

Technical Specifications (In-Cash Procurement)

Framework contract for electrical works and lightning protection

This technical specification aims to set up a framework contract in order to support the OPD for the execution of electrical and lightning protection works



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1 Purpose

Some systems of the ITER project are in commissioning or operation, SCOD/OPD/EPD brings support to the systems for electrical domain and lightning protection matters. Simple modifications or corrections of the original design are sometimes necessary in order to comply with the electrical or lightning regulations or to improve the functioning of the equipment once installed on the plant.

2 Scope

This technical specification aims to set up a framework contract based on bill of price for electrical and lightning protection works.

Works can be performed on the ITER worksite or at the HQ/storage area.

3 Definitions and acronyms

A list of ITER abbreviations used throughout the ITER Project can be found at IDM:

<https://user.iter.org/?uid=2MU6W5>

4 Regulation/standard and References document.

4.1 Regulation and certification

- **Decree 2010-1017** obligation of the contracting authority
- **Decree 2010-1016** obligation of the employers
- **Decree 2010-1118** operation on (or in the vicinity) an electrical installation and the authorization
- **Decree 2010-1018** various provisions relating to the prevention of electrical hazard in workplace
- **Order of the 07/02/2012**: Safety for the INB
- **Order of the 19/07/2011**: ICPE regulation regarding lightning protection
- **QUALIFOUDRE referential**

4.2 Standards and code

- **NFC 13200**: HV Electrical Standard
- **NFC 15100**: LV Electrical Standard
- **NFEN 62305-1 (2012)**: Protection against lightning – part 1: general principles
- **NFEN 62305-2 (2012)**:: Protection against lightning – part 2: Risk evaluation.
- **NFEN 62305-3 (2012)**:: Protection against lightning – part 3: Physical damage to structures and life hazard.
- **NFEN 62305-4 (2012)**:: Protection against lightning - part 4: Electrical and electronic systems within structures.
- **NFEN62561 serie 1-7 (2016-2017)**: Lightning Protection Components (LPC).
- **NFEN 61643-11 (2014)**: Low-voltage surge protective devices - Part 11 : surge protective devices connected to low-voltage power systems - requirements and test methods.



- **CLC/TS 61643-12 (2009)**: Low-voltage surge protective devices - Part 12 : surge protective devices connected to low-voltage power distribution systems - Selection and application principles
- **NFEN 61643-21 and A1/A2 (2001-2009/2013)**: Low voltage surge protective devices - Part 21 : surge protective devices connected to telecommunications and signalling networks - Performance requirements and testing methods
- **CLC TS 61643-22 (2016)**: Low-voltage surge protective devices - Part 22 : surge protective devices connected to telecommunications and signalling networks - Selection and application principles.

4.3 References documents

The list of applicable document for OHS is available in the PGC Annex 0 ([42FYFZ](#))

- [Provisions for Implementation of the Generic Safety Requirements by the External Interveners](#) (ITER_D_SBSTBM).
- ITER internal regulation (<https://user.iter.org/default.aspx?uid=27WDZW>)
- PGC Annex 0 - List of the applicable annexes to the PGC SPS Volume 1 (<https://user.iter.org/default.aspx?uid=42FYFZ>)
- PGC Annex 1 - Specific measures for preventing the spread of Covid-19 on the worksite (<https://user.iter.org/default.aspx?uid=36M2XY>).
- ITER Site Development Plan (UYRHXX v1.1)
- Quality Assurance for ITER Safety Codes (ITER_D_258LKL)
- Procurement Requirements for Producing a Quality Plan (ITER_D_22MFMW)
- ITER Procurement Quality Requirements (ITER_D_22MFG4) ITER Organization Environmental Management System doc 1: PMAE v1 (ITER_D_97W4PN)
- Environmental requirements (ITER_D_97WRFP)
- Alert procedure on ITER construction site ([ITER_D_7LB8NY](#)). Information spread by PGC volume 1.
- Work Permit Procedure <https://user.iter.org/default.aspx?uid=3E8289>
- Procurement Quality Requirements ([ITER_D_22MFG4](#))
- Requirements for Producing a Quality Plan ([ITER_D_22MFMW](#))
- ITER Site access Procedure ([ITER_D_S3893D](#))
- PGC SPS Vol. 1 - IO&F4E (ITER_D_T6V4RP)
- CAD instructions for companies ([ITER_D_9PNNM4](#))
- Contractor Safety Management Procedure ([Q2GBJF](#)) (only valid for HQ, storage Area)
- Storage Areas Access Procedure (ITER_D_V9TVBS)
- Requirements for Producing a Contractors Release Note (ITER_D_22F52F)
- Procedure for the management of Deviation Request (ITER_D_2LZJHB)
- Procedure for management of Nonconformities (ITER_D_22F53X)
- IO cabling rules <https://user.iter.org/default.aspx?uid=335VF9>

5 Estimated Duration

The duration of the contract is 2 years with 2 times a possibility of one-year extension



6 Works description-Responsibilities

The Contractor's performance shall include all supplies and services necessary for the Works (equipment, specialized tools, qualified labor, energy, diesel supply, transportation and various handling, detailed construction designs, and drawings, project organization, etc.).

All the document or component shall be validated by IO before any order or execution works.

Responsibilities:

The responsibilities between the Parties is summarised in Table 1 (below) and is further detailed in the following sections.

Activity	IO	Supplier
A-Design-supplies		
Requirement	R	A
Design (if requested)	A	R
Supplies of the material and delivery	A	R
B-Site works		
Permit to work	R	A
Site installation works	A	R
C-Final acceptance		
Legal inspection (if necessary)	R	////
As-built (if requested)	A	R
Final Acceptance	A	A

Table 1 Summary of the Responsibilities between the IO and the Supplier

R = Responsible for organizing, performing and for the content

A = Review/Comment/Accept/Approve

6.1 Execution Works and documentation.

The contractor will be responsible of the realization electrical and lightning protection works. The material and means necessary for the perfect finishing of the works are in the scope of the contractor. In some case the contractor might be requested to prepare study, drawing and various document.

The company has to provide a bill of price (6.1.1) and propose a price for the scenario (refer to the relevant Instruction To Tenderer).



The Qualifoudre Certification is mandatory.

Due the nature of the works to be performed, the company must be able to intervene on ITER site within 12 hours (urgent repair for example). The company must have a workshop within a radius of 20km from the ITER site.

The company shall have a perfect knowledge of the French Electrical regulation (labour code) and of the related Standards. The works performed by the company must be compliant with the French electrical regulation and standards.

6.1.1 Bill of price

Item	Description	Unit	Unit Price (HT)	Notes-Rule
1-Workforce and Man-hour for works under cost control				applicable rates when the works do not fit the bill of price below. The supplier will have to propose a quotation taking into account the present rates and the price of the material (quote from supplier to be provided)
1.1	qualified electrician	hour		
1.2	Team leader	hour		
1.3	designer	hour		
	over cost for special working hour			
1.5	night	%		
1.6	Saturday	%		
1.7	public holiday	%		
2-Study-Drawing-Documents				
2.1	Low Voltage Caneco calculation note	per circuit		The calculation note shall be executed with the last version of caneco. The calculation note shall includes the electrical sources and HV SCC, those information will be provided by IO.
2.2	modification of a drawing (dwg)	per sheet		dwg or pdf source file provided by IO
2.3	creation of a drawing (dwg)	per sheet		drawing to be provided in dwg and pdf format



<i>Item</i>	<i>Description</i>	<i>Unit</i>	<i>Unit Price (HT)</i>	<i>Notes-Rule</i>
2.4	redaction of a lightning maintenance manual	Unit		<i>This regulatory document must be redacted by a company certified QUAIFOUDRE. It includes a 1 day of site survey and the synthesis of information and other documents provided by IO. Those documents are in general as built informations delivered by several companies (tender batches) working for F4E.</i>
2.5	site survey	hour		<i>in order to prepare the task in section 2</i>
2.6	review of a legal inspection report and proposal of solution and associated costs	Unit		<i>This item aims to propose the technical solution when electrical non conformity are raised by a legal inspection office. The associated cost must be based on the present Bill of Price.</i>
3-CABLES and ACCESSORIES-Fiber Optic-Ethernet				<i>price per ml installed. Price includes the supply, installation, connections and accessories e.g terminals, bolt, washers, cable ties, collars, cable glands.</i>
3.1	H07RNF 3G			
3.1.1	1.5mm ²	ml		
3.1.2	2.5mm ²	ml		
3.1.3	4mm ²	ml		
3.1.4	6mm ²	ml		
3.1.5	10mm ²	ml		
3.1.6	16mm ²	ml		
3.1.7	25mm ²	ml		
3.1.8	35mm ²	ml		
3.1.9	50mm ²	ml		
3.2	H07RNF 4G			
3.2.1	1.5mm ²	ml		
3.2.2	2.5mm ²	ml		
3.2.3	4mm ²	ml		
3.2.4	6mm ²	ml		
3.2.5	10mm ²	ml		
3.2.6	16mm ²	ml		
3.2.7	25mm ²	ml		



<i>Item</i>	<i>Description</i>	<i>Unit</i>	<i>Unit Price (HT)</i>	<i>Notes-Rule</i>
3.2.8	35mm ²	ml		
3.2.9	50mm ²	ml		
3.3	H07RNF 5G			
3.3.1	1.5mm ²	ml		
3.3.2	2.5mm ²	ml		
3.3.3	4mm ²	ml		
3.3.4	6mm ²	ml		
3.3.5	10mm ²	ml		
3.3.6	16mm ²	ml		
3.3.7	25mm ²	ml		
3.3.8	35mm ²	ml		
3.3.9	50mm ²	ml		
3.4	U1000R2V 3G			
3.4.1	1.5mm ²	ml		
3.4.2	2.5mm ²	ml		
3.4.3	4mm ²	ml		
3.4.4	6mm ²	ml		
3.4.5	10mm ²	ml		
3.4.6	16mm ²	ml		
3.4.7	25mm ²	ml		
3.5	U1000R2V 4G			
3.5.1	1.5mm ²	ml		
3.5.2	2.5mm ²	ml		
3.5.3	4mm ²	ml		
3.5.4	6mm ²	ml		
3.5.5	10mm ²	ml		
3.5.6	16mm ²	ml		
3.5.7	25mm ²	ml		
3.5.8	35mm ²	ml		
3.5.9	50mm ²	ml		
3.6	U1000R2V 5G			
3.6.1	1.5mm ²	ml		
3.6.2	2.5mm ²	ml		
3.6.3	4mm ²	ml		
3.6.4	6mm ²	ml		
3.6.5	10mm ²	ml		
3.6.6	16mm ²	ml		
3.6.7	25mm ²	ml		
3.6.8	35mm ²	ml		
3.6.9	50mm ²	ml		
3.7	U1000RVFV 7G			
3.7.1	1.5mm ²	ml		
3.7.2	2.5mm ²	ml		



<i>Item</i>	<i>Description</i>	<i>Unit</i>	<i>Unit Price (HT)</i>	<i>Notes-Rule</i>
3.8	<i>U1000RVFV 12G</i>			
3.8.1	1.5mm ²	ml		
3.8.2	2.5mm ²	ml		
3.9	<i>U1000RVFV 19G</i>			
3.9.1	1.5mm ²	ml		
3.9.2	2.5mm ²	ml		
3.10	<i>U1000RVFV 27G</i>			
3.10.1	1.5mm ²	ml		
3.10.2	2.5mm ²	ml		
3.11	<i>U1000R2V 1X</i>			
3.11.1	25mm ²	ml		
3.11.2	35mm ²	ml		
3.11.3	50mm ²	ml		
3.12	<i>H07-VK 1X (for internal wiring)</i>			
3.12.1	1.5mm ²	ml		
3.12.2	2.5mm ²	ml		
3.12.3	4mm ²	ml		
3.12.4	6mm ²	ml		
3.12.5	10mm ²	ml		
3.12.6	16mm ²	ml		
3.12.7	25mm ²	ml		
3.12.8	35mm ²	ml		
3.12.9	50mm ²	ml		
3.13	<i>H07-VU 1X (yellow/green)</i>			
3.13.1	1.5mm ²	ml		
3.13.2	2.5mm ²	ml		
3.13.3	4mm ²	ml		
3.13.4	6mm ²	ml		
3.13.5	10mm ²	ml		
3.13.6	16mm ²	ml		
3.13.7	25mm ²	ml		
3.13.8	35mm ²	ml		
3.13.9	50mm ²	ml		
3.14	<i>Bare copper cable 1X</i>			
3.14.1	25mm ²	ml		
3.14.2	35mm ²	ml		
3.14.3	50mm ²	ml		
3.14.4	70mm ²	ml		
3.14.5	120mm ²	ml		
3.16	<i>U1000AR2V 3G</i>			
3.16.1	25mm ²	ml		
3.16.2	35mm ²	ml		
3.16.3	50mm ²	ml		



<i>Item</i>	<i>Description</i>	<i>Unit</i>	<i>Unit Price (HT)</i>	<i>Notes-Rule</i>
3.17	U1000AR2V 4G			
3.17.1	25mm ²	ml		
3.17.2	35mm ²	ml		
3.17.3	50mm ²	ml		
3.18	U1000AR2V 5G			
3.18.1	25mm ²	ml		
3.18.2	35mm ²	ml		
3.18.3	50mm ²	ml		
3.19	Fiber Optic			
3.19.1	Single-mode 2 strands 9/125μm	ml		
3.19.2	Single-mode 4 strands 9/125μm	ml		
3.19.3	Single-mode 8 strands 9/125μm	ml		
3.19.4	single-mode 12 strands 9/125μm	ml		Price includes the supply, installation, fusions at the extremities, reflectometry test based on ISO/IEC 14763-3/A1
3.19.5	Multi-mode 2 strands 50/125μm	ml		
3.19.6	Multi-mode 4 strands 50/125μm	ml		
3.19.7	Multi-mode 8 strands 50/125μm	ml		
3.19.8	Multi-mode 12 strands 50/125μm	ml		
3.19.9	LC connector	unit		
3.19.10	ST connector	unit		
3.19.11	MPT connector	unit		
3.20	Ethernet			Price includes the supply, installation and connector at the extremities
3.20.1	Cable S/FTP cat 6 (250MHz), 8 wires 0.25mm ²	ml		
3.20.2	Cable S/FTP cat 6a (500MHz), 8 wires 0.25mm ²	ml		
4-Direct Lightning protection				Prices must include the supply, installation and connections. Qualifoudre certification is mandatory.
4.1	50mm ² aluminium round conductor (compliant with NFEN 62561) DEHN 840018	ml		
4.2	flat copper strip 30x2mm (compliant with NFEN 62561) DEHN 831302	ml		
4.3	concrete base DEHN253015	unit		
4.4	Aluminium braid DEHN 377015	unit		
4.5	copper braid DEHN 377007	unit		
4.6	conductor holder DEHN 207019	unit		
4.7	conductor holder DEHN 274110	unit		
4.8	MV clamp 8-10mm DEHN 390559	unit		
4.9	MV clamp 8-10mm DEHN 390550	unit		
4.10	MV clamp 8-10mm/16mm DEHN 392059	unit		
4.11	KS clamp 6-10mm DEHN 301009	unit		
4.12	universal junction clamp DEHN 315119	unit		



Item	Description	Unit	Unit Price (HT)	Notes-Rule
4.13	junction clamp for round conductor DEHN 319209	unit		
4.14	junction clamp for flat conductor DEHN 319229	unit		
4.15	junction copper clamp for flat conductor DEHN 321047	unit		
4.16	Extension clamp DEHN 385213	unit		
4.17	clamp for steel beam 3-18mm DEHN 372119	unit		
4.18	clamp for steel beam 18-35mm DEHN 372149	unit		
4.19	clip DEHN 377009	unit		
4.20	200kA KS clamp DEHN 301209	unit		
4.21	200kA MV clamp DEHN 390209	unit		
4.22	200kA MV clamp for rods DEHN 392209	unit		
4.23	200kA UNI clamp DEHN 459219	unit		
4.24	3m long Spacer DEHN 253310	unit		
4.25	conductor holder DEHN 253302	unit		
4.26	baseplate DEHN 253300	unit		
4.27	insulated pin with MMV clamp DEHN 106150	unit		
4.28	isolator 1030mm DEHN 106228	unit		
4.29	isolator 690mm DEHN 106226	unit		
4.30	isolator 530mm DEHN 106225	unit		
4.31	1.5m Al 10-16mm rod DEHN 103210	unit		
4.32	3m Al 10-16mm rod DEHN 103240	unit		
4.33	6m Al 16mm rod DEHN 104600 (to be cut)	unit		
4.34	3m rod with tripod DEHN 105530	unit		
4.35	4m rod with tripod DEHN 105400	unit		
4.36	5m rod with tripod DEHN 105500	unit		
4.37	5.5m rod with tripod DEHN 105550	unit		
4.38	6m rod with tripod DEHN 105600	unit		
4.39	7m rod with tripod DEHN 105700	unit		
4.40	concrete base 337mm DEHN 102010	unit		
4.41	plastic plate 370mm DEHN 10250	unit		
4.42	4m rod 40mm DEHN 105170	unit		
4.43	5m rod 40mm DEHN 105171	unit		
4.44	4m rod 40mm DEHN 105172	unit		
4.45	4m rod 40mm DEHN 105173	unit		
4.46	support for 40mm rod DEHN 105140	unit		
4.47	support for 40mm rod DEHN 105342	unit		
4.48	support for 40mm rod DEHN 105348	unit		
4.49	support for 40mm rod DEHN 105344	unit		



<i>Item</i>	<i>Description</i>	<i>Unit</i>	<i>Unit Price (HT)</i>	<i>Notes-Rule</i>
4.50	support for 40mm rod DEHN 105347	unit		
4.51	support for 40mm rod/round DEHN 105354	unit		
4.52	support for 40mm rod/round DEHN 105162	unit		
4.53	support for 40mm rod/round DEHN 105160	unit		
4.54	collar DEHN 540105	unit		
4.55	collar DEHN 540200	unit		
4.56	collar DEHN 540104	unit		
4.57	collar DEHN 540100	unit		
4.58	collar DEHN 540103	unit		
4.59	earthing post 1m DEHN 625101	unit		
4.60	extremity for earthing post DEHN 625001	unit		
4.61	clamp for earthing post DEHN 610010	unit		
4.62	Copper equipotentiality busbar 6 holes DEHN 472207	unit		
4.63	Copper equipotentiality busbar 8 holes DEHN 472227	unit		
4.64	Copper equipotentiality busbar 12 holes DEHN 472237	unit		
5-Conduit-duct-cable tray				Prices must include the supply, installation and the accessories (supports, splint, ankle, screws, bolts, washers, holes, elbow, turn). 1 support each 2m. Sizes may vary from +/-20% depending of the manufacturer
5.1	Metallic			
5.1.1	metallic-perforated cable tray (metallic) 27x75mm	ml		
5.1.2	metallic-perforated cable tray (metallic) 27x123mm	ml		
5.1.3	metallic-perforated cable tray (metallic) 27x195mm	ml		
5.1.4	metallic-perforated cable tray (metallic) 27x316mm	ml		
5.1.5	metallic-perforated cable tray (metallic) 27x412mm	ml		
5.1.6	metallic-perforated cable tray (metallic) 51x75mm	ml		
5.1.7	metallic-perforated cable tray (metallic) 51x123mm	ml		
5.1.8	metallic-perforated cable tray (metallic) 51x195mm	ml		
5.1.9	metallic-perforated cable tray (metallic) 51x316mm	ml		
5.1.10	metallic-perforated cable tray (metallic) 51x412mm	ml		
5.1.11	metallic cover 75mm	ml		
5.1.12	metallic cover 123mm	ml		



<i>Item</i>	<i>Description</i>	<i>Unit</i>	<i>Unit Price (HT)</i>	<i>Notes-Rule</i>
5.1.13	metallic cover 195mm	ml		
5.1.14	metallic cover 316mm	ml		
5.1.15	metallic cover 412mm	ml		
5.1.16	metallic cable ladder 75x200mm	ml		
5.1.17	metallic cable ladder 75x300mm	ml		
5.1.18	metallic cable ladder 75x400mm	ml		
5.1.19	metallic cable ladder 75x500mm	ml		
5.1.20	metallic cover for cable ladder 200mm	ml		
5.1.21	metallic cover for cable ladder 300mm	ml		
5.1.22	metallic cover for cable ladder 400mm	ml		
5.1.23	metallic cover for cable ladder 500mm	ml		
5.1.24	metallic trunk 100x100mm	ml		
5.1.25	metallic cover 100mm	ml		
5.1.26	MRL tube D20mm	ml		
5.1.27	MRL tube D25mm	ml		
5.1.28	MRL tube D32mm	ml		
5.1.29	MRL tube D40mm	ml		
5.1.30	capri flexible steel duct 11mm	ml		
5.1.31	capri flexible steel duct 13mm	ml		
5.1.32	capri flexible steel duct 16mm	ml		
5.1.33	capri flexible steel duct 19mm	ml		
5.2	Plastic-PVC-Polypropylene-polymer			Prices must include the supply, installation and the accessories (supports, plugs, splint, clip, ankle, screws, washers, bolts, holes, elbow, turn). Trunk comprises the bottom and a cover. Sizes may vary from +/-20% depending of the manufacturer. Trunks are white, ducts and tubes are grey except if the colour is indicated in the table.
5.2.1	1 compartment Trunk 40x40mm	ml		
5.2.2	1 compartment Trunk 60x40mm	ml		
5.2.3	1 compartment Trunk 80x60mm	ml		
5.2.4	1 compartment Trunk 100x60mm	ml		
5.2.5	1 compartment Trunk 150x60mm	ml		
5.2.6	1 compartment Trunk 200x80mm	ml		
5.2.7	2 compartment Trunk 100x60mm	ml		
5.2.8	2 compartment Trunk 150x60mm	ml		
5.2.9	2 compartment Trunk 200x60mm	ml		
5.2.10	ICTA flexible duct 16mm	ml		
5.2.11	ICTA flexible duct 20mm	ml		
5.2.12	ICTA flexible duct 25mm	ml		
5.2.13	ICTA flexible duct 32mm	ml		
5.2.14	ICTA flexible duct 40mm	ml		
5.2.15	TPC Duct (red or green) 40mm	ml		
5.2.16	TPC Duct (red or green) 63mm	ml		
5.2.17	TPC Duct (red or green) 90mm	ml		
5.2.18	TPC Duct (red or green) 110mm	ml		
5.2.19	IRL tube 16mm	ml		
5.2.20	IRL tube 20mm	ml		
5.2.21	IRL tube 25mm	ml		



<i>Item</i>	<i>Description</i>	<i>Unit</i>	<i>Unit Price (HT)</i>	<i>Notes-Rule</i>
5.2.22	IRL tube 32mm	ml		
5.2.23	IRL tube 40mm	ml		
6-Electrical boards-Junction box				Price includes the supply, installation (fixation-commissioning) and necessary accessories (solid door with 405 lock, internal chassis, earthing busbar, internal trunk, rail, hole, ankle, screw, bolt, washer).
6.1	metallic enclosure			
6.1.1	IP66-IK10 H300xL300XP200	unit		
6.1.2	IP66-IK10 H400xL300XP200	unit		
6.1.3	IP66-IK10 H500xL400XP250	unit		
6.1.4	IP66-IK10 H600xL400XP250	unit		
6.1.5	IP66-IK10 H800xL600XP300	unit		
6.1.6	IP66-IK10 H1000xL800XP300	unit		
6.1.7	IP66-IK10 H1200xL800XP300	unit		
6.1.8	IP66-IK10 Junction box (with terminal bloc) 150x150x80	unit		
6.1.9	IP66-IK10 Junction box (with terminal bloc) 200x200x80	unit		
6.1.10	IP66-IK10 Junction box (with terminal bloc) 300x300x120	unit		
6.1.11	IP66-IK10 Junction box (with terminal bloc) 400x400x120	unit		
6.2	Plastic-PVC-Polypropylene-polymer enclosure			
6.2.1	IP65-IK09 6 modules	unit		
6.2.2	IP65-IK09 12 modules	unit		
6.2.3	IP65-IK09 16 modules	unit		
6.2.4	IP65-IK09 24 modules	unit		
6.2.5	IP65-IK09 36 modules	unit		
6.2.6	IP55-IK08 80x80x45mm	unit		
6.2.7	IP55-IK08 105x105x55mm	unit		
6.2.8	IP55-IK08 130x130x74mm	unit		
7-Enclosure internal equipment (indicator-commutation-protection-connection-labelling-heater-light-transformer-SPD....)				Price includes the supply, installation/connections and accessories. Installation could be in a new or in an existing electrical boards. For example a circuit breaker include implicitly the internal wiring, terminals, labels, sleeves, wiring tags. Accessories can be installed individually (for example in order to fix a non conformity
7.1	various accessories			
7.1.1	Tri-led voltage presence indicator	unit		
7.1.2	2 positions commutator	unit		
7.1.3	3 positions commutator	unit		
7.1.4	push button	unit		
7.1.5	emergency stop button front mounting	unit		
7.1.6	plan pocket	unit		
7.1.7	engraved labels 10x10mm	unit		
7.1.8	engraved labels 30x20mm	unit		
7.1.9	engraved labels 50x20mm	unit		
7.1.10	engraved labels 70x20mm	unit		
7.1.11	engraved labels 100x30mm	unit		
7.1.12	engraved labels 100x100mm	unit		



Item	Description	Unit	Unit Price (HT)	Notes-Rule
7.1.13	wiring tags	unit		raised during a legal inspection)
7.1.14	Hélévia wiring sleeves (various colour)	unit		
7.1.15	BB brass terminal 17mm	unit		
7.1.16	Plastic cable gland PG11 or ISO equivalent	unit		
7.1.17	Plastic cable gland PG16 or ISO equivalent	unit		
7.1.18	Plastic cable gland PG29 or ISO equivalent	unit		
7.1.19	Plastic cable gland PG36 or ISO equivalent	unit		
7.1.20	Plastic cable gland PG42 or ISO equivalent	unit		
7.1.21	Plastic cable gland PG48 or ISO equivalent	unit		
7.1.22	Metallic cable gland PG11 or ISO equivalent	unit		
7.1.23	Metallic cable gland PG16 or ISO equivalent	unit		
7.1.24	Metallic cable gland PG29 or ISO equivalent	unit		
7.1.25	Metallic cable gland PG36 or ISO equivalent	unit		
7.1.26	Metallic cable gland PG42 or ISO equivalent	unit		
7.1.27	Metallic cable gland PG48 or ISO equivalent	unit		
7.1.28	Heating resistor Climasys 250VAC-20W	unit		
7.1.29	internal lighting device 400mm-230VAC class 2	unit		
7.1.30	security transformer legrand 044235 250VA	unit		
7.1.31	security transformer legrand 044236 400VA	unit		
7.1.32	separation transformer legrand 044265 250VA	unit		
7.1.33	separation transformer legrand 044267 630VA	unit		
7.1.34	separation transformer legrand 044268 1000VA	unit		
7.2	Connection			
7.2.2	terminal bloc 1.5mm ²	unit		
7.2.3	terminal bloc 2.5mm ²	unit		
7.2.4	terminal bloc 4mm ²	unit		
7.2.5	terminal bloc 6mm ²	unit		



<i>Item</i>	<i>Description</i>	<i>Unit</i>	<i>Unit Price (HT)</i>	<i>Notes-Rule</i>
7.2.6	terminal bloc 10mm ²	unit		
7.2.7	terminal bloc 16mm ²	unit		
7.2.8	terminal bloc 25mm ²	unit		
7.2.9	terminal bloc 35mm ²	unit		
7.2.10	terminal bloc 50mm ²	unit		
7.2.11	Distribution bloc 125A	unit		
7.2.12	Distribution bloc 160A	unit		
7.2.13	Distribution bloc 250A	unit		
7.3	Circuit Breaker			
7.3.1	iDT40N 1P+N-1 to 6A-curve C-10kA	unit		
7.3.2	iDT40N 1P+N-10 to 16A-curve C-10kA	unit		
7.3.3	iDT40N 1P+N-25A-curve C-10kA	unit		
7.3.4	iDT40N 1P+N-32A-curve C-10kA	unit		
7.3.5	iDT40N 1P+N-40A-curve C-10kA	unit		
7.3.6	iDD40N 1P+N 32A+rcd30mA-curve C-10KA	unit		
7.3.7	iDD40N 1P+N 40A+rcd30mA-curve C-10KA	unit		
7.3.8	RCD iDT40 VIGI 1P+N 25A- AC type-30mA	unit		
7.3.9	RCD iDT40 VIGI 1P+N 40A- AC type-30mA	unit		
7.3.10	iC60N 2P-0.5 to 4A-curve C-50kA	unit		
7.3.11	iC60N 2P-6 to 16A-curve C-10kA	unit		
7.3.12	iC60N 2P-25A-curve C-10kA	unit		
7.3.13	iC60N 2P-32A-curve C-10kA	unit		
7.3.14	iC60N 2P-40A-curve C-10kA	unit		
7.3.15	iC60N 2P-50A-curve C-10kA	unit		
7.3.16	iC60N 2P-63A-curve C-10kA	unit		
7.3.17	iC60N 2P-6 to 16A-curve B-10kA	unit		
7.3.18	iC60N 2P-25A-curve B-10kA	unit		
7.3.19	iC60N 2P-32A-curve B-10kA	unit		
7.3.20	iC60N 2P-40A-curve B-10kA	unit		
7.3.21	iC60N 2P-50A-curve B-10kA	unit		
7.3.22	iC60N 2P-63A-curve B-10kA	unit		
7.3.23	iC60N 2P-6 to 16A-curve D-10kA	unit		
7.3.24	iC60N 2P-25A-curve D-10kA	unit		
7.3.25	iC60N 2P-32A-curve D-10kA	unit		
7.3.26	iC60N 2P-40A-curve D-10kA	unit		
7.3.27	iC60N 2P-50A-curve D-10kA	unit		
7.3.28	iC60N 2P-63A-curve D-10kA	unit		
7.3.29	iC60L 2P-0.5 to 4A-curve C-100kA	unit		
7.3.30	iC60L 2P-6 to 16A-curve C-25kA	unit		



<i>Item</i>	<i>Description</i>	<i>Unit</i>	<i>Unit Price (HT)</i>	<i>Notes-Rule</i>
7.3.31	iC60L 2P-25A-curve C-25kA	unit		
7.3.32	iC60L 2P-32A-curve C-20kA	unit		
7.3.33	iC60L 2P-40A-curve C-20kA	unit		
7.3.34	iC60L 2P-50A-curve C-15kA	unit		
7.3.35	iC60L 2P-63A-curve C-15kA	unit		
7.3.36	iC60L 2P-6 to 16A-curve B-25kA	unit		
7.3.37	iC60L 2P-25A-curve B-25kA	unit		
7.3.38	iC60L 2P-32A-curve B-20kA	unit		
7.3.39	iC60L 2P-40A-curve B-20kA	unit		
7.3.40	iC60L 2P-50A-curve B-15kA	unit		
7.3.41	iC60L 2P-63A-curve B-15kA	unit		
7.3.42	iC60L 2P-6 to 16A-curve K-25kA	unit		
7.3.43	iC60L 2P-25A-curve K-25kA	unit		
7.3.44	iC60L 2P-32A-curve K-20kA	unit		
7.3.45	iC60L 2P-40A-curve K-20kA	unit		
7.3.46	iC60L 2P-50A-curve K-15kA	unit		
7.3.47	iC60L 2P-63A-curve K-15kA	unit		
7.3.48	RCD iC60 VIGI 2P 25A- AC type-30mA	unit		
7.3.49	RCD iC60 VIGI 2P 40A- AC type-30mA	unit		
7.3.50	RCD iC60 VIGI 2P 63A- AC type-30mA	unit		
7.3.51	RCD iC60 VIGI 2P 25A- AC type-300mA	unit		
7.3.52	RCD iC60 VIGI 2P 40A- AC type-300mA	unit		
7.3.53	RCD iC60 VIGI 2P 63A- AC type-300mA	unit		
7.3.54	iC60N RCBO 2P-10 to 16A-30mA type AC-15kA	unit		
7.3.55	iC60HDC 2P-0.5 to 6A	unit		
7.3.56	iC60HDC 2P-10 to 16A	unit		
7.3.57	iC60N 3P-0.5 to 4A-curve C-50kA	unit		
7.3.58	iC60N 3P-6 to 16A-curve C-10kA	unit		
7.3.59	iC60N 3P-25A-curve C-10kA	unit		
7.3.60	iC60N 3P-32A-curve C-10kA	unit		
7.3.61	iC60N 3P-40A-curve C-10kA	unit		
7.3.62	iC60N 3P-50A-curve C-10kA	unit		
7.3.63	iC60N 3P-63A-curve C-10kA	unit		
7.3.64	iC60N 3P-10 to 16A-curve B-10kA	unit		
7.3.65	iC60N 3P-25A-curve B-10kA	unit		
7.3.66	iC60N 3P-32A-curve B-10kA	unit		
7.3.67	iC60N 3P-40A-curve B-10kA	unit		
7.3.68	iC60N 3P-50A-curve B-10kA	unit		



<i>Item</i>	<i>Description</i>	<i>Unit</i>	<i>Unit Price (HT)</i>	<i>Notes-Rule</i>
7.3.69	iC60N 3P-63A-curve B-10kA	unit		
7.3.70	iC60N 3P-6 to 16A-curve D-10kA	unit		
7.3.71	iC60N 3P-25A-curve D-10kA	unit		
7.3.72	iC60N 3P-32A-curve D-10kA	unit		
7.3.73	iC60N 3P-40A-curve D-10kA	unit		
7.3.74	iC60N 3P-50A-curve D-10kA	unit		
7.3.75	iC60N 3P-63A-curve D-10kA	unit		
7.3.76	iC60L 3P-0.5 to 4A-curve C-100kA	unit		
7.3.77	iC60L 3P-6 to 16A-curve C-25kA	unit		
7.3.78	iC60L 3P-25A-curve C-25kA	unit		
7.3.79	iC60L 3P-32A-curve C-20kA	unit		
7.3.80	iC60L 3P-40A-curve C-20kA	unit		
7.3.81	iC60L 3P-50A-curve C-15kA	unit		
7.3.82	iC60L 3P-63A-curve C-15kA	unit		
7.3.83	iC60L 3P-6 to 16A-curve B-25kA	unit		
7.3.84	iC60L 3P-25A-curve B-25kA	unit		
7.3.85	iC60L 3P-32A-curve B-20kA	unit		
7.3.86	iC60L 3P-40A-curve B-20kA	unit		
7.3.87	iC60L 3P-50A-curve B-15kA	unit		
7.3.88	iC60L 3P-63A-curve B-15kA	unit		
7.3.89	iC60L 3P-6 to 16A-curve K-25kA	unit		
7.3.90	iC60L 3P-25A-curve K-25kA	unit		
7.3.91	iC60L 3P-32A-curve K-20kA	unit		
7.3.92	iC60L 3P-40A-curve K-20kA	unit		
7.3.93	iC60L 3P-50A-curve K-15kA	unit		
7.3.94	iC60L 3P-63A-curve K-15kA	unit		
7.3.95	RCD iC60 VIGI 3P 25A- AC type-30mA	unit		
7.3.96	RCD iC60 VIGI 3P 40A- AC type-30mA	unit		
7.3.97	RCD iC60 VIGI 3P 63A- AC type-30mA	unit		
7.3.98	RCD iC60 VIGI 3P 25A- AC type-300mA	unit		
7.3.99	RCD iC60 VIGI 3P 40A- AC type-300mA	unit		
7.3.100	RCD iC60 VIGI 3P 63A- AC type-300mA	unit		
7.3.101	iC60N 4P-0.5 to 4A-curve C-50kA	unit		
7.3.102	iC60N 4P-6 to 16A-curve C-10kA	unit		
7.3.103	iC60N 4P-25A-curve C-10kA	unit		
7.3.104	iC60N 4P-32A-curve C-10kA	unit		
7.3.105	iC60N 4P-40A-curve C-10kA	unit		
7.3.106	iC60N 4P-50A-curve C-10kA	unit		



<i>Item</i>	<i>Description</i>	<i>Unit</i>	<i>Unit Price (HT)</i>	<i>Notes-Rule</i>
7.3.107	iC60N 4P-63A-curve C-10kA	unit		
7.3.108	iC60N 4P-10 to 16A-curve B-10kA	unit		
7.3.109	iC60N 4P-25A-curve B-10kA	unit		
7.3.110	iC60N 4P-32A-curve B-10kA	unit		
7.3.111	iC60N 4P-40A-curve B-10kA	unit		
7.3.112	iC60N 4P-50A-curve B-10kA	unit		
7.3.113	iC60N 4P-63A-curve B-10kA	unit		
7.3.114	iC60N 4P-6 to 16A-curve D-10kA	unit		
7.3.115	iC60N 4P-25A-curve D-10kA	unit		
7.3.116	iC60N 4P-32A-curve D-10kA	unit		
7.3.117	iC60N 4P-40A-curve D-10kA	unit		
7.3.118	iC60N 4P-50A-curve D-10kA	unit		
7.3.119	iC60N 4P-63A-curve D-10kA	unit		
7.3.120	iC60L 4P-0.5 to 4A-curve C-100kA	unit		
7.3.121	iC60L 4P-6 to 16A-curve C-25kA	unit		
7.3.122	iC60L 4P-25A-curve C-25kA	unit		
7.3.123	iC60L 4P-32A-curve C-20kA	unit		
7.3.124	iC60L 4P-40A-curve C-20kA	unit		
7.3.125	iC60L 4P-50A-curve C-15kA	unit		
7.3.126	iC60L 4P-63A-curve C-15kA	unit		
7.3.127	iC60L 4P-6 to 16A-curve B-25kA	unit		
7.3.128	iC60L 4P-25A-curve B-25kA	unit		
7.3.129	iC60L 4P-32A-curve B-20kA	unit		
7.3.130	iC60L 4P-40A-curve B-20kA	unit		
7.3.131	iC60L 4P-50A-curve B-15kA	unit		
7.3.132	iC60L 4P-63A-curve B-15kA	unit		
7.3.133	iC60L 4P-6 to 16A-curve K-25kA	unit		
7.3.134	iC60L 4P-25A-curve K-25kA	unit		
7.3.135	iC60L 4P-32A-curve K-20kA	unit		
7.3.136	iC60L 4P-40A-curve K-20kA	unit		
7.3.137	iC60L 4P-50A-curve K-15kA	unit		
7.3.138	iC60L 4P-63A-curve K-15kA	unit		
7.3.139	RCD iC60 VIGI 4P 25A- AC type-30mA	unit		
7.3.140	RCD iC60 VIGI 4P 40A- AC type-30mA	unit		
7.3.141	RCD iC60 VIGI 4P 63A- AC type-30mA	unit		
7.3.142	RCD iC60 VIGI 4P 25A- AC type-300mA	unit		
7.3.143	RCD iC60 VIGI 4P 40A- AC type-300mA	unit		
7.3.144	RCD iC60 VIGI 4P 63A- AC type-300mA	unit		



Item	Description	Unit	Unit Price (HT)	Notes-Rule
7.3.145	iC60N RCBO 4P-10 to 16A-30mA type AC-15kA	unit		
7.3.146	NG125L-2P-10 to 16A-curve C-50kA	unit		
7.3.147	NG125L-2P-25A-curve C-50kA	unit		
7.3.148	NG125L-2P-32A-curve C-50kA	unit		
7.3.149	NG125L-2P-40A-curve C-50kA	unit		
7.3.150	NG125L-2P-50A-curve C-50kA	unit		
7.3.151	NG125L-2P-63A-curve C-50kA	unit		
7.3.152	NG125L-2P-80A-curve C-50kA	unit		
7.3.153	NG125L-2P-10 to 16A-curve D-50kA	unit		
7.3.154	NG125L-2P-25A-curve D-50kA	unit		
7.3.155	NG125L-2P-32A-curve D-50kA	unit		
7.3.156	NG125L-2P-40A-curve D-50kA	unit		
7.3.157	NG125L-2P-50A-curve D-50kA	unit		
7.3.158	NG125L-2P-63A-curve D-50kA	unit		
7.3.159	NG125L-2P-80A-curve D-50kA	unit		
7.3.160	RCD NG125 VIGI 2P 63A-AC type-30mA	unit		
7.3.161	RCD NG125 VIGI 2P 63A-AC type-300mA	unit		
7.3.162	NG125L-3P-10 to 16A-curve C-50kA	unit		
7.3.163	NG125L-3P-25A-curve C-50kA	unit		
7.3.164	NG125L-3P-32A-curve C-50kA	unit		
7.3.165	NG125L-3P-40A-curve C-50kA	unit		
7.3.166	NG125L-3P-50A-curve C-50kA	unit		
7.3.167	NG125L-3P-63A-curve C-50kA	unit		
7.3.168	NG125L-3P-80A-curve C-50kA	unit		
7.3.169	NG125L-3P-10 to 16A-curve D-50kA	unit		
7.3.170	NG125L-3P-25A-curve D-50kA	unit		
7.3.171	NG125L-3P-32A-curve D-50kA	unit		
7.3.172	NG125L-3P-40A-curve D-50kA	unit		
7.3.173	NG125L-3P-50A-curve D-50kA	unit		
7.3.174	NG125L-3P-63A-curve D-50kA	unit		
7.3.175	NG125L-3P-80A-curve D-50kA	unit		
7.3.176	RCD NG125 VIGI 3P 63A-AC type-30mA	unit		
7.3.177	RCD NG125 VIGI 3P 63A-AC type-300mA	unit		
7.3.178	RCD NG125 VIGI 3P 125A-AC type-30mA	unit		
7.3.179	RCD NG125 VIGI 3P 125A-AC type-300mA	unit		
7.3.180	NG125N-4P-100A-curve C-25kA	unit		
7.3.181	NG125N-4P-125A-curve C-25kA	unit		
7.3.182	NG125N-4P-100A-curve D-25kA	unit		



<i>Item</i>	<i>Description</i>	<i>Unit</i>	<i>Unit Price (HT)</i>	<i>Notes-Rule</i>
7.3.183	NG125N-4P-125A-curve D-25kA	unit		
7.3.184	NG125L-4P-10 to 16A-curve C-50kA	unit		
7.3.185	NG125L-4P-25A-curve C-50kA	unit		
7.3.186	NG125L-4P-32A-curve C-50kA	unit		
7.3.187	NG125L-4P-40A-curve C-50kA	unit		
7.3.188	NG125L-4P-50A-curve C-50kA	unit		
7.3.189	NG125L-4P-63A-curve C-50kA	unit		
7.3.190	NG125L-4P-80A-curve C-50kA	unit		
7.3.191	NG125L-4P-10 to 16A-curve D-50kA	unit		
7.3.192	NG125L-4P-25A-curve D-50kA	unit		
7.3.193	NG125L-4P-32A-curve D-50kA	unit		
7.3.194	NG125L-4P-40A-curve D-50kA	unit		
7.3.195	NG125L-4P-50A-curve D-50kA	unit		
7.3.196	NG125L-4P-63A-curve D-50kA	unit		
7.3.197	NG125L-4P-80A-curve D-50kA	unit		
7.3.198	RCD NG125 VIGI 4P 63A-AC type-30mA	unit		
7.3.199	RCD NG125 VIGI 4P 63A-AC type-300mA	unit		
7.3.200	RCD NG125 VIGI 4P 125A-AC type-30mA	unit		
7.3.201	RCD NG125 VIGI 4P 125A-AC type-300mA	unit		
7.3.202	TeSys GV2-3P-0.1 to 0.16A	unit		
7.3.203	TeSys GV2-3P-0.16 to 0.25A	unit		
7.3.204	TeSys GV2-3P-0.25 to 0.40A	unit		
7.3.205	TeSys GV2-3P-0.40 to 0.63A	unit		
7.3.206	TeSys GV2-3P-0.63 to 1A	unit		
7.3.207	TeSys GV2-3P-1 to 1.6A	unit		
7.3.208	TeSys GV2-3P-1.6 to 2.5A	unit		
7.3.209	TeSys GV2-3P-2.5 to 4A	unit		
7.3.210	TeSys GV2-3P-4 to 6.3A	unit		
7.3.211	TeSys GV2-3P-6 to 10A	unit		
7.3.212	TeSys GV2-3P-9 to 14A	unit		
7.3.213	TeSys GV2-3P-13 to 18A	unit		
7.3.214	TeSys GV2-3P-17 to 23A	unit		
7.3.215	TeSys GV2-3P-20 to 25A	unit		
7.3.216	NSX100N-3P-micro 2.2-40A	unit		
7.3.217	NSX100N-3P-micro 2.2-100A	unit		
7.3.218	NSX100N-4P-micro 2.2-40A	unit		
7.3.219	NSX100N-4P-micro 2.2-100A	unit		
7.3.220	NSX160N-3P-micro 2.2-100A	unit		
7.3.221	NSX160N-3P-micro 2.2-160A	unit		
7.3.222	NSX160N-4P-micro 2.2-100A	unit		



Item	Description	Unit	Unit Price (HT)	Notes-Rule
7.3.223	NSX160N-4P-micro 2.2-160A	unit		
7.3.224	NSX250N-3P-micro 2.2-160A	unit		
7.3.225	NSX250N-3P-micro 2.2-250A	unit		
7.3.226	NSX250N-4P-micro 2.2-160A	unit		
7.3.227	NSX250N-4P-micro 2.2-250A	unit		
7.3.228	Over cost for micrologic 5.2E	%		
7.3.229	Over cost RCD for NSX	%		
7.4	miscellaneous for circuit breaker			
7.4.1	Mx tripping coil iC60 (230V)+OF	unit		
7.4.2	Mx tripping coil NG125 (230V)+OF	unit		
7.4.3	Mx tripping coil NSX (230V)+OF	unit		
7.4.4	MN tripping coil iC60 (48V or 230V)	unit		
7.4.5	MN tripping coil NG125 (48V or 230V)	unit		
7.4.6	MN tripping coil NSX (48V or 230V)	unit		
7.4.7	OF/SD contact for IC60	unit		
7.4.8	OF/SD contact for NG125	unit		
7.4.9	OF/SD contact for NSX	unit		
7.4.10	spreader terminal for NSX	unit		
7.4.11	Terminal cover for NSX or NG125	unit		
7.5	Fuses			
7.5.1	1Ph+N modular fuse holder including fuses (10x38mm)	unit		
7.5.2	2P modular fuse holder including fuses (10x38mm)	unit		
7.5.3	3P modular fuse holder including fuses (10x38mm)	unit		
7.5.4	4P modular fuse holder including fuses (10x38mm)	unit		
7.5.5	1Ph+N modular fuse holder including fuses (14x51mm)	unit		
7.5.6	2P modular fuse holder including fuses (14x51mm)	unit		
7.5.7	3P modular fuse holder including fuses (14x51mm)	unit		
7.5.8	4P modular fuse holder including fuses (14x51mm)	unit		
7.5.9	1Ph+N modular fuse holder including fuses (22x58mm)	unit		
7.5.10	2P modular fuse holder including fuses (22x58mm)	unit		
7.5.11	3P modular fuse holder including fuses (22x58mm)	unit		
7.5.12	4P modular fuse holder including fuses (22x58mm)	unit		



Item	Description	Unit	Unit Price (HT)	Notes-Rule
7.5.13	2P fuse holder including fuses (NH format)	unit		
7.5.14	3P fuse holder including fuses (NH format)	unit		
7.5.15	4P fuse holder including fuses (NH format)	unit		
7.5.16	spare fuse 10x38mm	unit		
7.5.17	spare fuse 14x51mm	unit		
7.5.18	spare fuse 22x58mm	unit		
7.5.19	spare fuse NH	unit		
7.6	Contactor			
7.6.1	contactor 3P-25A-Aux 24 to 250V	unit		
7.6.2	contactor 3P-40A-Aux 24 to 250V	unit		
7.6.3	contactor 3P-63A-Aux 24 to 250V	unit		
7.6.4	auxiliaries block 2 contacts	unit		
7.6.5	auxiliaries block 4 contacts	unit		
7.7	Switch Disconnecter			
7.7.1	iSW 2P-40A	unit		
7.7.2	iSW 2P-63A	unit		
7.7.3	iSW 4P-40A	unit		
7.7.4	iSW 4P-63A	unit		
7.7.5	iSW 4P-100A	unit		
7.7.6	iSW 4P-125A	unit		
7.7.7	OF contact for switch disconnecter	unit		
7.7.8	NG125NA 3P-63A	unit		
7.7.9	NG125NA 3P-80A	unit		
7.7.10	NG125NA 3P-100A	unit		
7.7.11	NG125NA 3P-125A	unit		
7.7.12	NG125NA 4P-63A	unit		
7.7.13	NG125NA 4P-80A	unit		
7.7.14	NG125NA 4P-100A	unit		
7.7.15	NG125NA 4P-125A	unit		
7.7.16	NSX100NA 3P-100A	unit		
7.7.17	NSX160NA 3P-100A	unit		
7.7.18	NSX250NA 3P-250A	unit		
7.7.19	NSX100NA 4P-100A	unit		
7.7.20	NSX160NA 4P-100A	unit		
7.7.21	NSX250NA 4P-250A	unit		
7.7.22	Transfer switch Sirco VM1 3P 125A	unit		
7.7.23	Transfer switch Sircover 3P 250A	unit		
7.7.24	Transfer switch Sirco VM1 4P 125A	unit		
7.7.25	Transfer switch Sircover 4P 250A	unit		
7.7.26	Transfer switch COMO CS 3P 63A	unit		
7.7.27	Transfer switch COMO CS 4P 63A	unit		



<i>Item</i>	<i>Description</i>	<i>Unit</i>	<i>Unit Price (HT)</i>	<i>Notes-Rule</i>
7.7.28	switch Sirco MV 3P 125A	unit		
7.7.29	switch Sirco 3P 250A	unit		
7.7.30	switch Sirco MV 4P 125A	unit		
7.7.31	switch Sirco 4P 250A	unit		
7.7.32	switch COMO 3P 63A	unit		
7.7.33	switch COMO 4P 63A	unit		
7.8	Relay			
7.8.1	RH Relay (24 to 250V)	unit		
7.8.2	Homopolar relay vigirex RH99M 48DC or 240 VAC	unit		
7.8.3	Homopolar toroid diam 50mm compatible RH99	unit		
7.8.4	Homopolar toroid diam 80mm compatible RH99	unit		
7.8.5	Homopolar toroid diam 120mm compatible RH99	unit		
7.8.6	Homopolar toroid diam 200mm compatible RH99	unit		
7.8.7	remote control switch 1P-16A	unit		
7.8.8	remote control switch 2P-16A	unit		
7.9	Surge protection Device (SPD)			
7.9.1	PRD1 12,5r type 1+2-1P+N	unit		
7.9.2	PRD1 12,5r type 1+2-3P	unit		
7.9.3	PRD1 12,5r type 1+2-3P+N	unit		
7.9.4	spare cartridge type 1+2 PRD1 12,5r	unit		
7.9.5	PRD1 25r type 1+2-1P+N	unit		
7.9.6	PRD1 25r type 1+2-3P+N	unit		
7.9.7	PRD1 25r type 1+2-3P+N	unit		
7.9.8	spare cartridge type 1 PRD1 25r	unit		
7.9.9	spare cartridge type 2 PRD1 25r	unit		
7.9.10	PRD1 Master type 1-1P+N	unit		
7.9.11	PRD1 Master type 1-3P	unit		
7.9.12	PRD1 Master type 1-3P+N	unit		
7.9.13	spare cartridge Type 1 PRD1 master	unit		
7.9.14	iPRD65r type 2-1P+N	unit		
7.9.15	iPRD65r type 2-3P+N	unit		
7.9.16	iPRD65r type 2-3P+N	unit		
7.9.17	spare cartridge type 2 iPRD65r	unit		
7.9.18	DEHNventil Type 1+2 2P FM 951205	unit		
7.9.19	DEHNventil Type 1+2 4P FM 951405	unit		
7.9.20	DEHN spare cartridge 951001	unit		
7.9.21	DEHNvenCI type 1+2 FM 961205	unit		
7.9.22	DEHNguard Type 2 2P FM 952207	unit		
7.9.23	DEHNguard Type 2 4P FM 952407	unit		



<i>Item</i>	<i>Description</i>	<i>Unit</i>	<i>Unit Price (HT)</i>	<i>Notes-Rule</i>
7.9.24	DEHN spare cartridge 952010	unit		
7.9.25	DEHNguard CI Type 2 2P FM 952178	unit		
7.9.26	DEHNguard CI Type 2 4P FM 952406	unit		
7.9.27	DEHN spare cartridge for DEHNguard CI	unit		
7.9.28	DEHN BLITZDUCTORconnect-withdrawable-reference according to the signal (TBD)	unit		
7.9.29	spare cartridge DEHN BLITZDUCTORconnect	unit		
8-Equipment				<i>The price includes the supply, installation and connection including the accessories (screws, ankle, holes....). The colour by default is white</i>
8.1	Services-Utilities	unit		
8.1.1	Legrand plexo IP55 mni-single switch	unit		
8.1.2	Legrand plexo IP55 mni-2 way switch	unit		
8.1.3	Legrand plexo IP55 mini-Push-off switch	unit		
8.1.4	Legrand plexo IP55 mini-socket 1P+N+E-16A	unit		
8.1.5	Male+Female Hypra socket IP55 mini-1P+N+E 16A+socle	unit		
8.1.6	Male+Female Hypra socket IP55 mini-3P+N+E 32A+socle	unit		
8.1.7	Legrand mosaic single switch	unit		
8.1.8	Legrand mosaic 2 way switch	unit		
8.1.9	Legrand mosaic Push-off switch	unit		
8.1.10	Legrand mosaic socket 1P+N+E-16A	unit		
8.1.11	electrical heater 1000W	unit		
8.1.12	electrical heater 2000W	unit		
8.1.13	Emergency lighting block SATI 45lm NFC 71800-71820	unit		
8.1.14	Ambiance lighting block SATI 400lm NFC 71800	unit		
8.1.15	remote control for emergency block	unit		
8.1.16	Emergency stop legrand 038096 or 038098+labelling	unit		
8.1.17	emergency call break glass box	unit		
8.1.18	Lighting device THORN Aquaforce Pro 96630754	unit		
8.1.19	Lighting device THORN Aquaforce Pro 96630758	unit		
8.1.20	lighting device THORN leonie 30W 96630337	unit		
8.1.21	lighting device THORN leonie 50W 96630338	unit		
8.1.22	lighting device THORN leo 100W 96630253	unit		



<i>Item</i>	<i>Description</i>	<i>Unit</i>	<i>Unit Price (HT)</i>	<i>Notes-Rule</i>
8.1.23	Over cost for infrared sensor for THORN lighting devices	%		

6.1.2 Scenario

Refer to the Instruction To Tender attached to this technical specification.

7 Implementation of the Contract

7.1 Price and Instructions to proceed

For each works request from IO/SCOD/OPD/EPD, the contractor shall propose a quotation based on the bill of price provided in the frame of the contract. IO will express his agreement through an ITP (instruction to proceed).

The contractor could be requested to purchase additional small material not included in the bill of price above on behalf of the IO. This clause is detailed in the Contract.

When the material is included in the bill of price, The Company must submit the quotation within 48H.

8 General conditions and requirements

8.1 Applicable codes and standards

The Contractor shall comply in performing the contract, with applicable laws, decrees, circulars and standards.

The Contractor shall comply with French construction standards or to European construction standards if such European standards exist and are equivalent to those French standards.

Unified Technical Documents (DTUs) and DTU Specifications and Calculation Rules shall be considered as industry practices and are applicable to the contract.

The Contractor shall be responsible for all requests for administrative authorisations and declarations that are required by virtue of applicable regulations.

For all products and materials subject to quality standards, the Contractor must only use products and materials that comply with said standards.

For all the works related to lightning Protection, the QUALIFOUDRE certification is mandatory.

8.2 Language

Since the official language of the ITER Organization is English, all written communication and deliverables shall be in English.



8.3 Delivery

The following generic requirements apply both for the shipment of equipment, etc. from the manufacture/assembly site to the ITER Site or to any intermediate site.

Suitable precautions shall be taken to avoid damage to the equipment. The equipment in the scope of the contractor will be subject to control and inspection, before unloading (on the truck). The delivery can be refused by IO if the equipment is damaged or not complete. The equipment remains under the responsibility of the contractor until the final acceptance of the installation works. The contractor is responsible of the delivery on site and has to deal with possible site constraints.

8.4 Site Data

8.4.1 Necessary information

The Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Works. To the same extent, the Contractor shall be deemed to have inspected and examined the site, its surroundings, the above data and other available information, and to have been satisfied as to all relevant matters.

8.5 Roads and Traffic management

It is the responsibility of the Contractor to put in place all the necessary safety and traffic management measures, in accordance with applicable rules and regulations, to ensure that staff and vehicles retain safe passage across the ITER Site. All the required equipment etc. to create a safe environment for the Works and ITER staff shall be provided by the Contractor.

During the Works, any road shall not be blocked for more than half its width. For total closure of any roads, Works shall be performed on Saturdays only.

Roads accessing the worksite must be kept clean at all times. For this purpose, the Contractor shall organize road washing as often as earth is observed.

Vehicles or machinery, particularly those used for earthworks and civil engineering works, must be manoeuvred safely. Any damage to surrounding structures (buildings, roads, sidewalks, walkways) must be immediately repaired by the Contractor.

8.6 Safety

The supplier will have to comply with the relevant IO OSH site instructions. The list is available in the PGC Annex 0 ([42FYPZ](#)). If the supplier does not have access to Iter Document Management system, the document can be sent on demand.

Works can be performed on the ITER worksite or at the HQ/storage area. This could lead to additional OHS documentation (PPSPS-PDP) and meetings.

Depending of the location of the works, a safety plan (PPSPS) or Prevention Plan (PDP) shall be established by the Contractor (at a minimum in French) prior to the start of the Works. Contractor will have to use the ITER template. The supplier and the potential subcontractor will have to attend to the common inspection with the relevant stakeholder.



8.7 Environmental protection

The Contractor shall comply with environmental protection requirements and procedures applicable at the ITER Site:

- ITER Organization Environmental Management System doc 1: PMAE v1 (ITER_D_97W4PN);
- Environmental requirements, (ITER_D_97WRFP []).

An environmental respect plan shall be provided by the Contractor 2 weeks prior to the start of the Works, using the ITER template.

Debris and waste of all type shall be removed as work progresses.

The Contractor shall be responsible for cleaning, repairing and restoring facilities which it dirtied or damaged to their original condition, and shall remove their debris and rubbish to public rubbish tips.

Should said cleaning fail to be performed, it will be done by a third party at the loss and expense of the Contractor.

8.8 Access to the site / Worksite installation

Access to the ITER Site is subject to the ITER Site Access Procedures

The Contractor shall be responsible for supplying and installing fencing protecting the worksite which shall be maintained for the duration of the works and removed after completion of the Works. The Contractor shall also display signs prohibiting entry onto the worksite.

8.9 Work authorisation

Prior to the start of any Works on the ITER Site, a Work Authorisation must be obtained in accordance with the Work Authorisation Procedure. Permit to work will be managed by the IO. The contractor will appear in the PTW system as Acceptor.

9 Quality Assurance (QA) requirements

Works performed through this contract will be QC3

The organisation conducting these activities should have an ITER approved QA Program or an ISO 9001 accredited quality system.

The general requirements are detailed in ITER Procurement Quality Requirements.

Prior to commencement of the Works, a Quality Plan must be submitted for ITER Organization approval giving evidence of the above and describing the organisation for this task; the skill of workers involved in the study; any anticipated sub-contractors; and giving details of who will be the independent checker of the activities (see Procurement Requirements for Producing a Quality Plan).

Documentation developed as the result of this task shall be retained by the Contractor for a minimum of five (5) years and then may be discarded at the direction of the ITER Organization.

Prior to acceptance, delivery or payment, the Contractor shall perform a review of items and services status with respect to contract requirements shall be made and documented. This review shall be done in accordance with and documented in the Contractor's Release Note – refer to.



The Contractor shall obtain written agreement from the ITER Organization to any modifications to the design or this specification. Deviations and non-conformances shall be processed in accordance with the procedure. The Contractor shall commit to process non-conformance reports and associated remedial and corrective actions expeditiously.