APPENDIX III

STRUCTURE OF THE BUYER CODE NUMBER SYSTEM DOCUMENT LIST AND ELECTRONIC TRANSMITTAL

1. INTRODUCTION:

- 1.1 This procedure covers the numbering of all documentation deliverables associated with the Unit Project.
- 1.2 The document numbering procedure also covers all vendor/supplier produced documentation, and full details of the various sequence codes are given.
- 1.3 All documentation numbering will be based on the BUYER standard numbering system as laid out in the Contract.
- 1.4 The project numbering system has been developed in such a way as to aid computerized data management and reporting facilities.

2. RESPONSIBILITIES:

2.1 It is the responsibility of SELLER personnel to ensure that all documentation deliverables are numbered in accordance with both this procedure and BUYER standards.

3. GENERAL:

3.1 Symbol Key

- A Identifies a mandatory Alpha character
- N Identifies a mandatory Numeric character

3.2 General

3.2.1 Refer to the notes at the end of each section for project specific variations.

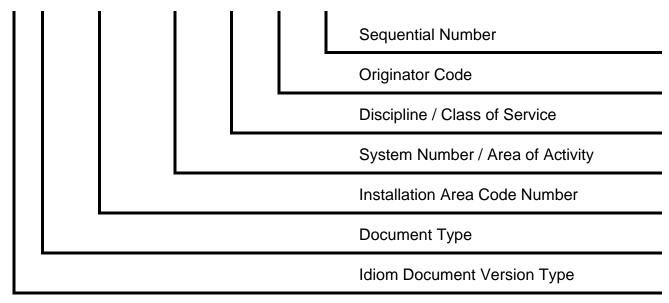
4. DOCUMENT DELIVERABLE NUMBERING

4.1 Design Documentation & Requisitions

4.1.1 All design drawings, documentation and requisitions will be numbered using the following format:

4.1.2 Sample Number:

A - AA - NNNN.NN - NNNN - NNN - AAA - NNN



- 4.1.3 Document Type two alpha characters (AA as per Sample Number in the item 4.1.2):
 - DE Drawings (P&ID's, plans, sketches, graphics, curves, tables, diagrams preliminary drawings etc.)
 - ET Technical Specifications (technical breakdown, design criteria, engineering specifications, procedures, philosophies etc.)
 - FD Data sheets
 - IS Isometrics
 - LD Document List
 - LI Lists (instrumentation, materials, equipment, schedules etc.)
 - MA Operating and Maintenance Manual
 - MC Calculations Reports and studies
 - MD Description memorandum premises (Naval, Structures, Process)
 - PT Technical Analysis
 - RM Materials requisitions
 - RL Reports
- 4.1.4 <u>Language Document Version Type</u> one alpha character (A as per Sample Number in the item 4.1.2)
 - I English.
- 4.1.4.1 For Portuguese language document version there is no alpha character.
- 4.1.5 <u>Installation Area Code Number</u> (NNNN.NN as per Sample Number in the item 4.1.2)

3010.2Q - P-86

- 4.1.6 <u>System Number/Area of Activity</u> (NNNN as per Sample Number in the item 4.1.2)
- 4.1.6.1 Four numeric characters as per listed in N-1710 ANNEX C AREA OF ACTIVITY attached in this Appendix



03.03 - EXHIBIT III - APPENDIX III_attachement ANNEX C.pdf

- 4.1.7 <u>Discipline/Class of Service</u>
- 4.1.7.1 Three numeric characters as per listed in N-1710 ANNEX D SERVICE CATEGORIES attached in this Appendix



03.03 - EXHIBIT III - APPENDIX III_attachement ANNEX D.pdf

A-AA-NNNN.NN-NNNN-NNN-AAA-NNN A PNNN.EXT

4.1.8 <u>Sequential Number</u> - three numeric characters (NNN as per Sample Number in the item 4.1.2)

Sequence number 001, 002, 003...etc.

- 4.1.9 <u>Originator Code three alpha characters (AAA as per Sample Number in the item 4.1.2)</u>
- 4.1.9.1 During the engineering Kick of meeting, BUYER will inform this code to SELLER use.

4.2 Electronic Files

- 4.2.1 Technical documents electronic files will be identified using the following format:
- 4.2.1.1 Sample Number:

Software Extension

Part Number

Document Revision

Sequential Number (see 4.1)

Originator Code (see 4.1)

	Discipline/Class of Service (see 4.1)
	System Number/Area of Activity (see 4.1)
	Installation Area Code Number (see 4.1)
	Document Type (see 4.1)
	Idiom Document Version Type

- 4.2.2 <u>Document Revision</u> one alpha character Note: No numerical character
- 4.2.2.1 Revision sequence is 0, A, B, C, D...etc.
- 4.2.3 Part Number two numeric characters
- 4.2.3.1 Sequence number to be used when the document has several electronic. See example on next page.
- 4.2.4 <u>Software Extension</u>
- 4.2.4.1 Original software identification extension.

Example: Document composed by three files

Document - I-MA-9999.99-6520-940-PPP-001; Rev. B:

Electronic Files - I-MA-9999.99-6520-940-PPP-001_B_P001.doc;

I-MA-9999.99-6520-940-PPP-001_B_P002.dgn; I-MA-9999.99-6520-940-PPP-001_B_P003.dgn

BUYER EDM LOADERS TO BE USED BY SELLER

During the Engineering Kick of Meeting, BUYER will provide to SELLER Loaders files to be used by SELLER to load documentation in the BUYER's Electronic Document Management (EDM) system.

ENGLISH

12 / 2024

Annex C - Area Of Activity

List Of Codes

Contents	Pages
0000 - General	2
1000 - Oil Drilling, Production And Treatment	2
2000 - Process Units - Refining	6
3000 - Process Units - Chemical, Petrochemical, And Fertilizers	9
4000 - Process Units - Alternative Energy Sources	11
5000 - Utilities, Units And Auxiliary Systems	13
6000 - Transport, Transfer, And Tankage	17
7000 - Special Distribution Systems And Electricity	22
8000 - Areas, Buildings, And Support And Temporary Facilities	23
9000 - Prorated Costs And/Or Costs Not Incorporated Into The Job	26

	N-1710 REV. BF	ENGLISH	12 / 2024	
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0000 - GENERAL

1000 - Oil Drilling, Production And Treatment

1100 - Drilling

1110 - Rig With Components

- Drilling	Derrick
	- Drillina

- Crown Block with Movement Compensator for Drilling String

1113 - Drilling Deck Mobile Equipment

1120 - Drilling Deck Equipment And Systems

1121	 Drilling Control
1122	- Drawworks

- Rotating Table, Top Drive and Associated Equipment

1124 - Tensioning Systems

- High Pressure Air System for Tensioners and Compensators

1130 - Mud And Bulk Systems

1131	 Low Pressure Mud System
1132	 High Pressure Mud System
1133	- Bulk Storage and Transfer System

1140 - Well Control Equipment And Systems

11	141	- BOP Stack

1142 - BOP Control System

1143 - Diverter with Control System

- Riser System including choke and kill lines

1150 - Material Handling Equipment And Systems

1151	- Pipe Handling System
1152	- BOP Conveying System
1153	- Lifting Devices (winches, traveling cranes, monorails, etc.)

1160 - Service Equipment And Systems

1161	 Cementing Unit
1162	 Well Test System

1170 - Subsea Wellhead Equipment

1180 - Coating And Cementing Materials And Equipment

N-1710 REV. BF ENGLISH 12 / 2024

1200 - Production

1210 - Well

- Satellite Manifold (Onshore Manifold)
 - Oil and Gas Transfer and Metering Station

1220 - Process Units

1221	- Gathering Station
1222	- Oil Treatment Station
1223	- Petroleum Processing (Mobile Units or Platforms)
1224	- Fluid Station (Completion and Stimulation Fluids)
1225	- Petroleum Vapor Recovery
1226	- Oil Fractionation Unit
1227	- Glycol Regeneration Unit

1230 - Natural Gas Units

1231	 Processing and Handling Unit (Compression, Distribution, etc)
1232	- Liquefaction Unit
1233	- Dehydration Unit
1234	- Sulfur Removal Unit
1235	- CO₂ Recovery Unit
1236	- Condensate Stabilization Unit
1237	- Condensate Processing Unit
1238	- Natural Gas Cooling Unit
1239	- Natural Gas Storage Unit

1240 - Artificial Lift (Primary Recovery)

1241	 Mechanical Pumping System
1242	- Hydraulic Pumping System
1243	- Electrical Centrifugal Pumping System
1244	- Gas Lift System

1250 - Oil Recovery (Secondary And Tertiary Recovery)

1251	 Water Injection System
1252	 Gas Injection System
1253	 Steam Injection System
1254	- CO ₂ Injection System
1255	- "In-Situ" Combustion System
1256	- Caustic Soda Injection System

1260 - Injection Of Chemicals For Production

1261	- Chemical Injection in Oil or Gas
1262	- Chemical Injection in Oily Waters
1263	- Chemical Injection in Injection or Intake Water

14-17 10 KEV. BI ENGLISH 1272024	N-1710 REV. BF ENGLISH 12 / 2024
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1300 - Structures Of Offshore Production And Drilling Units

1310 - Fixed Platform Structures

1311	 Jacket (Includes Piles, Mooring Place, Fenders in General, Lugs,
	Conductor Guides, Mud Mats)
1312	- Deck (Upper, Middle, and Lower) and Auxiliary Structures
	(Stairways, Catwalks, Crane Pedestals)
1313	- Helideck
1314	- Support Structures of Flares
1315	- Bridges for Interconnecting Platforms

1320 - Semi-Submersible Platform Structures

1321	- Floater (Pontoon)
1322	- Column (Leg)
1323	- Deck and Auxiliary Structures, Trailers and Fenders
1324	- Mooring System (Anchoring)
1325	- Anti-Flood System
1326	- Drilling Deck
1327	- Helideck

1330 - Jack-Up Platform Structures

1331	- Leg
1332	 Deck and Auxiliary Structures

1340 - Tension Leg Platform (Tlp) Structures

1341	- Pontoon
1342	- Column (Leg)
1343	- Deck and Auxiliary Structures
1344	- Tendon
1345	- Foundation

1350 - Unit And/Or Storage (Fpso Or Fso Type)

1351	- Hull
1352	- Deck and Auxiliary Structures, Trailer, and Fenders
1353	- Helideck
1354	- Support Structures of Flares
1355	- Support Structure of Turret (Casing)
1356	- Turret Structure
1357	- Mooring System (Anchoring)
1358	- Cargo Tanks and Empty Spaces (Voids and Cofferdams)
1359	- Offloading System
135A	- Forward offloading hose string
135B	- Forward mooring system
135C	 Forward emergency offloading hose string
135D	- After offloading hose string
135E	- After mooring system
135F	 After emergency offloading hose string
135G	- Portside Pull-back system
135H	- Starboard Pull-back system

1360 - Estruturas de Navio-Sonda

136	1	-	Hull

1362 - Deck and Auxiliary Structures

1363 - Helideck

1400 - Modular Facilities

1410 - Modules (See Note)

1411	- Module 1
1412	- Module 2
1413	- Module 3
1414	- Module 4
1415	- Module 5
1416	- Module 6
1417	- Module 7
1418	- Module 8
1419	- Module 9

1420 - Modules (See Note)

1421	- Module 10
1422	- Module 11
1423	- Module 12
1424	- Module 13
1425	- Module 14
1426	- Module 15
1427	- Module 16
1428	- Module 17
1429	- Module 18

1430 - Modules (See Note)

1431 - Module 19 1432 - Module 20

NOTE For documents with various modules, "1400" shall be used.

1500 - Subsea Facilities

1510 - Production Units

1511	 Subsea Template And Its Piles
1512	- Subsea Manifold (PLEM)
1513	- Articulated Towers (for Process or Loading)
1514	- Manifold Center
1515	- Subsea Template-Manifold
1516	- Wet Christmas Tree (WCT)
1517	- Atmospheric Manifold
1518	- Subsea Separation Systems
1519	- Flexible or Rigid Pipelines

	N-1710 REV. BF	ENGLISH	12 / 2024	
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1520 - Auxiliary Equipment/Tools

- Remote Operation Vehicle (ROV)

1522 - Pigging

- Workover Equipment Control System (IWOCS)

1600 - Extraction

1610 - Mining

1620 - Solid Preparation

1621 - Crushing Unit

- Fines Utilization Unit (Sintering, Briquetting, Pelleting)

2000 - Process Units - Refining

2001 - Helideck (Cancelled, Use 8277 - Helideck)

2100 - Fractionation Processes

2110 - Crude Fractionation Processes

2111 - Atmospheric Distillation Unit

2112 - Vacuum Distillation Unit

2113 - Asphalt Unit

2114 - Atmospheric and Vacuum Distillation Unit

2120 - Product Fractionation Processes

2121 - Gas Recovery Unit

2122 - Naphtha Stabilization Unit

2123 - Solvents Unit

2124 - Refinery Gas Processing Unit

2125 - Hexane Unit

2126 - Aviation Gasoline Unit

2127 - Light Hydrocarbon Refinery Processing Unit (UPHLR)

2150 - C5+ Fractionation Unit

2200 - Conversion Processes

2210 - Thermal Conversion Processes

2211 - Thermal Cracking Unit

2212 - Delayed Coker Unit

2213 - Pyrolysis Unit

2214 - Visbreaker Unit

N-1710 REV. BF ENGLISH 12 / 2024

2220 - Catalytic Conversion Processes

2221	- Catalytic Cracking Unit
2222	- Catalytic Reforming Unit
2223	- Alkylation Unit
2224	- Hydrocracking Unit
2225	- Sulfur Recovery Unit
2226	 Hydroisomerization Unit
2227	- Isooctane Unit
2228	- NOx and SOx Emission Abatement System

2300 - Treatment Processes

2310 - Hydrogenation Processes

2311	 Hydrogen Generation Unit by Refurbishing
2312	- Hydrodesulfurization Unit
2313	 Hydrotreating Unit (HDT, JET FUEL and DIESEL)
2314	- Hydrofinishing Unit
2315	 Coke Naphtha Hydrotreating Unit
2316	 Cracked Naphtha Hydrodesulfurization Unit
2317	 Aromatic Stream Hydrogenation Unit
2318	- Olefinic Stream Hydrogenation Unit
2319	 Diethanelamine Unit - UDEA (CANCELLED)
231A	 Hydrogen Generation Unit by Electrolysis

2320 - Removal Processes

2321	- Caustic Washing Unit
2322	- Sweetening Unit
2323	- H ₂ S and/or CO ₂ Removal Unit
2324	- Acid Washing Unit
2325	- Deasphalting Unit
2326	- Solvent Dearomatization Unit
2327	- Tail Gas Unit
2328	 MEA/DEA/MDEA Amine Removal Unit
2329	- Light Refinery Hydrocarbon Treatment Unit
232A	- Hydrogen Recovery Unit

2330 - Various Treatments

2331	- Extractive Regenerative Caustic Treatment (former MEROX
Treatment)	
2332	- Bender Treatment
2333	- Gasoline Treatment
2334	- Diesel Drying

2340 - Other Hydrogenation Processes

2341 - Unstable Currents Hydrotreating Unit

2350 - Regeneration Process

2351 - MEA/DEA/MDEA Amine Regeneration Unit

2400 - Lubricant And Paraffin Production

2410 - Extraction Processes

2411 - Oil Dewaxing Unit2412 - Dearomatization Unit

2420 - Paraffin Production

2421 - Wax Deoiling Unit
2422 - Percolation Unit
2423 - N-Paraffin Production Unit
2429 - Paraffin Tablet Packaging Unit

2430 - Wax And Lubricant Hydrogenation

2431 - Wax Hydrogenation Unit2432 - Lube Oil Hydrogenation Unit

2440 - Naphthenic Lubricant Unit

2500 - Oxygenate Production Processes

2510 - MTBE Unit 2511 - TAME Unit

2800 - Pilot Units

2801 - Process Settings of Quick Conversion Research Unit 2807 - Pitch Process Settings Research Unit 2808 - Pitch Research Unit 2812 - Large Pilot Coker Unit 2813 - Continuous Coker Pilot Unit 2815 - Jet Impingement Laboratory 2817 - Mixing and Online Certification Research Pilot Unit 2828 - Hydrocyclone Research Unit 2845 - Hot Mud Bed Reactor Studies Unit 2860 - Combustion Laboratory - Instrumentation Technology Research and Validation Unit 2880

2900 - Miscellaneous Processes

2910 - Raw Material Production Processes

2911 - Ethylene Unit2912 - Propylene Unit

2920 - Formula 1 Gasoline Production Processes

2921 - Formula 1 and Special Fuel Formulation Unit

N-1710 REV. BF ENGLISH 12 / 2024

3000 - Process Units - Chemical, Petrochemical, And Fertilizers

3100 - Raw Material Production Processes For Petrochemical

3110 - Fractionation Processes

3111 - Naphtha Fractionation Unit 3112 - Aromatic Fractionation Unit

3120 - Thermal Conversion Processes

3121 - Pyrolysis Unit

3122 - Thermal Hydrodealkylation Unit

3130 - Separation Processes

3131 - Aromatic Extraction Unit

3132 - Butadiene Extractive Distillation Unit

3133 - Paraxylene Adsorption Unit

3140 - Catalytic Conversion Processes

3141 - Catalytic Dealkylation Unit

3142 - Aromatic Transalkylation Unit

3143 - Xylene Isomerization Unit

3144 - Catalytic Reforming Unit

3145 - Diene Hydrogenation (Selective) Unit

3146 - Methanol Unit

3147 - Pyrolysis Gasoline Hydrogenation Unit

3148 - Styrene Unit

3150 - Production Processes For Petrochemicals

3151 - Acetic Acid

3152 - Formic Acid

3153 - Methanol

3154 - Formaldehyde

3155 - Melamine

3200 - Fertilizer Production Processes

3210 - Nitrogenated Fertilizers

3212 - Urea Unit

3213 - Ammonium Nitrate Unit

3214 - Ammonium Sulfate Unit

3215 - Automotive Liquid Reducing Agent Unit (ARLA32)

3216 - Urea Granulation Unit

3217 - Melamine Unit

3218 - Urea Pearl Unit



14-17 10 REV. BF ENGLISH 12/2024	N-1710 R	EV. BF ENG	ILISH 12 / 2024
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3220 - Phosphated Fertilizers

3221 - Phosphoric Acid Unit
3222 - Ammonium Monophosphate Unit
3223 - Ammonium Diphosphate Unit
3224 - Single Superphosphate Unit
3225 - Triple Superphosphate Unit

3300 - Polymer Production Processes

3310 - Synthetic Resin Production Processes

- Styrene-Acrylonitrile (SAN) Resin Unit

3320 - Elastomer And Lattice Production Processes

3321 - Liquid Polybutadiene Unit

3400 - Inorganic Processes

3410 - Acid Production

3411 - Nitric Acid Unit 3412 - Sulfuric Acid Unit

3420 - Clay Production

3421 - Activated Acid Unit

3490 - Catalyst Production

3491 - Alumina Catalyst Unit
3492 - Zeolytic Catalyst Unit
3493 - Ex-Situ Catalyst Regeneration Unit

3494 - Catalyst Development Unit

3500 - Organic Processes

3510 - Chlorination Processes

3511 - Benzene Chlorination Units

3520 - Nitration Processes

3530 - Emulsification Processes

3531 - Explosive Emulsion Unit

N-1710 REV. BF	ENGLISH	12 / 2024

3590 - Dye Production Processes

3591 - Indigo Dye Unit

3800 - Pilot Units

3810	 Nitrogen Fertilizers
3811	 Mixed Urea Pilot Unit
3812	 Drying by Atomization Pilot Unit
3813	- FCC Catalyst Preparation Pilot Unit - Jade
3814	- Ion Exchange Pilot Unit
3815	 Zeolites Crystallization Pilot Unit
3816	- Multipurpose Pilot Unit - Supral

4000 - Process Units - Alternative Energy Sources

4100 - Biomass

4110 - Ethanol Production

4111	- Juice Extraction Unit
4112	- Starch Extraction and Hydrolysis Unit
4113	- Fermentation Unit
4114	- Distillation Unit
4115	- Broth Treatment Unit
4116	- Broth Evaporation Unit
4117	- Ethanol Dehydration Unit
4118	- Vinasse Concentration/Treatment Unit

4120 - Biomass Processing

4121	 Biomass Gasification Unit
4122	- Bagasse Conditioning Unit
4123	- Biogas Generation Unit
4124	- Lignocelluloses Ethanol Production Unit

- Lignocelluloses Ethanol Production Uni

4200 - Alcohol Chemistry

4210 - Raw Material Production

4211	- Alcohol Ethylene Production Unit
4212	- Alcohol Ethylene Purification Unit

4300 - Shale

4310 - Shale Processing

4311	- Shale Retorting Unit
4312	- Shale Oil Distillation Unit
4313	 Shale Treatment Unit
4314	 Oil Dust Separation Unit

	N-1710 REV. BF	ENGLISH	12 / 2024
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4400 - Coal

4410 - Coal Processing

4411 - Coal Gasification Unit

4500 - Mining

4501	 Soil Recovery Unit
4502	 Rock Dismantling Unit
4503	- Sterile Removal Unit
4504	- Excavation and Loading Unit

4600 - Biofuels Production

4601	 Oil Production Unit (cancelled, use 4610)
4602	- Transesterification Unit (cancelled, use 4621)
4603	- External Complementary System (cancelled)

4610 - Treatment Processes

4611	- Vegetable Oil Refining Unit
4612	- Glycerin Purification Unit
4613	- Pre-Treatment Unit for Oils, Fats and Fatty Acids

4620 - Conversion Processes

4621	- Transesterification Unit
4622	- Esterification Unit
4623	- Hydroisomerization Unit
4624	- Hydroprocessing Unit for Oils, Fats and Fatty Acids (HEFA)

4700 - Solar Energy

4800 - Pilot Units

4810 - Shale

4811	- Multipurpose Pyrolysis Research Unit (former Unit Petrosix pilot)
4812	- Pilot Ore Treatment Unit
4814	- Oil Dust Separation Pilot Unit
4815	- Solar-photovoltaic and renewable hydrogen Pilot Unit

4900 - Vegetable Oil Production

4910 - Raw Material Preparation Processes

4920 - Vegetable Oil Extraction Processes

4921 - Mechanical Extraction Unit

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N-1710 REV. BF ENGLISH 12 / 2024	ļ
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4922	 Solvent Extraction Unit
4923	- Almond Oil Extraction Unit

4930 - Treatment Processes

4931 - Pie/Bal Conditioning Unit4932 - Composting Unit

5000 - Utilities, Units And Auxiliary Systems

5100 - Utilities

5110 - Water Intake And Supply

5111	- Salt Water Intake
5112	- Fresh Water Intake
5113	- Water Pipeline (Aqueducts)
5114	- Water Tank
5115	 Fresh Water Tankage and Distribution
5116	- Artesian Wells
5117	- Unidirectional Feed Tank or Unidirectional Tower

5120 - Treatment, Cooling, And Heating Of Water And Thermal Fluids

5121	- Water Treatment Unit
5122	- Water Desalination Unit
5123	- Condensate Treatment Unit
5124	- Water Cooling Unit (Cooling Towers)
5125	- Water Heating Unit
5126	- Acid Water Treating Unit
5127	- Thermal Fluid Heating Unit
5128	- Water Demineralization or Polishing Unit
5129	- Air Cooling or Heating Unit
512A	- Steam Tempering System
512B	- Oil Cooling System
512C	- Steam Ejector System

5130 - Utilities Center

5131	- Central Steam Generation Station
5132	- Electrical or Thermal Generation System
5133	- Central Liquid Fuel Station
5134	- Compressed Air Station
5135	- Fuel Gas Station
5136	- Instrument Air Station
5137	- Service Air Station
5138	- Starting Air Station
5139	- Hydraulic Station

5140 - Electric Energy System

- Transmission System (External Lines and Associated Equipment)

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5142	- Main Entrance Substation (Utility Company only)
5143	 Normal Electrical Distribution System (Networks and Associated Equipment)
5144	- Auxiliary Substations
5145	 Normal Lighting System (Networks, Panels, and Associated Equipment)
5146	 Grounding System and Lightning Protection System (Grounding, Grid, Lightning Arresters, Descents, and Associated Equipment)
5147	 Main Generation Station (Generators, Panels, Substation when only for Generation or Mixed Generation / Utility Company and Associated Equipment)
5148	 Essential Electrical Distribution System (Networks, Panels, and Associated Equipment)
5149	 Essential Lighting System (Networks, Panels, and Associated Equipment)

5200 - Auxiliary Units And Systems

5210 - Product Preparation

5211 - Tetraethyl Lead Unit 5212 - Asphalt Mixing Unit

5220 - Final Product Treatment

5221 - LPG Retreating Unit
5222 - Dye Addition Unit
5223 - Odorization Unit

5230 - Product Packaging

5231 - Solids Handling and Packaging5232 - Solids Storage

5240 - Gas Generation

5241 - Inert Gas Generation Unit5242 - Gas Nitrogen System

5250 - Acclimatization Systems

- Ventilation (Cancelled - Use 5254 and 5255)
- Air Conditioning
- Cooling
- Ventilation - Supply
- Ventilation - Exhaust
- Dehumidify System

5260 - Auxiliary Systems

- Emergency Generation System (Generators, Substation, Panels, and Associated Equipment)

INTERNAL

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N-1710 REV. BF	ENGLISH	12 / 2024
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5262	 Auxiliary Generation System (Generators, Substation, Panels, and Associated Equipment)
5263	 Emergency Lighting System (Networks, Panels, and Associated Equipment)
5264	 Telecommunications Energy System (Networks, Panels and Associated Equipment)
5265	 Direct Current and UPS System (Networks, Panels, UPSs, Battery Chargers, Rectifiers, and Associated Equipment)
5266	- Load Handling Unit
5267	 Cathodic Protection System (Networks, Panels, and Associated Equipment)
5268	- Pull In/Pull Out Station
5269	 Electrical Emergency Distribution System (Networks, Panels, and Associated Equipment)

5270 - Auxiliary Systems

5271	 Washing of Cargo Tanks ("COW" and "SWW")
5272	- Petroleum Asphalt Waste Heating System
5273	- Caustic Soda Solution Preparation Station
5274	- Gas Turbines Air Compressors Cleaning Station
5275	- Online chromatography system

5280 - Air Intake/Recovery System

5281 - Vacuum generator

5300 - Waste Systems

5310 - Sanitary Wastewater

5311	 Sanitary Wastewater Network
5312	- Sanitary Wastewater Treatment Unit

5320 - Industrial Wastewater

5321	- Clean Storm Water System (Collection, Flow, Grading, and
	Desanding)
5322	- Contaminated System (Collection, Flow, Flow Division,
	Accumulation, Grading, and Desanding)
5323	- Oily System (Collection, Flow, Flow Division, and Accumulation)
5324	- Other Systems (Acid Waters, Caustic Drainage, Hydrogen Sulfide Spent Sodas, Phenolic Sodas and Others)
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5330 - Effluent Treatment

5331	- Primary Treatment (Oil and Water Separation and Flotation)
5332	- Secondary Treatment (Biological or Chemical Treatment)
5333	- Tertiary Treatment (Complementary Treatment)
5334	- Effluent Treatment Unit
5335	- Ballast Tankage
5336	- Slop Tankage
5337	- Slop Distribution
5338	- Mud and Oily Slurry Drying System

INTERNAL



N-1710 REV. BF ENGLISH 12 / 2024

NOTE The nomenclatures Industrial Waste Treatment Unit (UTDI), Industrial Waste Treatment Station (ETDI) or Effluent Treatment Station (ETE) are also used.

5340 - Outfall

5400 - Safety Systems

5410 - Product Discharge Systems

5411	- Emergency Blow Down System
5412	- Flare System
5413	- High Pressure Burner
5414	- Low Pressure Burner
5415	- Atmospheric Vent System

5420 - Fire Fighting System

5421	 Fire Fighting Water Reservoir
5423	- Fire Fighting Water System
5424	- Foam System
5425	- Inert Gas System (CO ₂ , Halon)
5426	- Fire Fighting Equipment Shelter
5427	 Fire Fighting Training Area
5428	 Portable Fire Fighting System

5430 - Salvage And Abandonment System

5431	- Salvage System
5432	- Passive Protection
5433	- Escape Routes
5434	- Personal Protection Equipment (PPE)
5435	- Collective Protection Equipment (CPÉ)

5450 - Environmental Impact Control

5460 - Environmental Data Forecasting

5470 - Asset Control

5471	- Perimeter Fencing
5472	- Presence Detection System
5473	- Alarm and Monitoring System
5474	- Image Filing System

5500 - Support And Supervision Systems

5510 - Telecommunications (Radio, Acoustic, Optical)

5511	- Specialized Telecommunications System
5512	- Transmission System

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5513	- Videoconference System
5514	- CCTV System
5515	- Radio Communication System
5516	- Telephony System
5517	- Data System
5518	- PAGA System
5519	- Television System (former Telesupervision System)
551A	- Telecommunication Infrastructure
551B	- Telecommunications Consulting

5520 - Data Control, Supervision, And Acquisition System

- Environmental Monitoring System
- Fire and Gas Detection System
- Central Operation and Supervision Control Station (ECOS)
- Subsea Data Acquisition System (SAS and SSAS)
- Leak Detection System
- Building Automation
- Alarms and Sirens
- Access Control
- Stress Monitoring System for Anchor Chains, Tendons, and Risers
- Invoicing Metering System
- Equipment Protection System (Vibration)
- Infrastructure for automation core network

5330 - Positioning And Tracking System

5531 5532	 - Dynamic Global Positioning System (DGPS) (Cancelled) - System for Monitoring Stress on Anchor Chains or Tendons (Cancelled, see 5529)
5533	- Radiopositioning System
5534	- Satellite Positioning System
5535	- Acoustic Positioning System
5536	- Positioning System with Inertial Sensors
5537	- Integrated Positioning System
5538	- Dynamic Positioning System

5550 - Hvac Systems

5800 - Pilot Units

5801 - Pilot Acid Water Treatment Unit

6000 - Transport, Transfer, and Tankage

6100 - Interconnecting Piping

6110 - Process Interconnection

6111	 Interconnection between Activities Areas
6112	- Interconnection for Receipt of Raw Materials
6113	- Interconnection for Delivery of Products

INTERNAL

	N-1710 REV. BF	ENGLISH	12 / 2024	
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6120 - Interconnection Of Utilities

6121	- Steam System
6122	 Potable Water System
6123	 Cooling Water System
6124	- Compressed Air System
6125	- Fuel (Oil & Gas) System
6126	 Reused Water System

6200 - Pumping, Compression, And Metering Stations

6210 - Crude And Petroleum Product Pumping Stations

6211	- Crude Petroleum Pumping Station
6212	- Intermediate Product Pumping Station
6213	 Light Product Pumping Station
6214	- Dark Product Pumping Station
6215	- Slop Pumping Station

6220 - Special Product Pumping Stations

6221	 Lubricant Pumping Station
6222	 Paraffin Pumping Station

6230 - Miscellaneous Pumping Stations

6231	 Alcohol Pumping Station
6232	- Water Pumping Station
6233	- Sulfuric Acid Pumping Station
6234	- Vegetable Oil and Fat Pumping Station

6240 - Compressor Stations

6250 - Metering Stations

6251	 Oil Metering Station
6252	 Gas Metering Station

6260 - Pressure Reduction Stations

6261 - Flow Control Stations

6270 - Pressure Reduction Station Or City Gate

6280 - Online Mixing System

6290 - Gas Distribution Stations - Edg



N-1710 REV. BF ENGLISH 12 / 2024	
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6300 - Tankage

6310 - Crude And Petroleum Products Tankage

6311 6312	- Crude Petroleum Tankage- Intermediate Product Tankage
6313	 Light Product Tankage
6314	 Dark Product Tankage
6315	- LPG Tankage
6316	- LNG (Liquefied Natural Gas) Tankage
6319	 Storage of Finished Products

6320 - Lubricants And Paraffin Tankage

6321	 Basic Lubricants Tankage
6322	- Intermediate Lubricants Tankage
6323	- Finished Lubricants Tankage
6324	- Additives for Lubricants Tankage
6325	- Paraffin Tankage

6330 - Chemicals Tankage

6331	 Tetraethyl Lead Tankage
6332	- DEA Storage
6333	 Sulfuric Acid Tankage

6340 - Petrochemical Products Tankage

6341	- Ethylene Tankage
6342	- Styrene Tankage
6343	- Butadiene Tankage

6350 - Fertilizers Tankage

6351 - Ammonia Tankage

6360 - Tankage Of Miscellaneous Products

6361	- Ethanol Tankage
6362	- Water (Raw, Treated) Tankage
6363	- Biofuel Tankage (for ethanol tankage use code 6361)

6400 - Loading And Unloading Stations

6410 - Loading Stations

System
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N-1710	REV. BF	ENGLISH	12 / 2024

6420 - Vehicle Weighing Stations

6430 - Filling Station

6440 - Unloading Stations

- Tank Truck Unloading System- Tank Car Unloading System

- Tank Barge and Tanker Unloading System

6450 - Condensate Gas Manifold

6460 - Offshore Lng Regasification Unit

6500 - Pipelines

6510 - Oil Pipelines

6511 - Petroleum 6512 - Dark Products 6513 - Light Products 6514 - LPG 6515 - LGN

6520 - Gas Pipelines

6521 - Natural Gas 6522 - Refinery Gas

6530 - Alcohol Pipelines

6540 - Mineral Pipelines

6550 - Ammonia Pipelines

6560 - Water Pipelines

6570 - Pipelines For Various Products

6571 - Slop
 6572 - Effluents
 6573 - Sulfuric Acid
 6574 - Produced Water

6600 - Berthing, Mooring, Hydrographic And Vessel Facilities

N-1710 REV. BF ENGLISH 12 / 2024

6610 - Berthing

6611 - Piers and Dolphins

- Mooring Place for Support Vessels

6613 - Fixed Wharf 6614 - Floating Wharf

6620 - Mooring

6621 - Buoy 6622 - Monobuoy

- Multi-Buoy Mooring System - Turret (Cancelled, use 1356)

6630 - Hydrographic Structures

6631 - Navigation Channel6632 - Evolution Basin

6633 - Piers

6640 - Transport Vessel Structures

6641 - Main Deck
 6642 - Second Deck
 6643 - Bottom
 6644 - Ballast Tank

6645 - Hull

6646 - Support Structure

6650 - Navigational Aid Systems

6651 - Mooring

6652 - Ballasting and Drainage6653 - Navigation and Propulsion

6654 - Towing

6700 - Transportation And Handling Of Solids

6710 - Fertilizers

6711 - Urea

6712 - Potassium Chloride

6800 - Bulk Material Storage

6810 - Raw Material Storage

6811 - Coal Storage

6812 - Crude Shale Storage6813 - Retorted Shale Storage

14-17 10 KEV. BI ENGLISH 1272024	N-1710 REV. BF ENGLISH 12 / 2024
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6820 - Storage Of Miscellaneous Products

6821 - Coke Storage 6822 - Sulfur Storage 6823 - Fertilizer Storage 6824 - Catalyst Storage - Chemical Product Storage 6825

6826 - Urea Storage 6827 - Melamine Storage

6830 - Biomass Storage

6840 - Natural Gas Storage

6900 - General Area

6901 - Terminal - Waterway Terminal 6902

6903 - Land Terminal

7000 - Special Distribution Systems And Electricity

7100 - General

- Production Area 7101 7102 - Raw Material Storage System - Primary Finished Product System 7103 - Special Raw Material System 7104 - Secondary Finish Product System 7105 7106 - Special Products System

7300 - Asphalt

7301 - Polymer Asphalt Production System

7400 - Additive And Treatment Systems

7401 - Gasoline Additive System 7402 - Diesel Oil Additive System

- Jet Fuel and Aviation Gasoline Treatment System 7403

- Butane System 7404 7405 - Urea Covering

7406 - Fuel Oil Additive System

7500 - Electric Power Generation Systems

7501 - Thermoelectric Central - Hydroelectric Central 7502 - Small Hydroelectric Central 7503

7504 - Wind Power Plant

- Solar-photovoltaic Central 7505

7506 - Heliothermic Plant

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N-1710	REV. BF	ENGLISH	12 / 2024

7507 - Waste Energy Recovery Unit

7508 - Hybrid Plant

7600 - Electric Power Transmission Systems

7601 - Transmission Line 7602 - Transmission Substation

7700 - Electric Power Distribution Systems

7701 - Distribution Line7702 - Distribution Substation

8000 - Areas, Buildings, And Support And Temporary Facilities

8100 - General Area

8110 - Installation Area

8111 - Administrative Area
8112 - Industrial Area
8113 - Road Building Systems
8114 - Pipe Storage Area

8120 - Area Outside The Facility

8121 - Parking - External Access Road 8122 - Community Center 8123 8124 - Access Roads 8125 - Landing Strip 8126 - Family Relocation Area 8130 - Area for Scheduled Shutdowns of Process Units 8131 - Forest Nursery - Biological Reserve 8132 8133 - Nature Conservation Unit

8200 - Buildings

8210 - Administrative Buildings

8211 8212	- Administration- Reception and Public Relations
8213	- Training Center
8214	- Restaurant
8215	- Medical and Hospital Station and Outpatient Unit
8216	- Timekeeping Station
8217	- Telecommunications Centers, Communication Station
8218	- General Services Building
8219	- Transportation Service Building

N-1710	REV. BF	ENGLISH	12 / 2024	
14 17 10			,	

8220 - Industrial Buildings

8221 - Control Room/Control Center 8222 - Laboratory 8223 - Industrial Safety 8224 - Maintenance Shop 8225 - Inspection 8226 - Store House 8227 - Warehouse, Shed, Store Room 8228 - Metallurgical Workshop 8229 - Piping Workshop 822A - Processing Workshop 822B - Assembly Workshop 822C - General Office - Treatment and Painting Line 822D 822E - Plate Patio 822F - Painting Booth - Geological Sampling Litholibrary 822G 822H - Equipment Cleaning Area

8230 - Miscellaneous Buildings

- Surveillance 8231 8232 - Guard House 8233 - Locker Room 8234 - Auto Shop 8235 - Garage, Vehicle Shelter 8236 - Bank 8237 - Residences and Housing 8238 - Center for Social and Sports Activities, Gymnasium 8239 - Commercial Center

8240 - Other Administrative Buildings

8241

8242 - Information and Documentation Center 8243 - Auditorium - Contractors' Building 8244 8245 - 3D Visualization Center 8246 - Virtual Reality Center 8247 - Technological Incubator 8248 - Convention Center 8249 - Library

- Data Processing Center

8250 - Other Industrial Buildings

8251 Main Substation Building 8252 - Auxiliary Substation Building 8253 - Generator House 8254 - Operators House 8255 - Catalyst House 8256 - Boiler House 8257 - Compressor House 8258 - Pump House (Process, Fire Fighting, Transfer pumps) - Metering House (Cabin) 8259 825A - Storage Center for Radioactive Sources

	N-1710 REV. BF	ENGLISH	12 / 2024	
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8260 - Other Miscellaneous Buildings

8261	- Scale Building
8262	- Filling or Service Station
8263	- Checking and Measuring Platforms
8264	- Water Intake and Pumping Station Building
8265	- Water Treatment Station Building
8266	- Industrial Wastewater Treatment Station Building
8267	- Passenger and Air Cargo Station
8268	- Freight and Passenger Elevators
8269	- Health Promotion Center
8270	- Solid Waste Storage Central
8271	- Buildings and Historic Heritage Areas
8272	- Cargo Handling Building and Yard
8273	- Basement
8274	- Airport
8275	- Contingency Complex
8276	- Tunnel
8277	- Helideck

8300 - Miscellaneous Structures

8310 - Engineering Structures

8311	- Dams, Weirs, and Dikes
8312	- Lakes and Canals
8313	- Erosion Control and Slope Stability Structures
8314	- Bridge

8320 - Environmental Protection Center

8321 - Green Belt

8400 - Areas And Installations For Equipment Testing, Personnel Training And Research And Development (R&D) Activities

8410 - Areas And Installations For Equipment Testing

- Wireless Systems and Networks Areas

8420 - Areas And Installations For Personnel Training

- 8430 Areas And Installations For Research & Development (R&D) Activities
- 8440 Areas And Installations For Qualification Of Personnel And Procedures

8500 - Areas And Installations For Calibration Of Measurement Instruments

8510 - Instruments For Fluid Products

8511 - Flow Measurement

	N-1710 REV. BF	ENGLISH	12 / 2024	
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8520 - Instruments For Gaseous Products

8521 - Flow Measurement

8600 - Auxiliary Buildings In Industrial Units

8601	- Local Support House
8602	- Gardening and Industrial Cleaning
8603	- Truck Inspection
8604	 Fire Fighting Training
8605	 Maintenance Stop Dress Rooms
8606	 Asset Safety Dress Rooms
8607	- Cold Water Plant
8608	- Inspection Building

8900 - Temporary Structures And Facilities

8910 - Temporary Sheds

8911	 Temporary Administrative Shed
8912	- Temporary Cafeteria
8913	- Temporary Store Room
8914	- Temporary Guard House and Surveillance
8915	- Temporary Lodging
8916	- Temporary Support Residences

8920 - Temporary Systems

8921	 Temporary Electrical Network
8922	- Temporary Telephone Network
8923	- Temporary Water Network
8924	- Temporary Compressed Air Network
8925	 Temporary Sewage Network
8926	 Temporary Fire Fighting Network

8930 - Temporary Facilities

8931	- Temporary Power House
8932	- Temporary Workshops
8933	- Temporary Substation
8934	- Pipe and Material Storage Area

8940 - Temporary Structures

- Temporary Access Roads and Streets

9000 - Prorated Costs And/Or Costs Not Incorporated Into The Job

9100 - Administration And Support

9110 - Site Administration

9111 - Site Group

9120 - General Support Costs

9121	 Conservation and Repairs
9122	- Contracted Personnel Transportation
9123	 Contracted Provision of Meals
9124	 Contracted Surveillance
9129	- Other Support Expenses

9200 - Support Services

9210 - Support Expenses

9211	- Operational Transportation (Helicopters, Barges, etc)
9212	- Port Expenses
9213	- Cargo Handling
9214	- Transportation of Materials and Equipment
9215	- Costs Common to Project Facilities

9300 - Design Engineering

9310 - Studies And Designs (Development, Conceptual Design, Basic Design, Etc)

9311	- Studies, Designs and Technical and Economic Assessments of
	Offshore Exploratory Prospects
9312	- Studies, Designs, and Technical and Economic Assessments of
	Onshore Exploratory Prospects
9313	- Studies, Projects and Technical and Economic Evaluations of
	Maritime Exploitation Prospects
9314	- Studies, Projects and Technical and Economic Evaluations of Land
	Exploitation Prospects

9900 - Costs Not Incorporated Into The Job

9910 - Pre-Operation

9990 - Recovered Costs

N-1710

REV. BF

ENGLISH

12 / 2024

Annex D - Service Categories

LIST OF CODES

Contents	Pages
000 - General	2
100 - Construction, Architecture and City Planning	2
200 - Piping	4
300 - Dynamic Equipments (Machines)	6
400 - Heat Transfer	7
500 - Static Equipment	8
600 - Mechanical Equipment	9
700 - Power Generation (Or Conversion), Electricity, Electronic and Telecommunication	s Systems 11
800 - Instrumentation and Automation	13
900 - Miscellaneous Services and Costs	15



14 17 10	N-1710 REV. BF ENGLISH 12 / 2024
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000 - General

010 - Chemical Products

100 - Construction, Architecture And City Planning

110 - Terrain

111	- Topography
112	- Aerophotogrametric Surveys
113	- Earthworks (Terrain Preparation, Dirt Movement, Rock Cut), Deforestation,
	Dug Up on Rock Tanks
114	- Surveys
115	- Geotechnical Engineering
116	- Foundation Stones

117 - Archaeology

- Hydrology - Pluviomorphology- Geophysical Research 118

119

120 - Foundations

131

121 - Staking 122 - Infrastructure

130 - Non-Metallic Structures

132	- Wooden Structures
133	- Fixed Grating
134	- Metallic Molds for Concrete Structure
135	- Wooden Molds for Concrete Structure
136	- Metal Support for Concrete Structure
137	- Fiberglass structure

- Concrete Structures

138 - Inflatable Structure

140 - Metallic Structures

141	- Plates
142	- Structural Tubes
144	- Steel Bars
145	 Anchor Bolts
146	- Profiles
147	 Fixed Grating
148	 Steel Deck
149	 Steel Platform
14A	 Locksmith

150 - General Services In Buildings

151	- Masonry
152	- Internal Coating
153	 External Coating

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154 - Roofs and Covers

- 155 Frames and Glass
- 156 Sills and Thresholds
- 157 Floors
- 158 Lining
- 159 Office Assembly Service
- 15A Construction Details
- 15B Aluminum Frame
- 15C ACM (Composite Aluminum Panel)
- 15D Glass
- 15E Sun Screen
- 15F Wood and aluminum doors
- 15G Drinking fountain
- 15H Structural Masonry Systems

160 - Special Services In Buildings

- 161 Partition Panels
- 162 Painting
- 163 Waterproofing
- 164 Cleaning and Caulker
- 165 Acoustic Conditioning

170 - General Building Installations

- 171 Electrical Wiring
- 172 Hydraulic Installations
- 173 Sanitary Installations
- 174 Gas Installations
- 175 Ventilation, Pressurizing, Air Conditioning and Exhaust Systems
- 176 Safety and Firefighting Installations
- 177 Trash Collecting, Incinerating and Compacting Systems
- 178 Vertical Transport Installations
- 179 Compressed Air Installations
- Telecommunications sites (Telecom Room or Telecom Equipment Room, Videoconference room, multimedia room, infrastructure and mounting accessories - Lighting, Air-Conditioning, furniture and others)
- 17B Pluvial water installations

180 - Urbanization Services

- 181 Landscaping
- 182 Draining
- 183 Street-building Paving
- 184 Gardening
- 185 Slopes and Embankments Restraining Services
- 186 Ecologic Rearrangement187 Fences, Walls and Gates
- 188 Bridges, Viaducts and Roundabouts

190 - Architecture

- 191 Layout
- 192 Enlargement and Renovation
- 193 Demolition

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- 194 Hazard Maps (made by CIPA)
- 195 Visual Communications
- 196 Ergonomics
- Restoration (property listed by IPHAN)

200 - Piping

210 - Hard Pipes (Conduction, Production, Coating, Drilling)

- Carbon Steel and Carbon-Molybdenum Pipes
- 212 Cast Iron Pipes
- 213 Alloy Steel Pipes
- 214 Stainless Steel Pipes
- 215 Non-Ferrous Material Pipes
- 216 Non-Metallic Pipes
- Carbon Steel Coated Pipes
- 218 Reinforced Concrete Pipes
- 219 Special Material Pipes

220 - Valves

- 221 Gate Valves
- 222 Globe Valves
- 223 Check Valves
- 224 Ball Valves
- 225 Butterfly Valves
- 226 Plug Valves
- 227 Needle Valves
- 229 Special Valves

230 - Flanges

- 231 Cast Iron Flanges
- 232 Carbon Steel Flanges
- 233 Alloy Steel Flanges
- 234 Stainless Steel Flanges
- 235 Non-Ferrous Material Flanges
- 236 Non-Metallic Flanges
- 239 Special Material Flanges

240 - Connections

- Cast or Ductile Iron Connections
- 242 Carbon Steel Connections
- 243 Alloy Steel Connections
- Stainless Steel Connections
- 245 Non-Ferrous Material Connections
- 246 Non-Metallic Connections
- 249 Special Material Connections
- 24A Tie-in

INTERNA

N-1710 REV. BF	ENGLISH	12 / 2024
N-1710 REV. BF	ENGLISH	12 / 2024

250 - Accessories

251	 Studs/Bolts and Nuts
252	- Sealing and Insulating Joints
253	- Expansion Joints

253 - Expansion Joints 254 - Traps and Sight Glass

255 - Line Filters

256 - Line Blanks (8-Figures, paddle blank and Paddle Spacer)

257 - Condensed Separators

258 - Gas Purifiers

259 - Wye (Y-shapped) Fitting

25A - Fabricated Tee

25B - Pipe Fittings and Lining for Oil Wells

25C - Sprinkler Nozzles

260 - Firefighting Materials

261 - Hydrant

- Chambers and Foam Suppliers

263 - Water Jet Cannons

264 - Hoses265 - Sprinklers

266 - Quick Connectors

270 - Ducts And Piping Systems

271 - Steam-Heating Systems

272 - Service Stations and Entrainment Bases on the Beach

- Surface Equipment for Reservoir (Dry Christmas Tree, Casing Head and Production Well Head – BOP)

274 - Risers

- Special Works in Ducts (Crossovers, Bypasses and Overhead Passes)

Subsurface Equipment (Includes packer plug, tubing junctions, safety valves, interconnection of submarine ducts

277 - Submarine Well Head

278 - Buckle Arrestor

279 - Bell-Mouth

27A - Filtering Skid

27B - Heating Skid

27C - Pressure-Regulating Skid

27D - Measuring and Quality Skid

27E - Utility Skid

27F - Output Limitation Skid

27G - Skid for Process System Modularization

280 - Mechanical Schemes For Wells

281	- Mechanical Scheme for Oil Producing Well
282	- Mechanical Scheme for Gas Producing Well
283	- Mechanical Scheme for Water Injection Well

290 - Miscellaneous

291 - Flexible Tubes

292 – Hose

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N-1710 REV. BF ENGLISH 12 / 2024

- 293 Rigid Supports, Guides and Anchorages
- Spring and Counterweight Supports, Dampeners
- Pipeline Inspector Gauge (PIG) and Ball
- 296 Pig Launcher and Receiver "Scraper-Trap" and Ball
- 297 Cups
- 298 Swivel
- 299 Damper
- 29A Magneto Installation
- 29B Subsea Umbilical
- 29C Subsea Umbilicals and Flexible Pipes

300 - Dynamic Equipments (Machines)

310 - Pumps

- Centrifugal Pumps (Radial, Mixed Flow and Axial)
- Alternative Pumps (Piston, Plunger and Diaphragm)
- Rotating Pumps (Screw, Pallet, Lobes and Gears)
- 319 Special Pumps

320 - Compressors, Blowers And Fans

- Centrifugal Compressors (Axial and Radial)
- 322 Alternative Compressors (Piston and Diaphragm)
- Rotating Compressors (Screw, Pallet and Lobes)
- 324 Blowers
- 325 Fans and Exhauster
- 326 Air-Conditioning Units (Self-Contained and Fan Coil)
- 327 CNG or LNG Compression System
- 329 Special Compressors
- 32A Cooling Water Chiller

330 - Mechanical Drives

- 331 Steam Turbines
- 332 Gas and Expansion Turbines
- Internal Combustion Engines
- 334 Pneumatic and Hydraulic Engines

340 - Mechanical Transmission Elements

- 341 Reducers and Multipliers
- 342 Couplings
- 343 Belts, Chains and Pulleys, Bridles
- 344 Sucker Rod Pump
- 345 Snatch Block and Shackle
- 346 Hydraulic Rotation Variator
- 347 Wire rope and sling
- 348 Fiberglass rope

390 - Miscellaneous

- 391 Ejectors (Ejection/Eduction System/Eduction)
- 392 Oil System

INTERNA



N-1710 REV. BF ENGLISH 12 / 2024

393 - Sealing System

394 - Batel Door

395 - Hydraulic Rotor Barring System

396 - Power Oil System397 - Jacking Oil System

398 - Emergency Oil and Lubrication System

400 - Heat Transfer

410 - Steam Generators

411 - Aquatubular Boilers
412 - Flamotubular Boilers
413 - Heat Recovery Boilers

420 - Furnaces

421 - Heating, Steaming and Overheating Furnaces

422 - Reaction Furnaces
423 - Electric Furnaces
424 - Inert Gas Generators
425 - Reducer Gas Generators

430 - Insulating And Refractory Shielding

431 - Thermal Insulating
432 - Refractory Shielding
433 - Passive Fire Protection

440 - Cooling Towers

450 - Heat Exchangers

451 - Tubular Heat Exchangers

452 - Double Pipe Hairpin Heat Exchangers

453 - Water Vapor Condensers

454 - Heating or Cooling Coils

455 - Air Coolers

456 - Plate Exchangers

457 - Air Pre-heaters

459 - Special Exchangers (Transference Line, Plate-Fin, Coiled)

45A - Sulfur condensers

45B - Air cooler for Gas Turbines

470 - Gas Generators

471 - Biogas Purification



N-1710 REV. BF ENGLISH 12 / 2024

490 - Miscellaneous

491 - De-superheate

492 - Burners

493 - Thermal Exchanger Tubes

494 - Soot Blowers

495 - Combustion Chambers

496 - Incinerators

497 - Hydrogen System for Supply Station

498 - Electrical Heater

500 - Static Equipment

510 - Tanks

511 - Atmospheric Tanks
512 - Pressurized Tanks
513 - Polished water tanks

520 - Spheres

530 - Storage Cylinders

540 - Pressure Vessels, Oil Treatment, Gas Separators, Gas Depurators, Water Separators

- Compressed Air Pressure Vessel

542 - Gas Pressure Vessel
 543 - Water Pressure Vessel
 544 - Steam Pressure Vessel

550 - Towers

- Trays and Internal Components

552 - Fillings

560 - Special Pressure Vessels

561 - Filters

- Separators, Salt Removers and Coalescers
 - Decanters, Clarifiers, Flocculators and Washers

564 - Driers and Absorbers

565 - Deaerators 566 - Adsorbers

570 - Reactors

571 - Reactor Internals 572 - Coke Drum

N-1710 REV. BF ENG	GLISH 12 / 2024
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580 - Miscellaneous Equipment

581	 Retorts (Ovens, Furnaces) and Burners
582	- Chimneys
583	- Torches
584	- Silos
585	- Cyclones
586	- Silencers
587	- Hydrocyclones
588	- Sampler Analyzer
589	- Eductor/Fiector

590 - Miscellaneous Vac Systems (Ex Miscellaneous Equipment)

591	 Ducts and Transition Parts
592	- Dampers (eg: Fire Dampers)
593	 Air Filters (VAC System)

600 - Mechanical Equipment

610 - Drilling And Production Equipment

611	- Drilling Columns
612	- Tools
613	- Drills and Reamers
614	- Coring Equipment
615	- Fishing Tools
616	- Formation Testers and Special Tools
617	- Grouting Equipment
618	- Submarine Well Head and Wet Christmas Tree Tools
619	- Wet Christmas Tree (ANM)
61A	- Subsea Wellhead Consumables
61B	- Torpedo Guide Base (To Start Drilling)
61C	- Spare Parts for Subsea Wellhead Systems
61D	- Wellhead Equipment and Tools

620 - Transporters

621	- Belts, Chains, Rolls and Screws Transporters
622	- Lifts
623	 Monorails and Carousels
624	 Vibrating Feeders
625	- Porticos and Rolling Bridges
626	- Winches, Capstans and Pulleys
627	- Fork-lifts and Other Mobile Machines
628	- Rack

630 - Loading And Unloading Equipment

631	- Cranes
632	- Loading Arms and Filling Nozzles
633	- Telescopic Ladders
634	- Car-Dumpers



N-1710	REV. BF	ENGLISH	12 / 2024	
N-1710	REV. BF	ENGLISH	12 / 2024	

640 - Weighing And Proportioning Equipment

641	- Weighing	Machines
U -1 1	- vvciqiiliq	Machines

- Metering for Powdery, Granulated and Liquid Materials
- Continuous Weighing Equipment on Transporter
- 644 Checking Scales

650 - Packing Machines

- Bagging, Baling, Packaging and Enveloping Machines
- 652 Can, Drum, Bottle and Flask Filling Machines
- Closing, Stapling, Nailing, Gluing and Wrapping Machines
- Palletizers and Depalletizers
- 655 Compacting Machines
- 656 Marking and Labeling Machines

660 - Separation Equipment

- Centrifugal Machines, Centrifugal and Rotating Driers
- 662 Centrifugal Evaporators
- Filtering Belts and Draining Presses
- Mechanical Separators (Mobile Grills, Vibrating Sieves, Rolling Bridges,
 Collecting Rolls and Raking Mechanisms)
- 665 Rotating Filters and Press-Filters
- 666 Magnetic Separators
- Water and Oil Separators, Floaters, Decanters, Clarifiers and Thickeners
- Biodiscs and Biofilters, Aeration and Activated Sludge Lagoons
- Tertiary Treatment Equipment

670 - Mixing, Grinding, Dispersing And Aerating Equipment

- 671 Agitators
- 672 Solid Mixers
- 673 Mills, Calendar and Cutters
- 674 Grinders and Crushers
- 675 Atomizers and Pulverizers
- 676 Surface and Bottom Aerators
- 677 Static Mixers

680 - Material Transforming Equipment

- 681 Extrusion Equipment
- Injection and Molding Equipment (Encapsulator and Pelletizers)
- 683 Granulating Equipment
- Clustering Equipment (Briquetting and Sintering Machines)
- Deformation Equipment (Presses)

690 - Miscellaneous

- Automobiles, Pickups and Trucks
- 692 Locomotives and Train Wagons
- 693 Bulldozers
- 694 Small-Sized Vessels
- 695 Driving Machines

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696 - Inspection and Testing Equipment

- Tension Machines (Tubes)

698 - Turret Bearing

699 - Cart

69A - Floodgate

700 – Power Generation (Or Conversion), Electricity, Electronic And Telecommunications Systems

701 - Wind Turbine Generator

702 - Fuel Cell

703 - Photovoltaic Cell

704 - Microturbine

705 - Solar Power (Photovoltaic) System706 - Thermoelectric Generator (TEG)

707 - Electrolysis System

710 - Electrical Equipment

711 - Generators

712 - Electric Motor

- Transformers and Reactors (Former Transformers, Reactors, Grounding Resistor)

714 - Batteries (Former Batteries and Battery Chargers)

715 - Electrical Converters (Cancelled – use 772)

716 - Interrupting or Disconnector Switches for High Voltage Substations

717 - Circuit Breakers for High Voltage Substations

718 - Relays and Contactors

719 - Stand Insulators for High Voltage Substations

71A - Lightning Arresters for High Voltage Substations

71B - Grounding Switches for High Voltage Substations

71C - Bus Bars for High Voltage Substations

71D - Gas Insulated Substations in SF6 – GIS

71E - High Voltage Capacitor Bank

71F - Electrical Connectors for High Voltage Substations

71G - Electrical Measurement Instruments (Frequency meter, Voltmeter, Ammeter and Energy Meters Generated/Consumed)

720 - Electrical Wiring

721 - Wires, Cables and Joints

722 - Hard Conduits (Metallic) and Accessories

723 - Hard Conduits (Plastic) and Accessories

724 - Hard Conduits (Fiber Cement) and Accessories

725 - Flexible Conduits and Accessories

726 - Bus Bars Ducts

727 - Cable Trays and Accessories

728 - Terminal Block Box

729 - OPGW Cables (Optical Ground Wire Cable) and Accessories

72A - Perfored Cable Trays

N-1710 REV. BF ENG	GLISH 12 / 2024
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730 - Electrical Network Materials

731	- Weatherproof,	Gas-proof	and	Vapor-proof	Materials	(Conduit,	Boxes,
	Pushbutton)						

- Explosion Proof Materials (Conduit, Boxes, Pushbutton)
- 733 Overhead Electrical Distribution Network Materials
- Underground Electrical Distribution Network Accessories (Clamps, Holding Down Straps, Supports, Insulators)
- 735 Junction Boxes
- 736 Capacitors
- Grounding Network Materials (Lightning Arresters, Grounding Resistors, Grounding Rods, Copper Bars, Connectors)
- 738 Lighting Fixtures and Components
- 739 High Voltage Fitting

740 - Control Panels

- Electrical Panels (Swithgears) and Motor Control Centers (MCC)
- 742 Lighting Panels
- 743 Control and Protection Panels
- 744 Direct Current Panels
- 745 Measuring Panels
- 746 Alternating Current Panels

750 - Cathodic Protection System

- 751 Anodes
- 752 Rectifiers
- 753 Measuring and Interconnection Boxes
- 754 Current Draining Equipment

760 - Telecommunications Systems

- Telephony System (Telephonic Switching, PABX, Softswitch, Voice Gateway, explosion proof telephones, accessories, etc.)
- Transmission (Radio Link and Radio Coverage, Optical Fiber and Optical Systems, Satellite link, transmission circuit, Coaxial Cables, transmission infrastructure Telecom Tower, Antennas, waveguides, interface converters, etc.)
- Radio Communication (Trunking Radio, conventional radio communication, radio call, radio-telex, non-drectional beacon, infrastructure and accessories for radio communication – portable radios, etc.)
- Passive Network Elements (structured cabling, Ducts, Cable trays, cabinets, patch-panels, DIO, DID and Accessories)
- Sound System (cancelled and replaced by 767)
- Video Systems (CATV Equipment and service, Comercial and Corporative TV, pay-TV, videoconference, telepresence, infrastructure and accessories Cameras, Monitors, TV sets, screens, microphones and Other Equipment)
- Sound System and Acoustic Communications (Industrial intercommunication equipment, soundspeakers, cables, emergency signal light, etc.)
- Data Networks LAN, WAN and WLAN (Routers, Switches, Firewalls, IPS, WAN Accelerators, Access Points, Interface converters, modems, and data network accessories)

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N-1710	REV. BF	ENGLISH	12 / 2024

769	- Electrical Protection Systems for Telecommunications (Grounding,
	Protection System Against Atmospheric Discharges, FCC, Inverter, UPS,
	No-Break, Rectifier, Batteries; infrastructure and electrical accessories -
	Distributor, Electrical Panel and others)
76A	- Operational and Patrimonial Monitoring (Equipment and Services for

 Operational and Patrimonial Monitoring (Equipment and Services for CCTV, Telesupervision, infrastructure, Monitoring Accessories-screens, monitors, cameras, alarms, sensors and others)

76B - Specialized Equipment (Support, Emergency or Control)

- Specialized Video System (3D visualization or Collaborative and others)

76D - Specialized Voice and/or Audio system (Voice recorder and others)

76E - Specialized Data system

- Specialized Positioning System (Navigation Aid, Georeference and others)

76G - Synchronization

76H - Telecom Traffic Engineering (Network Capacity - Analysis, Planning and Control)

- Radiofrequencies management (Public Consultation and Radio Spectrum Engineering Studies)

76K - Optical Fiber for substation

770 - Electronics

76C

771	- Electronic Power System
111	- Licelierie i ewei eysterii

- Electrical Converters and Frequency Inverters (VFD)

773 - Battery Chargers (rectifiers) and UPS

774 - Optical-Electrical Converter
 775 - Excitation Control System

780 - Structure Protection

781 - Lightining Protection System

782 - Grounding

790 - Miscellaneous

791 - GIS – Geographical Information System

792 - Servers and Workstations

793 - Desktops, Laptops, PDAs and Similar Equipment

794 - Peripherals and Accessories795 - Other Pieces of Hardware

796 - Softwares

797 - Electrical Automation System

 - Instrument Transformers Accessories (Voltage Transformer VT and Current Transformer CT)

800 - Instrumentation And Automation

810 - Process Instrumentation (Sensors, Indicators, Transmitters And Switches)

811 - Temperature

812 - Pressure and Differential Pressure

813 - Flow814 - Level815 - Position

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N-1710 REV. BF	ENGLISH	12 / 2024
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820 - RECEIVER INSTRUMENTATION (INSTRUMENTS AND/OR SYSTEMS)

821 - I	Pneumatic	(Regulator.	Filters and	Other	Equipment [®]
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- 822 Mechanical and Hydraulic
- 823 Electronic
- 824 Digital
- Electric (Solenoid Valves, Relays, Power Supplies and Other Equipment)

830 - Final Control And Operation Devices

- 831 Control Valves
- 832 Self-Operated Valves
- Motor Operated Block Valves
- 834 Actuators
- 835 Emergency Valves
- Directional Valves (Pneumatic, Hydraulic)

840 - Alarm, Safety And Interlocking

- 841 Safety and Relief Valves
- 842 Bursting Discs
- Tank Breathers (Pressure and Vacuum)
- Sensor Elements
- 845 Alarm Annunciator
- Programmable Logic Controller (PLC)
- Cause and Effect Matrix
- Interlocking and Protection Devices (Equipment)
- 849 Interlocking Panel

850 - Special Systems

851	- Physical Properties Gauges (Viscosity, Density, Conductivity, Atmospheric
	Emissions)

- Chemical Properties Gauges (Analyzers, Chromatographs, pH)
- 853 Automatic Tank Gauging System
- Machine Monitoring Devices and Systems
- Fire and Gas Detection System
- Instrument Calibration Systems
- Leakage Detection Systems
- Management/Building Intelligence System
- Corrosion Analyzers
- 85A Chemical Dosing Plants Measurement and Control System

860 - Supervision Systems

- 861 SDCD/SCADA System
- 862 PLC
- 863 Supervisory Stations ECOS/VIDEO WALL
- 864 A/D Converters
- Pipeline Leakage Detection System
- 866 Supervisory Network
- 867 PLC Network
- Laboratory Information Management System LIMS
- 869 Industrial Network Architecture



N-1710	REV. BF	ENGLISH	12 / 2024	
N-1710	REV. BF	ENGLISH	12 / 2024	

870 - Interface Panels

871 - Marshalling Panel

- Control and Interface Loop

873 - Interface

874 - Sectioning and Maneuver Panel

880 - Miscellaneous

881 - Transmitter Programmer 883 - Human-machine Interface (HMI) 884 - Piping and Tubing Accessories for Instrumentation 885 - Electrical Accessories for Instrumentation 886 - Control Cables and Thermocouple Extension Cables 887 - Support Structures, Trays and Accessories for Instrumentation - Control Panels, Cabinets, and Racks 888 889 - Switches, Hubs, Routers, Converters, Firewall, Bridge - Junction Boxes (JB) 88A 88B - Instrumentation Power Supply Panels

900 - Miscellaneous Services And Costs

901 - Reliability Analysis and Study 902 - Duct Rehabilitation - Technical Exchange between Companies 903 904 - Maintenance Services 905 - Assets Safety - Land Studies 906 - Assets Safety - Maritime Studies - Assets Safety - Airport Studies 907 908 - Projects Approved by Government Agencies 909 - Pipeline Repair 90A - Studies and Analysis of Events or Processes 90B - Real Estate Regularization Services 90C - Real Estate Disposal Service 90D - Real Estate Incorporation Services 90E - Real Estate Control Services

910 - Organization, Management And Support

911	- Planning and Control
912	- Organization and Management
913	- Services and Support
914	- Material Management
915	- Technical Supervision and Assistance
916	- Audit
917	- Forum Assembly and Play Creation, Production and Assembly Services
918	- Communications
919	- Training
91A	- Documentation
91B	- Asset Acquisition

91C - Service Contracting91D - Material and Equipment Supply

91E - Local contents planning and execution 91F - Local contents control and follow-up

91G - Corporate Policy and Guidelines

91H - Development of Goods and Services Suppliers

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14-17 10 127 2024	N-1710 RI	EV. BF ENG	LISH 12 / 2024
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- Demand for Goods and Services 91J

91K - Law documentation

920 - Assessments And Examinations

921 - Assessments for Exprop	riation
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922 - Assessments for Purchase or Alienation

923 - Assessments for Tenancy

924 - Examinations and Assessments in Legal Actions

925 - Assessments for Credit Coverage

926 - Examinations and Assessments in Casualties

- Physical Record 927

928 - Assessment for Association

- Fixed Asset Valuations 929

930 - Hydrographic And Meteoceanographic Services

931 - Environmental Data Studies and Surveys

932 - Hydrographic Surveys (Bathymetric, Seismic, Side Scan - Sonar)

933 Marking

934 - Dredging

935 - Rock Removal

936 - Soil Study (Resistivity)

937 - Geodetic Surveys

938 - Special Geodesy Services

939 - Operational Meteo-oceanography

93A - Meteo-oceanographic Monitoring and Forecasting

940 - Project Engineering

941 - General Preliminary Studies - Basic Data for Projects

942 - Master Plans, Location and Arrangement Plans, Key Plans for Area Classification, Directive Plans for Submarine Pipes

NOTE For Key Plants for Classification of Areas use code 94A.

943 - Block Diagrams and Process Flow Diagram

944 - Piping and Instrumentation Diagram

945 - Underground Installations Plans

- Electrical Diagrams (Electrical, Single Fiber Schemes, Block Diagram, 946 Logical Diagrams)

- Industrial Safety

947

- Land Ducts Installations - Plan and Profile Project 948

949 - Isometric (Non-Related to Code 200 - Piping)

- Area Classification Plans, Area Classification Data Lists, Area 94A

Classification Plans and other Area Classification documents.

94B - Project Plans (VIP – Value Improving Practice – Usage Plan, Operation Plan, Maintenance and Inspection Plan, Project Scope Plan, Acquisitions Plan etc.)

94C - Studies and Surveys for Optimization of Production and Refining Processes

94D - Study of New Technologies

94E - Onshore Pipeline Directive Plan

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N-1710	REV. BF	ENGLISH	12 / 2024
N-1710	REV. BF	ENGLISH	12 / 2024

94F	- Electrical Studies (Short Circuit Current Calculations, Selectivity Study, Battery and Charger Calculation Memory, Calculation of Grounding Resistor, Electromagnetic Field Study, Stability, Power Flow, Electrical
	Protection other Studies of Electrical Characteristic)
94G	- Calculations of Efforts in Structures and Other Studies of Mechanical
	Characteristics (Effort Calculations, Efforts on Frames)
94H	- Energy Efficiency Studies and Assessments
94J	- Ergonomic Assessment Report
94K	- Sketch (sketch for future issuance or revision of a project document)
94L	- Thermoelectric Transient Studies
94M	- Reservoir Study
94N	- Deactivation/Decommissioning of Process Unit (former Process Plant Deactivation)
94P	- Project Automation and Digital Engineering

950 - Construction And Assembly Services

951	- Construction
952	- Industrial Assembly
953	- Equipment Assembly
954	- Duct Construction and Assembly
955	- Welding
956	- Painting
957	- Work Delivery Term
958	- Adaptations in Existing Ducts
959	- Geometrical Project
95A	- FRP Piping (Fiberglass reinforced plastic)
95B	- PRFV Pultruded Profiles (Fiberglass Reinforced Plastic)

960 - Naval Analyses, Procedures And Projects

961	- Staking (for Mooring and Fixing Structures)
962	- Moorage, Dockage and Anchorage
963	 Loading of Maritime Structures in General (Jackets, Modules, Helipads, Decks, Stakes and Others)
964	- Shackling, Transportation and Towing of Maritime Structures in General (Modules, Jackets, Helipad, Decks and Stakes) and Others
965	 Launching of Maritime Structures in General (Jackets and Module, Jacket, Helideck and Deck Installation, including hookup interconnection, verticalization, Settings and Dry Dock Operation)
966	- Launching of Submarine Duct, Side Deflection
967	- Auxiliary Installation Devices Project
968	- Pull in/Pull out of flexible ducts
969	- Analysis, procedures and naval design

970 - Commissioning, Inspections And Tests

971	- Assembly Inspection
972	- Manufacturing Inspection
973	- Inspection (Receipt, Tests, Operation and Maintenance)
974	- Tests (Factory, Certification, Functional and Performance)
975	- Technical Services – Corrosion
976	- Technical Services – Materials
977	- Technical Services – Corrosion Monitoring
978	- Storage, Preservation and Conditioning

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N-1710	REV. BF	ENGLISH	12 / 2024
N-1/10	REV. BF	ENGLISH	12 / 2024

979	- Pre-operation & Assisted Start and Operation
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97A - Painting Plan 97B - Welding Plan 97C - Quality Plan 97D - Preservation Plan 97E - Decommissioning

980 - Health, Safety And Environment

981	 Land-farming and Landfill for Hazardous Wastes
901	- Land-lanning and Landin for nazardous wastes

982 - Landfill for Inert Wastes

983 - Risk Analysis

984 - Making Natural Gas Odorous

985 - Environmental Plan of Construction

986 - Environmental Impact Study

987 - Water Treatment System

988 - Basic Environmental Plan

989 - Environmental Control Plan

98A - HSE Analysis in General

98B - EAR (Risk Analysis Report)

98C - Environmental Impact Study/Environmental Impact Report - EIA/RIMA

98D - Social and Environmental Assessment

98E - Environmental Evaluation

98F - HSE Procedure

98G - Process Risk Study (SERP System)

98H - Process Risk Activities (SERP System)

98J - Confined Spaces Register (NR-33)

98K - Energy Lock

98L - Land Motor Vehicles

98M - Forest Replacement Project/Forest Inventory

98N - Water Availability Assessment

98P - Preliminary Environmental Assessment

98R - Preliminary Risk Assessment

98S - Water Support Capacity Assessment

98T - Atmospheric Support Capacity Assessment

98U - Management Plan

98V - Preliminary Risk Analysis (APR)98W - Operational Safety Document (DSO)

98X - Hazard and Operability Study (HAZOP or HAZOP+LOPA)

98Y - Degraded Areas

98Z - Civil Construction Waste

990 - Other Costs

991 - Job Site

992 - Preliminary and Preparation Services

993 - Services in Provisional Installations

994 - Technical and Economic Analysis

995 - Atmospheric Monitoring – Prevention of Electric Discharges

996 - Environmental Monitoring

997 - Acquisition of Satellite Images

998 - Regained Costs

999 - Apportioned Costs