

CEN/TC 267/WG 8/MHD « Maintenance of EN 13480 series »

MHD Answers on 2017 Questions

MHD Question N°	Subjects	MHD answers doc. N°	Subsequent actions	MHD answers to questioners
2-001-2017	Table 4-1 Figure 6	N094	-	2017-11
3-001-2017	Clause 6.4.9	N094	-	2017-11
3-002-2017	Clause 8.3.1	N094	-	2017-11
3-003-2017	Clause 12.2.1	N094	-	2017-11
3-004-2017	Tables H.1 Table H.3	N094	to WG 3	2017-11
3-005-2017	Clause 8.4.3	N094	-	2017-11
3-006-2017	Clause 4.6	N094	-	2017-11
3-007-2017	Clause 8	N094	-	2017-11
3-008-2017	Clause 8.3.6	N094	to WG 3	2017-11
3-009-2017	Annex D	N094	to WG 3	2017-11
4-001-2017	Clause 9.14.1	N094	-	2017-11
5-001-2017	Clause 8.1.3	N094	-	2017-11
5-002-2017	Clause 8.1.2	N094	-	2017-11
5-003-2017	Clause 8.2.1 Clause 9.3.3	N094	-	2017-11
5-004-2017	Clause 8.2.1	N094	-	2017-11
5-005-2017	Clause 9.3.4	N094	-	2017-11
5-006-2017	Clause 8.2.1	N094	EN 13480-5/FprA4 (WI 00267076)	2017-11
5-007-2017	Clause 8.1.1.1 Table 8.2-1	N094	-	2017-11

Registration number	Date of submission	Target date for answer	Date of acceptance
2-001-2017	27/09/2017	28/09/2017	28/09/2017

Part number	Page number	Subclause number	Reference of the standard used
2			EN 13480-2:2017, Table 4-1

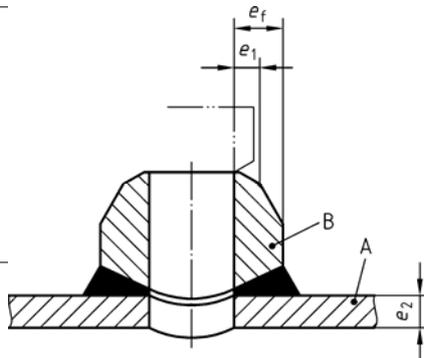
Question

Subject : Table B.4-1 - Figure 6 - EN 13480-2:2017 (issue 1:2017)

Question/comment :

Figure 6 is misprinted in Table 4-1 and should be replaced by correct figure (construction detail).

Answer proposed by the author of the question



Answer of the maintenance group

CEN/TC 267/WG 8/MHD Secretariat answer: The "Word" file for the Publication of EN 13480-2:2017 is correct. Figure 6 was misprinted during the process of transfer of the "Word" file into "PDF" file for the Publication of the new Edition. This concerns only the English version. A corrected page needs to be published.

Question from:

Name

Walther Stikvoort

Company

Jacobs / GLT PLUS

Country

The Netherlands

Date

2017-09-27



<i>Registration number</i>	<i>Date of submission</i>	<i>Target date for answer</i>	<i>Date of acceptance</i>
3-001-2017	14/11/2016	31/01/2017	15/11/2017

<i>Part number</i>	<i>Page number</i>	<i>Subclause number</i>	<i>Reference of the standard used</i>
3			EN 13480-3:2012, 6.4.9

Question

On §6.4.9, which deals with eccentric reducers, it is written: “The thicknesses shall be calculated in accordance with 6.4.6 or 6.4.7 for the junction at the large end. The minimum thicknesses shall be calculated in accordance with 6.4.8 for the junction at the small end. **The greater of these shall apply to the whole reducer.**”

What does the term “these” is referring to? What is the technical reason that led to this sentence?

We understand that the maximum thickness calculated between the large end and the small end applies to the whole reducer.

One of the related issues is that standard eccentric reducers of type B according to harmonized standard EN10253-2 do not follow this requirement because as per Table C.5, different minimum thicknesses T2, T3 and T4 are defined, instead of one thickness as per §6.4.9.

Answer proposed by the author of the question

The following sentence need to be rephrased or clarified so that calculation process is harmonized with EN10253-2 that represents the availability of fittings in the market:

“**The greater of these shall apply to the whole reducer.**” My proposal is to remove this sentence. The reason is that the calculation procedure for concentric reducer is called. So there is no need for additional requirement. But maybe I miss the meaning of this sentence and the impact on the design. In that case, this sentence need to be rephrased to avoid misunderstanding

Answer of the maintenance group

Cone thickness: The calculation rules and EN 10253-2 or -4 tabled measures must not necessarily coincide.

See also Clause 4.6 of EN 13480-3:2017 – Last paragraph

The stress limits of components in accordance with European Standards with P/T ratings, e.g. flanges and components with wall thickness related to standard pipes, e.g. fittings, need not be recalculated.

Question from:

Name

Nicolas Levet

Company

Alstom Power Systems

Country

France

Date

2016-11-14



Registration number	Date of submission	Target date for answer	Date of acceptance
3-002-2017	14/11/2016	31/01/2017	15/11/2017

Part number	Page number	Subclause number	Reference of the standard used
3			EN 13480-3:2012, 8.3.1

Question

Figures 8.3.1-1 and 8.3.1-2 are defining the thickness ratio as a function of diameter ratio for openings. During project execution, we faced 2 issues related to these figures:

- 1- The ratio d_i/D_i is limited to 1. But in the case of an equal tee, it is possible to obtain, due to the manufacturing process, d_i greater than D_i , although outside diameters D_o and d_o are the same. This is the case for instance for stainless steel equal tees type B from EN10253-4 where T_s is greater than T_b , thus leading to d_i/D_i greater than 1. Then this kind of tee is not in line with the limitations from EN13480.
- 2- It is written: "The thickness ratio e_{ab} / e_{as} **used in the calculations** shall not be greater than the value given in Figure 8.3.1..."
Does it mean that, for the calculation, it is possible to use thinner e_a than the e_a defined in figure 4.3.1?
Let's take a typical case to illustrate :
 - The run pipe is defined with a nominal thickness of 6,3mm. Analysis thickness $e_{as}=5$ mm considering $C_0+C_1+C_2=1,3$ mm
 - The branch pipe is 20mm nominal thickness. Analysis thickness as per figure 4.3.1 is $e_{ab} = 18$ mm, considering $C_0+C_1+C_2=2$ mm.
 - The thickness ratio is equal to $18/5 = 3.6$, which is out of the limitation of §8.3.1.
 - So we perform the opening calculation considering analysis thickness of the branch limited to 10mm so that $e_{ab}/e_{as}=2$.

Then we satisfy the sentence "The thickness ratio e_{ab} / e_{as} **used in the calculations** shall not be greater than the value given in Figure 8.3.1..."

Answer proposed by the author of the question

1 - The case of equal tee with d_i/D_i greater than one to be clarified. For instance $d_i/D_i > 1$ could be authorized in case of an equal tee, or if $d_o \leq D_o$

2- A sentence to be added to explain that e_a used for the opening calculation can be lower than the e_a defined in figure 4.3.1.

Answer of the maintenance group

Limitations of Clause 8 to be obeyed when using the calculation procedure of the Clause 8.

E.g. for an equal tee, d_i/D_i and e_{ab}/e_{as} shall be less than or equal to 1.

For deviations from this, there are alternative methods like Annex O ($e_{ab}/e_{as} \leq 1,5$) or if it does not apply you may use DBA. Thus there is no use for calculating with a smaller e_a than given in the figure 8.3.1-1.

Question from:

Name

Nicolas Levet

Company

Alstom Power Systems

Country

France

Date

2016-11-14



<i>Registration number</i>	<i>Date of submission</i>	<i>Target date for answer</i>	<i>Date of acceptance</i>
3-003-2017	14/11/2016	31/01/2017	15/11/2017

<i>Part number</i>	<i>Page number</i>	<i>Subclause number</i>	<i>Reference of the standard used</i>
3			EN 13480-3:2012, 12.2.1

Question

Subject : Responsibility of piping manufacturer

Question/comment:

Preface:

Piping systems shall have sufficient inherent flexibility to prevent detrimental stresses or distortion in connected equipment or plant (e.g. vessels, pumps or turbines) resulting from excessive thrusts and moments in the piping.

Manufacturer:

Person or organization that takes full responsibility for the design and manufacture of the piping system and its conformity to EN 13480 (including 12.2.1)

Sub clause 12.1.1 can be interpreted as such that it is the responsibility of the Piping Manufacturer to carry out the required verifications in connected equipment even if he is not the manufacturer or procurer of the connected equipment?

- Required verifications might be strength calculations of vessel nozzles.

Answer proposed by the author of the question

The suitability and integration of piping and other equipment for the intended use is utterly the responsibility of the manufacturer of the Plant or Assembly and not an individual piping manufacturer.

Flexibility of piping (ESR 6 a)

The flexibility of the piping itself will be considered during the design of the piping. The forces on connecting equipment (nozzle loads) shall be considered not later than during the design/assessment of the plant or assembly.

Answer of the maintenance group

Loads on terminal points: Responsibility of manufacturer shall be defined in contract.

Question from:

Name

Pasi Nieminen

Company

Inspecta Sweden AB

Country

Sweden

Date

2016-11-14



<i>Registration number</i>	<i>Date of submission</i>	<i>Target date for answer</i>	<i>Date of acceptance</i>
3-004-2017	04/05/2017	17/07/2017	15/11/2017

<i>Part number</i>	<i>Page number</i>	<i>Subclause number</i>	<i>Reference of the standard used</i>
3			EN 13480-3:2012, Annex H

Question

Subject: SIFs (Stress Intensification Factor i – Annex H) for tees according to EN10253-x and ASME B16.9

Question/comment:
See attached sheets

Answer proposed by the author of the question

See attached sheets

Answer of the maintenance group

This question is forwarded to the European working group CEN/TC 267/WG 3 "Design and calculation – EN 13480-3" for further development.

Question from:

Name

David BODE

Company

SIGMA Ingenieurgesellschaft mbH

Country

Germany

Date

2017-05-04



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

Please fulfil the following			
Part :	Page	Subclause	National Standard Reference
EN13480 - 3	246/252	Table H1 – H3	EN13480-3:2012 Issue 3
Subject : SIFs for tees according to EN10253-x and ASME B16.9			
Question/comment :			
1) What is the correct SIF from EN13480-3 Appendix H Table H1 for Tees according to: 1a) EN10253-x Part A 1b) EN10253-x Part B 1c) ASME B16.9			
2) What is the correct SIF when using EN13480-3 Appendix H Table H3 2a) EN10253-x Part A 2b) EN10253-x Part B 2c) ASME B16.9			
3) When calculating the SIF what is the correct wall thickness to be used for e_n ? Does the wall thickness or the SIF to be considered depend on the component type and component thickness of the piping elements welded to the tee? Is the SIF for the tee to be increased if the pressure rating of the piping element connected to the tee is smaller than that of the tee?			

Proposed answer(s)/correction(s) * :

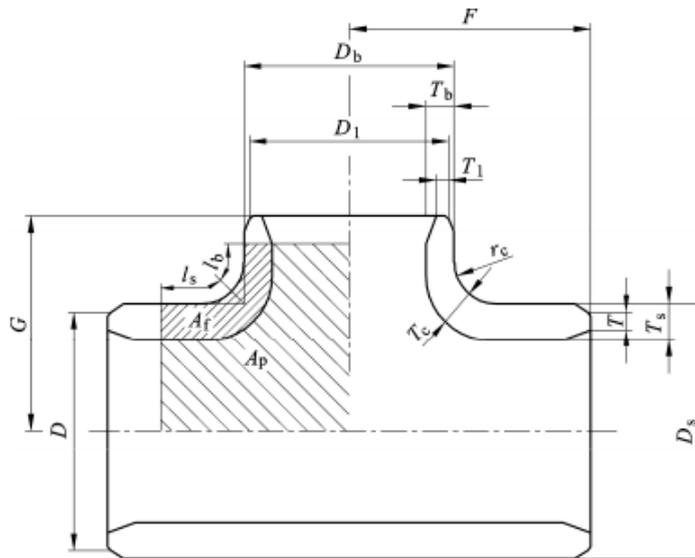
1a) The correct SIF is calculated according to N°6 - "tee with welded-on, welded-in or extruded nozzle"

1b) and 1c) The correct SIF is calculated according to N°8 - "forged welded -in tee with e_n and $e_{n,b}$ as connecting thickness"

2a) The correct SIF is calculated according to line 6 - "unreinforced fabricated tee"

2b) and 2c) The correct SIF is calculated according to line 4 - "Forged tee to be welded, designed with a burst pressure greater than or equal to the burst pressure of the connected pipes"

3) The wall thicknesses e_n is equivalent to the thickness "T" and $e_{n,b}$ to "T1" as defined in EN10253-X Fig. A.5 and Table C.2/D.2

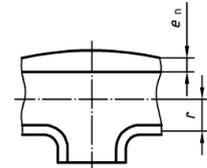


or e_n is equivalent to the nominal wall thickness as stamped according to ASME B16.9 § 4.1 (c)

The SIF shall be calculated based on the Tee geometry alone. The wall thickness of the connected piping elements has no influence on the SIF of the Tee. Piping elements with smaller wall thicknesses connected to the tee should be considered separately at their correct location with the appropriate SIF, not as an increase of the SIF of the tee.

Proposed modification:

In Table H3:

<p>Forged tee to be welded, designed with a burst pressure greater than or equal to the burst pressure of the connected pipes</p>	$\frac{0,9}{h^{2/3}}_{ae fgi}$	$0,75i_o + 0,25_{ae fgi}$	$\frac{4,4e_n}{r}$	
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Change "greater than or equal to the burst pressure of the connected pipes" by

"greater than or equal to the burst pressure of the straight pipe with wall thickness e_n " or

"equivalent to that of a straight pipe with wall thickness e_n "



<i>Registration number</i>	<i>Date of submission</i>	<i>Target date for answer</i>	<i>Date of acceptance</i>
3-005-2017	24/05/2017	17/07/2017	15/11/2017

<i>Part number</i>	<i>Page number</i>	<i>Subclause number</i>	<i>Reference of the standard used</i>
3			EN 13480-3:2012, 8.4.3

Question

Subject :

This is regarding query for EN13480-3:2012, equation 8.4.3-4. As per code equation reinforcement pad width is restricted to effective. As per our understanding l_p should be $\geq l_s$. However In code $l_p \leq l_s$.

See attached sheet.

Answer proposed by the author of the question

Please clarify.

Answer of the maintenance group

Equation 8.4.3-4 and associated Figure 8.4.3-2 are correct, no changes are necessary. (Figure 8.4.3-1 is not correct and has been replaced in the new edition EN 13480-3:2017)

Question from:

Name

Sumit Goel

Company

Layout and Piping

Country

India

Date

2017-05-24



Registration number	Date of submission	Target date for answer	Date of acceptance
3-006-2017	20/07/2017	31/08/2017	15/11/2017

Part number	Page number	Subclause number	Reference of the standard used
3			EN 13480-3:2012, 4.6

Question

Subject : Use ASME B16.5 fittings in combination with EN 13480-3

Is it possible to use ASME B16.5 fittings in combination with EN 13480-3. It has the same philosophy; if the pipe with a calculated diameter and wall thickness (schedule) is strong enough.

The fittings with the same diameter and schedule are minimal even strong.

The fittings are a blackbox and the manufacturer has some freedom with the wall thickness at any place in the fitting only the built-in dimensions are given and the size and wall thickness of the connected pipe.

It's not possible to calculate a fitting without these wall thickness and/or radius dimensions or all the fittings need to be measured for the right wall thickness and/or radius

Text in code:

4.6 Dimensioning of piping components subject to pressure

"The stress limits of components in accordance with European Standards with P/T ratings, e.g. flanges and components with wall thickness related to standard pipes, e.g. fittings, need not be recalculated"

Answer proposed by the author of the question

-

Answer of the maintenance group

B16.5 fittings may be used in conjunction with EN 13480 under following conditions:

1- to issue a PMA;

2- to verify the mechanical strength by calculation with the rules given in EN 13480-3.

Moreover, you can refer to the MHD answer to the question 3-011-2016.

Question from:

Name

SJ van Duijn

Company

Technip-EPG

Country

The Netherlands

Date

2017-07-20



<i>Registration number</i>	<i>Date of submission</i>	<i>Target date for answer</i>	<i>Date of acceptance</i>
3-007-2017	28/08/2017	15/09/2017	15/11/2017

<i>Part number</i>	<i>Page number</i>	<i>Subclause number</i>	<i>Reference of the standard used</i>
3			EN 13480-3:2012, Clause 8

Question

Subject: Clause 8 "Openings and branch connections"

In order to determine the total length of reinforced nozzle for a branch, it is required to know the length of "Weld Joint Examination" as well as "Length of Wall Thickness Transition". How can we calculate these lengths? Is any method for this specified in any EN code?

Additionally, we want to know how to calculate the "Angle at Transition of Wall thickness" as well as "Transition Radii".

All the above information is required to prepare a detail drawing of Reinforced Nozzle for fabrication by suitable vendor.

Answer proposed by the author of the question

—

Answer of the maintenance group

This question deals with the setting of examination method (e.g. ultrasonic, EN ISO 17640, Annex A).

No such details are given in EN 13480 series and therefore is out of scope of MHD

Question from:

Name

Preeti Gupta

Company

Tractebel Engineering Pvt.Ltd

Country

India

Date

2017-08-28



<i>Registration number</i>	<i>Date of submission</i>	<i>Target date for answer</i>	<i>Date of acceptance</i>
3-008-2017	14/11/2017	15/11/2017	15/11/2017

<i>Part number</i>	<i>Page number</i>	<i>Subclause number</i>	<i>Reference of the standard used</i>
3			EN 13480-3:2017, 8.3.6

Question

Subject: Reinforcing pad

Question/comment:

This requirement seems to be an exception of the EN 13480-3 (not in CODETI 2013 division 1 or ASME B31.1 de 2007 for example) What is the reason? Is it condition for exemption?

Answer proposed by the author of the question

Remove, if no justification, indeed it closes the use of EN 13480 for some application

Answer of the maintenance group

Question forward to the European working group CEN/TC 267/WG 3 for further investigation

Question from:

Name

Sourout TAYAKOUT

Company

EDF

Country

France

Date

2017-11-14



<i>Registration number</i>	<i>Date of submission</i>	<i>Target date for answer</i>	<i>Date of acceptance</i>
3-009-2017	14/11/2017	15/11/2017	15/11/2017

<i>Part number</i>	<i>Page number</i>	<i>Subclause number</i>	<i>Reference of the standard used</i>
3			EN 13480-3:2017, Annex D

Question

Subject: Flange

Question/comment:

It seems that the appendix D need some clarification:

- § D3 – B1? (this parameter is provide in other code)
- the formula D. 5-29 should be divided by B1 ?
- the formula D. 5-30 should be divided by B ?
- Joint characteristic tab (m and y) are missing.

Answer proposed by the author of the question

The proposed answer is to carry out the update.

Answer of the maintenance group

Question forward to the European working group CEN/TC 267/WG 3 for further investigation for the 3 first indents of the question above

Joint characteristics are given in Table 7.2.4-1 of EN 13480-3:2017

Question from:

Name

Sourout TAYAKOUT

Company

EDF

Country

France

Date

2017-11-14



Registration number	Date of submission	Target date for answer	Date of acceptance
4-001-2017	23/05/2017	17/07/2017	15/11/2017

Part number	Page number	Subclause number	Reference of the standard used
4			EN 13480-4:2012, 9.14.1

Question

Subject :

The amendment A4:2017 modifies subclause 9.14.1 of EN 13480-4:2012 by introducing the Hollomon-Jaffe parameter P.

For some reason the amendment A4:2017 do not specify the purpose of parameter P and what to do if the parameter P exceeds the value of P_{crit} or if parameter P is below the value of P_{crit} .

When the P_{crit} value was introduced to EN 13480-4:2012 by publishing A1:2013 the definition of P_{crit} was forgotten and the A4:2017 tries to correct this deficiency but doesn't succeed in full. As the data for P_{crit} is derived from EN 13445-4 the essential text of EN 13445-4 shall be added to EN 13480-4

Answer proposed by the author of the question

1) Add the last sentence of EN 13445-4:2014 clause 10.1, suitably modified, to EN 13480-4 clause 9.14.1 after text ... $lg = \log_{10}$
"Without prior agreement between the manufacturer of the piping/part and the material manufacturer the actual tempering temperature of NT or QT material shall not be lower than the admissible temperature as per Table 9.14.1-2. A higher PWHT temperature than tempering temperature would impair the mechanical properties of the material. In Table 9.14.1-3 a P_{crit} -value is introduced. This parameter, a critical Hollomon-Jaffe value, shall not be exceeded without proving the mechanical properties according to the procedures described in 9.14.xx.

2) Add the whole text of EN 13445-4:2014 clause 10.5 to a suitable location in EN 13480-4 clause 9.14.xx, preferably after Table 9.14.1-3

Answer of the maintenance group

This topic is under discussion in the relevant European working group and a proposal is under development dealing with multiple PWHT effects.

Question from:

Name

Juha Purje

Company

Inspecta Tarkastus Oy

Country

Finland

Date

2017-05-23



Registration number	Date of submission	Target date for answer	Date of acceptance
5-001-2017	16/11/2016	31/01/2017	15/11/2017

Part number	Page number	Subclause number	Reference of the standard used
5			EN 13480-5:2012, 8.1.3

Question

Subject : Extension of NDT according table 8.2.1 and imperfections revealed by sample inspections

Point 8.1.3 Imperfections revealed by sample inspections

When sample inspection reveals imperfections in one weld which are not acceptable, the following shall apply for each defective weld:

- Two additional welds of the same batch shall be examined by the same method(s)
- If these additional welds are acceptable, the initial weld shall be repaired or replaced and re-examined by the original methods(s).

My question is: **Can we consider these two additional welds to calculate the extension of NDT performed?**

Example: We have 100 welds with a requirement of 10% NDT according to table 8.2.1.

We perform the inspection of 8 welds, 1 is found as not acceptable. Applying the requirement of point 8.1.3, we perform the inspection of 2 additional welds, that we find as acceptable and the repair, that we also find as acceptable. As a result, we have tested 8 welds (7 acceptable of the first test and the repair, tested as

acceptable), plus the 2 additional welds, also found as acceptable. In total 10 welds, (10% of the 100 welds with a NDT requirement of 10% according table 8.2.1).

Can we consider that with these 10 welds, we meet the requirement of the code of 10%? Or we shall test another 2 welds (we do not count the 2 additional welds to calculate the extent of welds tested)?

Answer proposed by the author of the question

Yes, the two additional welds can be considered to calculate the extension of welds tested to fulfil the requirements of the table 8.2.1.

Answer of the maintenance group

Answer : **No.**

EN 13480-5 requires ADDITIONAL WELDS. This means the welds are in addition to the sample inspection extent required by the standard. Refer to EN 13480-5 clause 8.1.3:

“When sample inspection reveals imperfections in one weld which are not acceptable, the following shall apply for each defective weld:

- Two **additional** welds of the same batch shall be examined by the same method(s)”

Question from:

Name Enrique Bandera Rodriguez

Company MONCOBRA S.A

Country Spain

Date 2016-11-16



Registration number	Date of submission	Target date for answer	Date of acceptance
5-002-2017	20/01/2017	31/01/2017	15/11/2017

Part number	Page number	Subclause number	Reference of the standard used
5			EN 13480-5:2012+A1, 8.1.2

Question

Subject: Extent of visual inspection of welds

In case of spot check, the percentage indicated in table 8.1-2, shall be done in every lot of welds or the percentage shall be done over the total amount of welds covering every lot of welds (Inspect unless one weld per lot of welds). In the case that we have 100 welds, with a requirement of 10% of spot check. Which inspection is the correct?:

Welds (% to test)	Welds welded per welder	Joints welded per WPS	Inspection A (covering every lot of welds)	Inspection B (covering the percentage per lot of welds)
100 (10% to test)	60 Welded by Welder A	41 welded with WPS W1	5 welds tested	5 welds tested
		19 welded with WPS W2	1 weld tested	2 welds tested
	20 Welded by Welder B	19 welded with WPS W1	1 weld tested	2 welds tested
		1 welded with WPS W2	1 weld tested	2 welds tested
	20 Welded by Welder C	19 welded with WPS W1	1 weld tested	2 welds tested
		1 welded with WPS W2	1 weld tested	2 welds tested
			10 welds tested	15 welds tested

Answer proposed by the author of the question

The percentage of inspection shall cover every lot of welds, due to that, the inspection A is correct.

Answer of the maintenance group

Answer: No. The extent of visual testing is 100%.

If a sample inspection by other NDT such as RT or PT is required by the standard (e.g. by table 8.2-1) the extent of NDT is defined per category and material. The distribution to different welders and WPS shall consider the requirements specified in clause 8.1.2 b which requires, that the sample shall be "representative (!!!) of a batch of welds." A "batch of welds" is defined in clause 8.1.2. "Representative" means that all welders shall be covered in relation to the number of welds they weld compared the number of total welds. The extent of actual NDT may be therefore higher than the number specified by the standard. MHD is not in position to evaluate the example in the table since detailed information of fabrication are missing and numbers given in the table are not reproducible and appear to be wrong.

Question from:

Name Enrique Bandera Rodriguez
Company MONCOBRA S.A **Country** Spain
Date 2017-01-20



Registration number	Date of submission	Target date for answer	Date of acceptance
5-003-2017	08/05/2017	17/07/2017	15/11/2017

Part number	Page number	Subclause number	Reference of the standard used
5			EN 13480-5:2012, 8.2.1, 9.3.3

Question

Subject: Extent of NDT with the use of pipe according to EN 10217

EN 13480-5 Table 9.3.3.1 – Extent of NDT in case of pneumatic pressure test according to 9.3.3

Type of weld	Extent of NDT
Circumferential welds; branch and nozzle welds DN ≥ 100	10% ^a RT or UT, cross sections with longitudinal welds to be covered

1) Does this mean that when pipes according to EN 10217 are used in the piping system, this results in an effective 100% RT or UT of all the circumferential welds?

If not, what is the meaning of 'cross sections with longitudinal welds to be covered'?

2) Could you also confirm that when testing according to EN 13480-5 paragraph 9.3.2.2.1, only 5% of the circumferential welds need to undergo RT or UT for piping in category I or II, even in the case of pipes according to EN 10217

Answer proposed by the author of the question

1) No, 10% need to be covered, but the longitudinal welds need to be a part of the UT/RT with regards to branch or nozzle welds

2) Yes, 5% of the circumferential welds need to undergo RT or UT for piping in category I or II

Answer of the maintenance group

Answer :

1) No.

Cross sections shall be covered if the tube or pipe is not a product according to a harmonized material standard such as EN 10217 or EN 10253 (e.g. not standardized pipe with longitudinal seam made from plate in accordance with EN 13480, see also EN 13480-5, clause 8.3).

2) If piping is hydrostatically pressure tested in accordance with clause 9.3.2.2.1, the extent of NDT is given in table 8.2-1. This applies also, if pipes according to EN 10217 are used for piping fabrication.

The actual extent depends on category **and material**, see table 8.2-1.

Question from:

Name

Daan Van Gansen

Company

ENGIE AXIMA

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Belgium

Date

2017-05-08



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5-004-2017	09/05/2017	17/07/2017	15/11/2017

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5			EN 13480-5:2012, 8.2.1

Question

Subject: Extent of Testing for Piping Cat 0 and below 0.5bar (Sound Engineering Practice)

With regard to the sentence 'For volumetric testing an amount of 2% is **recommended**'
Could you clarify the word 'recommended' Is this a mandatory requirement? My interpretation is that it is a mandatory requirement to assure weld quality, however I am finding it difficult to impose on a subcontractor because of the word 'Recommended'

Answer proposed by the author of the question

For volumetric testing a minimum amount of 2% **shall** be carried out'

Answer of the maintenance group

Clause 8.2.1 1) requires that the amount of NDT shall be suitable to assure weld quality. The extent of 2 % is given as a recommendation only. This is made by intention.

See also MHD answer to the question 5-006-2017.

Question from:

Name William Kellaway

Company WK Inspection Services limited

Country UK

Date 2017-05-09



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5			EN 13480-5:2012, 9.3.4

Question

Subject: Type of NDT required for socket welds when a hydraulic pressure test is impracticable

Which type of NDT has to be applied for connection socket welds in accordance with paragraph 9.3.4 (in case where a hydrostatic pressure test would be impracticable)?

Answer proposed by the author of the question

For this type of weld, an impracticable hydrostatic pressure test shall be substituted by 100% PT

Answer of the maintenance group

Clause 9.3.4 shall be used when two independent testing methods (volumetric testing **and** surface testing) can be applied. Otherwise, pressure testing shall be performed. This should be considered when designing the welded joints. For minimum NDT of (pressure tested) connections, refer to clause 8.2.1.

Question from:

Name

Vincent DELAURENT

Company

SPIE NUCLEAIRE

Country

France

Date

2017-06-23



Registration number	Date of submission	Target date for answer	Date of acceptance
5-006-2017	27/09/2017	15/11/2017	15/11/2017

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5			EN 13480-5:2012, 8.2.1

Question

Subject: Volumetric testing for category 0 piping

Question/comment : 8.2.1 b) 1) states : *for piping of pipe category 0 and piping operating at or below 0,5 bar, the amount of NDT shall be suitable to assure weld quality. For volumetric testing a minimum amount of 2% is recommended;*

Should this be read as (1), (2) or (3):

- (1) "if volumetric testing is applied, a minimum amount of 2% is recommended."
- (2) "it is recommended to perform 2% volumetric testing on all welds"
- (3) "volumetric testing is required, the recommended minimum amount is 2%"

Our proposal and interpretation is to read it as (1) but we had some intensive discussions with our clients on this point. Our motivations in these discussions was as follows:

- The second sentence cannot be red without the first sentence; NDT shall be suitable to assure weld quality. This means that if a connection is risky volumetric testing should be applied and that in many (low-stress) connections only VT shall be suitable.
- In table 8.2-1 there can be seen that in many occasions 0% RT/UT has to be done for category I, II or III welds. For example for a branch weld with category II with material group 1.1. With the 2% volumetric in paragraph 8.2.1 there is not stated which specific weld, specific material, specific dimensions or specific loadings (such as fatigue). So we conclude it is only mentioned as an example.
- If we go to paragraph 8.3, we can see that even with a longitudinal joint it is possible to apply no UT or RT at all.

Answer proposed by the author of the question

Proposed correction: 8.2.1 b) 1)

for piping of pipe category 0 and piping operating at or below 0,5 bar, the amount of NDT shall be suitable to assure weld quality. If volumetric testing is applied, a minimum amount of 2% is recommended

Answer of the maintenance group

Clause 8.2.1, indent b), indent 1) will be modified as follows in a new amendment on EN 13480-5:2017:

"for piping of pipe category 0 and piping operating at or below 0,5 bar, the amount of NDT shall be suitable to assure weld quality.

Note: *If volumetric testing is applied, a minimum amount of 2% is recommended."*

Requirements for category 0 piping have been introduced in the Standard on a general basis. The requirement for volumetric NDT shall remain a recommendation. In some cases, no volumetric testing is needed where as in other cases the 2% may be insufficient.

Question from: Robert Jan van Hofwegen

Name

Company

Bronswerk Heat Transfer BV

Country

The Netherlands

Date

2017-09-27



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5			EN 13480-5:2012, 8.1.1.1

Question

Subject: Clarification of specification for water treatment plant

Actually we have a project in execution in Finland for industrial water treatment plant. Within our scope of work we have skids which include pipes in 216L, piping class I as per Table 4.1-1 of EN 13480.

We have EN 13480-5 difference of interpretation with the client on 8.1.1.1 and related NDT scope. We have performed 100 % VT on welds (external surface) and 5 % RT on welds as per Table 8.2-1. NDT results are compliant without defects.

Our concern is with scope of visual inspection, as per our understanding of 8.1.1.1, "C) Surface examination stipulated in Table 8.2-1 shall be performed on the outer surface;" visual inspection is limited to external visible welds. Our client vision is to have 100 % VT on piping internal welds by any available tools (endoscopie, mirrors, etc.)

Answer proposed by the author of the question

Could you confirm applicable scope of visual inspection for those piping spools?

Answer of the maintenance group

See also MHD answer to the question 5-001-2016.

Note that the service or contract may give requirements which are over and above the standard requirements.

We assume that for this project in your company a PMA is available for the 316L.

Question from: Name

Tomas GARCIA

Company

VEOLIA WATER TECHNOLOGIES

Country

France

Date

2017-10-23