



Exploration & Production

GENERAL SPECIFICATION

STRUCTURAL

GS STR 100

Fixed offshore steel platforms - General

04	10/04	§ 5.1, Table 5.1, 6.1, 6.2, 10 revised, 6.2.2.3, 11 & 12 added
03	10/03	§ 4.1, 5, table 5.1, § 6.2.2.2 - 6.3 - 9 revised - § 10 added - Change of Group name and logo
02	10/02	Revised Table 5.1
01	11/01	Added Chapter 9
00	03/01	First issue
Rev.	Date	Notes



Contents

1. Scope	3
2. Reference documents.....	3
3. Definitions.....	5
4. General requirements	5
4.1 The different studies	5
4.2 Design plan.....	8
4.3 Design quality control	8
5. Importance of structural members	9
5.1 Structural members	9
5.2 Non-structural Members	10
6. Structural design calculation note/Analysis report presentation	12
6.1 General.....	12
6.2 Data and results syntheses	12
6.3 Computer modelling.....	13
7. Drawings	14
8. Materials Take Off (MTO).....	15
9. Re-analysis structural dossiers	15
10. Certification	16
11. Design Fabrication and Installation (DFI).....	16
12. Appendix.....	16



1. Scope

This document defines the general procedures and COMPANY requirements to be applied for the structural design, fabrication and installation of fixed steel offshore platforms.

The specific requirements, procedures to be applied for the structural design of the particular sub-assemblies of an offshore platform are defined in the structural specifications listed in section 2 hereafter.

Materials to be used are covered by specification **GS STR 201**.

Fabrication of offshore platforms is covered by specification **GS STR 301**.

Load out, transport and Installation of offshore platforms are covered by specification **GS STR 401**.

2. Reference documents

The reference documents listed below form an integral part of this General Specification. Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the EFFECTIVE DATE of the CONTRACT.

The structural design of offshore platforms shall be conducted in accordance with the reference documents including codes and standards defined in specifications listed hereafter.

Standards

Reference	Title
Not applicable	

Professional Documents

Reference	Title
Not applicable	

Regulations

Reference	Title
Not applicable	

Codes

Reference	Title
Not applicable	

**Other documents**

Reference	Title
Not applicable	

Total General Specifications

The provisions of this document shall be applied in the light of the project documents supplied by COMPANY, including:

- Country specificity appendices
- Particular project specification
- Data sheets
- Articles and conditions; list of tasks
- Quality assurance provisions.

Reference	Title
GS COR 100	Design of cathodic protection of offshore structures
GS COR 240	Fusion bonded epoxy based coatings works for conductor pipes of drilling platforms
GS COR 350	External protection of offshore and related structures and equipment by painting
GS STR 001	Weight monitoring and weighing of offshore units
GS STR 002	Permanent lifting or handling devices for offshore installations
GS STR 101	Design of offshore jacket and subsea structures
GS STR 102	Design of offshore topsides structures
GS STR 103	Design and fabrication of skids and equipment supporting structures
GS STR 104	Design and fabrication of technical cubicles for offshore oil installations
GS STR 105	Design of Boat landings, bumpers and protections for offshore installations
GS STR 201	Materials for offshore steel structures
GS STR 301	Fabrication of offshore steel structures
GS STR 304	Fabrication of welded plate girders
GS STR 401	Load out, sea-fastening, transportation and installation of offshore structures
GS STR 431	Installation of piles for offshore steel structures – Driven piles
GS STR 432	Installation of piles for offshore steel structures – Drilled and grouted piles



Reference	Title
GS STR 901	Design rules and construction standards for ancillary structures of offshore installations
GS GEO 702	Requirements for design and installation of skirted foundations and suction anchors
GS SAF 221	Safety rules for buildings

3. Definitions

Throughout this specification, the following definitions shall apply:

Purchaser	Means the COMPANY or SUPPLIER (as applicable) which have placed the Purchase Order to the MANUFACTURER.
Inspector	Means COMPANY's representative(s) or member(s) from an Inspection Agency duly appointed by COMPANY or SUPPLIER (as applicable) to act as its representative(s) for the purpose of the contract.
Third Party	Means the COMPANY in charge of independent design appraisal or independent analysis or independent inspection in accordance with the rules defined in the contractual reference documents. Third Party can be an independent COMPANY, the Certifying Authority, the MWS, or the Classification Authority, as defined in the contractual reference documents.
Certifying authority	Means the COMPANY in charge of the certification of the platform (or part thereof) and of issuing of the relevant certificates in accordance with the rules defined in the contractual reference documents.
MWS	Means the Marine Warranty Surveyor.
Classification authority	Means the COMPANY in charge of issuing the various certificates pertaining to the class of a ship, in accordance with its own rules.

4. General requirements

4.1 The different studies

The scope of work and the documents to be supplied shall be function of the type of study to be made:

4.1.1 Feasibility study

The purpose of this study is to determine:

- Whether the solution is technically achievable, taking into account a shift of the CoG within the uncertainty pattern, and a COMPANY reserve in particular with respect to foundations and stability limitations (intact, damage condition, for pre-service and in-place)
- The costs and the project time schedule.



The following documents are to be supplied:

- A simplified design note for determining the structural concepts, the main or special components, the standard and secondary components (the standard and secondary components being estimated, e.g. by comparison with other projects)
- A quantitative weight estimate (with a 30% margin of error)
- The supply, fabrication and installation approximate schedules
- The conceptual drawings describing the structure and its installation.

4.1.2 Pre-project or preliminary study

This study is intermediate between the Feasibility Study and the Basic Engineering Study. Documents for this study shall consist of:

- A detailed description of the concepts, including the main characteristics and features, taking into account a shift of the CoG within the uncertainty pattern, and a COMPANY reserve in particular with respect to foundations and stability limitations (intact, damage condition, for pre-service and in-place) .
- A review of the installation methods
- A calculation note similar to the afore-described
- An estimated weight, broken down over the main components (within 20%)
- A schedule with breakdown of the main items
- Drawings detailing important points
- The requirements to be met by the CONTRACTOR in charge of the Basic Engineering Studies.

Note: This study level does not allow steel to be ordered.

4.1.3 Basic engineering

This study completely defines the main structure, and addresses the principles of the secondary structures; the documents consist of:

- A structural design basis and criteria particular specification, taking into account a shift of the CoG within the uncertainty pattern, and a COMPANY reserve in particular with respect to foundations and stability limitations (intact, damage condition, for pre-service and in-place).
- A design brief summarising the design methods and criteria to be used for basic engineering; This document shall be approved by COMPANY before any basic design is started
- A complete calculation note for the main structure in its entirety including the main connections and stiffeners, the lifting pad eyes, the foundations, the cathodic protection, for all the phases of the platform life (i.e. load out, transport, installation, in-place, seismic, fatigue analyses, boat impact, dropped object, vibration, blast and fire, etc.)

The calculation note presentation and content shall be as defined in chapter 6 hereafter.

- The secondary structure and its connections are not necessarily defined in detail, but principles shall be studied and specified

- Main structure design drawings (related to as design drawings in **API RP 2A**), describing in detail the main structure, including detailed geometry, weld symbols, detailed definition of material grades and qualities, itemised material list with weight indication

The drawing areas not justified by calculation shall be clearly highlighted with the indication of the reason for the reserve

- Main structure connections design drawings, including detailed geometry, weld symbols, detailed definition of material grades, itemised material list with weight indication
- Principle drawings for the secondary structure and their connections
- Structural standards
- A structural weight report covering main and secondary structures
- Loading diagrams for each level of the module
- Main structural material take-off itemised lists, drawing per drawing, with recap. list per sample. This document shall enable to order steel for the main structure
- Main structural steel requisition if required
- Particular technical specifications.

4.1.4 Detailed engineering

This study completely defines the structure; the documents consist of:

- Technical specifications,
- Structural design premises and brief summarising the structural design methods, criteria and principles intended to be used throughout the detail design, taking into account a shift of the CoG within the uncertainty pattern, and a COMPANY reserve in particular with respect to foundations and stability limitations (intact, damage condition, for pre-service and in-place). CONTRACTOR shall seek COMPANY approval on this document prior to starting any detailed engineering study
- A complete calculation note for the structure in its entirety, including each component and detail, for all the phases of the platform life (i.e.: fabrication and erection of sub-assemblies, load out, transport, installation, in-place, seismic, fatigue analyses, boat impact, dropped object, vibration, blast and fire, etc.), covering as a minimum (but not limited to):
 - The main and secondary structural members
 - The main and secondary connections
 - Lifting pad eyes, guides
 - Structural details such as stiffeners, gussets, penetrations, equipment supports
 - All calculations related to the foundations, as per the requirements of **GS STR 431**
 - All calculations related to load out, transport, installation, as per the requirements of **GS STR 401**
 - All calculations related to temporary phases, such as panels roll-up, sub-assemblies lifting, unpilled stability and mudmat design, etc.



- Main structure fabrication drawings, describing in detail the main structure, including detailed geometry, stiffeners, gussets, weld symbols, detailed definition of material grades and qualities, itemised material list with weight indication
- Main structure connections fabrication drawings, including detailed geometry, stiffeners, gussets, weld symbols, detailed definition of material grades, itemised material list with weight indication
- Detailed fabrication drawings for the secondary structure and connections, including detailed geometry, stiffeners, gussets, weld symbols, detailed definition of material grades, itemised material list with weight indication
- Structural standards shall be developed into detailed fabrication drawings
- Structural material take-off itemised lists, drawing per drawing, with recap. list per sample. This document shall enable to order steel
- Loading diagrams for each level of the module
- Installation drawings and diagrams
- Particular specifications, such as (but not limited to): steel material, anodes, shock-absorbers, etc.
- Load out and installation specifications
- Shop drawings
- A general manufacture, transport and installation program
- As-built drawings.

4.2 Design plan

CONTRACTOR shall submit a design plan detailing the list of calculation notes and drawings to be issued including the status of issue (for comments, for approval, for call for tender, for construction, as-built drawings, etc.) and the schedule of design.

A separate calculation note shall be issued for each design condition (such as load out, transport, lift, in-place, seismic, fatigue analyses, etc.)

4.3 Design quality control

4.3.1 CONTRACTOR QA/QC Plan

At the beginning of the design phase, CONTRACTOR shall submit a detailed QA/QC plan for the structural discipline to COMPANY for review/approval.

No structural design shall be initiated before the approval of the QA/QC plan by COMPANY.

Each and every document issued by CONTRACTOR shall be verified and checked by its QA/QC system.

Document verification by CONTRACTOR shall be performed at several levels:

- Structural discipline checks
- Inter-discipline checks
- Project engineer checks.



Each level of verification shall be materialised by a box in the document title block. This box shall be signed-in by the lead engineer in charge of the discipline or the project manager.

4.3.2 COMPANY review

Each calculation note or drawing is to be submitted to COMPANY for review/comment.

The calculation notes shall be issued together with the fabrications drawings. No drawing shall be issued for tender, for construction or for material order without COMPANY review.

The COMPANY shall not review any fabrication drawings without first having reviewed the design calculations. COMPANY review/comment approval does not release CONTRACTOR from his responsibility concerning the subject design.

4.3.3 Computer software packages reliability

All software packages, programs and sub-programs used shall have been previously tested and known to give reliable results.

Software packages used for global 3D structural analyses shall be validated by a recognised Third Party approved by COMPANY.

4.3.4 External quality check

In addition to its review, COMPANY reserves the right to have the calculation notes, the drawings and the various documents checked or verified by:

- A Third Party, as defined in section 3 above
- A Certifying Authority, as defined in section 3 above
- MWS.

In such case, CONTRACTOR shall supply each and every documents requested by the Third Party or Certifying Authority or Inspection Agency.

5. Importance of structural members

5.1 Structural members

The structural members of the resisting structures shall be distributed into three categories of importance, mainly in regard of the consequences of their possible failure during platform production or during installation of constituting parts of the platform (lifting of packages, etc.):

- **Special Category members**

Failure of any of these members would cause total or partial destruction of the platform during its production or destruction of parts of the platform during their installation, or they are members that cannot be repaired.

- **First Category members**

Failure of any of these members would cause total or partial platform shutdown, but no total or partial destruction of the platform. Repair of these members would only be made if production or installation of the platform is stopped.

- **Second Category members**

They are members other than those classified in Special Category or First Category.



According to the Table 5.1, the classification of structural members into categories of importance shall be submitted to COMPANY for prior approval.

Structural categories shall be clearly detailed for each and every member and structural items in structural engineering and fabrication drawings.

The above classification has an impact on the qualities of the steel grades to be ordered, on the welding procedures to be used and on the amount and type of non destructive examination to be carried out during fabrication.

When exceptionally, and subject to COMPANY approval, local cans are substituted by a constant thickness member to avoid multiple joints, the member shall be upgraded to Special Category.

As referenced in other specifications, primary structure addresses Special and First category structures as defined above. Secondary structures addresses Second category structures. Tertiary structures addresses non-structural items.

5.2 Non-structural Members

Accessory and finishing elements, i.e. not participating in the overall strength of the platform structures (catwalks, hand-rails, stairs, ladders, grating, false flooring, etc.) constitute a class separate from that of Structural Members defined in the paragraph 5.1 above.

Table 5.1 - Classification of structural members into category of importance

Category Type of structure	Special category ⁽³⁾	First category	Second category
Jacket and piles	- Pad eyes - Piles - Jacket legs ⁽¹⁾ and part of them (ex. cans, bottles, etc.) - Cans of bracings - Buoyancy tanks - Conductor pipes - Crown rings (if any)	- Jacket bracings - Support structure of boat-landings, risers (clamps, stub pieces, etc.) - Conductor guides (funnels and supporting plates)	- Boat landings - Bumpers - Mudmats - Shock cells
Deck	- Pad eyes and nodes to which they are connected - Deck legs and cans - Main girders with depths ≥ 800 mm - Critical nodes (based on design) - Transition pieces between deck and piles - Skidding beams - Bearing nodes (bridges, flares, turbines, etc.)	- Other members of the main structure - Rolled sections and WPG with $400 \leq$ depths < 800 mm - Bracings of trusses - Gussets (thk ≥ 15 mm) welded on First Category members. - Crane boom rests	- Secondary girders with depths < 400 mm - Joisting - Stiffening elements of the secondary structure - Hatch covers - Plating
Modules	- Pad eyes and nodes to which they are connected - Structural members that are critical during lifting	- Main girders, columns and bracings of trusses - Gantry structures	- Secondary members of the support structure
Helideck	- Pad eyes	- Deck legs (for helideck landing pad not integrated to the superstructures) - Main girders columns and bracings	- Secondary members of the support structure
Lifting appliances and accessories	- All components subjected to concentrated stresses during lifting, such as pad eyes, etc. - Spreader beams. - Crane pedestals up to and including the slewing ring	- Elements submitted to heavy stresses (dynamic loads among other stresses)	- Other structural members - Guides and bumpers of lifting aids
Other structures ⁽²⁾	- Pad eyes and nodes to which they are connected - Bearing nodes, cans of vent booms and bridges	- Primary members of the main structure - Main lattice girders of vent booms and bridges - Skidways, transition beams, sub-structures - Barge grillage - Main components (bracings) of sea fastening - Doubler plates on Special and First Category members	- Secondary members of the support structure - Rigging platforms - Doubler plates on Second Category Members.

(1) Jackets legs (except cans) with inner leg piles may be of First Category only when so approved by COMPANY.

(2) Any other structures which are not mentioned in this table, including inter-platform catwalks, superstructures of living quarters, vent booms, technical rooms or similar, etc.

(3) All pins and axles shall be classified as Special Category (as for all pad-eyes).

6. Structural design calculation note/Analysis report presentation

6.1 General

All calculations must be made with SI units. Values not included in this system shall only be tolerated as references. They shall be converted into SI values and shall not **at any time** be used in the calculations.

The use of inches shall be avoided even for tubular sizes.

All documents / calculation notes shall be issued to COMPANY only under "WORD" format on a CD Rom.

6.2 Data and results syntheses

In addition to the elements listed in paragraph 6.3 (computer modelling), the design note all structural and non-structural components shall also include:

- At the beginning, a summary of the basis of the calculation and a list of the reference documents
- At the beginning, a summary of the conclusions of the calculation/analysis performed, including any recommendation
- At the end, a synthesis of the results in the form of drawings or sketches, with check on determinant conditions
- A copy of the structural drawings showing the modelled platform structure
- A copy of the platform plot plan drawings showing the modelled platform equipment location, identification, and weight
- A copy of any document used as a reference, other than contractual reference documents
- Any hand calculation performed during the structural analysis at data input stage or as complementary verification or code check
- A CD Rom containing the input electronic file of the complete computer model used for the analysis, including all output and code checks commands.

These above documents may be grouped in several appendices, together with the computer outputs.

6.2.1 Calculation bases

The following shall be summarized at the beginning of the design note:

- The soil conditions
- Environmental conditions in table form: tides, waves, currents, wind, snow, ice, marine growth, temperatures, seismic activity, etc.
- Dead load and live load values used, level by level and load case by load case shall be in the form of drawings or data sheets
- Mask dimensions used for wind loads, in form of sketches.

Any element justifying the options taken in the design note sheets shall also be mentioned: e.g. assembly in two halfdecks, jacket launched or lifted and installed skidding of a heavy element on a floor, temporary bracings required during transportation, etc.



6.2.2 Results synthesis

The design note shall include a synthesis of the results.

6.2.2.1 Deflections

Platform diagrams shall summarize the deflection of the deck level and at some of the jacket points, given by the analysis(es).

The natural frequency of the platform, in the direction being considered, shall be indicated on each sketch.

Similar diagrams shall be added for the critical points (telecommunication towers, large span catwalks, etc.)

6.2.2.2 Stress states

The maximum values of the API-AISC stress ratios and cumulative fatigue damage ratios for each of the members and joints shall be indicated on a sketch or drawing.

If a joint is heavily stressed its stress percentage (calculated stress to acceptable stress ratio) shall be given.

6.2.2.3 Data base

All platform design criteria and final characteristics shall be summarised on an EXCEL spread sheet to be supplied by COMPANY (sample enclosed in section 12 - Appendix).

6.3 Computer modelling

6.3.1 General

The computer models shall represent accurately the structure geometry, the loads (magnitude, location, sequence, etc.), the masses, the materials, the dynamic and/or hydrodynamic behaviour and characteristics, and the boundary conditions of the platform to be analysed, with regard to the type of analysis to be performed.

Any simplification, equivalence, sub-modelling or sub-structuration, load cases resulting from sub-assemblies designed by others, shall be documented in detail and shown to be acceptable for the type of analysis to be performed in terms of loads, mass, stiffness, displacements, boundary conditions, etc.

For any type of structural calculation or analysis performed on computer, the complete and detailed computer outputs shall be submitted with the analysis report.

The computer structural models (input data files) for each analysis shall be given a document number including revision number to be in accordance with the project document numbering procedure. Electronic copy of those computer structural models shall be issued to COMPANY together with the relevant calculation notes or analysis.

Each calculation note shall clearly make cross-reference to the numbered computer files.

6.3.2 Geometry and load data sheets

The computer outputs shall be accompanied by:

- Sketches or data sheets done by computer, reproducing in detail and completely the modelled structure's geometry and topology, including the joints and members numbering, the location and the type of support points, the member properties, the members buckling parameters (buckling length and buckling coefficient).

These sketches shall correspond perfectly to the modelled structure.

The member numbering shall be clearly distinguishable from the joint numbering.

- Loading sketches or drawings showing the loads applied to the joints and the members shall correspond point by point with the computer input and the effective load magnitude and position on the platform.

6.3.3 Computer output presentation

For any type of structural calculation or analysis performed on computer, the computer outputs shall restore exactly and in detail the input data, along with the analysis results.

The inputs shall be explained by comments enabling the reader to find the instruction with ease and correlate any modelled item with the effective item pertaining to the platform. In particular, loading cases modelling equipment weights or loads shall be fully traceable, and shall indicate equipment tag numbers on a case by case basis as per project equipment list and platform plot plans.

The load case combinations shall be given in the form of a table showing the different options and the coefficients used.

The following analysis results, including member forces, reactions, summary of loading cases and loading combinations, shall be listed for each elementary loading cases and combined cases.

Joint displacements shall be printed for combined cases.

The members and nodes code checking results shall be given in detail for each and every member or node grouped by sub-assembly (legs, piles, horizontal levels, frame braces, etc.) and shall include effective stresses, allowable stresses, summarised checking parameters, node/member geometrical characteristics and critical load case identification.

Summarised code checking results and fatigue results shall also be given in decreasing order. The utilisation factors (for members and nodes) exceeding 0.5 shall be plotted on computer data sheets showing geometry, member/node number and related ratio.

The code checking results outputs shall also indicate the reference of the code formula for each utilisation factor printed. Electronic copy (autocad format) shall be made available to COMPANY upon request.

7. Drawings

All drawings shall be issued preferably under A1 format (full size) and compulsorily under reduced readable A3 format.



The following drawings shall be provided, together with detail engineering or fabrication drawings:

- Drawing list, including structural weight for each drawing of the list. This drawing list shall be updated at each new drawing revision issue
- Structural general arrangement drawing (3D perspective)
- General note drawing
- Typical welding detail drawings.

8. Materials Take Off (MTO)

The special specification shall indicate who shall be responsible for MTO's (Survey or Construction CONTRACTOR).

The MTO's are established drawing by drawing and element by element. Summaries shall be made for each sub-assembly and per element category (girders, flooring, columns, handrails, etc.).

Lengths and areas taken into account shall be those calculated on the drawings.

Unless indicated otherwise in the special specification the weights shall be calculated from a specific steel weight equal to 7.85 and taking:

- For pipes, the longest generant
- For sheet metal, the actual surface area
- For rolled sections, the overall lengths without deducting the notching and holes.

The weight for bolts and welding beads shall be taken grossly depending on the structure concerned.

MTO cumulation shall particularly enable lift weight to be calculated.

9. Re-analysis structural dossiers

At the end of the project, the structural computer models shall be updated by CONTRACTOR to represent the 'as built' platform structure, in NSO STRUDL format or in SACS format, in order to allow COMPANY to perform structural re-analyses. These updated 'as built' computer model data files will be called re-analysis structural data files.

Reassessment of the foundation capacity shall be performed taking into account the actual piles installation records.

These re-analysis structural data files shall include all necessary files (including, but not limited to, structure description files, load cases description files, code checking files, member forces files, fatigue life calculation files, etc.) to allow for a structural re-analysis and issue all required structural information, for Static In-place, Fatigue, and Seismic conditions.

These structural re-analysis data files shall be completed with the necessary relevant documentation such as computer plot plans, loading diagrams, as built drawings, final weight report taking into account the weighing results, etc..., to ensure a clear understanding and a possible re-use of the computer data files by COMPANY. Re-analysis data files and the relevant documentation shall be inserted into re-analysis structural dossiers, to be handed over to COMPANY on CD Rom support.



Final engineering/as-built drawings dossier shall be provided in Autocad & pdf formats.

10. Certification

An Independent Third Party shall perform the following:

1. At the basic engineering phase :

- A Design Appraisal of specifications, drawings and calculation notes with independent analyses of the deck & jacket main structure including main connections, crane pedestal and the foundations for the in-service condition (i.e. in-place, boat impact, seismic and fatigue analyses).
- A Design Appraisal of specifications, drawings and calculation notes without independent analyses for the other pre-service and in-service conditions, including all appurtenances, cathodic protection, passive fire protection, fire and blast. Independent analysis may be required on the case by case basis.

2. At the detailed engineering phase :

A Design Appraisal of specifications, drawings and calculation notes without independent analyses of the deck & jacket main structure including main connections and the foundations for the pre-service & in-service conditions .

Independent analysis may be required on the case by case basis. In particular, it shall be required for the in-service condition in case of changes from the basic design such as: environmental data, soil data, topsides loads, main structure arrangement, etc.

11. Design Fabrication and Installation (DFI)

A Design Fabrication and Installation (DFI) dossier shall be established accordingly to NORSOK Z001 requirements.

12. Appendix

All platform design criteria and final characteristics shall be summarised on an EXCEL spread sheet (AP STR 100.xls) to be supplied by COMPANY (following sample).



Exploration & Production

General Specification

Date: 10/04

GS STR 100

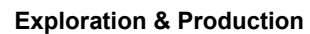
Rev: 04

GENERALITES														
Nom de la plate-forme	Fonction(s)	Nombre de personnes	Poids total structure		Pont modulaire ou intégré	Productions				Zone géographique	Nom du champ	Coordonnées ou Bloc	Type de mer	Référence pour la profondeur
			hors piles	avec piles		oil	gaz	condensate	water					
			(t)	(t)		(bopd)	(Mm3/jour)	(bcpd)	(bwpd)					
	production				1=modulaire									
	forage				2=intégré									
	quartiers													
	injection													
	torche													
	intermédiaire													

DONNEES D'ENVIRONNEMENT										
Résistivité (Ohm/m².m)	RIE (g)	SLE (g)	Surcharges climatiques		Température de l'eau			Température de l'air		
			Neige (t/m²)	Glace (t/m²)	mini (°c)	maxi (°c)	moyenne (°c)	mini (°c)	maxi (°c)	moyenne (°c)

DONNEES OCEANO-METEO														
Périodicité	Caractéristiques de vagues maximales				Vague h=1/3		Courants marins		Marées		Vents			
	Amplitude	Hauteur de crête	Période	Longueur d'onde	Amplitude	Période	Surface	Fond	Storm surge	Tide surge	rafales (3')	soutenu (1')	Autre	
													période (s)	vitesse (m/s)
(m)	(m)	(s)	(m)	(m)	(s)	(m/s)	(m/s)	(m)	(m)	(m/s)	(m/s)			
1 an														
100 ans														

MARINE GROWTH		
Intervalle (m)	Epaisseur (mm/radius)	Surcharge dans l'air (t/m ³)



General Specification

Date: 10/04

GS STR 100

Rev: 04

This document is the property of Total. It must not be stored, reproduced or disclosed to others without written authorisation from the Company.



Exploration & Production

General Specification

Date: 10/04

GS STR 100

Rev: 04

AUTRES DONNEES ET RESULTATS DE CALCULS														
Charges en tête				Conditions de transport			Spécifications techniques	Aciers utilisés	Ecran à la houle	Direction la plus défavorable	Déplacements		Remarque(s)	Analyse statique
Module support frame	permanentes	live loads	Charges totales	Moyen de transport	Vent	Houle					Au niveau du deck	Au niveau mudline		
(t)	(t)	(t)	(t)		(m/s)	(s et m)					(mm)	(mm)		

COEFFICIENTS CD ET CM					
CD			CM		
Zone marine growth	Ailleurs	Profilés ou global	Zone marine growth	Ailleurs	Profilés ou global

EFFORTS DE VENT			
Operating		Storm	
FH (t)	M/seabed (t/m)	FH (t)	M/seabed (t/m)

EFFORTS DE HOULE			
Effort considéré	Déphasage (°)	FH (t)	M/seabed (t/m)
RH max op.			
RH max storm			
M max op.			
M max storm			

ECRAN A LA HOULE			
Elément considéré	Nombre	Diamètre(s) (")	Surface (m ²)
Boat landing			
Caissons			
Conductor pipe			
Riser			



Exploration & Production

General Specification

GS STR 100

Date: 10/04

Rev: 04

JACKET														
Hauteur	Dimensions en tête	Surface en tête	Dimensions en base	Poids de la structure du jacket	Volume du jacket	Nombre de niveaux horizontaux	Surface horizontale	Poids horizontal	Surface latérale	Poids latéral	Poids à l'installation	Poids du jacket en service	Poussée totale sur jacket + appurtenances	Nombre de Well slots
(m)	(m*m)	(m²)	(m*m)	(t)	(m3)		(m²)	(t)	(m²)	(t)	(t)	(t)	(t)	

JAMBES									
Jambes				Floation legs			Skirts		
Nombre	Diamètre(s)	WT	Poids total	Nombre	Diamètre(s)	WT	Nombre	Diamètre(s)	WT
	(")	(")	(t)		(")	(")		(")	(")

PILES									
Poids	Follower		Point d'application	coefficient utilisé	Charges normales		Charges extrêmes		Moyen de mise en place
	Diamètre	Poids			compression	traction	compression	traction	
(t)	(")	(t)			(t)	(t)	(t)	(t)	

aucun
1,5
2

DESCRIPTION DES PILES				
Type de pile	Nombre	Diamètre	WT	Longueur
		(")	(")	(m)
Main piles				
Insert piles				
Skirt piles				



Exploration & Production

General Specification

Date: 10/04

GS STR 100

Rev: 04

APPURTENANCES FIXES ET PROVISOIRES														
Anodes ou Courant imposé	Courant imposé	Poids total anodes (t)	Caissons	J tubes	Risers	Mud mat			Ballast	Cimentation	Poids total appurtenances fixes	Buoyancy tanks	Temporary pile guides	Poids total appurtenances provisoires
						Nature	Surface (m²)	Poids (t)						

1=Anodes

2=Courant imposé

ANODES			
Localisation	Type	Nombre	Poids unitaire (t)

BOAT LANDING				
Type d'accrochage	Bateau		Boat landing	
	Poids (t)	Vitesse (m/s)	Surface (m ²)	Poids (t)

AUTRE APPURT.	
Description	Poids (t)

TOPSIDES									
Nombre de niveaux		Surface totale (m ²)	Elévation (m)	Poids total				Modules	
principaux	secondaires			structures (t)	operating (t)	dry (t)	à l'installation (t)	Nombre	Volume total (m3)

HELIDECK						
Elévation (m)	Type d'hélicoptère	Surface (m ²)	Poids			Constructeur
			structure (t)	surcharges (t)	operating (t)	

TORCHE									
Type	Angle/ verticale (°)	Période (s)	Support		Torche		Ensemble		Constructeur
			longueur (m)	Poids (t)	longueur (m)	Poids (t)	longueur (m)	Poids (t)	

PASSERELLES									
Bridge	Lien vers?	Longueur (m)	Poids						
			structure			operating (t)	test (t)	Live Loads (t)	Dry (t)
			principale (t)	secondaire (t)	globale (t)				

GRUES			
Marque	Capacité de levage (t à m)	Age (années)	Remarque(s)



General Specification

Date: 10/04

GS STR 100

Rev: 04

[illegible]