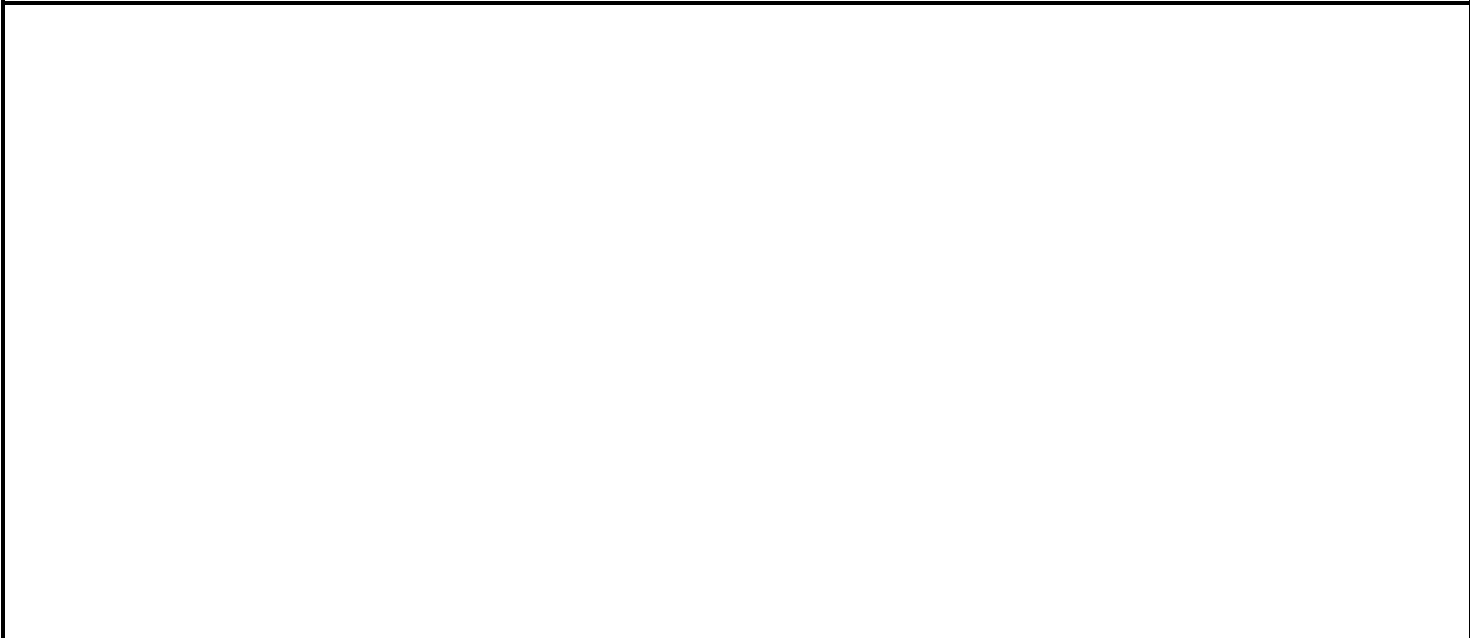
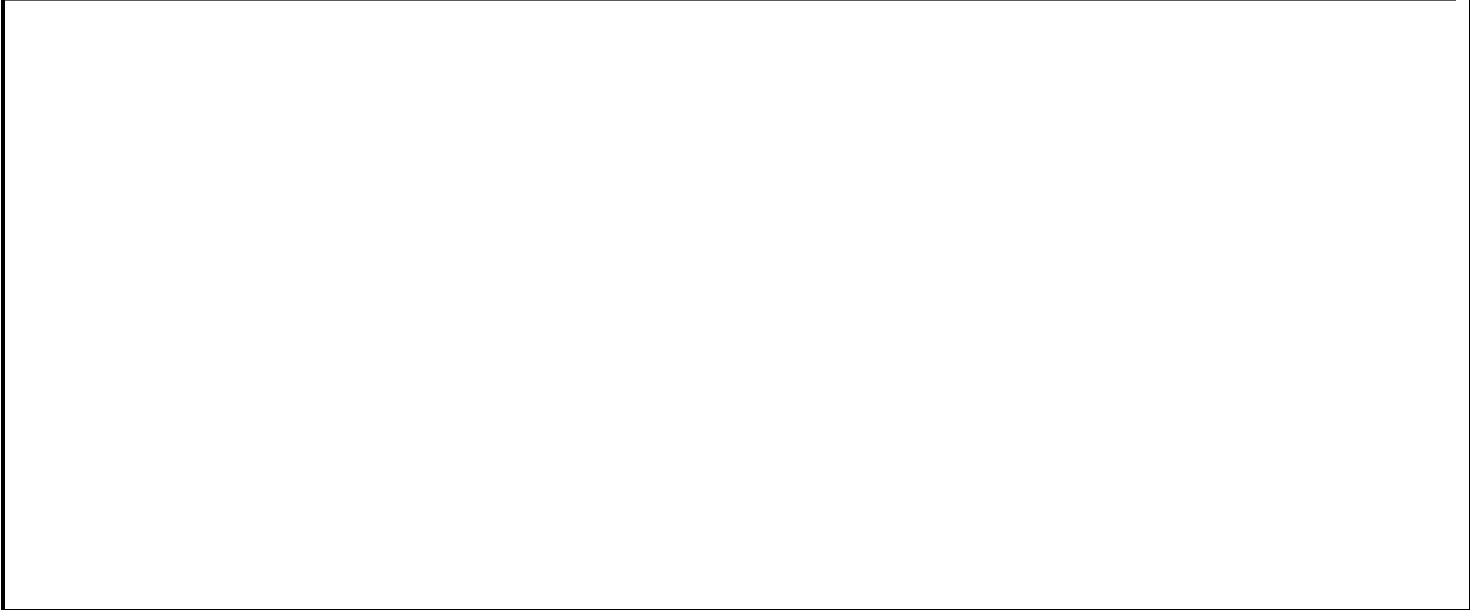


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Data sheet for LV cable



01	04/10/2025	Issued For Approval				
00	13/09/2025	Issued For Review				
Rev.	Date	Description	Prepared	Checked	Approved	Authorized

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2	X							32							
3	X	X						33							
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6	X	X						36							
7	X							37							
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Introduction

“Nominal” and “Design” capacity of the project is equal to 2340 depth and 2700 depth fresh ore feed conditions respectively. The plant is “Designed” to accommodate the “Maximum” conditions.

LV Cable Data sheet				
Item	Description	Unit	Purchaser Requirements	Vendors Response
1	General Data			
1.1	Vendor's Name	-	VTs	
1.2	Reference standard:(e.g. NFC, IEC, BS, etc)	-	IEC 60502-1, IEC 60228 & IEC 60332-1-2	
1.3	Applicable specification:	-	12002-D-EL-SPC-303-GNL-017 12002-D-EL-ITP-303-GNL-091	
1.4	Reference Documents		Power and Control Cable List for Stockpile Area 12002-D-EL-LIT-303-STP-231 Power and Control Cable List for Grinding Area 12002-D-EL-LIT-303-GRD-331 Power and Control Cable List for Flotation Area 12002-D-EL-LIT-303-FLO-388 Power and Control Cable List for Moly Area 12002-D-EL-LIT-341-MOL-508 Power and Control Cable List for Lime and Reagent Area 12002-D-EL-LIT-303-RGT-556 Power and Control Cable List for Dewatering Area 12002-D-EL-LIT-303-DWT-596 MTO for Power & Control Cable for Stockpile Area 12002-D-EL-MTO-303-STP-223 MTO for Power & Control Cable for Grinding Area 12002-D-EL-MTO-303-GRD-323 MTO for Power & Control Cable for Flotation Area 12002-D-EL-MTO-303-FLO-380 MTO for Power & Control Cable for Dewatering Area 12002-D-EL-MTO-303-DWT-440 MTO for Power & Control Cable for Moly Area 12002-D-EL-MTO-341-MOL-500 MTO for Power & Control Cable for Lime and Reagent Area 12002-D-EL-MTO-303-RGT-548	01
2	Environmental Conditions			
2.1	Location of installation			
2.2	Installation: (Underground/Above ground)		Underground/Above ground	
2.3	Hazardous area classification		Safe Area	
2.4	Altitude	m	2500 meters above sea level	
2.5	Maximum ambient temperature:	°C	40	
2.6	Minimum ambient temperature:	°C	-25	
2.7	Installation condition (Direct buried/ Concrete trench)		Concrete trench/Cable Ladder	
2.8	Maximum humidity	%	23%~70%	
2.9	Corrosive atmosphere		No	
2.10	Thermal resistivity of soil	K.m/W	1.5 This coefficient is applied if the cable is buried.	01
2.11	Seismic condition		0.3g	
3	LV Power cables			
3.1	Service voltage	kV	0.4 kV	

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01

LV Cable Data sheet

Item	Description	Unit	Purchaser Requirements	Vendors Response
3.2	Max. Withstand Voltage	kV	0.6/1 (1.2) kV	
3.3	Test Voltage (for 5 minutes)	kV	3.5 kV AC	
3.4	Insulation withstand Voltage (power frequency)	kV	ACC.to IEC	
3.5	Rated Frequency	Hz	50HZ	
3.6	Grounding System (TT, TNS, IT)		TNS	
3.7	Voltage variations (+/- % of Ur)	%	±10	
3.8	Frequency variations (+/- % of Fr)	%	± 5	
3.9	Conductor Material (CU/AL)		CU/Stranded and annealed copper conductor	
3.10	Filler Material		Extruded PVC or Poly Propylene with sheath (For multi core cables)	
3.11	Bedding Material		PVC	
3.12	Armored Material (Galvanized steel/Aluminum) (In case of application)		Armor for three core cables: Galvanized steel wire Armor for single core cables: Aluminum wire	01
3.13	Lead cover requirement	Yes/No	NO	
3.14	Over sheath Material/ Color		PVC/Black	
3.15	Flame retardant requirement	Yes/No	Yes	
3.16	Low Smoke requirement	Yes/No	Yes	
3.17	Low production of corrosive and toxic gas.	Yes/No	Yes	
3.18	Anti UV requirement	Yes/No	Yes	
3.19	Anti-rodent requirement	Yes/No	Yes	
3.20	Oil resistance	Yes/No	No	
3.21	Color	-	3-cores: Black, Blue, Yellow/Green (L1, N, PE) 4-cores: Black, Brown, Gary, Yellow/Green (L1, L2, L3, PE) 5-cores: Black, Brown, Gary, Blue, Yellow/Green (L1, L2, L3, N, PE) 1 or 2-Cores (DC- Cables): Red (for Positive) & Blue (for Negative) 6-cores and up: Black with White numbers (for Control Cables)	
3.22	Fire resistance requirement	Yes/No	No	
3.23	Cable cross section	mm ²	Acc. to the Electrical Cable List (MTO)	
3.24	No. of Cores		Acc. to the Electrical Cable List (MTO)	
3.25	Cable Types:			
3.26	0.4 KV Power Cable Type: (N2XY Single core and Multi core)		Cu/XLPE/PVC Cu/XLPE/Bd/AWA/PVC (If required) Cu/XLPE/Bd/SWA/PVC (If required)	01
3.27	0.4 KV Cable Type: (N2XCy for VFD's)		CU/XLPE/Bd/CWS/PVC	
4	Physical Characteristics for LV Power Cable			
4.1	Cable Type		VTS	
4.2	Cable Abbreviated Description		VTS	
4.3	CONDUCTOR:			
4.3.1	Material	-	VTS	
4.3.2	No × Dia. of Wire	-	VTS	
4.3.3	Conductor cross section	mm ²	VTS	
4.3.4	Cores construction (Plain/shaped/circular/Sector)		VTS	
4.3.5	Diameter	mm	VTS	
4.3.6	Core wrap		VTS	

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LV Cable Data sheet				
Item	Description	Unit	Purchaser Requirements	Vendors Response
4.3.7	Conductor class		Class 2 (Stranded)	
4.4	INSULATION			
4.4.1	Material	-	XLPE	
4.4.2	Nominal Thickness	mm	VTs	
4.5	METALLIC SHIELDING WIRE SCREEN			
4.5.1	Shape		VTs	
4.5.2	Material & Type		Copper Wire screen and Copper tape Helically	
4.5.3	Equivalent Cross-Section	mm ²	VTs	
4.5.4	Copper Wire Screen Dimension	mm	VTs	
4.5.5	Polyester Tape Thickness	mm	VTs	
4.6	FILLER: (For Multi core Cables)			
4.6.1	Material		Low Smoke PVC	
4.6.2	Thickness	mm	VTs	
4.7	OUTER SHEATH:			
4.7.1	Material	-	PVC (ST2, UV Resistant, Flame Retardant, Low Smoke)	
4.7.2	Thickness	mm	VTs	
4.8	Approx. Overall diameter of Completed Cable		VTs	
4.9	Max. bending radius factor		VTs	
4.10	Min bending radius	mm	VTs	
4.11	Max. Pulling Force/Per Cable	N	VTs	
4.12	Approx. Weight of Cable	kg/km	VTs	
4.13	Max. DC resistance of Conductor @ 20°C	Ω/km	VTs	
4.14	Max. AC resistance of Conductor @ 90°C (XLPE)	Ω/km	VTs	
4.15	Max. AC resistance of Conductor @ 70°C (PVC)	Ω/km	VTs	
4.16	Minimum installation temperature	°C	VTs	
4.17	Reactance	Ω/km	VTs	
4.18	Capacitance	μF/km	VTs	
4.19	Max. Current Rating of Cable in the Following Condition:			
4.19.1	Depth of Laying	m	0.8	
4.19.2	Thermal Resistance of soil	°C.m/W	1.5	
4.19.3	Soil Temperature	°C	20	
4.19.4	Air Temperature	°C	30	
4.19.5	Current rating in Ground	A	VTs	
4.19.6	Current rating in Air	A	VTs	
4.19.7	Current rating in Air	A	VTs	
4.20	Max. Short circuit rating @1 Sec:			
4.20.1	Conductor Initial temperature 90°C and final temperature 250°C	KA	VTs	
4.20.2	Screen Initial temperature 50°C and final temperature 250°C	KA	VTs	
4.21	Max. Conductor Temperature for XPLe:			
4.21.1	Continuous Current	°C	90	
4.21.2	Short Circuit	°C	250	
5	LV Control cable			
5.1	Service voltage	kV	0.4 kV	

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LV Cable Data sheet				
Item	Description	Unit	Purchaser Requirements	Vendors Response
5.2	Max. Withstand Voltage	kV	0.6/1 (1.2) kV	
5.3	Test Voltage (for 5 minutes)	kV	3.5 kV AC	
5.4	Insulation withstand Voltage (power frequency)	kV	ACC.to IEC	
5.5	Rated Frequency	Hz	50HZ	
5.6	Grounding System (TT, TNS, IT)		TNS	
5.7	Voltage variations (+/- % of Ur)	%	±10	
5.8	Frequency variations (+/- % of Fr)	%	± 5	
5.9	Conductor Material (CU/AL)		CU/Stranded and annealed copper conductor	
5.10	Conductor Purity	%	Acc. to IEC 60228	
5.11	Filler Material		Extruded PVC or Poly Propylene with sheath (For multi core cables)	
5.12	Bedding Material		PVC	
5.13	Lead cover requirement	Yes/No	NO	01
5.14	Over sheath Material/ Color		PVC/Gray	
5.15	Flame retardant requirement	Yes/No	Yes	
5.16	Low Smoke requirement	Yes/No	Yes	
5.17	Low production of corrosive and toxic gas.	Yes/No	Yes	
5.18	Anti UV requirement	Yes/No	Yes	
5.19	Anti-rodent requirement	Yes/No	Yes	
5.20	Oil resistance	Yes/No	No	
5.21	Core Color coding		6-cores and up: Black with White numbers (for Control Cables)	
5.22	Conductor class		Class 2 (Stranded)	
5.23	Fire resistance requirement	Yes/No	No	
5.24	Semiconductive layer		Extruded layer of semi-conductive material between conductor and insulation and between insulation and screen	
5.25	Cable cross section	mm ²	Acc. to the Electrical Cable List (MTO)	
5.26	No. of Cores		Acc. to the Electrical Cable List (MTO)	
5.27	Cable Types:			
5.28	0.4KV Control Cable Type (NYY for Single and Multi-core cables)		CU/PVC/PVC	
6	LV Control cable for Physical Characteristics			
6.1	Cable Type		VTS	
6.2	Cable Abbreviated Description		VTS	
6.3	CONDUCTOR:			
6.3.1	Material	-	VTS	
6.3.2	No × Dia. of Wire	-	VTS	
6.3.3	Conductor cross section	mm ²	VTS	
6.3.4	Cores construction (Plain/shaped/circular/Sector)		VTS	
6.3.5	Diameter	mm	VTS	
6.3.6	Over sheath insulation		PVC / ST1	
6.3.7	Core wrap		VTS	
6.4	INSULATION			

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LV Cable Data sheet				
Item	Description	Unit	Purchaser Requirements	Vendors Response
6.4.1	Material	-	PVC	
6.4.2	Nominal Thickness	mm	VTs	
6.5	METALLIC SHIELDING WIRE SCREEN			
6.5.1	Shape		VTs	
6.5.2	Material & Type		Copper Wire screen and Copper tape Helically	
6.5.3	Equivalent Cross-Section	mm ²	VTs	
6.5.4	Copper Wire Screen Dimension	mm	VTs	
6.5.5	Polyester Tape Thickness	mm	VTs	
6.6	FILLER: (For Multi core Cables)			
6.6.1	Material		Low Smoke PVC	
6.6.2	Thickness	mm	VTs	
6.7	OUTER SHEATH:			
6.7.1	Material	-	PVC (ST1, UV Resistant, Flame Retardant, Low Smoke)	
6.7.2	Thickness	mm	VTs	
6.7.3	Color	-	3-cores: Black, Blue, Yellow/Green (L1, N, PE) 4-cores: Black, Brown, Gary, Yellow/Green (L1 , L2 , L3 , PE) 5-cores: Black, Brown, Gary, Blue, Yellow/Green (L1 , L2 , L3 , N , PE) 1 or 2-Cores (DC- Cables): Red (for Positive) & Blue (for Negative) 6-cores and up: Black with White numbers (for Control Cables)	
6.7.4	Application Method	-	Extruded	
6.8	Approx. Overall diameter of Completed Cable		VTs	
6.9	Max. bending radius factor		VTs	
6.10	Min bending radius	mm	VTs	
6.11	Max. Pulling Force/Per Cable	N	VTs	
6.12	Approx. Weight of Cable	kg/km	VTs	
6.13	Max. DC resistance of Conductor @ 20°C	Ω/km	VTs	
6.14	Max. AC resistance of Conductor @ 90°C (XLPE)	Ω/km	VTs	
6.15	Max. AC resistance of Conductor @ 70°C (PVC)	Ω/km	VTs	
6.16	Minimum installation temperature	°C	VTs	
6.17	Reactance	Ω/km	VTs	
6.18	Capacitance	μF/km	VTs	
6.19	Max. Current Rating of Cable in the Following Condition:			
6.19.1	Depth of Laying	m	0.8	
6.19.2	Thermal Resistance of soil	°C.m/W	1.5	
6.19.3	Soil Temperature	°C	20	
6.19.4	Air Temperature	°C	30	
6.19.5	Current rating in Ground	A	VTs	
6.19.6	Current rating in Air	A	VTs	
6.19.7	Current rating in Air	A	VTs	

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LV Cable Data sheet				
Item	Description	Unit	Purchaser Requirements	Vendors Response
6.20	Max. Short circuit rating @1 Sec:			
6.20.1	Conductor Initial temperature 90°C and final temperature 250°C	KA	VTs	
6.20.2	Screen Initial temperature 50°C and final temperature 250°C	KA	VTs	
6.21	Max. Conductor Temperature for PVC:			
6.21.1	Continuous Current	°C	70	
6.21.2	Short Circuit	°C	160	
7	Drum Characteristics: (to be Completed by the VENDOR)			
7.1	Drum Material	-	VTs	
7.2	Drum dimension		VTs	
7.3	Max Cable length on drum	m	VTs	
7.4	Min Cable length on drum	m	VTs	
7.5	Total weight	kg	VTs	
7.6	Min. cable installation temperature	°C	VTs	
8	Cable Marking (At least the following information shall be printed on the outer sheath of the cables, at reasonable intervals acc. to manufacturer standard)			
8.1	Manufacturer's name		VTs	
8.2	Year of Manufacture		VTs	
8.3	Type of Insulation		VTs	
8.4	Rated Voltage		VTs	
8.5	Number of Cores		VTs	
8.6	Size of Conductors		VTs	
9	Cable Tests & Inspection			
9.1	ITP for LV and Control Cable		Refer to Doc No. 12002-D-EL-ITP-303-GNL-091	

Note: ITP & QCP will be finalized after P.O in PIM Stage.

1- VTs: Vendor To Specified

2- VENDOR shall complete the datasheet according to voltage level, cable sizes and types in separate sheets.