using the moduli of elasticity and stress intensification factors i from Table H.1 at the relevant temperatures and pressures:

$$iM_C = \max\left(\sqrt{(i_j \ M_{xCj} - i_k \ M_{xCk})^2 + (i_j \ M_{yCj} - i_k \ M_{yCk})^2 + (i_j \ M_{zCj} - i_k \ M_{zCk})^2}\right)_{j=1...N;k=1...N}$$

Proposed answer(s): *

The two stress intensification factors *i* highlighted in yellow above should be deleted. In both places the term should only contain the resultant moment M_C.

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

WG 3 answer 2022-05-10: No

The fact that the explanation below the formula (12.3.4-1) includes "i Mc" is fully intentional and not an error. In (12.3.4-1), space to be integrated as follows: i Mc
Editorial correction to be carried out for clarification

Historically the moment range Mc was calculated and at the end multiplied by a SIF "i".
This is no longer possible because the SIF is now pressure dependent (since we introduced the stiffening of the bends due to pressure) and therefore it is load case dependent.

To be sent to EN 13480 Maintenance Group secretariat:	EN 13480 Maintenance Group secretariat c/o UNM Standardization Office on behalf of AFNOR F 92038 Paris La Défense Cedex – France e-mail: en13480@unm.fr

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

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

EN 13480 "Industrial piping and pipelines" Maintenance Group Question form

Request reference number *(to be filled by MHD):* **3-002-2022** **Date: 2021-12-10**

Please fulfil the following

Part:	Issue:	Page	Subclause	National Standard Reference
EN 13480-3	2017	114	10.2 e)	DIN EN 13480-3

Subject:

Type of request: ☒ Technical clarification ☐ Editorial correction ☐ Technical comment ☐ Translation correction

From :
Company:Bilfinger Engineering & Maintenace GmbH .
Name: Klaus Luxenburger ....
Postal address: Karl-Räder Str. 3-5, 67069 Ludwigshafen

e-mail: klaus.luxenburger@bilfinger.com ....
phone: +49 621 6506-222 ....

☐ Manufacturer ☒ User ☐ Other (please specify):

Question/comment:

In section 10.2, detailed fatigue analysis is not required if all 3 requirements in subclause e) are met

Here we are not sure about the interpretation of the term “mechanical loading” in subclause e) 2):

the mechanical loading on branches is such that the maximum total stress range caused by mechanical loads, inclusive of stress concentration factors, does not exceed 1/3 of the design stress f (including stress range factors) at the calculation temperature;

1. Does the term « mechanical loading » include loads and moments caused by restrained thermal expansion of the pipe ?
2. In our specific example, we have a pipe (wall thickness is less than 60 mm) only subjected to temperature cycles. The number of equivalent full temperature cycles is less than 7000. There are no pressure cycles and no cycling action from other sources. Is a detailed fatigue analysis in this case required?

Proposed answer(s): *

1. No, because loads and moments caused by restrained thermal expansion of the pipes are already covered by subclause 10.2 e) 3), where equivalent full temperature cycles are limited to N < 7000
2. No, all requirements of 10.2 e) are met. No detailed fatigue analysis is required.

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

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

WG 3 answer 2022-05-10:

Clause 10 is under revision at the moment under the WI 00267091. New draft amendment to EN 13480-3 under progress. The restriction of 10.2 e), sub-indent 2) is intended to be removed through the drafting of this new amendment. The current proposal for revision is as follows (under discussion):

A fatigue analysis shall not be required if one of the following conditions is met:

a) the system design can be shown to replicate closely a previously analysed acceptable design;

b) the system design is similar to a currently operating system design;

c) (1) the total number of alternating load cycles from all sources is less than 1 000,

or

(2) the equivalent number of full pressure cycles as defined in accordance with 10.3.2 does not exceed 1 000, the number of equivalent thermal cycles acc. to eq. (12.1.3-5) does not exceed 7 000 and the thickness does not exceed 125 mm for ferritic steels or 60 mm for austenitic steels.

d) the calculated maximum range of principal cyclic stress is less than 47 N/mm^2 for carbon and austenitic steels. When considering fillet welds, this value shall be reduced to 35 N/mm^2;

To be sent to EN 13480 Maintenance Group secretariat:	EN 13480 Maintenance Group secretariat c/o UNM Standardization Office on behalf of AFNOR F 92038 Paris La Défense Cedex – France e-mail: en13480@unm.fr

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

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

EN 13480 "Industrial piping and pipelines" Maintenance Group Question form

Request reference number *(to be filled by MHD):* **3-003-2022** **Date: 2022-01-21**

Please fulfil the following

Part:	Issue:	Page	Subclause	National Standard Reference
EN 13480-3	see Appendix	see Appendix	see Appendix	--

Subject:

Type of request:
☒ Technical clarification ☐ Editorial correction
☐ Technical comment ☐ Translation correction

From :

Company:Hilti Aktiengesellschaft ....
Name: Giovanni Riello ....
Postal address: Feldkircherstrasse 100, 9494 Schaan, Liechtenstein..

e-mail: Giovanni.riello@hilti.com ....
phone: + 423 234 2347 ....

☒ Manufacturer ☐ User ☐ Other (please specify):

Question/comment: see Appendix

Proposed answer(s): n/a

Answer from the MHD *(to be filled by MHD):*
2022-11-29
Answer to question 1:
Standardised supports are frequently used catalogued components, which have proven load capacities.
Answer to question 2:
1 & 2 are standard supports, 3 is a customised support (as the question is written)
Answer to question 3:
It is applicable to both standard & customised supports
Answer to question 4:
No, see official answer from MHD on question 3-007-2021
Answer to question 6:
To all delivered supports

To be sent to EN 13480 Maintenance Group secretariat:	EN 13480 Maintenance Group secretariat c/o UNM Standardization Office on behalf of AFNOR F 92038 Paris La Défense Cedex – France e-mail: en13480@unm.fr

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

Appendix to EN 13480 "Industrial piping and pipelines" Maintenance Group Question form from Hilti AG, date 21.01.2022

No	Part	Issue	Page	Subclause	Question / Comment
1	EN 13480-3:2017 (E)	Issue 1 (2017-06)	164	13.2.1	The definition of standardized supports in subclause 13.2.1 is: *"Standardized supports are generic components which have proven load capacities and are catalogued."* What is the definition of "generic components"? Please note in DIN EN 13480-3:2017-12 the term "generic" is not translated.
2	EN 13480-3:2017 (E)	Issue 1 (2017-06)	164	13.2.1	Are pipe shoes which meet the following criteria standardized supports or customized supports: 1. Pipe shoes have proven load capacities 2. Pipe shoes are catalogued 3. Pipe shoes have height and angle adjustment for specific pipe sizes and temperature ranges?
3	EN 13480-3:2017 (E)	Issue 1 (2017-06)	164	13.2.1	Subclause 13.2.1 states: *"The support design shall be confirmed by calculation in accordance with this sub-clause or by type testing (load rating)."* Is this clause applicable to customized supports only or is this clause applicable to customized supports and standardized supports?
4	EN 13480-3: 2017 A4:2021-09		3	13.11.11	Do the alternative rules for design and calculation of pipe support include also "Annex D (informative) Design assisted by testing" according to EN 1990:2002?
5	EN 13480-3: 2017 A4:2021-09		3	13.11.11	Only if No. 4 is answered with yes: a) What partial factor γ_m must be applied on the characteristic value derived as per EN 1990, D7.2 b) Is it acceptable to use as design value the assessment described in EN 1990, D7.3?
6	EN 13480-3:2017 (E)	Issue 1 (2017-06)	170	13.9	13.9 states: "*The support manufacturer shall provide the purchaser of supports with a certificate confirming that the supports comply with the requirements of Clause 13 and Annex N."* Is this clause applicable to customized supports only or is this clause applicable to customized supports and standardized supports?

EN 13480 "Industrial piping and pipelines" Maintenance Group Question form

Request reference number *(to be filled by MHD):* **3-004-2022** **Date: 2022-04-12**

Please fulfil the following

Part:	Issue:	Page	Subclause	National Standard Reference
EN 13480-3:2017 (E)	Issue 2 (2021-10)	164-167	13.1.4	--

Subject: Pipe support boundaries

Type of request:

☒ Technical clarification ☐ Editorial correction

☐ Technical comment ☐ Translation correction

From :

Company: Sweco Sweden AB....................................
Name: Johan Björk ....
Postal address: Bäckgatan 7, 931 34 Skellefteå..........
e-mail: johan.bjork@sweco.se ....
phone: +46 702537698 ....

☐ Manufacturer ☒ User ☐ Other (please specify):

Question/comment:

According to sec 13.1.1.4 Pipe supports (B – B1 – B2) shall be designed in accordance with clause 13 of this document which is harmonised with the PED.

What is the requirements for interconnecting welds or fasteners between B2 (pipe support) and C (structure) (acc. to Figure 13.1.4-1 and 13.1.4-2)?

Proposed answer(s): *

A) Interconnecting welds or fasteners and manufacturing/installation process of such welds or fasteners connecting B2 (pipe support) to C (structure) acc. To section 13.1.4 shall conform with requirements acc. To Table N.1 — Documentation of pipe supports fabricated according to EN 13480-3:2017?

or

B) Interconnecting welds or fasteners and manufacturing/installation process of such welds or fasteners connecting B2 (pipe support) to C (structure) acc. To section 13.1.4 shall conform with requirements acc.to EN1090-2:2018.

<u>Answer from the MHD</u> *(to be filled by MHD):* WG 3 answer on 2022-05-10 : For a welded joint to building structure, it is clear that this weld is not the scope of the support designer or supplier so the weld needs to be designed by the structural steel designer in accordance with the applicable codes. For the bolted connection shown below, the bolts (C1) are part of the structural engineers scope & should be design according to the applicable structural code. Details of design of bolts can be found in EN 1993-1-8 together with any National annex will also provide information. The bolts could be supplied by the support manufacturer if agreed at the time of placing the purchase order. Also the support manufacturer may well specify the size of bolt required for his support component/assembly but the design responsibility will rest with the structural engineer because half of the bolted joint is structure & the other half is support. The support designer has no idea of the stresses in the structural component of the joint.

To be sent to EN 13480 Maintenance Group secretariat:	EN 13480 Maintenance Group secretariat c/o UNM Standardization Office on behalf of AFNOR F 92038 Paris La Défense Cedex – France e-mail: en13480@unm.fr

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

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

EN 13480 "Industrial piping and pipelines" Maintenance Group Question form

Request reference number *(to be filled by MHD):* **3-005-2022**			**Date: 2022-04-19**	
Please fulfil the following				
Part: EN 13480-3	Issue: 1 :2017	Page 82	Subclause 8.3.8/8.3.9	National Standard Reference DIN EN 13480-3:2017-12
Subject: Extruded outlets/forged tee				
Type of request:	☒ Technical clarification ☐ Technical comment		☐ Editorial correction ☐ Translation correction	
From : Company: TÜV NORD Systems GmbH & Co. KG .... Name: Manuela Wagner .... Postal address: Große Bahnstr. 31, 22525 Hamburg ..			e-mail: mwagner@tuev-nord.de .... phone: +49 40 8557 2862	
☐ Manufacturer	☐ User	☒ Other (please specify): Notified Body		

Question/comment:

According to EN 13480-3, No. 8.3.8, extruded outlets can only be used to a limited extent.
Nach EN 13480-3, Nr. 8.3.8 sind ausgehalste Abzweige nur eingeschränkt anwendbar.

What is meant by an “extruded outlet”?
Was ist mit einem „ausgehalsten Abzweig“ gemeint?

Is an extruded outlet a branch created by pulling material out of a pipe? In this way, instead of an adapted nozzle seam, a circumferential seam can be welded just above the pipe. Or does this also mean a Tee that has been cold or hot formed (extruded), similar to Figure 8.3.9-2, by manufacturers of fittings e.g. according to EN 10253-2?
Ist ein ausgehalster Abzweig ein Abzweig, der durch Herausziehen von Material aus einem Rohr entsteht? So kann anstelle einer angepassten Stutzennaht eine Rundnaht kurz über dem Rohr geschweißt werden. Oder ist damit auch ein kalt- oder warmgeformtes (ausgehalstes) T-Stück, ähnlich wie in Abbildung 8.3.9-2, gemeint, das von Herstellern von Formstücken z.B. nach EN 10253-2 hergestellt wird?

Manufacturing methods according to EN 10253-2 Table 1 are:
Herstellverfahren nach EN 10253-2 Tabelle 1 sind:

- Hot formed — - drop pressed or
  - rolled, forged with subsequent machining or
  warmverformt: — *- im Gesenk gepresst oder*
  - gewalzt, geschmiedet mit anschließender spanenden Bearbeitung oder
- Cold formed — - drop pressed
  kaltverformt: — *- im Gesenk gepresst*

Which procedure is not permissible according to EN 13480-3, No. 8.3.8?
Welches Verfahren ist entsprechend EN 13480-3, Nr. 8.3.8 nicht zulässig?

Does section 8.3.9 only apply to the last sentence of 8.3.8 and thus only refer to the application in the creep range?
Gilt Abschnitt 8.3.9 nur für den letzten Satz von 8.3.8 und bezieht sich damit nur auf die Anwendung im Zeitstandbereich?

Please specify section 8.3.8 in more detail and adapt the terms to EN 10253-2 if necessary.
Bitte präzisieren Sie Abschnitt 8.3.8 und passen Sie die Begriffe gegebenenfalls an EN 10253-2 an.

Proposed answer(s): *

An extruded outlet is a branch that just above the pipe, allows for a circumferential weld instead of an adapted nozzle seam.
Ein ausgehalster Abzweig ist ein Abzweig, der kurz über dem Rohr, eine Rundnaht statt einer angepassten Stutzennaht ermöglicht.

All tees according to EN 10253-2 Table 1 can be used. They do not fall under EN 13480-3, 8.3.8.
Alle T-Stücke nach EN 10253-2 Tabelle 1 können verwendet werden. Sie fallen nicht unter EN 13480-3, 8.3.8.

Section 8.3.9 only applies to the last sentence of 8.3.8 and thus only refers to the application in the creep range.
Abschnitt 8.3.9 gilt nur für den letzten Satz von 8.3.8 und bezieht sich damit nur auf die Anwendung im Zeitstandbereich.

Section 8.3.8 will be formulated more clearly.
Abschnitt 8.3.8 wird klarer formuliert werden.

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

WG 3 answer on 2022-11-30 :

1) An extruded outlet is a branch that just above the pipe, allows for a circumferential weld instead of an adapted nozzle seam.
2) Tees according to EN 10253-2 do not fall under EN 13480-3, 8.3.8, but under 8.3.9.
3) Tees according to 8.3.9 are not subject to any limitations specified in 8.3.8.
4) Clause 8 is under discussion at the moment for possible revision within a new draft amendment to EN 13480-3.

To be sent to EN 13480 Maintenance Group secretariat:	EN 13480 Maintenance Group secretariat c/o UNM Standardization Office on behalf of AFNOR F 92038 Paris La Défense Cedex – France e-mail: en13480@unm.fr

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

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

EN 13480 "Industrial piping and pipelines" Maintenance Group Question form

Request reference number *(to be filled by MHD):* **3-006-2022**			**Date: 2022-05-03**	
Please fulfil the following				
Part: EN 13480-3	Issue: 1:2017	Page -	Subclause 13.7	National Standard Reference DIN EN 13480-3:2017-12
Subject: Sliding supports				
Type of request:	☒ Technical clarification ☐ Technical comment		☐ Editorial correction ☐ Translation correction	

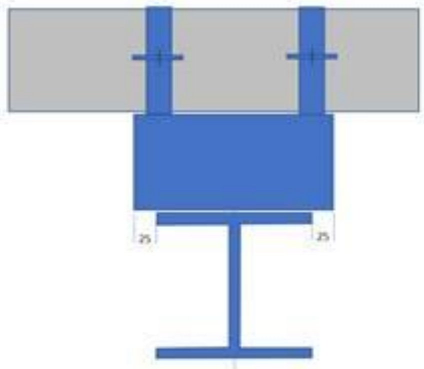
From : Company: Shell Deutschland GmbH .... Name: Johannes Fuchs... Postal address: Godorfer Hauptstraße 150 D-50997 Köln	e-mail: Johannes.Fuchs@shell.com .... phone: +49 2236 75-9356 or +49 2236 799251.....

☐ Manufacturer	☒ User	☐ Other (please specify): Notified Body

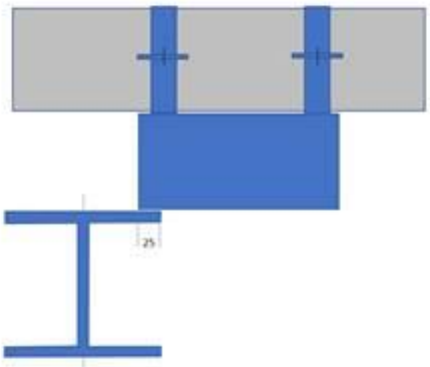
Question/comment:

For the "DIN EN 13480-3 Abs. 13.7. Aufstandsfläche bei Gleitlagern",
especially the part "Die Gleitflächen müssen so ausreichend dimensioniert sein, dass bei den vorgegebenen Verschiebungen eine Sicherheitsspanne von mindestens 25 mm in jeder Richtung vorhanden ist.", one of our contractors has a different interpretation than we have.

Our interpretation of this article is that the sliding surface of the pipe support must be fully attached to the steel beam with a minimum of 25mm overlapping at any condition (warm or cold):



The interpretation of our contractor is that the sliding surface of the pipe support needs to be at least 25mm attached to the steel beam:



So, our question is how to interpret the DIN EN 13480-3 Abs. 13.7. The way we do, the way the contractor does or even in a third way.

Proposed answer(s): *

-

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

2022-11-29:

Read EN 13480-3:2017, subclause 13.7 as:
After the planned movement of the pipe shoe, there shall be a safety margin of 25 mm in any direction with sliding area and load bearing capacity of the structure being sufficient.

The subclause does not specifiy the exact geometry of your slide support/secondary steel work, but specifies that the function shall remain intact with the margin of 25 mm beyond the expected displacement at the support.

To be sent to EN 13480 Maintenance Group secretariat:	EN 13480 Maintenance Group secretariat c/o UNM Standardization Office on behalf of AFNOR F 92038 Paris La Défense Cedex – France e-mail: en13480@unm.fr

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

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

EN 13480 "Industrial piping and pipelines" Maintenance Group Question form

Request reference number *(to be filled by MHD)*: 3-007-2022 **Date:** 2022-09-27

Please fulfil the following

Part:	Issue:	Page	Subclause	National Standard Reference
EN 13480-3	2017	74	8	--

Subject: Use of Helical welded pipe (EN10217-5 SAWH) for fabrication of fittings

Type of request:

☒ Technical clarification ☐ Editorial correction

☐ Technical comment ☐ Translation correction

From :

Company: EQUANS
Name: Jan Van den Troost
Postal address: Industrieweg 16 Grimbergen - Belgium
e-mail: Jan.vandentroost@equans.com
phone: +...

☒ Manufacturer ☐ User ☐ Other (please specify):

Question/comment:

Does EN13480 restricts the use of helical welded tubes (EN10217-5 SAWH) for the fabrication of branch connections? (pipe in pipe)

According to EN10253-2 §8.2.1 the use of helical welded tube (SAWH) is not permitted for the fabrication of fittings.

Proposed answer(s): *

Helical welded tubes SAWH are permitted for the fabrication of branch connections if a joint coefficient z=1 has been applied.

Answer from the MHD *(to be filled by MHD)*: 2022-11-29

EN13480-3 does not restrict the fabrication of branch connections using helical welded tubes. Rules of EN13480-3 are to be considered. Further study with CEN/TC267/WG4 and WG5

To be sent to EN 13480 Maintenance Group secretariat:	EN 13480 Maintenance Group secretariat c/o UNM Standardization Office on behalf of AFNOR F 92038 Paris La Défense Cedex – France e-mail: en13480@unm.fr

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

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

EN 13480 "Industrial piping and pipelines" Maintenance Group Question form

Request reference number *(to be filled by MHD)*: **3-008-2022** **Date: 2022-10-21**

Please fulfil the following

Part:	Issue:	Page	Subclause	National Standard Reference
EN 13480-3	2017	176	13.11.6	NF EN 13480-3 V1

Subject: Calculation of the threaded assemblies

Type of request:

☒ Technical clarification ☐ Editorial correction
☐ Technical comment ☐ Translation correction

From :

Company: EPRI2+2 ....
Name: Pierre GUERTIN ....
Postal address: 1 place Firmin Gautier
38000 GRENOBLE ....

e-mail: p.guertin@epri.fr ....
phone: +336476244898 ....

☐ Manufacturer ☒ User ☐ Other (please specify):

Question/comment:

Q1: The subclause 13.11.6 (threaded assemblies) indicates that this part it is applicable for carbon material bolts, ferritic material bolts and U bolts. The stainless steel bolts are not mentioned. **Is there another way to calculate stainless steel bolts or this chapter is also applicable for stainless steel bolts?**

Q2: For threaded assemblies with pretension we usually apply a standard tightening torque defined by the norm EN25-030 (which corresponds to 90% of the Yield stress). This tightening torque creates a pretension in the bolts. Our issue with norm EN13480-3 part 13.11.6 is that if we calculate the tension stress of the bolt by including this pretension, we always exceed the stress criteria of the table 13.11.6-1. **Should we not apply the pretension in the tension stress calculation or is there another way to calculate assemblies with pretension?**

Proposed answer(s):

Q1: Currently, we consider that this subclause is also applicable for stainless steel bolts.

Q2: For other standards such as EUROCODE we usually include the pretension in the calculation of the strength of the bolts. We think that the best way to validate assemblies with pretension is to use the European standard EUROCODE (EN1993) formulas since this standard is mentioned in this subclause.

Answer from the MHD *(to be filled by MHD):*
WG 3 answer 2022-11-30:
Q1: The answer can be found in EN 13480-3:2017/A5:2022
Q2: Standard pipe supports do not require pre-tensioned bolts. If you intend to use pre-tensioned bolts to connect pipe supports to the structure (as shown in figure 13.1.3-3) use for these bolts the standard of structure (see definition in figure 13.1.3-3). In most cases it might be EUROCODE 3 – EN 1993-1-8.

To be sent to EN 13480 Maintenance Group secretariat:

EN 13480 Maintenance Group secretariat c/o UNM
Standardization Office on behalf of AFNOR
F 92038 Paris La Défense Cedex – France
e-mail: en13480@unm.fr

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

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

EN 13480 "Industrial piping and pipelines" Maintenance Group Question form

Request reference number *(to be filled by MHD):* **3-009-2022**			**Date: 2022-11-08**	
Please fulfil the following				
Part: EN 13480-3	Issue: 2017	Page 258	Subclause Appendix H	National Standard Reference --
Subject: Application of stress intensification factor for fittings on piping which is less than 5 mm -thick				
Type of request:	☒ Technical clarification ☐ Technical comment		☐ Editorial correction ☐ Translation correction	

From : Company: ITER Organization..................................... Name: Thierry Cerisier.. Postal address: Route de Vinon-sur-Verdon - CS 90 046 - 13067 St Paul Lez Durance Cedex - France................	e-mail: Thierry.Cerisier@iter.org .... phone: +33 4 42 17 62 39 ....

☐ Manufacturer	☒ User	☐ Other (please specify):

Question/comment:

Dear Sir/Madam,

could you please clarify some issues related with application of stress intensification factors on piping of less than 5 mm thick, with following context:

We are performing piping flexibility analysis as per Section 12 of EN 13480-3. Our piping lines contain fittings (standardized EN 10253-4 tees, reducers, elbows, type B) and we evaluate corresponding SIFs for them as follows:

Reducer: EN 13480-3, table H.1, point 5
Elbow: EN 13480-3, table H.3, point “Welding elbow or pipe bend”
Tee: EN 13480-3, table H.3, point “Forged tee to be welded, designed with a burst pressure greater than or equal to the burst pressure of the connected pipes”

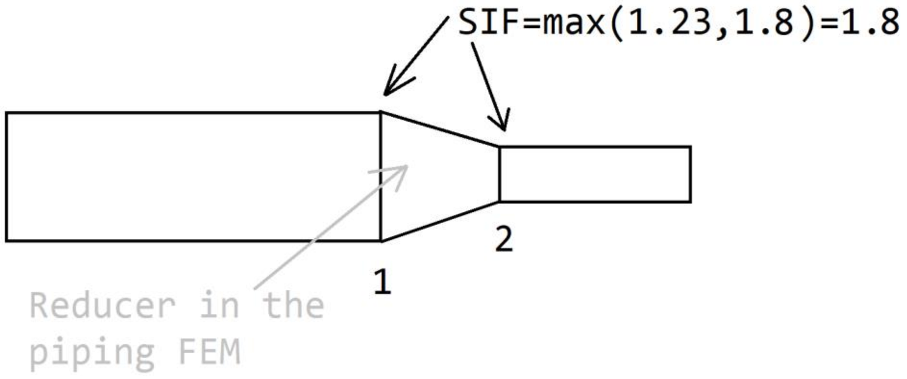
However, we can see that, in some cases, SIF for fitting itself is smaller than SIF for butt-weld that is required to weld this fitting to straight pipe of less than 5 mm thick (SIF=1.8 as per table H.1, 9).

For example,

Reducer 88.9x3.2 – 60.3x2.9:

SIF=0.5+alpha/100*(do/en)^(1/2)=0.5+16/100*(60.3/2.9)^(1/2)=1.23<1.8.

Question is following: should we necessarily override reducer SIF=1.23 in piping FEM (nodes 1, 2) with butt-weld SIF=1.8 in such a case to account the fact that SIF=1.8 of butt weld needed to connect reducer to straight pipe yields greater SIF than fitting itself (1.23)? Or is the SIF=1.23 for fitting itself conservative enough, even provided piping thickness is less than 5 mm, and SIF=1.8 is only valid for connection of two straight pipes and is not applicable for connection of straight pipe to fittings?



And the same question exists for other type of fittings: tees, elbows and for connection of straight pipe with weld-necked flange (we assumed the SIF for the latter to be equal to unity by default):

Proposed answer(s): *

a) Yes, in specified cases (connection of pipe with fittings and with WN flange, the greatest between SIF for (fitting itself /WN connection) and SIF=1.8 for butt-weld should necessarily be used to define SIF for FEM analysis

b) No, SIF for (fitting itself/WN connection) is conservative enough for FEM application in the region of fitting/WN connection, even if it is smaller than 1.8. SIF equal to 1.8 is intended to be used only for region of connection of two straight pipes

c) In some specified cases (<please, indicate>), it is necessary to take the greatest SIF between SIF for fitting itself/WN connection as proposed, and for the rest cases it is not necessary.

<u>Answer from the MHD</u> *(to be filled by MHD):* 2022-11-29: If two SIF are applicable at the same node (e.g. butt-weld at one end of the reducer) in the pipe stress analysis the maximum shall be taken.	
To be sent to EN 13480 Maintenance Group secretariat:	EN 13480 Maintenance Group secretariat c/o UNM Standardization Office on behalf of AFNOR F 92038 Paris La Défense Cedex – France e-mail: en13480@unm.fr

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

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

EN 13480 "Industrial piping and pipelines" Maintenance Group Question form

Request reference number *(to be filled by MHD):* **4-001-2022** **Date: 2022-06-03**

Please fulfil the following

Part:	Issue:	Page	Subclause	National Standard Reference
EN 13480-4	2017	10	5.6	--

Subject: Clarification to the standard regarding application of EN ISO 13920 or EN ISO 13480-4, appendix B

Type of request:
☒ Technical clarification ☐ Editorial correction
☐ Technical comment ☐ Translation correction

From :
Company: Bilfinger Engineering & Technologies
Postal address: Alter Hellweg 33, 44179 Dortmund
e-mail: stefan.mathias@bilfinger.com
phone: +0049 173-2995035 ....

☒ Manufacturer ☐ User ☐ Other (please specify):

Question/comment:

In our prefabrication workshop in Dortmund, we are fabricating pipe spools for power plants.

1.) related to para 5.6, first section
Is our understanding correct, that the spool tolerances on the dimensions given in the isometric drawing shall be according to EN ISO 13920 class C and G?
(as other tolerances are not specified in this standard nor by design standard)

2.) related to para 5.6, third section
Is our understanding correct, that alternative tolerances deviating from above, if applicable, shall be identified in (client's) specifications? (e.g. use of annex B)

3.) related to para 5.6, second section
Is our understanding correct, that it is not intended to measure angular tolerances on straight spools (where no angle is specified), but the start-to-end-length (terminal points) shall meet the dimensional tolerance, verified by applying EN ISO 13920 for tolerance of that linear dimension.

4) related to para 5.6, second section
Is our understanding correct, that bending angles (for hot or cold bendings) specified in the isometric drawing (e.g.80°) shall be measured and compared with the requirement by applying EN ISO 13920 for tolerance of that angular dimension. Accordingly the measurement of start-to-end-diagonal-length (terminal points) is not required.

Proposed answer(s): - 1) Yes - 2) Yes - 3) Yes - 4) Yes

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

2022-11-29:

Clause 5.6 specifies two sets of tolerances.

General tolerances apply to the finished piping or section of piping for which the tolerances are specified and shall be class C for tolerances for linear dimensions, for (see EN ISO 13920, table 1), for tolerances for angular dimensions (see EN ISO 13920, table 2 and clause 4.2) and class G for flatness, straightness and parallelism tolerances (see EN ISO 13920, table 3 and clause 4.3).

These tolerances apply, except where other tolerances are specified by EN 13480or by design.
The second sentence clarifies the determination of angular tolerances of the finished (!) part.
Annex B specifies tolerances for spools to support follow-up pipe work installation.

Considering this, the questions may be answered as follows:

1) Spool tolerances are specified in Annex B. Tolerances according to the first sentence apply to the finished piping (or section of piping for which they are specified).

2) Alternative tolerances shall be specified (and verified) by design.
Annex B as such is not an "alternative" but shows 3 Grades of tolerances where one of it shall be agreed before fabrication commences.

3) Annex B does not specify any angular tolerances.
Tolerances for linear dimensions and straightness are specified in EN ISO 13920.

4) See clause 5.6 second sentence.

The European working group CEN/TC 267WG 4 should consider to re-write the clause for better understanding regarding:

a) for a total piping system;
b) a prefabricated spool

This will be carried out in a later amendment after publication of the new Edition of EN 13480-4 under preparation.

To be sent to EN 13480 Maintenance Group secretariat:	EN 13480 Maintenance Group secretariat c/o UNM Standardization Office on behalf of AFNOR F 92038 Paris La Défense Cedex – France e-mail: en13480@unm.fr

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

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

EN 13480 "Industrial piping and pipelines" Maintenance Group
Question form

Request reference number *(to be filled by MHD):* **5-001-2022**			**Date: 2022-05-09**	
Please fulfil the following				
Part: EN 13480-5 :2017	Issue: 2017	Page	Subclause	National Standard Reference --
Subject:				
Type of request:	☒ Technical clarification ☐ Technical comment		☐ Editorial correction ☐ Translation correction	
From : Company: Bilfinger Engineering & Technologies GmbH Name: Stefan Mathias .... Postal address: Alter Hellweg 33 44379 Dortmund Germany			e-mail: stefan.mathias@bilfinger.com .... phone: +...	
☐ Manufacturer	☐ User	☐ Other (please specify):		

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

Question/comment:

we kindly ask for your assistance in a case of clarification to the standard DIN EN ISO 13480-5:2017.

Para 7.2.4.3 says:
Cold formed bends shall be tested according to Table 7.2.4.3-1. ….
Dimensional checks shall be performed after tooling of the bending machine and start of production to the same extent as specified for MT/PT (see Table 7.2.4.2-1)

This sentences are inconsistent related to the referenced tables, because table 7.2.4.2-1 is related to inductive bending.

As we understand it, what is meant is the following:
Dimensional checks shall be performed after tooling of the bending machine and start of production to the same extent as specified for MT/PT (see Table 7.2.4.3-1)

otherwise the meaning should be made clearer like this
Dimensional checks shall be performed after tooling of the bending machine and start of production to the same extent as specified for MT/PT for inductive bending (see Table 7.2.4.2-1)

As we are performing prefabrication work for our project Hinkley Point C and as we are of different opinion than NoBo Bureau Veritas, a clarification on short term is very much appreciated.
May we ask you to gain an Interpretation / opinion on that issue in your next meeting of NA 082-00-17 AA (Spiegelausschuß zu CEN/TC 267).
A written feedback would be great.

Many thanks for your help in advance.

Proposed answer(s): *

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

2022-11-29:

The clause should be corrected in the new edition of EN 13480-5:2023 under preparation as follows:

Change 7.2.4.3 paragraph 4 as follows:

"*Dimensional checks shall be performed after tooling of the bending machine and start of production to the same extent as specified for MT/PT (see Table ~~7.2.4.2-1~~ **7.2.4.3-1**) and shall include ovality, angle of bend and tolerances (see EN 13480-4)*".

The European working group CEN/TC 267WG 5 should consider to re-write the clause for better understanding This will be carried out in a later amendment after publication of the new Edition of EN 13480-5 under preparation.

To be sent to EN 13480 Maintenance Group secretariat:	EN 13480 Maintenance Group secretariat c/o UNM Standardization Office on behalf of AFNOR F 92038 Paris La Défense Cedex – France e-mail: en13480@unm.fr

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

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

EN 13480 "Industrial piping and pipelines" Maintenance Group Question form

Request reference number *(to be filled by MHD):* **5-002-2022** **Date: 2022-09-15**

Please fulfil the following

Part:	Issue:	Page	Subclause	National Standard Reference
EN 13480-5	2017	16	8.2.1	--

Subject: Extent of testing in table 8.2.1 with note e

Type of request:
☒ Technical clarification ☐ Editorial correction
☒ Technical comment ☐ Translation correction

From :
Company: Slåttland Mek Industri AS ....
Name: Zdenko Mahacek..
Postal address: Rudskogveien 30, 1894 Rakkestad ....

e-mail:zdenko@slattnland.no ....
phone: +4797778499 ....

☒ Manufacturer ☐ User ☐ Other (please specify):

Question/comment:

Comment: In table 8.2.1 for Material "1.3,1.4…10.2" PED Category I /II note e "Only if PWHT has been carried out" is placed on diameter/thickness. Shouldn't it be set on/over percentage of testing?

Clarification: Is 10%PT still required if PWHT is not performed on material 10.2?

Proposed answer(s): *
Comment: Move note e from "All" in table to percentages stated for branch welds and socket/fillet welds.
Clarification: No, it is not required.

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

2022-11-29:

- To the Comment:
Keep the note as it is. Otherwise, it will apply also to category III piping which is not intended.

- To the Clarification:
Surface testing is not required if PWHT is not applied.

To be sent to EN 13480 Maintenance Group secretariat:

EN 13480 Maintenance Group secretariat c/o UNM
Standardization Office on behalf of AFNOR
F 92038 Paris La Défense Cedex – France
e-mail: en13480@unm.fr

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

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

EN 13480 "Industrial piping and pipelines" Maintenance Group
Question form

Request reference number *(to be filled by MHD):* **5-003-2022**				**Date: 2022-11-23**
Please fulfil the following				
Part: EN 13480-5	Issue: 2017	Page 20	Subclause 9.3	National Standard Reference --
Subject: Presusre test				
Type of request:	X Technical clarification ☐ Technical comment		☐ Editorial correction ☐ Translation correction	
From : Company:TGE ENGINEERING Name:Jakub Stojanowski Postal address:			e-mail:Jakub.stojanowski@tge-gas.com phone: +...	
X Manufacturer	☐ User	☐ Other (please specify):		

<u>Question/comment</u>:

I am looking again for your kind support in regards to proof test of pipelines in accordance to EN 13480-5 chapter 9.3.

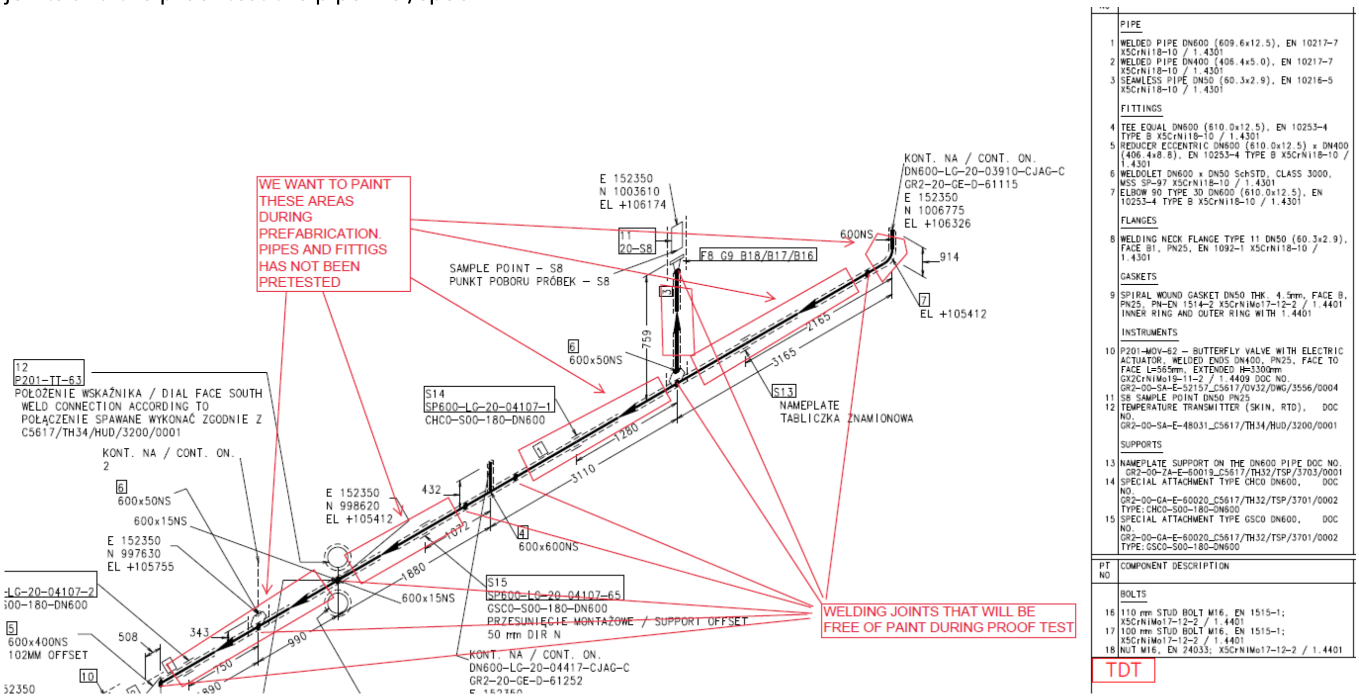
We are manufacturing pipelines and we would like to paint all pipes and fittings leaving paint free only circumferential welds which we are doing on prefabrication or erecting on site.
Pipes are made in accordance to EN 10217-7 -it mean that they have longitudinal joints. Pipes and fitting has not been pretested in acc to EN 13480-5 chapter 9.3.

EN 13480-5 standard is saying that
9.3.2.1.2 All joints shall be left uninsulated and unlined and exposed for examination during pressure testing, except that joints and tubes previously tested in accordance with this standard may be insulated or covered. A primer for corrosion protection shall be permitted, provided, it does not prevent the clear examination of the joint under test.

That is why we want to leave only circumferential welding joints free of paint and paint rest parts of the pipes and fittings.

BUT the standard is also stating
9.3.2.2.2 The pressure of piping under test shall be increased to a value of approximately 50 % of the specified test pressure. Thereafter, the pressure shall be increased in steps of approximately 10 % of the specified test pressure until it is reached. The piping system shall be held at the test pressure for a period of at least 30 minutes. The pressure shall then be reduced to the maximum allowable pressure *PS* and all components and welded joints subjected to a close visual examination of all surfaces and joints. During this examination, the piping shall show no signs of general plastic yielding.
9.3.2.2.3 During the hydrostatic test, the external surface of the piping system shall be kept in such a condition that leaks can be detected. The hydrostatic test shall be passed if no leakage or visible plastic deformation is observed.

The question is can we paint during prefabrication spools (pipe and fitting) leaving free of paint only circumferential welding joints and the proof test the pipeline /spool?



<u>Proposed answer(s)</u>: *
Maybe additional extension of time of pressure test will be required instead of 30min?

Answer from the MHD *(to be filled by MHD):* 2022-11-29: There are differences in pressure test requirements of EN 10217-7 and EN 13480-5:2017, therefore this question needs to be transferred to the European working group CEN/TC 267/WG 5 for further study.	
To be sent to EN 13480 Maintenance Group secretariat:	EN 13480 Maintenance Group secretariat c/o UNM Standardization Office on behalf of AFNOR F 92038 Paris La Défense Cedex – France e-mail: en13480@unm.fr

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

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

EN 13480 "Industrial piping and pipelines" Maintenance Group Question form

Request reference number *(to be filled by MHD)*: **6-001-2022**				**Date: 16/02/2022**
Please fulfil the following				
Part: EN 13480-6	Issue: V1 2017	Page 30, 31	Subclause §A.3.4.5 / §A3.5.5	National Standard Reference NF EN 13480-6 V1 2017-12

Subject: Longitudinal bending of buried piping

Type of request:

☒ Technical clarification
☐ Editorial correction
☐ Technical comment
☐ Translation correction

From :

Company:TechnipEnergies ....
Name:Maschino ....
Postal address:5-9 Av Bataillon Carmagnole Liberté – Vaulx en Velin 69157 ....

e-mail:gael.maschino@technipenergies.com ....
phone: +33 4 26 20 25 38 ....

☐ Manufacturer ☒ User ☐ Other (please specify):

Question/comment:

Equation A.3.4.5-1 : longitudinal bending moment for alpha = 0 (bottom of pipe) increases when theta is getting greater. Decrease of bending stress is expected in this case. Please confirm equation.

Equation A.3.5.5-1 : replace Q (total earth load (N/m) acc. to A.3.4.2.1) by R (soil reaction (N)) to make formula consistent.

Proposed answer(s): *

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

2022-11-29:

Equation A.3.4.5-1: Further check is needed.
Question to be shifted to the European working group CEN/TC 267/WG 1.

Equation A.3.5.5-1: Further check is needed.
Question to be shifted to the European working group CEN/TC 267/WG 1.

To be sent to EN 13480 Maintenance Group secretariat:	EN 13480 Maintenance Group secretariat c/o UNM Standardization Office on behalf of AFNOR F 92038 Paris La Défense Cedex – France e-mail: en13480@unm.fr

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