

**REQUEST FOR EXPRESSION OF INTEREST FOR PROVISION OF EITS (ELECTRICAL,  
INSTRUMENT, TELECOM AND SECURITY) TOOLS AND EQUIPMENT**

**REFERENCE NO.: CPP-PROC-UG-092-0930-TX**

China Petroleum Pipeline Engineering Co., Ltd. (hereinafter abbreviated as CPP) as Pipeline, Feederline & Above Ground Installation Contractor for the East African Crude Oil Pipeline (EACOP) Project invites experienced and reputable Contractors to express their interest in providing **EITS tools and equipment** to the EACOP Project.

The EACOP Project involves the construction and operation of an underground and cross-border pipeline to transport crude oil for export to international markets. The pipeline will run from Kabaale, Hoima District in Uganda to the Chongoleani peninsula near Tanga in Tanzania. The length of the pipeline is 1,443 km, of which 296 km will be in Uganda.

**BRIEF DESCRIPTION OF THE SCOPE OF THE SERVICES:**

- ♦ EITS tools and equipment refer to the consumables, tools and equipment to be used in electrical, instrumentation, telecom and security construction. For details, please refer to Appendix 3 attached.

**MINIMUM REQUIREMENTS:**

**Companies or organizations expressing their interest are invited to document their request with:**

- Proof of business registration and business license for Uganda.
- Proof of registration with the Uganda Tax Revenue Authority.
- Proof of registration with the National Supplier Database (NSD) for Uganda.
- Compliance with the Petroleum Midstream National Content Regulation # 34,2016 for Uganda.
- Uganda Registration Service Bureau (URSB) Annual returns of the latest year.
- Fully filled Key personnel list with CV (Appendix 1) and Equipment list of production and inspection (Appendix 2) in requested format. (Blank is regarded as an unqualified item.)
- Similar supplying experience within the last three years (Appendix 3) in the requested format.
- Copy of certificates of ISO 9001, ISO 45001, ISO 14001, or equivalent of them.
- Tax Clearance Certificate for the latest year available.

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Companies which have the ability, capacity, and resources to implement the activities listed above should express their interest by sending together with the documents stated in the above section through an email to **supplierdata1@cpptz.com** (Max. Email Size: 20 MBs, all documents must be submitted in the English language) on or before **24:00 hours East African Time (EAT), on 30<sup>th</sup> October 2024**. The subject of the email should be **“EOI for CPP-PROC-UG-092-0930-TX”**. CPP reserves the right not to consider companies that submit an incorrect email subject and the incorrect format of Appendix 1, 2 and 3.



The **format** of the required documents and **relevant technical requirements** which are mentioned in Minimum Requirements should be **downloaded from EACOP's website**

( <https://eacop.com/opportunities-by-main-construction-contractors/china-petroleum-pipeline-engineering-co-ltd/>).

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**Note:** CPP will review and assess the documents provided by companies that have expressed interest in accordance with this EOI and conduct evaluations based on internal criteria to determine which companies will be included in the list of pre-qualified companies. Only the pre-qualified companies will receive, by signing a Non-Disclosure Agreement (NDA), an invitation to bid as a continuation of the call for tender process. CPP reserves the right at its sole discretion to make the decision to select or reject a company and maintain its decision.





### APPENDIX 3 Basic Description and Requirement of Tools and Materials

S/N	Description	Specification	Basic Technique Requirement	Picture of Sample
<b>Materials</b>				
1	Safety Net	1.8Meter widthX3Meter Length		
2	DISPOSABLE WARNING BELT	3.0mm thick100 Meter Length		
3	DISPOSABLE WARNING BELT	PE Red and White 50 Meter Length 5cm Width		
4	angle steel	30mmX30mmX3mm		
5	galvanized iron sheet	thickness 1.5,1 square		
6	steel bar	12mm thick		
7	Steel cap	Suitable12mmThicksteel rod		
8	reflective stripe	Width 5cm long 45 m		
9	Detachable fencing	Portable, yellow black, stereoplasm		
10	indicator light	Solar Traffic Cone Light Control Yellow HZL-358		
11	Temperature and humidity recorder	Large screen digital display DM-1032		
12	Air hood	Weather windsock vane		
13	Industrial dust mask	Dust masks KN95 Industrial dust-proof independent packaging		
14	Ear plugs,3M 1100 noise proof, 200 pairs/box	3MNoise reduction earplugs for noise prevention, super sound insulation		
15	Goggles,Closed type	9002286 grey		
16	Goggles,Closed type	normal		
17	LED flashlight (repeatitious)	flashlight A8  Holy Fire		
18	COLORED FLAG	Red, Green		
19	Insulation barrels	50LThickening		
20	Insulation box	50LThickening		
21	Full Body Harness	High-altitude work fall prevention safety rope full body European standard, strap+Double hook2m+Buffer Pack		
22	Dry powder fire extinguisher	9kg dry powder fire extinguisher		
23	Parasols	Large round outdoor stall2.4m+Base		
24	Reflective Vests	Orange and green		
25	WHISTLE	stainless steeloutdoor		
26	cotton gloves	Line gloves		
27	First aid kit	Aluminum Alloy Medicine Box First Aid Box		
28	Movable whiteboard 100*150cm	Mobile whiteboard stand writing board60*90Single-sided white board reinforced bracket		
29	waist pack	Work bag		
30	Treadle type garbage can with wheels	Outdoor trash can industrial large commercial with wheels 240L		
31	Treadle type garbage can with wheels	Trash basket plastic waste basket		
32	RUBBER GLOVES	Extended rubber leather gloves		
33	Kettle	Home kettle boiling water 304 Stainless steel		
34	Raincoats	Raincoat (jacket and pants)		
35	Rainboots	Middle tube Strip steel plate		
36	UMBRELLA	foldable		
37	Face shield with safety helmet	helmet PC Protective face shield		
38	UV resistant face mask			
39	liquid soap			
40	Alcohol Wipes	75%Alcohol wipes, individual packs50piece		
41	campstool			
42	Tents for caring onsite			
43	Work Shoes	Steel toe, high waist, desert boots		
44	Workwear	Top and pants		
45	BLUE SAFETY HELMET White Safety Helmet Yellow Safety Helmet	white/blue/yellow		
46	Galvanized steel pipe			
47	Law Enforcement Recorder	Portable chest128G		
48	Vacuum cleaner	Wet and dry use		
49	lunch box	Large stainless steel, double layer		
50	Chopsticks	Bamboo chopsticks		
51	spoon	Stainless steel		
52	Snake catching rod			
53	Bee-proof clothing			
54	Garbage bag (small)	Trash basket plastic waste basket 50cmX50cm		
55	Garbage bag (large)	Outdoor trash can industrial large		
56	Laundry Detergent	3KG 1 bottle		

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57	Washing powder	10 catty		
58	Electric mosquito coil bottle	120 piece 2 Device		
59	toothbrush	12 Family size only		
60	toothpaste	180g		
61	Laundry Soap	116g X10 piece		
62	toilet paper	Large roll paper5.5Family Pack		
63	Printing paper	A4  80g		
64	Bottled water pump	Water press		
65	Shampoo & Body Wash	two-in-one		
66	Bedding Sets(5 Pieces)	1.5 Single bed 4 Set		
67	Asbestos insulation quilt	1.5 quilt		
68	wash basin	Plastic basin		
69	Hand drill grinding head	Cylindrical round head25*6		
70	power cable	3*4+1*2.5		
71	power cable	3*2.5		
72	Cable heat shrink end cap	Applicable35mm2Singlecore (with sealant)		
73	Cable heat shrink end cap	33kV, 150mm2,diameter44.9		
74	Cable heat shrink end cap	33kV ,240mm2diameter49		
75	Cable heat shrink end cap	33kV ,300mm2diameter51.3		
76	Cable heat shrink end cap	33kV, 400mm2diameter54.1		
77	Cable heat shrink end cap	66kV, 630mm2diameter76.3		
78	Cable heat shrink end cap	132kV 630mm2diameter86.3		
79	Cable heat shrink end cap	diameter20Mm,length40Mm		
80	Cable heat shrink end cap	diameter30Mm,length40Mm		
81	Cable heat shrink end cap	diameter40Mm,length60Mm		
82	Cable heat shrink end cap	diameter50Mm,length70Mm		
83	Cable heat shrink end cap	diameter70mm,length90Mm		
84	Cable heat shrink end cap	diameter80Mm,length90Mm		
85	Cable heat shrink end cap	diameter30Mm,length40Mm		
86	Cable heat shrink end cap	diameter40Mm,length60Mm		
87	Cable heat shrink end cap	diameter50Mm,length70Mm		
88	Cable heat shrink end cap	diameter20Mm,length40Mm		
89	SUNPROOF,WATERPROOFTARPAULINS	tarpaulin,15*10m		
90	SUNPROOF,WATERPROOFTARPAULINS	tarpaulin,10*20m		
91	High voltage insulating tape	red		
92	High voltage insulating tape	yellow		
93	High voltage insulating tape	blue		
94	High voltage insulating tape	black		
95	High voltage insulating tape	Yellow Green		
96	High voltage insulating tape	White, blue, yellow, green, red		
97	High voltage insulating tape	Widen 5cm Super sticky insulation tape PVC		
98	cleaning cloth	Cable cleaning towel Alcohol content 99%		
99	Plastic binding rope	350mm Per Pack100root		
100	Plastic binding rope	100mm Per Pack100root		
101	Plastic binding rope	200mmlong White 100Rootper pack		
102	Plastic binding rope	4.8*450mm-500White 500Rootper pack		
103	Plastic binding rope	9mm*550mm-600mm White 500Rootper pack		
104	Plastic binding rope	9mm*650mm-700mm 500Rootper pack		
105	Plastic binding rope	3 * 300   100 pieces per pack		
106	Plastic binding rope	10*800 100 pieces per pack		
107	Plastic binding rope	10*1200 100 pieces per pack		
108	Cable stainless steel belt	20mm*2mm Per volume50m 304		
109	Gear Type Cable Tie Pliers	Thickness 2mm above Cutting width 25mm Within		
110	cable marker	1.0 square		
111	cable marker	1.5 square		
112	cable marker	2.5 square		
113	Electric hammer	Electric hammer head6mm*150mm		
114	Electric hammer	Electric hammer head8mm*150mm		

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115	Electric hammer	Electric hammer head10mm*150mm		
116	Electric hammer	Electric hammer head12mm*150mm		
117	Electric hammer	Electric hammer head14mm*150mm		
118	Electric hammer	Electric hammer head16mm*150mm		
119	Electric hammer	Electric hammer head38mm*500mm		
120	Electric pick head	Pointed chisel14mm*250		
121	Electric pick head	Flat head chisel14mm*250		
122	abrasive disc	Angle grinder Φ100		
123	Cutting disc,107 * 1.2 * 16mm	Angle grinderΦ100		
124	Cutting disc,107 * 1.2 * 16mm	Angle grinderΦ 180		
125	Adhesive tape	45mm Large volume		
126	Adhesive tape	24mm Large volume		
127	Blowing aid,ZCQ01	Waterproof foam glue filled with expansion agent		
128	Grounding Aluminum Thermite Welding Die	6mm2-120mm2		
129	Thermite flux	Matching the above mold		
130	Flat head selfdrilling screw	M4.8*20  1bag 100		
131	Flat head selfdrilling screw	M4.8*30  1bag 100		
132	Flat head selfdrilling screw	M4.8*40  1bag 100		
133	Grounded copper rod	14 * 1.2 meters (copper layer 0.25mm)		
134	Ground clamp	Φ12		
135	earthing line	Yellow-green ground wire 16mm <sup>2</sup>		
136	Copper Nose	16mm <sup>2</sup> -10mm		
137	Stainless steel screws (including nuts	M10 , 350mm		
138	Cutting disc,107 * 1.2 * 16mm	Abrasive cutting disc Φ355		
139	Curve saw blade	Wood working saw blades 4 General grade		
140	NYLON ROPE	6mmthick		
141	NYLON ROPE	8mmthick		
142	NYLON ROPE	10mmthick		
143	Dyneema Rope	16mm thick		
144	Ratchet tie down straps	4cmWidthX12mLongset (cargo tying)		
145	304 stainless steel iron chain	Anti-theft lock chain buckle		
146	Bridge door lock	padlock 32mm		
147	Axial flow fan	Pipeline 300-2P		
148	shelf for store	120*50*200 main shelf		
149	SelfSpray Paint	black		
150	SelfSpray Paint	white		
151	SelfSpray Paint	red		
152	SelfSpray Paint	green		
153	SelfSpray Paint	Silver powder		
154	Battery for office needs	(No.1)		
155	Battery for office needs	(No.5)		
156	Battery for office needs	(No.7)		
157	Battery for office needs	9V   Square		
158	Cable heating straighting machine 2007			
159	Cable straighting machine	33kVCable Straightening		
160	Guide cone head	132kVCable stress cone installation		
161	Flow deflector	132kVCable stress cone installation		
162	Set of cone tooling	132kVCable stress cone installation		
163	Curve saw blade	One box 5 root		
164	Crimping pliers	Coaxial cable crimping pliers Hexagonal pliers F Head cold pressing pliers		
165	Cutting Blades	1/2Feeder cutter MCPT-L4 Each set6Blade		
166	HDPE Hotmelt machine	Equipped with a cutting blade and hot melt head, 63-160		
167	Electrician's knife	Heavy duty all steel utility knife		
168	Wall paperblades	A box of 10 pieces		
169	Hydraulic expander	Aluminum slot hole opener 5.2mm Reinforced punching pliers		
170	fusion splicer	fusion splicere electrode		
171	Manual torque wrench	0-200N·m		
172	Cable strippers	80-130mm(Specificationsare determined based on the outer diameter of the cable insulation) 35 <sup>2</sup> -630 <sup>2</sup>		

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173	Cable insulation grinding machine	9031(Makita)		
174	Abrasive belt zirconia	AA400 610mm*100mm(KoreanDolphin)		
175	Abrasive belt	Zirconia AA240 610mm*100mm(KoreanDolphin)		
176	Primary automatic temperature contRollser	YWK-F-KQ30A 0~99°C ±0.5°C leko		
177	Heating belt	50mm*5m 1000W 220V Silicone		
178	Metal Chop Saw	JR3070CT AC220V 1510W 32mm(Makita)		
179	Hack saw blades	S1122BF 225mm (bosch)		
180	Electric hoist	0.75t 1.5m		
181	Level ruler	30cm 2		
182	Thermometer	Wet and dry thermometer HTC-1 -50°C~70°C ±1°C 10%~99%RH ±5%RH		
183	wrench	Combination ratchet wrench43201 8mmmm(Star)		
184	wrench	Combination ratchet wrench43203 10mmmm09526(Star)		
185	wrench	Combination ratchet wrench43207 13mmmm(Star) Diamond glass cutterDL2701		
186	wrench	Combination ratchet wrench43210 17mmmm(Star) ZGJ-1#1 1.5*140*50		
187	wrench	mbination ratchet wrench43212 19mmmm(Star)Glass Ordinary glass ZGJ-1#1 4*140*50		
188	Box Wrenches (832mm)	8 inch		
189	Daily Miscellaneous (General)	97452 15Cun (Shida)		
190	Quartz glass sheet Ordinary glass	ZTGYQK-300 16-400mm2		
191	Quartz processing parts	Lithium battery		
192	Steel pliers			
193	wrench	Chain wrench 12 inch		
194	Hydraulic pliers	Manual hydraulic pliers 12 inch 18 tooth		
195	Axial flow fan	20 Gallon (Iron)		
196	Claw hammer	0.5kg Fiber glass Handle Claw Hammer 340*130mmzebra(ZEBRA) ZC100		
197	Hack saw bow	Saw bow 12 inch zebra (ZEBRA) ZC100 ink cartridge		
198	Hack saw blades	ZC100		
199	Oil barrel	A3Office and Commercial		
200	Printer	Employee badge printer A3 60mic		
201	Printer cartridge	A4 60mic		
202	PVC White Card	Line4centimeter		
203	Laminator	White 25kg Per bag		
204	DIAPHRAGM SEAL	A3 60mic		
205	DIAPHRAGM SEAL	A4 60mic		
206	Line drawing car	Draw a line of 4 centimeters		
207	White lime	White 25kg per bag		
208	Battery Charger	Compatible with 12V/24V		
209	butter			
210	bolt(Each Sets includes screws,nuts,flat washers and spring washers)	6MM (including flat pad and spring pad, with nut) galvanized		
211	bolt(Each Sets includes screws,nuts,flat washers and spring washers)	8MM (including flat pad and spring pad, with nut) galvanized		
212	bolt(Each Sets includes screws,nuts,flat washers and spring washers)	10MM (including flat pad and spring pad, with nut) galvanized		
213	bolt(Each Sets includes screws,nuts,flat washers and spring washers)	12MM (including flat pad and spring pad, with nut) galvanized		
214	Hydraulic expander	Stainless steel hole opener 26/34/42 set		
215	Hydraulic expander	Stainless steel reamer 4-12.5 levels 4-20.9 levels 4-32.15 levels set		
216	Electric pick steel drill			
217	Wheel distance meter	Digital distance measuring wheel		
218	Electric soldering iron suit			
219	Hydraulic pliers	Wire crimping pliers with a length of 2.5-10 square meters		
220	Copper welding wire			
221	fusion splicer	fusion splicer striking rod		
222	fusion splicer	fusion splicer cutter		
223	fusion splicer	fusion splicer cutting blade		
224	Dasqua High Precision Frame Level	5-wire with tripod included		
225	Ink fountain			
226	Ink Block			
227	Rubber insulated gloves	10KV		
228	11KV/Insulated shoes	43 size		
229	Discharge rod			
230	Adhesive tape	Pressure sensitive tape 5cm Width		



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S/N	Description	Specification	Basic Technique Requirement	Picture of Sample
231	Paste			
232	Aluminum pipe plug			
233	Stainless steel screws (including nuts)	M10x1000mm Including two female pads, one flat pad and one elastic pad		
234	M10 Gecko expansion tube			
235	Carbon steel wire 1.6mm	1.6mm		
236	Carbon steel wire	1.8mm		
237	headlamps	high-power		
238	Waterproof adhesive tape	5cm wide		
239	Anticorrosive asphalt paint			
240	Glass anti-corrosion paint			
241	PVC Non-sticky color ribbon			
242	EHT cable strippers			
243	EHT cable guide head			
244	Plastic film (plastic film)	30cm wide		
245	Adhesive tape	Transparent tape thick		
246	Steel wire rope	Diameter 16		
247	V-Groove			
248	Aluminum slot plug	31mm X 35mm		
249	Cable protection port	31mmX35mmX20mm		
250	Cable protector for aluminum channel	Cable protector for aluminum channel		
251	Nylon scraper			
252	Nylon rod	29mmX29mmX50mm		
253	Nylon rod	28X25X150mm		
254	Nylon rod	28X25X100mm		
255	regulating wheel	31mmX36mmX45mm		
256	Nylon blade head			
257	Plastic binding rope	4.8*400mm White		
<b>TOOLS</b>				
1	Steel Wire Rope Sling	1T		
2	Steel Wire Rope Sling	3t		
3	Steel Wire Rope Sling	5t		
4	Steel Wire Rope Sling	10t		
5	Steel Wire Rope Sling	20t		
6	U RING	3T		
7	U RING	5T		
8	U RING	10T		
9	U RING	20T		
10	pulley	1Tons (National Standard 1Tons with bearings for rope trough)		
11	pulley	3ton (National Standard 3.2Tons with bearings for rope trough)		
12	Hand Electric Drill	Bosch (BOSCH) GSR 18V-50 18V		
13	Cable pulley Commoncorner	Straight line, high quality nylon wheel		
14	Cable pulley Commoncorner	Triple corner		
15	Cable pulley Commoncorner	Ordinary corner		
16	Cable pulley Commoncorner	Aperture 100		
17	Cable pulley Commoncorner	Aperture 130		
18	Cable pulley Commoncorner	Aperture 150		
19	Cable pulley Commoncorner	Aperture 200		
20	Protective sub	Bell mouth   12*15		
21	Cable pulley Commoncorner	Multi-wheel		
22	Rack pipe pulley	Rack pipe pulley		
23	Cable trolley	SHC2000-21293 V folding		
24	Cable trolley	SHC1500-21292 V folding		
25	Traction Rope	Dyneema φ16mm		
26	Sledge hammer	10 Pounds 4kg		
27	Crimping pliers	16-150 mm <sup>2</sup>		
28	Combination toolbox	Various types of wrenches, screwdrivers, etc.		
29	Hydraulic expander	19,22,29,32,38,44,51,64mm		
30	Tap die Sets (32 piece /Sets)	M3, M4, M5, M6, M8, M10, M12		

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31	Net (optical cable)	Cable diameter 20mm		
32	LADDER	5 meter		
33	scaffold	1.9 meter		
34	Aluminum alloy vertical ladder	3 Meter, single piece (escape ladder)		
35	EXTENTION LADDER	Aluminum ladder 5step 1.9Michael		
36	Digital Multimeter	(FLUKE) Bilingual in Chinese and English		
37	multimeter	(FLUKE) Bilingual in Chinese and English, F301A		
38	Soldering iron	300W Internal Electric Locomotive		
39	soldering paste	Solder wire and solder paste Contains drug core, 2.0mm, 50g		
40	torque wrench	Preset adjustable, digital display English		
41	Combination toolbox	Portable labor protection plumber multifunctional decorator canvas thickened tool box		
42	Connectors	Single head   44.9mm   model 25-50		
43	Connectors	Single head   49mm   model 70-95		
44	distribution box 380V, IP65, 6kA/1s, 50Hz with Gran 3 loops	power box TT4		
45	INDUSTRIAL PLUG	One inlet and three outlet aviation explosion-proof plug   16A		
46	Industrial quick plug (public)	Aviation plug socket coupler connector 16A 3Core, male		
47	Industrial quick plug (female)	Aviation plug socket coupler connector 16A 3Core, female		
48	Industrial quick plug (public)	Aviation plug socket coupler connector 32A 5Core, male		
49	Industrial quick plug (female)	Aviation plug socket coupler connector 32A 5Core, female		
50	Pipe wrench, 24 inch / 18 inch, 2/Sets	twenty four Inch pipe pliers <b>【Heavy duty】</b>		
51	crimping pliers	Needle crimping pliers HSC86-4A		
52	crimping pliers	U-shaped Copper nose cold pressing pliers 0.25-6square		
53	Multifunctional electrician pliers	Multi-function needle nose pliers, FO-2022		
54	Open end wrench	450mm		
55	Light Meter	DLX-LSK2304		
56	inner hexagon spanner (12 piece Sets)	Hexagon socket 6mm   8   10   12   16   Flat head		
57	Heavy duty Allen wrench (10 piece /Sets)	Hexagon socket H6 and H8		
58	inner hexagon spanner (12 piece Sets)	H2.5、H6、H8		
59	delivery vehical	6T delivery vehical		
60	Fiber pigtail	FC-FC, 5 meter		
61	Grease	Cable oil		
62	connector	Flexural connector 10 ton		
63	connector	rotary connector 10 ton		
64	connector	rotary connector 5 ton		
65	steel tapeline	50 meter		
66	steel tapeline	5 meter		
67	Wall paperknife	Star   Telescopic   25		
68	Wallpaper blade	25mm   0.5mm   45°		
69	IRON WIRE	4.0/50kg/plate		
70	Screws	iron nail 2inch		
71	Stainless steel bucket with two handles	Screws and nuts 12*50		
72	Vernier caliper, 0150mm	0~300mm   0.02mm   mechanical   Oneway claw   (Extended claws)		
73	ungstencarbide rotary burs	pull 3 ton		
74	Explosion proof fire hose	(for sewage pumps) 4 inch		
75	water band accessory	Clamp (100mm)		
76	MARKING PEN	Non-erasable, single-end, water-based, rough, white		
77	MARKING PEN	Not erasable   black   Per Box 10 Mounting		
78	Tents for high voltage cable splicing	2m*7m		
79	Table	Folding table		
80	Industrial hot air gun	2000W   220V   97925		
81	Heating grill handle	Grilled handle		
82	Drain valve (air reservoir)	liquid gas storage tank, Small gas tank, gas pipe and clamp		
83	Drill Bit (25 piece /Sets)	twist drill High speed steel, φ4		
84	Drill Bit (25 piece /Sets)	twist drill High speed steel, φ6		
85	Drill Bit (25 piece /Sets)	twist drill High speed steel, φ8		
86	Drill Bit (25 piece /Sets)	twist drill High speed steel, φ10		
87	Drill Bit (25 piece /Sets)	twist drill High speed steel, φ12		
88	Round file	Flat head file		

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89	Round file	(Round file)		
90	Cable threading machine	5mm*100m		
91	endoscope	10 Meter hard line three in one		
92	Woodworking saw	450mm DL6845		
93	Tents for high voltage cable splicing	Fir 3-person tent		
94	degreasing cotton	Industrial cotton wool roll		
95	fiber cleaver	Cutable 75mm PVC		
96	V-groove	optical fiber V Groove		
97	Table	Simple square table outdoor portable table		
98	Adhesive tape	Widen 5cm Super sticky insulation tape PVC		
99	pulley	1Tons (National Standard 1Tons with bearings for rope trough)		
100	pulley	3ton(National Standard 3.2Tons with bearings for rope trough)		
101	Reverse chain	3ton(National standard industrial triangular hoist 3ton 3m)		
102	Pull rivet gun	Double handle rivet gun (With replacement head) 460mm		
103	Hexagon Socket In Metric System	M6 Socket bit Hexagon self-tapping screws Air screwdriver Electric drill Dovetail thread		
104	Hot melt glue gun	Glass glue gun 90511, 1.5inch		
105	Crowbar	20*450 type		
106	Crowbar	Hexagonal pry bar 1.35m (25 thick)		
107	L Shaped Framing Square	500*250 (2.7mm) stainless steel angle ruler L Ruler right angle 90 Double-sided scale		
108	L Shaped Framing Square	Stainless steel ruler 60mm		
109	Level ruler	70 type 1000mm		
110	Level ruler	70 type 1000mm		
111	Claw hammer	0.5kg Fiber handle 340*130mm		
112	iron hammer	Ball Pein Hammer with Wooden Handle 1P		
113	rubber hammer			
114	Wire brush	For angle grinder		
115	Rechargeable electric scissors	Tin shears 12 inch		
116	Socket	8 Total length of the master control 5m		
117	Cutting machine	Stone and wood dual-purpose (stone cutting machine 110W water, electricity, tiles, wood, concrete, marble machine) Electronic brake		
118	Abrasive Disk Saw blade	Cutting concrete		
119	Abrasive Disk Saw blade	Cutting wood		
120	Crimping pliers	Internet Phone Crystal Head Crimping Pliers		
121	Carpenter's chisel	Flat head steel chisel Masonry steel chisel 300mm		
122	Carpenter's chisel	Pointed steel chisel Masonry steel chisel 300mm		
123	trolley	Wheelbarrow trolley construction site single wheel trolley push sand soil garbage transporter		
124	Pointed shovel	Pointed shovel		
125	Flat head shovel			
126	Shovel handle			
127	Pickaxe			
128	Pickaxe handle			
129	ring cutting machine	Polystyrene plastic insulation layer ring cutting machine		
130	Welding rod, Diameter 45mm, 500 pieces/box	3.2 5 Kilogram 1 Bag		
131	Welding rod, Diameter 45mm, 500 pieces/box	J422-2.5 5 Kilogram 1 Bag		
132	Argon arc welding gloves (hand feeling treasure)			
133	Black glass	Welding cap white glass		
134	Black glass	Welding cap black glass		
135	Thermal welding 185Sq.mm with 185Sq.mm	35mm <sup>2</sup>		
136	welding gun	600A		
137	Semiautomatic Handheld Safety Welding Mask	Electric welding protective mask welder holding welding cap with red steel paper		
138	Hydraulic pipe benders			
139	Hydraulic pipe benders	Stainless steel pipe bending machine RIDGID-408		
140	Hydraulic pipe benders	Accessories 2 Inch Matching with pipe bending machine		
141	Cutting Blades	Stainless steel pipe cutter RIDGID 35S		
142	Cutting Blades	Stainless steel pipe cutter blade RIDGID Rotary 65S		
143	Hydraulic expander	Manual hydraulic hole opener SYK-8A		
144	Tap die Sets (32 piece /Sets)	Threading machine die 1inch-2inch		
145	Tap die Sets (32 piece /Sets)	Threading machine die 1/2-3/4 inch		
146	Electric wrench (lithium battery)	A set of electric drill matching tube		

### APPENDIX 3 Basic Description and Requirement of Tools and Materials

S/N	Description	Specification	Basic Technique Requirement	Picture of Sample
147	Electric wrench (lithium battery)	electric wrench		
148	Printer	Tag Printer C51dc		
149	Stickers	Square		
150	Stickers	Knife type		
151	Hydraulic Wire Cutter	Manual hydraulic cable cutter ZTGYQK-300 16-400mm <sup>2</sup>		
152	Angle grinder	Industrial Grade-With intelligent brake function With two large capacity batteries		
153	Angle grinder	With power cordGWS 2000		
154	video intercom	Walkie-Talkie Frequency band420		
155	light source / optical power meter	Optical power and red light function all-in-one combination(1310/1550)		
156	Ethernet cable finder	NF-268		