



R1 30 04 01 Technical Directive

Pressure equipment decree handbook
(Legislation regarding pressurised containers)

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Table of contents:

1	INTRODUCTION	3
2	NEW CONSTRUCTION TO OPERATION STEP-BY-STEP PLAN FOR USERS.	4
3	NEW CONSTRUCTION	5
3.1	WHICH PRESSURE EQUIPMENT FALLS UNDER THE DECREE?	5
3.2	HOW CAN A MANUFACTURER PRODUCE PRESSURE EQUIPMENT/STRUCTURES THAT MEET THE REQUIREMENTS OF THE PED?	7
3.3	WHO IS CLASSIFIED AS A MANUFACTURER?	7
3.4	USER RESPONSIBILITY	9
3.5	WHEN TO REGISTER NEW PRESSURE EQUIPMENT WITH THE DTD.	9
4	INSPECTION BEFORE USE (KVI)	10
5	OPERATIONAL PHASE	11
5.1	REGISTRATION OF EXISTING PRESSURE EQUIPMENT BY THE DTD	11
5.2	PERIODIC INSPECTION	12
5.3	NOTIFICATION OF DEVIATIONS WITH REGARD TO PRESSURE EQUIPMENT	12
5.4	REPAIRS/MODIFICATION	12
6	APPENDIX 1 CLASSIFICATION OF PRESSURE EQUIPMENT ON THE BASIS OF DIRECTIVE 97/23/EC AND THE PRESSURE EQUIPMENT DECREE	14
6.1	TABLE 1. PRESSURE VESSELS FOR GROUP 1 GASES (DANGEROUS)	15
6.2	TABLE 2. PRESSURE VESSELS FOR GROUP 2 GASES (NON-DANGEROUS)	16
6.3	TABLE 3. PRESSURE VESSELS FOR GROUP 1 LIQUIDS (DANGEROUS)	17
6.4	TABLE 4. PRESSURE VESSELS FOR GROUP 2 LIQUIDS (NON-DANGEROUS)	18
6.5	TABLE 5. BOILERS	19
6.6	TABLE 6. PIPES FOR GROUP 1 GASES (DANGEROUS)	20
6.7	TABLE 7. PIPES FOR GROUP 2 GASES (NON-DANGEROUS)	21
6.8	TABLE 8. PIPES FOR GROUP 1 LIQUIDS (DANGEROUS)	22
6.9	TABLE 9. PIPES FOR GROUP 2 LIQUIDS (NON-DANGEROUS)	23
7	NOTES AND REFERENCES WITH THE TABLES	24
8	APPENDIX 2: OVERVIEW OF THE MODULES OF THE CONFORMITY ASSESSMENT PROCEDURES	25
9	APPENDIX 3: “TATA STEEL MANUFACTURER’S EC DECLARATION OF CONFORMITY”	26
10	APPENDIX 4: “TATA STEEL USER DECLARATION OF CONFORMITY”	27
11	APPENDIX 5: STEP-BY-STEP PLAN, TO BE USED BY TATA STEEL AS MANUFACTURER)* OF PRESSURE EQUIPMENT AND STRUCTURES	28
12	APPENDIX 6: DEFINITION OF RESPONSIBILITY IN RELATION TO (STATIONARY) PRESSURE EQUIPMENT	30
13	REFERENCES	31
	Commodities Act regulations for pressure equipment	31
	- The individual regulations concern:	31
	- Government Gazette 1999, no. 232 Pressure equipment decree regulations;	31
	- Government Gazette 2001, no. 224 Pressure equipment decree regulations Amendment I;	31
	- Government Gazette 2005, no. 097 Pressure equipment decree regulations Amendment II;	31
14	STATEMENT	33

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Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 1 of 33

1 Introduction

The decree and ministerial regulation regarding pressure equipment, which came into force in phases from 2002, covers legislation concerning pressurised containers. The decree has been incorporated in the Commodities Act.

The decree is composed of the following parts:

1. New construction.
This section is based on European legislation (the aim is to ensure consistency within the EU countries, Iceland, Norway and Liechtenstein, and to remove trade barriers between member states). For this purpose, the European Directive 97/23/EC concerning pressure equipment (Pressure Equipment Directive, hereinafter referred to as PED) has been incorporated in the pressure equipment decree (decree 311).
2. The owner is responsible for the use and assembly of the equipment.
This has been established by national legislation in the first amending decree (decree 339).
3. The operational phase.
This has been established in the second amending decree (decree 387), also derived from the national legislation. This decree came into force on 1 August 2005.

The Tata Steel Regulation, Quality Health Safety and Environment (QHSE) 5.22: Equipment under pressure, determines how this legislation is implemented at Tata Steel IJmuiden.

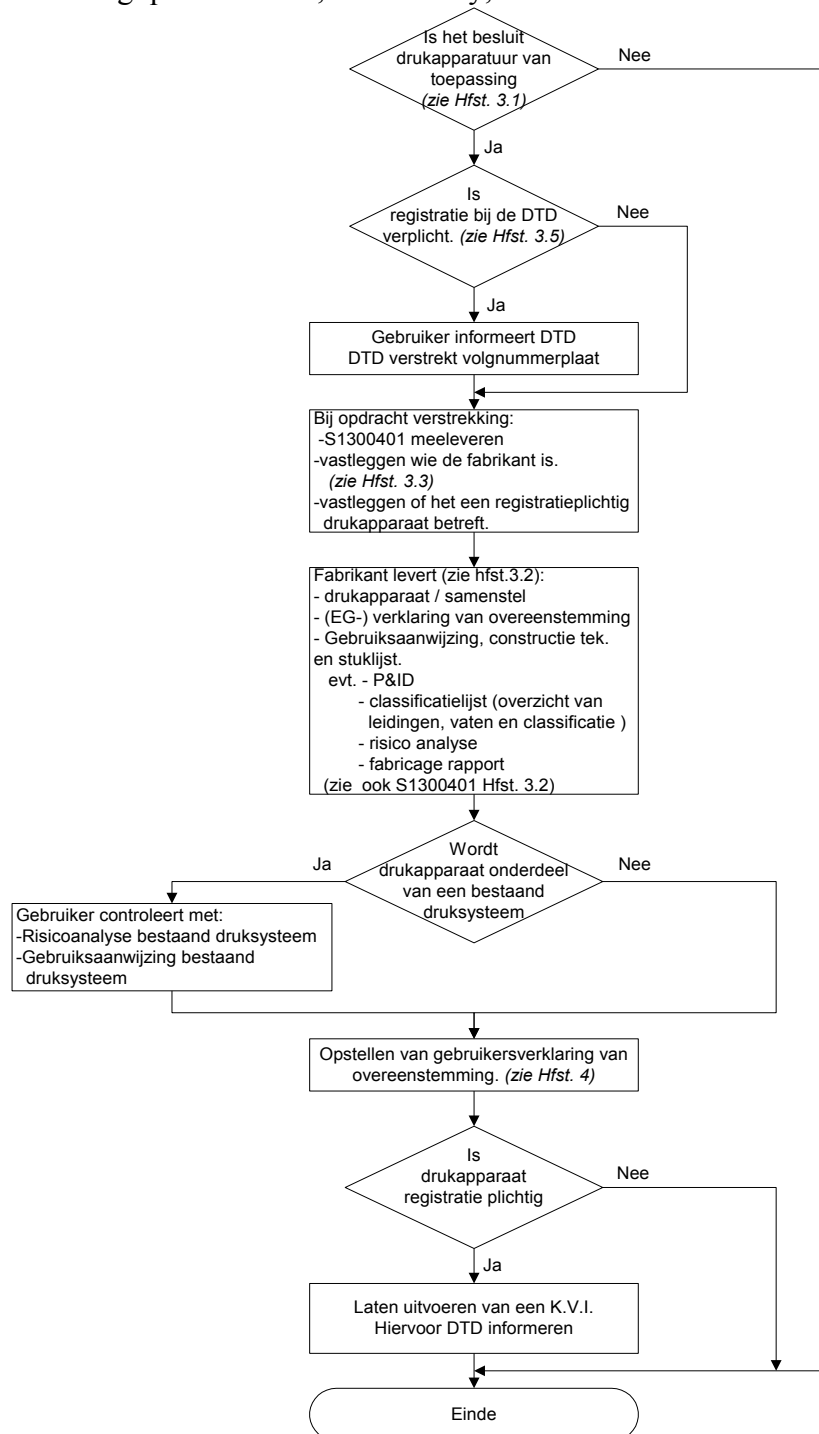
This internal Tata Steel directive is meant to serve as a pressure equipment user's handbook for ordering, engineering, producing, repairing/modifying and integrating it into an existing pressure system.

The regulation determines whether the decree is applicable and, if so, which actions the ordering party/engineer/operator/user must take.

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 3 of 33

2 New construction to operation step-by-step plan for users.

The user who orders pressure equipment or has it manufactured must ask him/herself the following questions and, if necessary, take action:



Note: The **design pressure** of the equipment is the determining factor for determining whether the equipment falls under the pressure equipment decree. The **design pressure** of the pressure system (in which the equipment is incorporated) is the determining factor in deciding whether or not a piece of equipment needs to be registered with the Supervisory Service for Pressurised Containers (DTD), or if it should undergo an Inspection Before Use (KVI).

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 4 of 33

3 New construction

The decree distinguishes between the following:

- Pressure equipment: pressure vessels, installation pipelines, safety appendages and pressurised appendages, as well as the elements attached to the pressurised parts, if applicable.
- Structures: various pieces of pressure equipment that have been assembled into an integrated and functional whole by a manufacturer.
- Pressure system: a system of various pieces of pressure equipment or structures that were assembled into an integrated and functional whole under the responsibility of the user at the user's site.

An installation pipe that includes various appendages is considered a single pressure device. In general, pressure equipment at Tata Steel will be part of an existing pressure system. A structure is normally manufactured in such a way that it can function and be placed on the market as a separate unit (skit mounted unit). This will almost never be the case at Tata Steel.

The Tata Steel Standard S1 30 04 01 states the requirements that a supplier must meet if hired by Tata Steel to supply pressure equipment or a structure composed of multiple pressurised containers, or if hired to modify or repair pressure equipment.

Before Tata Steel employees can have the pressure equipment repaired, modified or purchased, this standard must be attached to the application and sent to the supplier.

3.1 Which pressure equipment falls under the decree?

Depending on the type of pressure equipment and the medium, the pressure equipment decree distinguishes the following situations:

1. Vessel filled with: dangerous)*/non-dangerous gas or dangerous)*/non-dangerous liquid, table 1 to 4 respectively
2. Boilers, table 5
3. Pipe filled with: dangerous /non-dangerous gas or dangerous /non-dangerous liquid, table 6 to 9 respectively

For every situation, the applicable category (I to IV) in the PED is indicated in a table (see Appendix 1), depending on the product of volume x pressure)** (for a vessel) or diameter x pressure (for a pipe).

Pressure equipment that falls under category I or higher must meet the essential safety requirements stated in the PED. The authorised procedures for conformity assessment are indicated on the basis of the category classification (see 3.2).

)* Dangerous substances (group 1) are described as: Explosive, extremely flammable, highly flammable, flammable, very toxic, toxic and oxidising. The category of a substance can be determined with the aid of http://chemischestoffen.eu.tatasteel.com/WEP_template/Default.aspx, under the heading “zoek chemische stof” (find chemical substance). See also Appendix 1.

)** Design pressure

Pressure vessels with a simple form (only for: Air or N₂, manufactured as a series, design pressure ≤ 30 bar and product of pressure x volume < 10,000 bar l) may have been manufactured in accordance with directive 2009/105/EC (previously 87/404/EEC). In that case, the pressure vessel must meet the requirements set by the directive.

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 5 of 33

With respect to category classification, appendages such as valves, hoses, etc., must at least belong to the same category as the pipe that they are a part of.

The category can be determined by means of the diameter, the pressure and the medium.

The extractor safety provisions are classified in category IV and therefore fall under the decree.

With regard to sight glasses and manometers, the product of volume x pressure and the medium are the determining factors.

In the case of a structure and a pressure system incorporating a device belonging to cat. I to IV, the individual new pressure devices, as well as the integrated whole, must meet the requirements of the PED.

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 6 of 33

3.2 How can a manufacturer produce pressure equipment/structures that meet the requirements of the PED?

If the manufacturer is a department of Tata Steel, the step-by-step plan recorded in Appendix 5 must be followed. Normally, the manufacturer (as described in the decree) responsible for producing pressure equipment or a structure must perform the following tasks:

- Choosing a conformity procedure
Depending on the category classification of the pressure equipment (see Appendix 1), choose a conformity procedure (so-called module, Appendix 2). The chosen module determines the following for the manufacturer: the level of involvement of the Notified Body (NOBO) with regard to the design, the manufacture, the quality system and/or the final inspection. The pressure equipment with the highest danger category incorporated in the structure determines the danger category of the entire structure. The manufacturer must ensure that the separate pressure equipment complies with the PED, if required, and that the integration of the different pressure devices also complies with the PED (see also Appendix 5).
- Carry out risk analysis.
Lloyds Register - Stoomwezen has created a model and instruction manual that can be used to carry out a risk analysis for a pressurised container.
A manufacturer hired by the commissioning party to design and construct a specific pressurised container will find it difficult to anticipate the conditions under which the pressurised container will be used at the site. The user, however, is able to anticipate the operating conditions. In fact, the user needs to inform the manufacturer of the operating conditions in order to ensure that the user receives the best possible equipment for the job. The user is therefore advised to fill in the risk analysis form (which can be found at www.stoomwezen.nl under info - aanvragen (applications), insofar as it concerns the operating situation, and send it together with the commission. The manufacturer will complete the risk analysis form and keep it in his construction file. Manufacturers of pressurised containers produced as a series (air vessels, hydraulic accumulators, appendages) carry out the risk analysis without any knowledge of the final installation location and operating conditions. The manufacturer may set limits/preconditions in the operating instructions regarding the use of the equipment, which he is obligated to supply with the equipment.
- Design and manufacture
Designing/constructing (or having another party construct) the pressure equipment, structure or pressure system in such a way that the essential safety requirements of the directive are met (Annex I of the PED).
The pressure used for device calculations (calculation pressure) may always be higher than the design pressure.
- Drafting of the “EC (manufacturer’s) declaration of conformity”.
- Marketing and labelling (permissible operating parameters statement).
- Providing operating instructions (manual).

3.3 Who is classified as a manufacturer?

It is important to know in advance who is the manufacturer, in the sense of the pressure equipment decree.

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 7 of 33

The manufacturer is responsible for ensuring that the pressure equipment or structure meets the requirements of the PED. The (EC) declaration of conformity is the written proof of this and must be issued before the equipment is used.

The following situations can be distinguished:

1. **A stand-alone pressure device (commodity).**

A third party handles the entire design, manufacture and supply process

For example: An air vessel placed on the market. The manufacturer is usually the party responsible for constructing the vessel.

If a certain product of volume and pressure (Appendix 1) is exceeded, the directive 97/23/EC or 87/404/EEC must be complied with. The manufacturer must supply the pressurised container with, among other things, CE markings and an “EC declaration of conformity”.

2. **A complete structure composed of pressure equipment as a commodity.** (This can also be the assembly of a structure composed of equipment by a third party at the Tata Steel IJmuiden site). The manufacturer (a third party) handles the entire process of designing, assembling/manufacturing and supplying a structure composed of multiple pressurised containers that fall under the directive. The manufacturer will be the one who constructs the structure.

In addition to the EC declarations for the pressurised containers, the manufacturer will also have to supply an “EC declaration of conformity” for the structure on delivery and mark it with a CE label.

3. **Construction of pressure equipment according to the recommendations of Tata Steel (user) for the Tata Steel IJmuiden site.** For example:

- a. A steam main built at the request of the user, usually as an extension of an existing network. In this case, the actual builder does not always have to be the manufacturer (as defined in the PED). The following parties play a role: The department responsible for main engineering (such as PTC), the office responsible for detail engineering (drawings and calculations), the builder, the firm responsible for constructing the main. The manufacturer is usually Tata Steel (PTC department). The basic principle here is the expansion of an existing installation at Tata Steel’s own site, for which Tata Steel itself is responsible.

If a certain product of volume x pressure is exceeded, the main must comply with the directive in accordance with table 7 (Appendix 1). The manufacturer (which would be PTC in a case like this one) will then issue the (EC) declaration of conformity. Marking with CE labels is not relevant (CE labels are only important if the equipment is sold at a later date).

- b. A special vessel constructed to the specifications of the user. The above-mentioned parties can also play a role in this. In that case, the manufacturer (as defined in the PED) is usually also the builder. The basic principle here is the construction of a separate device by the builder in the factory.

If a certain product of volume and pressure (Appendix 1) is exceeded, the directive 97/23/EC must be complied with. The pressurised container must be supplied with, among other things, a CE label (which is important if the equipment is sold at a later date) and an “EC declaration of conformity”.

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 8 of 33

3.4 User responsibility

The owner/user is responsible for any pressure system under his control.

When constructing an extension (new construction), or modifying the design parameters beyond the original design or in case of a changed assembly, the user must check the modified pressure system (the integration) before use, and fill in and sign the “Tata Steel user declaration of conformity” (in accordance with Appendix 4).

The user checks the following:

- The presence of the required documents)*. (Especially: (EC) declarations of conformity (also for appendages) and operating instructions)
- The safe assembly and operability
- Accessibility
- Identification and markings (CE labels)
- The operating instructions for possible preconditions regarding the use and assembly.
- The pressure system, to ensure that the permissible limits have not been exceeded.

)* See also Standard S1 30 04 01, chapter 3, for an overview of the required documentation

3.5 When to register new pressure equipment with the DTD.

Appendix 1 can be used to determine if new pressure equipment assembled at Tata Steel IJmuiden should be registered with the DTD. For equipment incorporated in an existing pressure system, the design pressure of the pressure system (see Tata Steel Standard S1 47 02 01) is the determining factor and not the design pressure of the separate device.

Pressure equipment with a registration obligation must be provided with a serial number plate issued by the DTD. A piping system (with equal pressure, medium and temperature) composed of pipes and appendages is considered a single pressure device in this case.

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 9 of 33

4 Inspection Before Use (KVI)

After the assembly and prior to use, the user performs an inspection. See also paragraph 3.4. The AKI/DTD performs a KVI inspection of the pressure equipment and structures with a registration obligation belonging to the higher danger categories (see the tables in Appendix 1) after assembly, but prior to use.

The user/manufacture must inform the DTD in advance.

The following must be submitted:

- The “Tata Steel user declaration of conformity”,
- “EC (manufacturer’s) declarations of conformity”. Also for any incorporated pressure equipment supplied (vessels, appendages, etc.).
- The operating instructions of the assembled pressure equipment.
- In addition, the proof of protection against the permissible limits being exceeded (for example, certificates of safety valves) must be submitted.

After the AKI performs a KVI and obtains positive results, it issues a “declaration of operability”.

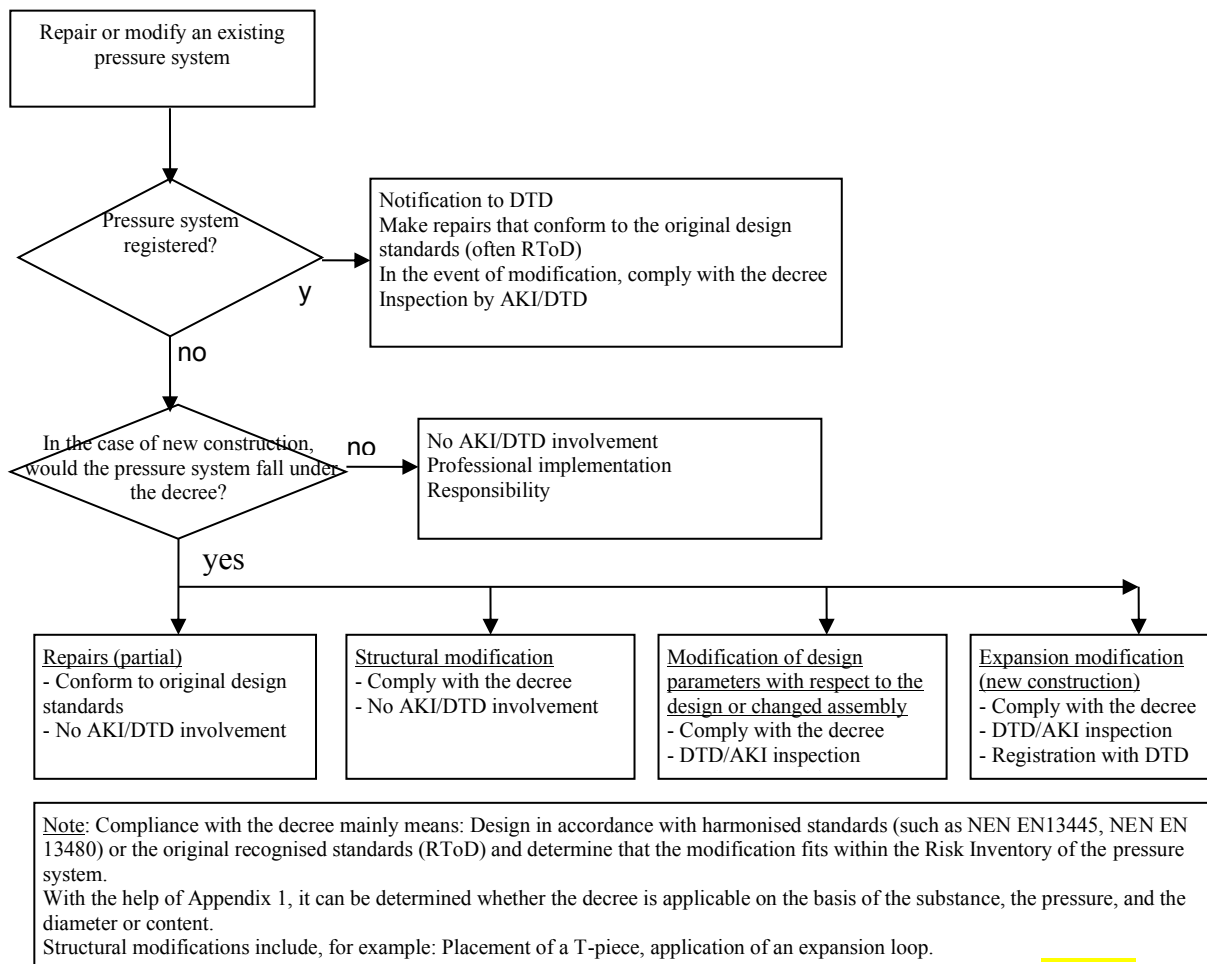
Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 10 of 33

5 Operational phase

5.1 Registration of existing pressure equipment by the DTD

Paragraph 3.5 states which new pressure devices are registered by the DTD. The DTD will also continue to monitor the existing pressure equipment. This includes, among other things, pressure equipment that does not fall under the pressure equipment decree (such as oxygas pipes, registered on the basis of provisions incorporated in the Environmental Management Act). In general, certain pressure equipment may be included in the DTD database now, but might not be included any more in the future in case of new construction (for example: small air vessels). The reverse situation might also occur (for example: pressurised containers filled with liquid). Existing pressure equipment that did not have a registration obligation in accordance with the legislation applicable at the time will not have to be registered under the pressure equipment decree. However, the new legislation will become applicable in the event of modification (changed assembly, modified design parameters) of non-registered pressure equipment, or expansion (new branch) of a non-registered pressure system, and the equipment may then need to be registered with the DTD.

With the use of the diagram below, it can be determined whether registration and involvement of



the AKI/DTD are required.

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 11 of 33

5.2 Periodic inspection

The 2nd amending decree indicates that pressurised containers in the higher danger categories must be periodically inspected by an AKI/DTD.

The user will be informed about the pressure equipment under his control in the usual way by means of the well-known “equipment under pressure database lists”.

For the sake of clarity:

- The lists determine which pressure devices must be inspected and when this must take place.
- The details of the inspection are determined by the schedule.

As determined in the QHSE, the inspection will be carried out by Lloyds Register - Stoomwezen / the DTD.

The inspection results will be recorded on the notes sheet. The user will receive a copy of this sheet after the inspection.

5.3 Notification of deviations with regard to pressure equipment

The DTD must be notified in writing of any flaws in registered pressure equipment, and of its relocation or use under different process conditions.

5.4 Repairs/modification

In the event of repairs/modification, the user needs to determine in advance whether the registration obligation applies to the pressurised container. The overview below indicates the repair and modification process for pressurised containers with a registration obligation and those without one:

Modifications to pressure systems involving expansion (for example: a new pipe that will branch off from an existing network) are considered new construction. See chapter 3 for more information.

Efficacy Device type	Repairs or modification
Pressurised container with a registration obligation (QHSE 5.22 chapter 2 group A & B1 & C)	<p>Inform DTD of repairs/modification (in advance)</p> <p>The user/manufacture determines and records whether the modification fits within the existing Risk Inventory (RI). If necessary, he will adjust the RI and/or the operating instructions.</p> <p>The user/manufacture submits the rep/mod proposal)¹ to DTD/AKI.</p> <p>AKI/DTD evaluates the rep/mod.</p> <p>AKI/DTD or the manufacturer draws up an inspection plan.</p> <p>AKI/DTD continues the rep/mod in accordance with the inspection plan.</p> <p>AKI/DTD records the findings on the notes sheet and informs the user.</p> <p>If a modification has an impact on the method of use, the equipment or the assembly, the manufacturer will draw up the “EC declaration of conformity” (see Appendix 3) and the user will draw up the “Tata Steel user declaration of conformity” (see Appendix 4). This is followed by an inspection by the AKI.</p>

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 12 of 33

<p>Pressurised container without a registration obligation (QHSE 5.22 chapter 2 group B2)</p>	<p>The user has the repairs/modification carried out and recorded, taking into account the original design standards (often RToD) or the harmonised standards. Standard S1 45 04 01 (implementation and inspection of steel welding work) is in force. Welding work on the pressure shroud falls under welding category 2 at minimum.</p> <p>If the modification (as a result of, for example, other process conditions, increased volume) leads to the pressure equipment falling under the registration obligation (for limits, see Appendix 1), the above-mentioned steps must be taken. In addition, the equipment must be registered with the DTD.</p>
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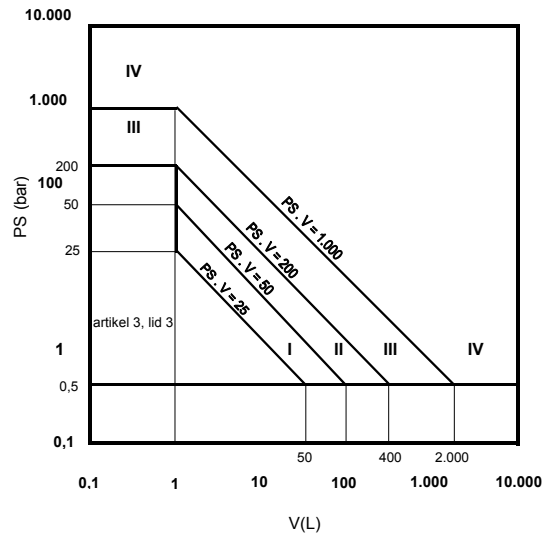
)1 The proposal must conform to the essential safety requirements as stated in Annex I of the PED. This mainly means that the proposal must be based on the original design standards (often RToD) or the harmonised standards (such as NEN-EN 13445, 13480).

<p>Tata Steel IJmuiden Projects & Technical Consultancy</p>	<p>R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)</p>
<p>Tata Steel Technical Directive</p>	<p>Page 13 of 33</p>

6 Appendix 1 Classification of pressure equipment on the basis of directive 97/23/EC and the Pressure equipment decree

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 14 of 33

6.1 Table 1. Pressure vessels for group 1 gases (dangerous)



Tabel 1A/B. Verplichtingen geldende voor drukvaten met gassen uit groep 1 (gevaarlijk) volgens richtlijn 97/23EG en het besluit drukapparatuur.													
categorie	Nieuwbouw						1A (zeer gevaarlijke gassen)*				1B (gevaarlijke gassen)**		
	Wettelijk verplicht			Tata eis			Ingebruikname		Gebruiksfasen		Ingebruikname		Gebruiksfasen
	CE-merk op toestel + identificatie van Notified Body (NoBo)	Identificatie van fabrikant, bouwjaar en type op toestel	Gebruiksaanwijzing	(EG) verklaring van overeenstemming uitgegeven door fabrikant	Tekening & stuklijst & verklaring geschiktheid	Fabricage rapport (TCD)	Opname in bestand DTD + keuring voor ingebruikname AKI / DTD	Gebruikersverklaring van overeenstemming op te maken voor eerste ingebruikname	Periodiek onderzoek vereist AKI / DTD	Reparatie en/of modificatie via AKI / DTD	Opname in bestand DTD + keuring voor ingebruikname AKI / DTD	Gebruikersverklaring van overeenstemming op te maken voor eerste ingebruikname	Periodiek onderzoek vereist AKI / DTD
3.3	)1	x	x										
I	x)2	x	x	x	x	X)***	x	x	x	x		x	
II	x)3	x	x	x	x	X)***	x	x	x	x		x	
III	x)3	x	x	x	x	X)***	x	x	x	x	x	x	x
IV	x)3	x	x	x	x	x	x	x	x	x	x	x	x

)* Very dangerous substance (M.R. art. 2) substances in group 1, insofar as they are very toxic or explosive.

)** Dangerous substance (M.R. art. 2) substances in group 1, insofar as they are toxic, oxidising, flammable,

Highly flammable or extremely flammable, such as oxygen, butane, propane, natural gas, ammonia.

)*** Manufacture report required if equipment classified in table 1A

Note:

Exceptions to the table with regard to inspection before use (KVI):

- Stationary above-ground propane and butane storage reservoirs (leased) with gas consumption of up to 5,000 L.

- Stationary above-ground propane reservoirs (leased) with gas consumption of up to 8,000 L at a construction site.

- Storage tanks with oxygen and nitrous oxide (leased) up to 25,000 L.

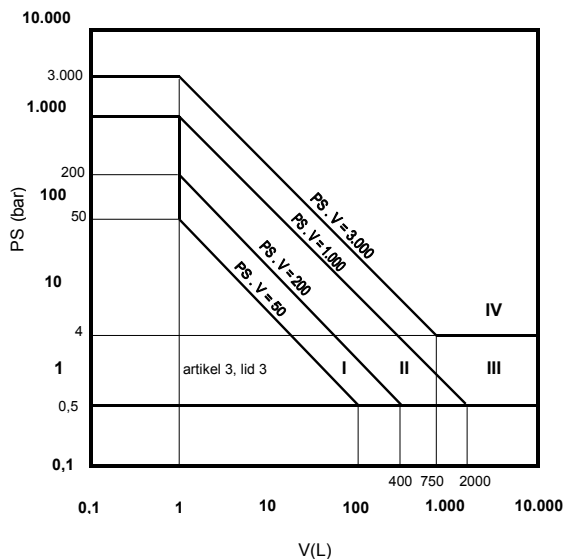
This concerns pressurised containers, insofar as they are present at Tata Steel IJmuiden, that are leased (usually via AGA or Hoek Loos).

- Vessels containing a dangerous substance, namely category I or II unstable gases (such as acetylene), must be considered "very dangerous". In other words, there is also a supervision and registration obligation for categories I and II.

Newly constructed vessels with unstable gases belonging to category I or II must be classified in category III. For additional notes and references, see chapter 7.

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 15 of 33

6.2 Table 2. Pressure vessels for group 2 gases (not dangerous)



Tabel 2A/B. Verplichtingen geldende voor drukvaten met gassen uit groep 2 (ongevaarlijk) volgens richtlijn 97/23EG en het besluit drukapparatuur en toestellen in serie vervaardigd van een eenvoudige vorm, bestemd voor N2 of lucht, vervaardigd conform richtlijn 2009/105/EG

categorie	Nieuwbouw						2A (milieugevaarlijk vlg. BRZO) ⁴				2B (overig niet gevaarlijke gassen) ⁵			
	Wettelijk verplicht			Tata eis			Ingebruikname		Gebruiksfasen		Ingebruikname		Gebruiksfasen	
	CE-merk op toestel + identificatie van Notified Body (NoBo)	Identificatie van fabrikant, bouwjaar en type op toestel	Gebruiksaanwijzing	(EG) verklaring van overeenstemming uitgegeven door fabrikant	Tekening & stuklijst & verklaring geschiktheid	Fabricage rapport. (TCD)	Opname in bestand DTD + keuring voor ingebruikname AKI / DTD	Gebruikersverklaring van overeenstemming op te maken voor eerste ingebruikname	Periodiek onderzoek vereist AKI / DTD	Reparatie en/of modificatie via AKI / DTD	Opname in bestand DTD + keuring voor ingebruikname AKI / DTD	Gebruikersverklaring van overeenstemming op te maken voor eerste ingebruikname	Periodiek onderzoek vereist AKI / DTD	Reparatie en/of modificatie via AKI / DTD
3.3	)1	x	x											
I	x)2	x	x	x	x			x					x	
II	x)3	x	x	x	x		x	x	x	x		x		
III	x)3	x	x	x	x		x	x	x	x	x	x	x	x
IV	x)3	x	x	x	x	x	x	x	x	x	x	x	x	x

Note:

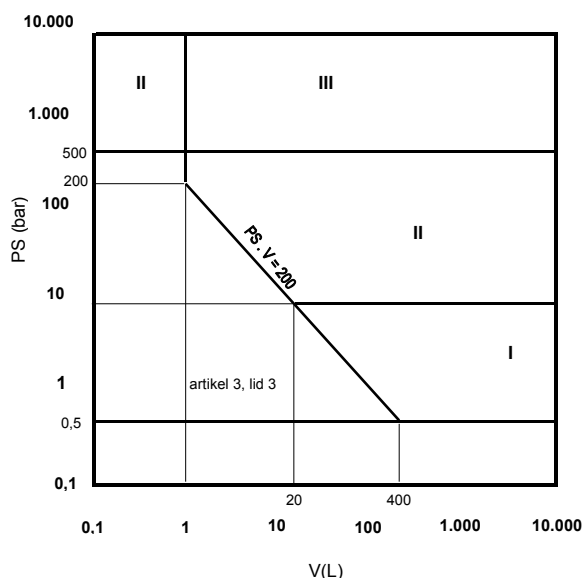
Exception to the table with regard to inspection before use by AKI:

- Pressure vessels filled with air up to 2,500 L or 30 bar.
- Storage reservoirs (leased) with nitrogen, argon, helium and carbon dioxide up to 40,000 L.
- Fire extinguishers and respirators are classified in category III at minimum, and are registered and maintained by the fire department. The Supervisory Service for Pressurised Containers (DTD) is not involved.

For additional notes and references, see chapter 7.

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 16 of 33

6.3 Table 3. Pressure vessels for group 1 liquids (dangerous)



Tabel 3A/B. Verplichtingen geldende voor drukvaten met vloeistoffen uit groep 1 (gevaarlijk) volgens richtlijn 97/23EG en het besluit drukapparatuur.														
categorie	Nieuwbouw						3A (zeer gevaarlijke vloeistoffen)*				3B (gevaarlijke vloeistoffen)**			
	Wettelijk verplicht			Tata eis			Ingebruikname		Gebruiksfase		Ingebruikname		Gebruiksfase	
	CE-merk op toestel + identificatie van Notified Body (NoBo)	Identificatie van fabrikant, bouwjaar en type op toestel	Gebruiksaanwijzing	(EG) verklaring van overeenstemming uitgegeven door fabrikant	Tekening & stuklijst & verklaring geschiktheid	Fabricage rapport (TCD)	Opname in bestand DTD + keuring voor ingebruikname AKI / DTD	Gebruikersverklaring van overeenstemming op te maken voor eerste ingebruikname	Periodiek onderzoek vereist AKI / DTD	Reparatie en/of modificatie via AKI / DTD	Opname in bestand DTD + keuring voor ingebruikname AKI / DTD	Gebruikersverklaring van overeenstemming op te maken voor eerste ingebruikname	Periodiek onderzoek vereist AKI / DTD	Reparatie en/of modificatie via AKI / DTD
	3.3	)1	x	x										
I	x)2	x	x	x	x	x)****		x	x	x	x			
II	x)3	x	x	x	x	x)****	x)***	x	x)***	x)***	x)***	x	x)***	
III	x)3	x	x	x	x	x	x	x	x	x	x	x	x	

)* Very dangerous substance (M.R. art. 2) substances in group 1, insofar as they are very toxic or explosive.

)** Dangerous substance (M.R. art. 2) substances in group 1, insofar as they are toxic, oxidising, flammable, highly flammable or extremely flammable (BTX and petrol, for example).

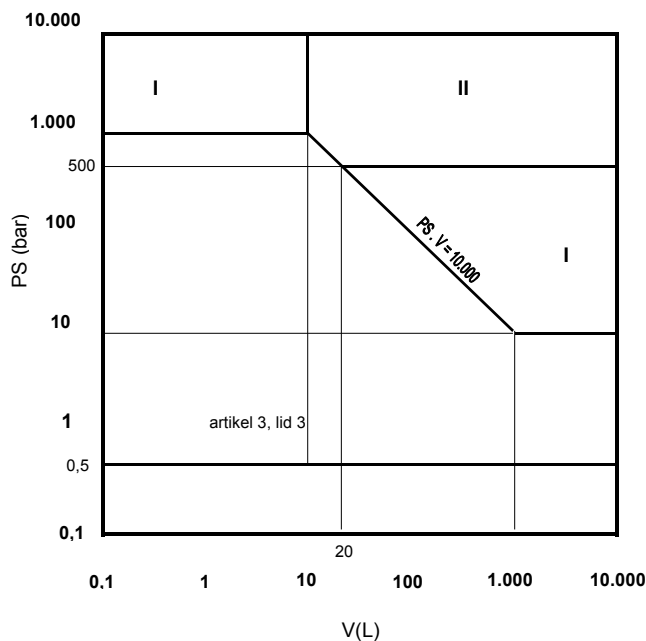
)*** If volume > 1 L.

)*** Manufacture report required if equipment classified in table 3A.

For notes and references, see chapter 7

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 17 of 33

6.4 Table 4. Pressure vessels for group 2 liquids (not dangerous)



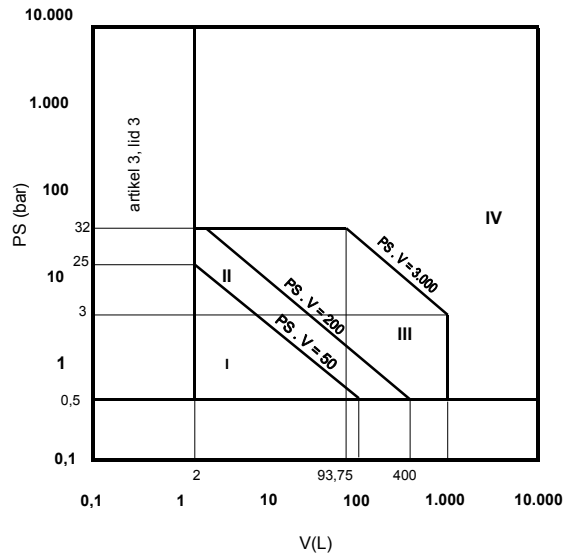
Tabel 4A/B. Verplichtingen geldende voor drukvaten met vloeistoffen uit groep 2 (ongevaarlijk) volgens richtlijn 97/23EG en het besluit drukapparatuur.															
categorïe	Nieuwbouw							4A (milieugevaarlijk vigs. BRZO)4				4B (overig niet gevaarlijke vloeistoffen)			
	Wettelijk verplicht				Tata eis			Ingebruikname		Gebruiksfase		Ingebruikname		Gebruiksfase	
	CE-merk op toestel + identificatie van Notified Body (NoBo)	Identificatie van fabrikant, bouwjaar en type op toestel	Gebruiksaanwijzing	(EG) verklaring van overeenstemming uitgegeven door fabrikant	Tekening & stuklijst & verklaring geschiktheid	Fabricage rapport (TCD)	Opname in bestand DTD + keuring voor ingebruikname AKI / DTD	Gebruikersverklaring van overeenstemming op te maken voor eerste ingebruikname	Periodiek onderzoek vereist AKI / DTD	Reparatie en/of modificatie via AKI / DTD	Opname in bestand DTD + keuring voor ingebruikname AKI / DTD	Gebruikersverklaring van overeenstemming op te maken voor eerste ingebruikname	Periodiek onderzoek vereist AKI / DTD	Reparatie en/of modificatie via AKI / DTD	
3.3	)1	x	x											
I	x)2	x	x	x	x		x)*	x	x)*	x)*			x		
II	x)3	x	x	x	x	x	x	x	x	x	x	x	x	x	

)* If volume > 10 L.

For notes and references, see chapter 7

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 18 of 33

6.5 Table 5. Boilers

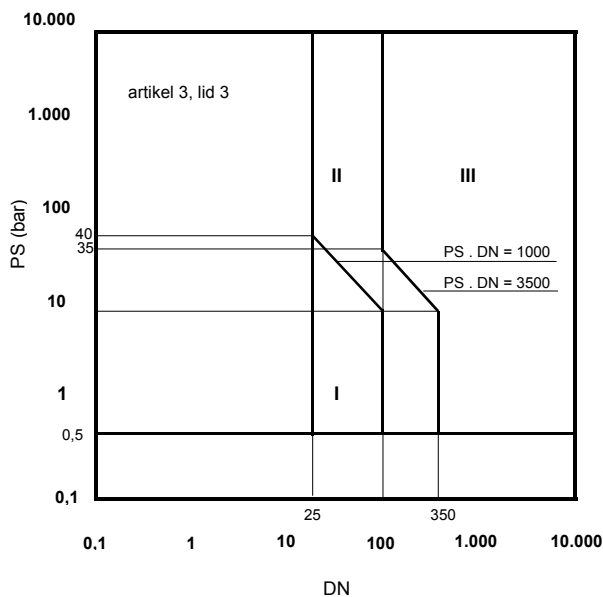


Tabel 5. Verplichtingen geldende voor ketels volgens richtlijn 97/23EG en het besluit drukapparatuur.										
categorie	Nieuwbouw						Ingebruikname	Gebruiksfasen		
	Wettelijk verplicht			Tata eis						
	CE-merk op toestel + identificatie van Notified Body (NoBo)	Identificatie van fabrikant, bouwjaar en type op toestel	Gebruiksaanwijzing	(EG) verklaring van overeenstemming uitgegeven door fabrikant	Tekening & stuklijst & verklaring geschiktheid	Fabricage rapport (TCD)	Opname in bestand DTD + keuring voor ingebruikname AKI / DTD	Gebruikersverklaring van overeenstemming op te maken voor eerste ingebruikname	Periodiek onderzoek vereist AKI / DTD	Reparatie en/of modificatie via AKI / DTD
3.3	)1	x	x							
I	x)2	x	x	x	x			x		
II	x)3	x	x	x	x			x		
III	x)3	x	x	x	x		x	x	x	x
IV	x)3	x	x	x	x	x	x	x	x	x

For notes and references, see chapter 7

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 19 of 33

6.6 Table 6. Pipes for group 1 gases (dangerous)



Tabel 6A/B. Verplichtingen geldende voor leidingen met gassen uit groep 1 (gevaarlijk) volgens richtlijn 97/23EG en het besluit drukapparatuur.													
categorie	Nieuwbouw						6A (zeer gevaarlijke gassen)*				6B (gevaarlijke gassen)**		
	Wettelijk verplicht			Tata eis			Ingebruikname		Gebruiksfasen		Ingebruikname		Gebruiksfasen
	CE-merk op toestel + identificatie van Notified Body (NoBo)	Identificatie van fabrikant op toestel	Gebruiksaanwijzing	(EG) verklaring van overeenstemming uitgegeven door fabrikant	Tekening & stuklijst & verklaring geschiktheid	Fabricage rapport	Opname in bestand DTD + keuring voor ingebruikname AKI / DTD	Gebruikersverklaring van overeenstemming op te maken voor eerste ingebruikname	Periodiek onderzoek vereist AKI / DTD	Reparatie en/of modificatie via AKI / DTD	Opname in bestand DTD + keuring voor ingebruikname AKI / DTD	Gebruikersverklaring van overeenstemming op te maken voor eerste ingebruikname	Periodiek onderzoek vereist AKI / DTD
3.3	)1	x	x										
I	x)2	x	x	x	x	x)****	x	x	x	x		x	
II	x)3	x	x	x	x	x	x	x	x	x	x)***	x	x)***
III	x)3	x	x	x	x	x	x	x	x	x	x	x	x

)* Very dangerous substance (M.R. art. 2) substances in group 1, insofar as they are very toxic or explosive.

)** Dangerous substance (M.R. art. 2) substances in group 1, insofar as they are toxic, oxidising, flammable, highly flammable or extremely flammable, such as oxygen, butane, propane, natural gas, ammonia.

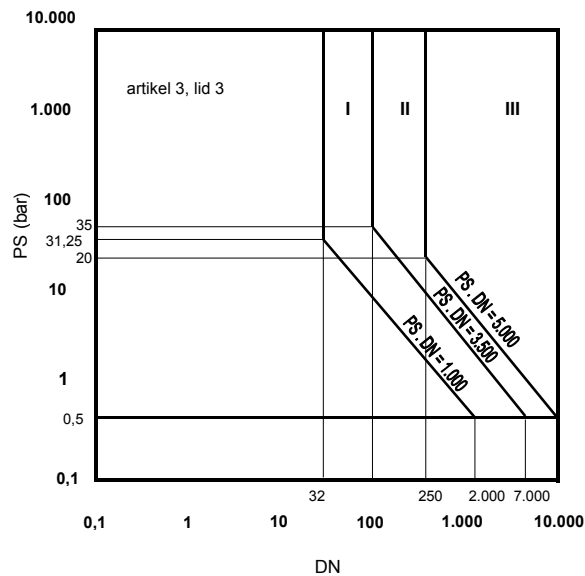
)*** If diameter > 65 mm.

)*** Manufacture report required if equipment classified in table 6A.

For notes and references, see chapter 7.

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 20 of 33

6.7 Table 7. Pipes for group 2 gases (not dangerous)



Tabel 7A/B. Verplichtingen geldende voor leidingen met gasen uit groep 2 (ongevaarlijk) volgens richtlijn 97/23EG en het besluit drukapparatuur.

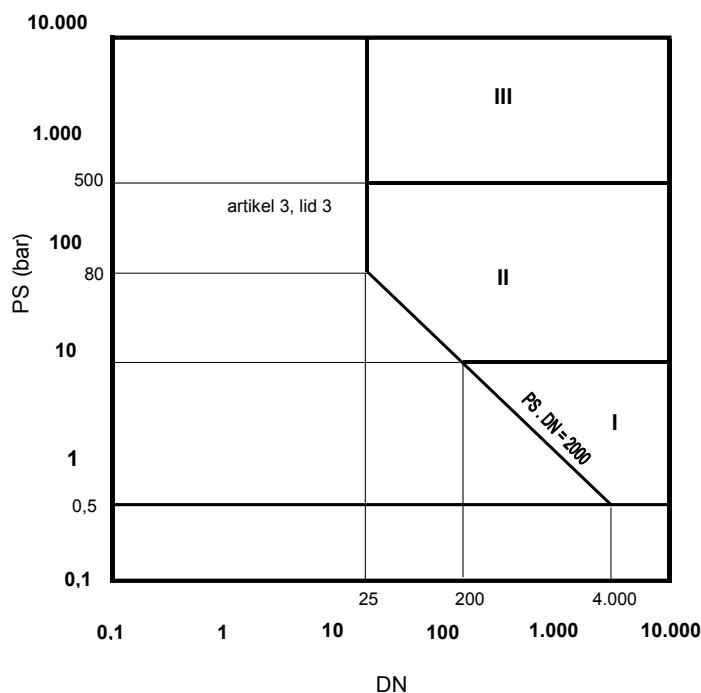
categorie	Nieuwbouw						7A. (milieugevaarlijk vlg. BRZO) ⁴				7B. (overige niet gevaarlijke gevaarlijke gasen) ⁵			
	Wettelijk verplicht			Tata eis			Ingebruikname		Gebruiksfasen		Ingebruikname		Gebruiksfasen	
	CE-merk op toestel + identificatie van Notified Body (NoBo)	Identificatie van fabrikant, bouwjaar en type op toestel	Gebruiksaanwijzing	(EG) verklaring van overeenstemming uitgegeven door fabrikant	Tekening & stuklijst & verklaring geschiktheid	Fabricage rapport (TCD)	Opname in bestand DTD + keuring voor ingebruikname AKI / DTD	Gebruikersverklaring van overeenstemming op te maken voor eerste ingebruikname	Periodiek onderzoek vereist AKI / DTD	Reparatie en/of modificatie via AKI / DTD	Opname in bestand DTD + keuring voor ingebruikname AKI / DTD	Gebruikersverklaring van overeenstemming op te maken voor eerste ingebruikname	Periodiek onderzoek vereist AKI / DTD	Reparatie en/of modificatie via AKI / DTD
	3.3	1	x	x										
I	x	2	x	x	x			x					x	
II	x	3	x	x	x	x	x	x	x	x		x	x	
III	x	3	x	x	x	x	x	x	x	x	x	x	x	

As an exception, all installation pipes that contain substances (such as steam) with a temperature higher than 350°C and that, based on table 7, would fall under category II, will instead be classified in category III.

For additional notes and references, see chapter 7.

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 21 of 33

6.8 Table 8. Pipes for group 1 liquids (dangerous)



Tabel 8A/B. Verplichtingen geldende voor leidingen met vloeistoffen uit groep 1 (gevaarlijk) volgens richtlijn 97/23EG en het besluit drukapparatuur.														
categorie	Nieuwbouw						8A. (zeer gevaarlijke vloeistoffen)*				8B. (gevaarlijke vloeistoffen)**			
	Wettelijk verplicht			Tata eis			Ingebruikname		Gebruiksfasen		Ingebruikname		Gebruiksfasen	
	CE-merk op toestel + identificatie van Notified Body (NoBo)	Identificatie van fabrikant, bouwjaar en type op toestel	Gebruiksaanwijzing	(EG) verklaring van overeenstemming uitgegeven door fabrikant	Tekening & stuklijst & verklaring geschiktheid	Fabricage rapport (TCD)	Opname in bestand DTD + keuring voor ingebruikname AKI / DTD	Gebruikersverklaring van overeenstemming op te maken voor eerste ingebruikname	Periodiek onderzoek vereist AKI / DTD	Reparatie en/of modificatie via AKI / DTD	Opname in bestand DTD + keuring voor ingebruikname + keuring voor ingebruikname AKI / DTD	Gebruikersverklaring van overeenstemming op te maken voor eerste ingebruikname	Periodiek onderzoek vereist AKI / DTD	Reparatie en/of modificatie via AKI / DTD
3.3	)1	x	x											
I	x)2	x	x	x	x	x)****	x	x	x	x	x)***	x	x	x
II	x)3	x	x	x	x	x	x	x	x	x	x)***	x	x)***	x)***
III	x)3	x	x	x	x	x	x	x	x	x	x)***	x	x)***	x)***

)* Very dangerous substance (M.R. art. 2) substances in group 1, insofar as they are very toxic or explosive.

)** Dangerous substance (M.R. art. 2) substances in group 1, insofar as they are toxic, oxidising, flammable, highly flammable or extremely flammable (such as BTX and petrol).

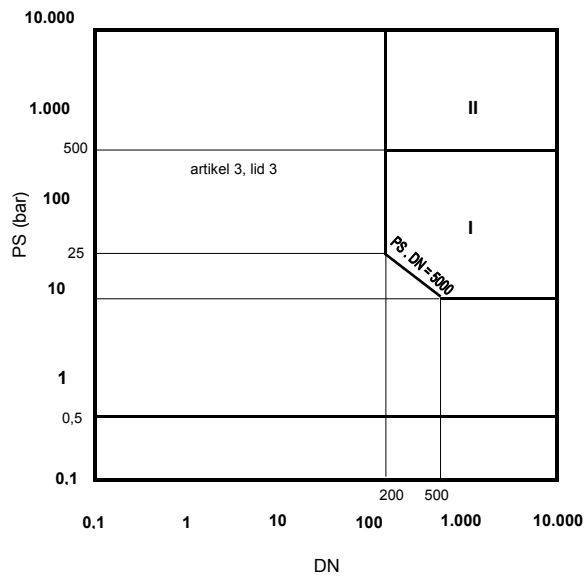
)*** If diameter > 65 mm.

)*** Manufacture report required if equipment classified in table 8A.

For notes and references, see chapter 7

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 22 of 33

6.9 Table 9. Pipes for group 2 liquids (not dangerous)



Tabel 9A/B. Verplichtingen geldende voor leidingen met vloeistoffen uit groep 2 (ongevaarlijk) volgens richtlijn 97/23EG en het besluit drukapparatuur.

categorie	Nieuwbouw						9A. (milieugevaarlijk vigs. BRZO)5				9B. (overige niet gevaarlijke vloeistoffen)			
	Wettelijk verplicht			Tata eis			Ingebruikname		Gebruiksfasen		Ingebruikname		Gebruiksfasen	
	CE-merk op toestel + identificatie van Notified Body (NoBo)	Identificatie van fabrikant, bouwjaar en type op toestel	Gebruiksaanwijzing	(EG) verklaring van overeenstemming uitgegeven door fabrikant	Tekening & stuklijst & verklaring geschiktheid	Fabricage rapport (TCCD)	Opname in bestand DTD + keuring voor ingebruikname AKI / DTD	Gebruikersverklaring van overeenstemming op te maken voor eerste ingebruikname	Periodiek onderzoek vereist AKI / DTD	Reparatie en/of modificatie via AKI / DTD	Opname in bestand DTD + keuring voor ingebruikname + keuring voor ingebruikname AKI / DTD	Gebruikersverklaring van overeenstemming op te maken voor eerste ingebruikname	Periodiek onderzoek vereist AKI / DTD	Reparatie en/of modificatie via AKI / DTD
3.3	)1	x	x											
I	x)2	x	x	x	x		x	x	x	x			x	
II	x)3	x	x	x	x	x	x	x	x	x	x	x	x	x

For notes and references, see chapter 7.

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 23 of 33

7 Notes and references with the tables

In the tables, an “x” indicates what is obligatory.

The limit values for pressure, volume and diameter provided in the tables are a true-to-scale copy of the graphs incorporated in Annex II of directive 97/23/EC.

The tables apply to the B1 and B2 groups named in Tata Steel QHSE (5.22: Equipment under pressure) chapter 2.

)1 Equipment must be designed and built in accordance with the regulations for skilled craftsmanship (art.3 paragraph 3) applicable in the member state. This equipment is not allowed to have a CE mark.

)2 On equipment manufactured according to module A, the CE mark may not be accompanied by an identification mark of the NOBO. This is because module A does not require NOBO supervision.

)3 Pressure equipment made under the responsibility of the user for his own use does not need to have a CE mark. If the pressure equipment is sold at a later date, it would be sensible to apply a CE mark.

When pressure equipment is assembled under the responsibility of the user at the company site, the pressure system is not marked with a CE label.

)4 Environmentally dangerous according to BRZO, Appendix 1, part 2, column 1 under 9 and 10. To allow one to determine if a substance belongs to this category, the referenced text has been reproduced below.

Environmentally dangerous substances in combination with the warning:

- a. R50 (very toxic to organisms living in the water), (e.g. formaldehyde).
- b. R51 (toxic to organisms living in the water) and R53 (can have adverse effects on the aquatic environment in the long term)

Substances and preparations not classified in one of the above-mentioned categories in combination with the following warnings:

- a. R14 (contact with water causes a severe reaction) (including R14/15)
- b. R29 (produces toxic gas on contact with water)

)5 Other, non-dangerous , substances, such as steam, nitrogen, air, argon, helium and carbon dioxide.

Other comments:

- The operating instructions are required by law to be written in Dutch (Decree 311 art. 29).
- “PS” is the design pressure. The design pressure of the pressure system applies to the Inspection Before Use (KVI) and the DTD registration (see also chapter 3.5).

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 24 of 33

8 Appendix 2: Overview of the modules of the conformity assessment procedures

(see directive 97/23/EC art 10 paragraph 3 and Annex III for more information)

Category I	Category II	Category III	Category IV
Module	Modules	Modules	Modules
A	A1	B1 + D	B + D
	D1	B1 + F	B + F
	E1	B + E	G
		B + C1	H1
		H	

Module	Design	manufacture
A	Construction file	Internal production check
A1	Construction file	Internal production check with final inspection by a NOBO
B	Type inspection of the product by NOBO	
B1	Type inspection of the design by NOBO	
C1		Final inspection by NOBO
D		Certified quality system)* for manufacture and final inspection
D1	Construction file	Certified quality system for manufacture and final inspection
E		Certified quality system for final inspection
E1	Construction file	Certified quality system for final inspection
F		Product check by NOBO
G	Assessment by NOBO	Manufacture check and final inspection by NOBO
H	Certified quality system for design	Manufacture and final inspection
H1	Certified quality system for the design (with an assessment by NOBO) and	Manufacture and final inspection (with the final inspection by the NOBO)

)* Quality system tested by NOBO

If Tata Steel is the manufacturer (as defined by the PED), we will mostly use module A or A1 for cat. I or II respectively, and module G for cat. III and IV.

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 25 of 33

9 Appendix 3: “Tata Steel manufacturer’s EC declaration of conformity”

With the requirements of the European Directive 97/23 EC
For: pressure equipment, structure, (modified) pressure system)¹

Name/address of the manufacturer	<i>Tata Steel Strip Products IJmuiden (Department/Work Unit) PO Box 10.000 1070 CA IJmuiden</i>
Location (if known)	
Description of the pressure equipment, structure, pressure system and/or modification made to an existing pressure system. (dwg. no. (P&ID)) (Design pressure/design temperature/medium/volume of vessel or diameter of pipe)	
Category classification	
The followed conformity assessment procedure	
If applicable, the name of the institute that carried out the inspection	
Any safety appendages included (setting information)	
If applicable, the technical specifications used	
If applicable, the harmonised standards used	
If applicable, the references to the other Community directives that were applied.	
Date of pressure test	
If there is a registration obligation, the Tata Steel serial number under which the pressure equipment is registered	

On behalf of Tata Steel Strip Products IJmuiden, the pressure equipment/structure/(modified) pressure system)¹ described above is declared to be in accordance with the essential safety requirements of Directive 97/23 EC.

Last name:

General Manager (work unit)

Signature:

Date:

)¹ Cross out the choices that do not apply

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 26 of 33

10 Appendix 4: “Tata Steel user declaration of conformity”

For: First use of the pressure equipment, structure or pressure system, and/or use after modification made to existing pressure equipment, structure or pressure system)¹ .

Name/address of the user	
Location	
Description of the pressure equipment, structure, pressure system and/or modification made to an existing pressure system. (dwg. no. (P&ID)) (Design pressure/design temperature/medium) (date of execution)	
Information on the safety appendages that safeguard the pressure system.	
If the pressure equipment must be registered, the Tata Steel serial number.	
If applicable, the name of the institute that carried out the inspection before use (KVI).	

The user declares:

- ✓ That he has viewed the pressure equipment, structure(s) and/or (modified) pressure system before use,
- ✓ That he has received the (EC) declaration(s) of conformity and the operating instructions,
- ✓ That he has checked that the modifications made/the incorporated pressure equipment and/or structures match what was ordered,
- ✓ That the integration of pressurised container(s) and/or structure(s) has (have) been assembled and connected properly (*directive, Annex I, art 2.8*),
- ✓ That the pressure equipment, structure(s) and/or modified pressure system has (have) been checked to determine that the permissible limits cannot be exceeded (this involves, among other matters, the inspection of the safety appendages) (*directive, Annex I, art 2.10 and 3.2.3*),
- ✓ That the integrated equipment can be operated safely, that it functions safely (*directive, Annex I, art 2.3*), and that it can be safely filled and emptied (*directive, Annex I, art 2.9*).

Last name:

Person authorised by user (work unit)

Signature:

Date:

(This document must be stored with the other equipment documentation (such as the (EC) declaration of conformity, operating instructions) by the user.)

As a result of decree 339 (1st pressure equipment amending decree), article 12a, a conformity assessment must be performed by the user before a pressure system (a system that incorporates at least one pressure device of cat. I or higher) as defined in article 12a, is used. This document can be used for this purpose.

)¹ Cross out the choices that do not apply

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 27 of 33

11 Appendix 5:

Step-by-step plan, to be used by Tata Steel as manufacturer)* of pressure equipment and structures

Pressure equipment)**

1. Determine if the pressure equipment falls within the limits of the PED (see Appendix 1). In order to do so, determine the system limits of the pressure equipment in advance (especially in the case of pipes). Branching pipes may belong to a lower category, art 3.3 or skilled craftsmanship.
2. Determine if the product is on the list of exceptions (*PED art. 1, par. 3*).
3. Determine the category of the product (See Appendix 1)
The PED contains danger categories. Pressurised containers belonging to categories I to IV must meet the essential safety requirements mentioned in the PED. A pressurised container is classified in a category on the basis of the pressure x volume or pressure x diameter and medium. In category II or higher, a Notified Body (Lloyds Register - Stoomwezen) is involved to some extent. For application forms for Lloyds Register - Stoomwezen inspections, see "www.stoomwezen.nl Info - aanvragen".
4. If the product belongs to category I, determine if it also falls under one of the directives mentioned in the PED, article 1 paragraph 3.6.
5. Carry out a risk analysis (*for a model, see "www.stoomwezen.nl Info - aanvragen"*).
6. Design the pressurised container in accordance with the requirements (*preferably using the harmonised European standards (such as EN13445, EN13480, EN15001-1), and possibly the RToD, ASME codes, etc.*).
7. Apply one of the permitted procedures for conformity assessment (see Appendix 2, The module determines the level of NOBO supervision) (*PED, art. 10 paragraph 1.3 and Annex III*). Cat III and IV pressure equipment is treated according to module G. A design assessment by the NOBO is then required. The result of the NOBO assessment is then recorded in a Design Approval Document (DAD)
8. Create operating instructions in the Dutch language (*PED Annex I, chapter 3.4*).
9. Realise the design.
10. Handle the formalities:
 - 10.1. Add markings and labels (*PED Annex I, 3.3*).
 - 10.2. Draw up (the draft version of) the "Tata Steel manufacturer's EC declaration of conformity" (see Appendix 3).
 - 10.3. Ensure that a NOBO inspection report is drawn up for Cat II, III and IV devices. The following documents needs to be submitted in connection with this:
 - (draft version of) "Tata Steel manufacturer's EC declaration of conformity" (see Appendix 3),
 - Operating instructions,
 - The signed Inspection & Test Plan,
 - The manufacture book or technical construction file (for table of contents, see S1 30 04 01, Appendix 1).
 - 10.4. Once the NOBO inspection report has been drawn up, the definitive version of the "Tata Steel manufacturer's declaration of conformity" can be signed by the General Manager.
 - 10.5. Archive the documentation and submit a copy to the user and, if registration of the equipment is obligatory, to the DTD.

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 28 of 33

Structures)***

1. Determine if there are any pressure devices present in the structure and which of these fall within the limits of directive 97/23/EC.
2. If so, assess the structure's conformity with directive 97/23/EC and draw up the "Tata Steel manufacturer's EC declaration of conformity" (see Appendix 3).

The pressure equipment with the highest danger category is the determining factor when selecting a conformity assessment. Assess the required supporting documents of the separate pressure equipment. Assess the integration of the various components in accordance with points 2.3, 2.8 and 2.9 of Annex I of the directive. Assess the protection of the structure against the permissible limits being exceeded, as described in points 2.10 and 3.2.3. of Annex I of the directive.

)* To be used by the Tata Steel department (Such as PTC, HTD) responsible for the realisation (design and construction) of a pressure device (see also chapter 3.3 "Who is classified as a manufacturer?")

)** Pressure equipment: pressure vessels, installation pipes, safety appendages and appendages under pressure, as well as, if applicable, the elements attached to the components under pressure.

)*** Structures: Various pressure devices that a manufacturer has assembled into an integrated and functional whole.

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 29 of 33

12 Appendix 6: Definition of responsibility in relation to (stationary) pressure equipment.

A general obligation for the user (primary responsibility) to maintain the technical integrity of fixed (stationary) pressure equipment to ensure safety, health and environmental protection, taking into account the state of the technology and practice at the time of design, construction, assembly, activation, use, maintenance, inspection and deactivation, as well as on the basis of a consideration of the effectiveness and feasibility of measures in relation to the costs, in accordance with the ALARP or BBT method.

Clarification:

1. The results of a risk inventory and assessment determine the measures that can reasonably be required.
2. The measures for compliance with the responsibility obligation are determined by the user (in contrast to the specific legal requirements for designated fixed (stationary) pressure equipment).
3. ALARP: “as low as reasonably practicable”.
4. Best Available Techniques (Dutch: BBT): with regard to achieving a high level of environmental protection, the most effective techniques for preventing or, in the event that this is impossible, limiting as much as possible the emissions and other negative effects on the environment that a piece of equipment can produce. Taking into account the costs and benefits, these techniques must be economically and technically feasible in the industry to which the equipment belongs, and can reasonably be obtained in the Netherlands or another country by the person operating the equipment. Furthermore, these techniques also include the design of the equipment, the manner in which it is constructed and maintained, the method of operation, and the manner in which the equipment is decommissioned. (ref.: Environmental Management Act (*Wet Milieubeheer*))

Source: Practical Regulations for Pressure Equipment (NEN)

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 30 of 33

13 References

This directive refers to:

Commodities Act pressure equipment decree	Decree of 5 July 1999 establishing a general administrative measure for implementing the Dangerous Equipment Act, the 1985 Fire Brigade Act, the 1903 Mining Act, the Continental Shelf Mining Act, the Environmental Management Act and the Steam Act with regard to pressure equipment. (Pressure equipment decree)
Commodities Act regulations for pressure equipment	Commodities Act regulations for pressure equipment. - The individual regulations concern: - Government Gazette 1999, no. 232 Pressure equipment decree regulations; - Government Gazette 2001, no. 224 Pressure equipment decree regulations Amendment I; - Government Gazette 2005, no. 097 Pressure equipment decree regulations Amendment II; - Government Gazette 2007, no. 070 Pressure equipment Commodities Act regulations Amendment. - Government Gazette 2010, no. 17575 Pressure equipment Commodities Act regulations Amendment.
Directive 97/23/EC (PED)	Directive of the European parliament and the Council of 29 May 1997 regarding the approximation of the laws of the member states concerning pressure equipment.
Directive 2009/105/EC	Directive concerning pressure vessels with a simple form.
RToD	Regulations for equipment under pressure
EN 13445 EN 13480	Unfired pressurised containers (harmonised standard) Metal industry piping systems (harmonised standard)
Tata Steel Quality Health Safety and Environment (QHSE) regulations	5.22: Equipment under pressure
Tata Steel Standard: S1 45 04 01 S1 30 04 01 S1 47 02 01	Steel welding execution and inspection Ordering, execution and inspection in the case of new construction, repairs to or modification of pressure equipment. Names used for media; description of the media to be transported through piping systems at Tata Steel
Chemical substances	http://chemischestoffen.eu.tatasteel.com/WEP_template/Default.aspx
Ministry of Social Affairs and Employment	www.Minszw.nl section on safe working conditions - pressure equipment

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 31 of 33

Lloyds Register -
Stoomwezen
NOBO

www.stoomwezen.nl

NOTified BOdy, (including Lloyds) involved in new construction

AKI

Appointed Inspection Institute (Dutch: *Aangewezen Keurings Instelling*) involved in the operational phase (such as Lloyds)

IVG

Inspection Service of the User (DTD)

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 32 of 33

14 Statement

Version 1.0:

This is a new directive and replaces the temporarily published “Pressure equipment decree handbook (legislation regarding pressurised containers)”

Version 2.0:

Directive has been entirely revised

Version 3.0:

Directive made to conform with decree 387

Version 4.0:

Directive made to conform with the Implementation Regulation for the Pressure Equipment Decree no. ARBO/P&G/2005/28546.

Appendix 1 “Classification of pressure equipment on the basis of directive 97/23/EC and the pressure equipment decree” has mainly been modified.

Version 5.0:

Appendix 3 has been modified. In addition, several small changes have been made.

Version 5.1:

Changes to the text on pages 5, 6, 24

Version 6.0:

Addition: Diagram in paragraph 5.1 and Appendix 5 (definition of responsibility). Various minor corrections to the text have been made.

Version 6.1:

The declaration of conformity with the PED divided into the “Tata Steel manufacturer’s EC declaration of conformity” and “Tata Steel user declaration of conformity”. The purpose of this is to ensure a better division of responsibilities.

Version 6.2:

Changes: Corus Staal changed to Tata Steel and RVM&E changed to QHSE.

Various minor corrections and changes not related to the content have been made.

Tata Steel IJmuiden Projects & Technical Consultancy	R1 30 04 01 Pressure equipment decree handbook (Legislation regarding pressurised containers)
Tata Steel Technical Directive	Page 33 of 33