



HALTON HILLS HYDRO INC. - APPROVED MATERIAL SPECIFICATIONS

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[Halton Hills Hydro Inc. Purchasing Specifications for Major and Non-Major Equipment.](#)

REVISED: January 26, 2010

The following are Halton Hills Hydro's Approved Materials Specifications to be used in conjunction with this utility's Underground Distribution Specifications (UD-Specs) and were developed by Halton Hills Hydro Inc. to be used solely in this utility's service area.

Halton Hills Hydro has and will continue to determine the application for approved materials. Halton Hills Hydro will not be held responsible/ liable for any misuse of these materials by others (inside or outside the limits of this utility's service area).

These specifications are not recommended for use outside of Halton Hills Hydro's distribution service area as other standards/ codes may apply in other areas. As such, Standards/ Codes/ other applicable documentation should be obtained from the utility responsible for power distribution in the area you are working, if not within the limits of this utility's service area.

Please note that these materials are subject to change without notification and as such it is recommended that the user confirm latest revision of the materials specification if in doubt. Halton Hills Hydro shall not be held liable for equipment purchased that does not meet with these specifications and for any malfunction of equipment used. Halton Hills Hydro reserves the right to reject materials used if the equipment does not conform to these specifications or if another valid reason exists not to allow the use of the material. It is the responsibility of the user to ensure they are purchasing only approved materials and are using the correct materials for the intended use.

WIR52 **CABLE, UNDERGROUND SECONDARY SERVICE, TRIPLEX, 3-#4/0 AWG, COMPACT AL., XLPEI-PVCJ, 600V TO CEA WCWG-04 USC90 OR USEI90 OR CSA-C22.2 No.52-96 (R2000)**

MANUFACTURER: PRYSMIAN (formerly PIRELLI) GENERAL CABLE NEXANS
MFG. CAT#
MANUFACTURER:
MFG. CAT#

WIR53 **CABLE, UNDERGROUND SECONDARY SERVICE, TRIPLEX, 3-250 MCM, COMPACT AL., XLPEI-PVCJ, 600V TO CEA WCWG-04 USC90 OR USEI90 OR CSA-C22.2 No.52-96 (R2000)**

MANUFACTURER: PRYSMIAN (formerly PIRELLI) GENERAL CABLE NEXANS
MFG. CAT#
MANUFACTURER:
MFG. CAT#

WIR56 **CABLE, UNDERGROUND PRIMARY, #1/0 AWG, COMPACT CU., STRAND BLOCKED, TR-XLPEI, PVCJ, 28 KV TO CSA C68.3-97, 100% CONCENTRIC NEUTRAL.**

MANUFACTURER: PRYSMIAN (formerly PIRELLI) GENERAL CABLE NEXANS
MFG. CAT#

WIR57 **CABLE, UNDERGROUND PRIMARY, #2/0 AWG, COMPACT AL., STRAND BLOCKED, TR-XLPEI, PVCJ, 28 KV TO CSA C68.3-97, 100% CONCENTRIC NEUTRAL. ****NOT FOR USE IN RESIDENTIAL/ COMMERCIAL/ INDUSTRIAL SUBDIVISIONS AND/ OR DEVELOPMENTS******

MANUFACTURER: PRYSMIAN (formerly PIRELLI) GENERAL CABLE NEXANS
MFG. CAT#

WIR66 **CABLE, UNDERGROUND PRIMARY, 1000 MCM, COMPACT AL., STRAND BLOCKED, TR-XLPEI, PVCJ, 28 KV TO CSA C68.3-97, 33% CONCENTRIC NEUTRAL.**

MANUFACTURER: PRYSMIAN (formerly PIRELLI) GENERAL CABLE NEXANS
MFG. CAT#

WIR69 **CABLE, UNDERGROUND PRIMARY, 1000 MCM, COMPACT CU., STRAND BLOCKED, TR-XLPEI, PVCJ, 28 KV TO CSA C68.3-97, 33% CONCENTRIC NEUTRAL. (FEEDER EGRESS OLN Y OR IF SPECIFIED BY HALTON HILLS HYDRO)**

MANUFACTURER: PRYSMIAN (formerly PIRELLI) GENERAL CABLE NEXANS
MFG. CAT#

WIR66 **CABLE, UNDERGROUND PRIMARY, 500 MCM, COMPACT Cu., STRAND BLOCKED, TR-XLPEI, PVCJ, 28 KV TO CSA C68.3-97, 33% CONCENTRIC NEUTRAL. ****FOR MAINTENANCE USE ONLY, NOT FOR NEW INSTALLATIONS******

3.1 Cable and Cable Supports

MANUFACTURER: PRYSMIAN (formerly PIRELLI) GENERAL CABLE NEXANS
MFG. CAT#

CAB01 CABLE SUPPORT, UNDERGROUND IN CONCRETE FOUNDATION, V-CUSHION WITH CLAMPING BRACKET AND HOT DIP GALVANIZED CHANNEL FOR MOUNTING SUPPORTS (TYPICALLY FITS 1000MCM, 28kV CABLE WITH DIAMETER OF 2-1/4" BUT CONTRACTOR SHALL ENSURE SNUG FIT AROUND CABLE).

MANUFACTURER: SASCO STRUT
MFG. CAT# S214VC-EH

CAB02 CABLE SUPPORT, UNDERGROUND IN CONCRETE FOUNDATION, V-CUSHION WITH CLAMPING BRACKET AND HOT DIP GALVANIZED CHANNEL FOR MOUNTING SUPPORTS (TYPICALLY FITS 500MCM, 28kV CABLE WITH DIAMETER OF 1-7/8" BUT CONTRACTOR SHALL ENSURE SNUG FIT AROUND CABLE).

MANUFACTURER: SASCO STRUT
MFG. CAT# S178VC-EH

NOTE: CONDUCTORS AND CABLES MANUFACTURED BY COMPANIES LISTED ABOVE ARE APPROVED BY HALTON HILLS HYDRO, HAVING RECEIVED CSA CERTIFICATION RECORDS OR TYPE TEST DATA FOR CONDUCTORS OR CABLES AS PER O.REG 22/04. ADDITIONAL MANUFACTURER'S MAY BE ADDED PROVIDED TYPE TEST DATA IS PROVIDED TO HALTON HILLS HYDRO PRIOR TO PURCHASING.

PM TRANSFORMER, SINGLE PHASE, LOW PROFILE, PADMOUNTED, 50 kVA, 16000V-240/120V TO BE USED WITH VAULT FOUNDATION AS PER GUIDELINE FOR LOW-PROFILE SINGLE PHASE PAD-MOUNTED TRANSFORMERS.

MANUFACTURER: MOLONEY CAM-TRAN CES
MFG. CAT#
MANUFACTURER: ABB
MFG. CAT#

PM022 TRANSFORMER, SINGLE PHASE, DUAL VOLTAGE PRIMARY, LOW PROFILE, PADMOUNTED, 50 kVA, 16000/4800V-240/120V TO BE USED WITH VAULT FOUNDATION AS PER GUIDELINE FOR LOW-PROFILE SINGLE PHASE PAD-MOUNTED TRANSFORMERS.

MANUFACTURER: MOLONEY CAM-TRAN CES
MFG. CAT#
MANUFACTURER: ABB
MFG. CAT#

PM TRANSFORMER, SINGLE PHASE, LOW PROFILE, PADMOUNTED, 50 kVA, 2400V-240/120V TO BE USED WITH VAULT FOUNDATION AS PER GUIDELINE FOR LOW-PROFILE SINGLE PHASE PAD-MOUNTED TRANSFORMERS.

MANUFACTURER: MOLONEY CAM-TRAN CES
MFG. CAT#
MANUFACTURER: ABB
MFG. CAT#

PM TRANSFORMER, SINGLE PHASE, LOW PROFILE, PADMOUNTED, 75 kVA, 16000V-240/120V TO BE USED WITH VAULT FOUNDATION AS PER GUIDELINE FOR LOW-PROFILE SINGLE PHASE PAD-MOUNTED TRANSFORMERS.

MANUFACTURER: MOLONEY CAM-TRAN ABB
MFG. CAT#
MANUFACTURER: ABB
MFG. CAT#

PM TRANSFORMER, SINGLE PHASE, DUAL VOLTAGE PRIMARY, LOW PROFILE, PADMOUNTED, 75 kVA, 16000/4800V-240/120V TO BE USED WITH VAULT FOUNDATION AS PER GUIDELINE FOR LOW-PROFILE SINGLE PHASE PAD-MOUNTED TRANSFORMERS.

MANUFACTURER: MOLONEY CAM-TRAN CES
MFG. CAT#
MANUFACTURER: ABB
MFG. CAT#

PM TRANSFORMER, SINGLE PHASE, LOW PROFILE, PADMOUNTED, 75 kVA, 2400V-240/120V TO BE USED WITH VAULT FOUNDATION AS PER GUIDELINE FOR LOW-PROFILE SINGLE PHASE PAD-MOUNTED TRANSFORMERS.

MANUFACTURER: MOLONEY CAM-TRAN CES
MFG. CAT#
MANUFACTURER:
MFG. CAT#

PM TRANSFORMER, SINGLE PHASE, LOW PROFILE, PADMOUNTED, 100 kVA, 16000V-240/120V TO BE USED WITH VAULT FOUNDATION AS PER GUIDELINE FOR LOW-PROFILE SINGLE PHASE PAD-MOUNTED TRANSFORMERS.

MANUFACTURER: MOLONEY CAM-TRAN CES
MFG. CAT#
MANUFACTURER: ABB
MFG. CAT#

PM TRANSFORMER, SINGLE PHASE, DUAL VOLTAGE PRIMARY, LOW PROFILE, PADMOUNTED, 100 kVA, 16000/4800V-240/120V TO BE USED WITH VAULT FOUNDATION AS PER GUIDELINE FOR LOW-PROFILE SINGLE PHASE PAD-MOUNTED TRANSFORMERS.

MANUFACTURER: MOLONEY CAM-TRAN CES
MFG. CAT#
MANUFACTURER: ABB
MFG. CAT#

PM TRANSFORMER, SINGLE PHASE, LOW PROFILE, PADMOUNTED, 100 kVA, 2400V-240/120V TO BE USED WITH VAULT FOUNDATION AS PER GUIDELINE FOR LOW-PROFILE SINGLE PHASE PAD-MOUNTED TRANSFORMERS.

MANUFACTURER: MOLONEY CAM-TRAN CES
MFG. CAT#
MANUFACTURER: ABB
MFG. CAT#

3.2 Single Phase Transformers

NOTE: TRANSFORMERS MANUFACTURED BY COMPANIES LISTED ABOVE ARE APPROVED BY HALTON HILLS HYDRO, HAVING RECEIVED TYPE TEST DATA FOR TRANSFORMERS AS PER O.REG 22/04 OR HAVE BEEN CSA/ ESA/ UL CERTIFIED. ADDITIONAL MANUFACTURER'S MAY BE ADDED PROVIDED TYPE TEST DATA IS PROVIDED TO HALTON HILLS HYDRO PRIOR TO PURCHASING. ALL TRANSFORMER MUST BE BUILT TO CSA SPECIFICATIONS CAN/ CSA C227.3-06 AND IN ACCORDANCE WITH HALTON HILLS HYDRO'S GUIDELINE FOR LOW-PROFILE SINGLE PHASE PAD-MOUNTED TRANSFORMERS (LATEST REVISION). PLEASE CONTACT ENGINEERING DEPARTMENT FOR GUIDELINES.

UGM020 TERMINATION, COLD SHRINK, SILICONE POLYMER, #2 - #4/0 AWG, 28kV, 200 KV BIL, ANSI/IEEE 48-1990 , CLASS 1

MANUFACTURER: 3M
MFG. CAT# 7663-S-8

UGM TERMINATION, COLD SHRINK, SILICONE POLYMER, 250 - 800 KCMIL, 28kV, 200 KV, ANSI/IEEE 48-1990 , CLASS 1

MANUFACTURER: 3M
MFG. CAT# 7665-S-8

UGM TERMINATION, COLD SHRINK, SILICONE POLYMER, 900 - 1750 KCMIL, 28kV, 200 KV, ANSI/IEEE 48-1990 , CLASS 1

MANUFACTURER: 3M
MFG. CAT# 7666-S-8

UGM021 ELBOW, LOADBREAK, 200 AMP, 28KV, C/W TEST POINT, FOR #1/0 AWG CU COMPACT 28KV CABLE, (28kV CLASS) ANSI/IEEE 386-1995

MANUFACTURER:	ELASTIMOLD	Cooper - RTE
MFG. CAT#	274LR-H5230A-CS854	PLE228CC06TCSA
MFG. CAT#		PLE228DD06TCSA
MFG. CAT#		PLE228CC07TCSA
MFG. CAT#		PLE228DD07TCSA

Purchaser of elbow is responsible for verifying the elbow will mate with the primary cable. Typically use code "06" for #1/0 cable or use code "07" for #2/0 cable. See HHH cable specifications and design for appropriate size cable.

UGM022 INSERT, BUSHING, LOADBREAK, 200 AMP, 28 KV, ANSI/IEEE 386-1995

MANUFACTURER:	RTE	ELASTIMOLD
MFG. CAT#	LB1228	2701A4-CS854

UGM23 CAP, INSULATING, 28 KV, FOR 200 AMP, 28 KV INSERT, BUSHING, LOADBREAK, C/W GROUND WIRE, ANSI/IEEE 386-1995

MANUFACTURER:	ELASTIMOLD	RTE
MFG. CAT#	273DRGA-CS854	PLPC-228

UGM30 ELBOW ARRESTER, 28kV, 200A RATED, "METAL OXIDE VARISTOR ELBOW" C/W GROUND LEAD AND DRAIN WIRE TAB TO BE INSTALLED ON OPEN POINTS AND UGM48, ANSI/IEEE 386-1995

MANUFACTURER: COOPER/ RTE
MFG. CAT# 3238019C21M

UGM47 ELBOW, T-OP 2 (RTE)/ T-BODY (ELASTIMOLD), 600 AMP, 28KV, C/W TEST POINT, SIZED TO FIT CABLE BEING INSTALLED, ANSI/IEEE 386-1995

3.3 Connectors and Terminators

MANUFACTURER: RTE ELASTIMOLD
MFG. CAT# DT628T K656BLR

**UGM48 INSERT, BUSHING, LOADBREAK REDUCING TAP PLUG, 28kV, 600A/
200A, TO BE INSTALLED ON BACK OF T-OP 2/ T-BODY AND CAPPED
WITH UGM23, ANSI/IEEE 386-1995**

MANUFACTURER: RTE ELASTIMOLD
MFG. CAT# LRTP628 K650ETP

**UGM51 INSULATED PROTECTIVE CAP, 600A, 28kV FOR T-OP 2 ELBOW,
STANDARD SIZE, COMPLETE WITH DRAIN WIRE, ANSI/IEEE 386-1995**

MANUFACTURER: COOPER/ RTE
MFG. CAT# DPC628

**UGM52 INSULATED PROTECTIVE CAP, 600A, 28kV FOR T-OP 2 ELBOW,
EXTENDED SIZE, COMPLETE WITH DRAIN WIRE, ANSI/IEEE 386-1995**

MANUFACTURER: COOPER/ RTE
MFG. CAT# DPC628UT

**UGM CABLE ADAPTER FOR 500MCM (CABLE DIAMETERS 1.36" - 1.56") TO
BE ORDERED IN ADDITION TO COOPER/ RTE T-OP 2. **PURCHASER
TO VERIFY ADAPTER WILL FIT CABLE.**

MANUFACTURER: COOPER/ RTE
MFG. CAT# CA628H

**UGM CABLE ADAPTER FOR 1000MCM (CABLE DIAMETERS 1.64" - 1.84") TO
BE ORDERED IN ADDITION TO COOPER/ RTE T-OP 2. **PURCHASER
TO VERIFY ADAPTER WILL FIT CABLE.**

MANUFACTURER: COOPER/ RTE
MFG. CAT# CA628K

UGM CONNECTOR, 500MCM

MANUFACTURER: COOPER/ RTE
MFG. CAT# CC6C22TCSA30

UGM CONNECTOR, 1000MCM

MANUFACTURER: COOPER/ RTE
MFG. CAT# CC6C27TCSA32

UGM PARKING STAND BUSHING, 28kV, 600A.

MANUFACTURER: COOPER/ RTE
MFG. CAT# ISB628CSC

**UGM CONNECTOR, STEM, COMPRESSION Al/Cu, #1 AWG - #1/0 AWG
COMPACT STRANDED**

MANUFACTURER: 3M
MFG. CAT# SC0001

**CON CONNECTOR, COMPRESSION SLEEVE, FOR #4/0 - #4/0 AWG, AL/AL
COMPACT STRANDED**

MANUFACTURER: ILSCO LAPRAIRIE BURNDY

3.3 Connectors and Terminators

MFG. CAT# ASC4/0 KSN40P YJS28A

CON CONNECTOR, COMPRESSION SLEEVE, FOR #250 - #250 MCM, CU/CU or AL/AL COMPACT STRANDED

MANUFACTURER: ILSCO LAPRAIRIE BURNDY
MFG. CAT# ASC250 KSN025P YJS29A

CON03 CONNECTOR, LUG, 1 HOLE, COMPRESSION, #1/0 AWG, CU COMPACT STRANDED (For Primary Cables)

MANUFACTURER: BURNDY TRIDEM LAPRAIRIE
MFG. CAT# YJA1/0T12 01-210:1 CKLL10-NTN

CON006 CONNECTOR, LUG, 1 HOLE, COMPRESSION, #4/0 AWG, AL COMPACT STRANDED (For Secondaries to Meter Base)

MANUFACTURER: ILSCO SPECTAL LAPRAIRIE
MFG. CAT# ACC4/0 HT4/0-1T KL40-TN
MANUFACTURER: BURNDY
MFG. CAT# YJA4/0AT12TN

CON CONNECTOR, LUG, 1 HOLE, COMPRESSION, 250 MCM, AL COMPACT STRANDED (For Secondaries to Meter Base)

MANUFACTURER: ILSCO SPECTAL LAPRAIRIE
MFG. CAT# ACC-250 HT25-1T KL025-TN
MANUFACTURER: BURNDY
MFG. CAT# YJA343AT12TN

CON CONNECTOR, LUG, 1 HOLE, COMPRESSION, #2/0 AWG, CU STRANDED (For Grounding Wire)

MANUFACTURER: BURNDY TRIDEM LAPRAIRIE
MFG. CAT# YJA2/0T12 01-212:1 CKLL20-NTN

CON CONNECTOR, TAP, WEDGE, COPPER, WHITE CARTRIDGE FOR #2/0 AWG STR. TO #2/0 AWG Str.

MANUFACTURER: AMPACT
MFG. CAT# 1-275187-5

CON CONNECTOR, TAP, WEDGE, COPPER, WHITE CARTRIDGE FOR #1/0 AWG STR. TO #2/0 AWG Str.

MANUFACTURER: AMPACT
MFG. CAT# 1-275187-6

UGM	DUCT, PVC, 3" (75 MM), 3M LENGTH, TYPE DB2/ES2, C/W BELL END, CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	DB1003	08230
UGM040	DUCT, PVC, 4" (100 MM), 3M LENGTH, TYPE DB2/ES2, C/W BELL END, CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	DB1004	08240
UGM	DUCT, PVC, 3" (75 MM), 6M LENGTH, TYPE DB2/ES2, C/W BELL END, CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	DB2003	08231
UGM041	DUCT, PVC, 4" (100 MM), 6M LENGTH, TYPE DB2/ES2, C/W BELL END, CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	DB2004	08241
UGM	COUPLING, POLYETHYLENE, 3" (75 MM), PUSH FIT, CSA C22.2 NO. 211.1 FOR CONCRETE ENCASED DUCTWORK ONLY	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	PFC03	PFC030
UGM	COUPLING, POLYETHYLENE, 4" (100 MM), PUSH FIT, CSA C22.2 NO. 211.1 FOR CONCRETE ENCASED DUCTWORK ONLY	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	PFC04	PFC040
UGM	COUPLING, POLYETHYLENE, 5°, 3" (75 MM), PUSH FIT, CSA C22.2 NO. 211.1 FOR CONCRETE ENCASED DUCTWORK ONLY	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	PFC5 03	5APP30
UGM	COUPLING, POLYETHYLENE, 5°, 4" (100 MM), PUSH FIT, CSA C22.2 NO. 211.1 FOR CONCRETE ENCASED DUCTWORK ONLY	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	PFC5 04	5APP40
UGM	COUPLING, PVC SOLVENT WELD, 3" (75 MM), CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	SWC 03	SWC030
UGM	COUPLING, PVC SOLVENT WELD, 4" (100 MM), CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	SWC 04	SWC040
UGM	COUPLING, PVC SOLVENT WELD, 5°, 3" (75 MM), CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	SWC5 03	5ACS30
UGM	COUPLING, PVC SOLVENT WELD, 5°, 4" (100 MM), CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	SWC5 04	5ACS40
UGM	DUCT PLUG, TAPERED, PVC, 3" (75 MM), CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	PLUG03	PLUG30
UGM	DUCT PLUG, TAPERED, PVC, 4" (100 MM), CSA C22.2 NO. 211.1	

3.4 Underground Duct Conduit

MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	PLUG04	PLUG40
UGM	DUCT SPACER, INTERMEDIATE, 4" X 1-1/2", FOR 4" DUCT, PVC, CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	RIS4015	IS5530
UGM	DUCT SPACER, BASE, 4" X 1-1/2", FOR 4" DUCT, PVC, CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	RBS4015	BS5530
UGM	DUCT SPACER, INTERMEDIATE, 3" X 1-1/2", FOR 3" DUCT, PVC, CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	IS3015	IS4530
UGM	DUCT SPACER, BASE, 3" X 1-1/2", FOR 3" DUCT, PVC, CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	BS3015	BS4530
UGM	BELL END, PVC, 3", TYPE DB2/ES2, CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	BEL03	BELL30
UGM	BELL END, PVC, 4", TYPE DB2/ES2, CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	BEL04	BELL40
UGM	DUCT BEND, PVC, 3" X 36"(R), 45°, TYPE DB2/ES2, CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	45B3X36	453036
UGM	DUCT BEND, PVC, 4" X 36"(R), 45°, TYPE DB2/ES2, CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	45B4X36	454036
UGM	DUCT BEND, PVC, 3" X 60"(R), 45°, TYPE DB2/ES2, CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	45B3X60	453060
UGM	DUCT BEND, PVC, 4" X 60"(R), 45°, TYPE DB2/ES2, CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	45B4X60	454060
UGM	DUCT BEND, PVC, 3" X 36"(R), 90°, TYPE DB2/ES2, CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	90B3X36	903036
UGM	DUCT BEND, PVC, 4" X 36"(R), 90°, TYPE DB2/ES2, CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	90B4X36	904036
UGM	DUCT BEND, PVC, 3" X 60"(R), 90°, TYPE DB2/ES2, CSA C22.2 NO. 211.1	
MANUFACTURER:	ROYAL	IPEX
MFG. CAT#	90B3X60	903060

UGM DUCT BEND, PVC, 4" X 60"(R), 90°, TYPE DB2/ES2, CSA C22.2 NO. 211.1

MANUFACTURER: ROYAL IPEX
 MFG. CAT# 90B4X60 904060

UGM DUCT, RIGID PVC, 2" (50 MM), C/W BELL END, CSA C22.2 NO. 211.2

MANUFACTURER: ROYAL IPEX
 MFG. CAT# RCO200 32120

UGM DUCT, RIGID PVC, 2.5" (50 MM), C/W BELL END, CSA C22.2 NO. 211.2

MANUFACTURER: ROYAL IPEX
 MFG. CAT# RCO250 32125

UGM BELL END, 2" RIGID PVC, PART OF METER BASE ENTRANCE, SEE DUCT INSTALLATION SPEC UD-09

MANUFACTURER: ROYAL IPEX CARLON
 MFG. CAT# N/A IB35 E997J-CAR

UGM BELL END, 2.5" RIGID PVC, PART OF METER BASE ENTRANCE, SEE DUCT INSTALLATION SPEC UD-09

MANUFACTURER: ROYAL IPEX CARLON
 MFG. CAT# N/A IB40 E997K

UGM OFFSET TERMINAL ADAPTORS, 2" RIGID PVC, PART OF METER BASE ENTRANCE

MANUFACTURER: ROYAL IPEX CARLON
 MFG. CAT# CMO35 MO35 E995J

UGM TERMINAL ADAPTER, 2" RIGID PVC, PART OF METER BASE ENTRANCE

MANUFACTURER: ROYAL IPEX CARLON
 MFG. CAT# CTA35 TA35 E943J

UGM TERMINAL ADAPTER, 2.5" RIGID PVC, PART OF METER BASE ENTRANCE

MANUFACTURER: ROYAL IPEX CARLON
 MFG. CAT# N/A TA40 E943K

UGM GENTLE 90 DEGREE ELBOW, CSA APPROVED, WITH BELL END FOR COUPLING LARGER SERVICE DUCT TO SMALLER SERVICE DUCT. TO BE USED IN RECESSED METER BASE INSTALLATIONS ONLY. BELL END SHALL FIT UNDERGROUND DUCT FROM ROAD.

MANUFACTURER: IPEX
 MFG. CAT# EE3590 (METER END) & 68427 (BELL END) OR LARGER AS REQUIRED

UGM U-Guard Riser, PVC, Power Mold, 2" x 8', Flanged, Heavy Duty. Used in conjunction with HHH Specification UD-15 (most recent revision).

MANUFACTURER: Holm Industries Inc.
 Distributor: Lakeport Power Ltd.
 MFG. CAT# 400PM2-408

UGM U-Guard Riser, PVC, Power Mold, 4" x 8', Flanged, Heavy Duty. Used in conjunction with HHH Specification UD-15 (most recent revision).

MANUFACTURER: Holm Industries Inc.
 Distributor: Lakeport Power Ltd.
 MFG. CAT# 400PM4-408

UGM Adapter Boot, PVC, 2" or 3", Vented. Used in conjunction with HHH Specification UD-15 (most recent revision).

MANUFACTURER: Holm Industries Inc.
 Distributor: Lakeport Power Ltd.
 MFG. CAT# 400PMA-23

SWG SWITCHGEAR, 28 KV, PADMOUNTED, SF6 SWITCH/ RFI, 3 PHASE, 5 WAY, 2 SWITCHED WAYS, AND 3 FAULT INTERRUPTING WAYS c/w MOTOR OPERATION PROVISIONS.

MANUFACTURER: CANADA POWER
MFG. CAT# PRG6-55-29.3
MODEL (& PART #): 6TTT6/ 898 (801C1801)

SWG SWITCHGEAR, 28 KV, PADMOUNTED, SF6 SWITCH/ RFI, 3 PHASE, 4 WAY, 3 SWITCHED WAYS, AND 1 FAULT INTERRUPTING WAY c/w MOTOR OPERATION PROVISIONS.

MANUFACTURER: CANADA POWER
MFG. CAT# PRG6-44-29.3
MODEL (& PART #): 66T6/ 898 (801C1806)

SWG SWITCHGEAR, 28 KV, PADMOUNTED, SF6 SWITCH/ RFI, 3 PHASE, 4 WAY, 2 SWITCHED WAYS, AND 2 FAULT INTERRUPTING WAYS c/w MOTOR OPERATION PROVISIONS.

MANUFACTURER: CANADA POWER
MFG. CAT# PRG6-44-29.3
MODEL (& PART #): 6TT6/ 898 (801C1781)

SWG SWITCHGEAR, 28 KV, PADMOUNTED, SF6 SWITCH/ RFI, 4 WAY WITH TWO (2) - 3 PHASE SWITCHED WAYS, AND TWO (2) 3-SINGLE PHASE FAULT INTERRUPTING WAYS c/w MOTOR OPERATION PROVISIONS.

MANUFACTURER: CANADA POWER
MFG. CAT# PRG61/3 - 44 - 29.3
MODEL (& PART #): 6TT6/ 898B (801C1810)

SWG SWITCHGEAR, 28 KV, PADMOUNTED, SF6 SWITCH/ RFI, 4 WAY WITH TWO (2) - 3 PHASE SWITCHED WAYS, ONE (1) 3-PHASE FAULT INTERRUPTING WAY, AND ONE (1) 3-SINGLE PHASE FAULT INTERRUPTING WAY c/w MOTOR OPERATION PROVISIONS.

MANUFACTURER: CANADA POWER
MFG. CAT# PRG61/3 - 44 - 29.3
MODEL (& PART #): 6TT6/ 898C (801C1809)

SWG SWITCHGEAR, 28 KV, PADMOUNTED, SF6 SWITCH/ RFI, 3 PHASE, 4 WAY WITH 1 SWITCHED WAY, AND 3 FAULT INTERRUPTING WAYS c/w MOTOR OPERATION PROVISIONS.

MANUFACTURER: CANADA POWER
MFG. CAT# PRG6 - 44 - 29.3
MODEL (& PART #): 6TTT/ 898 (801C1767)

SWG SWITCHGEAR, 28 KV, PADMOUNTED, SF6 SWITCH/ RFI, 3 PHASE, 5 WAY, (2) 3-PHASE SWITCHED WAYS, (2) 3-PHASE FAULT-INTERRUPTING WAYS, AND (1) 3-SINGLE PHASE FAULT-INTERRUPTING WAYS c/w MOTOR OPERATION PROVISIONS.

MANUFACTURER: CANADA POWER
MFG. CAT# PRG61/3-55-29.3
MODEL (& PART #): 6TTT6/ 898 (801C1928)

KAB

**SECTIONALIZING UNIT, THREE PHASE, THREE WAY, 200A, 25 KV,
74"(D)X 60"(W)X 30"(H), PROVISION FOR TWO WAY - FOUR WAY
MODULES, MUNSELL GREEN FINISH, 14 GAUGE STEEL, ENCLOSURE
ONLY, APPROX. 400 LBS.**

MANUFACTURER:
MFG. CAT#

DURHAM COMPANY
AMSPR-12423-200A-28KV

KABAR
K503

3.6 Metering

MET **METER SOCKET, S BASE, 200A, UNDERGROUND, 4 JAW, 2 - 1/2"**
"STUD" - LINE CONNECTIONS, 2 TERMINAL LOAD CONNECTIONS
FOR 6 - 250MCM CABLE, CU/AL, RATED 600V, TYPE 3R ENCLOSURE
(CSA APPROVED) **FOR USE ON NEW/ UPGRADED UNDERGROUND
SERVICES INCLUDING SUBDIVISIONS.**

MANUFACTURER:	CUTLER-HAMMER	MICROELECTRIC	HYDEL
MFG. CAT#	CLX	MO2-V; MO2-VO	MSC400TW

MET **METER SOCKET, 400A, 120/240V, SINGLE PHASE, UNDERGROUND, 5**
JAW, 2 - 1/2" "STUD" - LINE CONNECTIONS, 2 TERMINAL LOAD
CONNECTIONS FOR 6 - 500MCM CABLE, CU/AL, EQUIPPED WITH
AUTOMATIC CIRCUIT CLOSING DEVICE, TYPE 3R ENCLOSURE (CSA
APPROVED)

MANUFACTURER:	MICROELECTRIC
MFG. CAT#	JS4A

MET **METER SOCKET, 2 POSITION, 200A MAIN, 2-100A POSITIONS,**
OVERHEAD, 4 JAW, SCREW TERMINALS - LINE CONNECTIONS FOR
6-250MCM CABLE CU/AL, 2 TERMINAL LOAD CONNECTIONS FOR 6 -
1/0 CABLE, CU/AL, RATED 600V, TYPE 3R ENCLOSURE (CSA
APPROVED)

MANUFACTURER:	MICROELECTRIC	HYDEL
MFG. CAT#	BE2-V	SD220PW

MET **METER SOCKET, 2 POSITION, S BASE, 200A MAIN, 200A POSITION,**
UNDERGROUND, 4 JAW, 2 - 1/2" "STUD" - LINE CONNECTIONS, 2
TERMINAL LOAD CONNECTIONS FOR 6 - 250MCM CABLE, CU/AL,
RATED 600V, TYPE 3R ENCLOSURE (CSA APPROVED)

MANUFACTURER:	CUTLER-HAMMER	MICROELECTRIC	HYDEL
MFG. CAT#	2KU2CLX	BDC2-V	MSC23R

MET **METER SOCKET, 3 POSITION, S BASE, 200A MAIN, 200A POSITION,**
UNDERGROUND, 4 JAW, 2 - 1/2" "STUD" - LINE CONNECTIONS, 2
TERMINAL LOAD CONNECTIONS FOR 6 - 250MCM CABLE, CU/AL,
RATED 600V, TYPE 3R ENCLOSURE (CSA APPROVED)

MANUFACTURER:	CUTLER-HAMMER	MICROELECTRIC
MFG. CAT#	3KU2CLX	BDC3-V

MET METER SOCKET, 4 POSITION, S BASE, 200A MAIN, 200A POSITION, UNDERGROUND, 4 JAW, 2 - 1/2" "STUD" - LINE CONNECTIONS, 2 TERMINAL LOAD CONNECTIONS FOR 6 - 250MCM CABLE, CU/AL, RATED 600V, TYPE 3R ENCLOSURE (CSA APPROVED)

MANUFACTURER: CUTLER-HAMMER MICROELECTRIC
MFG. CAT# 4KU2CLX BDC4-V

MET METER SOCKET, 2 POSITION, 200A PER POSITION, UNDERGROUND, 4 JAW, 2 TERMINAL LOAD CONNECTIONS FOR 6 - 250MCM CABLE, CU/AL, RATED 600V, TYPE 3R ENCLOSURE (CSA APPROVED)

MANUFACTURER: MICROELECTRIC
MFG. CAT# BD2-V (LEFT-HAND ENTRY) or BD2-VH (RIGHT-HAND ENTRY)

MET METER SOCKET, 3 PHASE , S BASE, 200A , UNDERGROUND/OVERHEAD, 7JAW, 3 - 1/2" "STUD" - LINE CONNECTIONS, 3 TERMINAL LOAD CONNECTIONS FOR 6 - 250MCM CABLE, CU/AL, RATED 600V, TYPE 3 ENCLOSURE (CSA APPROVED)

MANUFACTURER: CUTLER-HAMMER MICROELECTRIC
MFG. CAT# P27 PL27-TCV

MET METER SOCKET, 5 JAW, TRANSFORMER RATED, 20 AMP, 600V MAX. CONDUCTOR RANGE 14 - 10 AWG. CIRCUIT CLOSING FEATURE TO SHORT OUT CURRENT TRANSFORMER UPON REMOVAL OF METER. WEATHERPROOF TYPE 3R ENCLOSURE (CSA APPROVED).

MANUFACTURER: CUTLER-HAMMER MICROELECTRIC
MFG. CAT# TCC5-0 CL5-V

MET COMBINATION OVERHEAD/ UNDERGROUND METER SOCKET, 4 JAW, 200 AMP, 600V MAX. CONDUCTOR RANGE #6 - 250MCM AWG. ALUMINUM TUNNEL TYPE CONNECTORS, SUPPLIED WITH SCREW TYPE RING . WEATHERPROOF TYPE 3R ENCLOSURE (CSA APPROVED). **USED PRIMARILY FOR OVERHEAD SERVICES, NOT NEW SUBDIVISIONS/ UNDERGROUND SERVICES UNLESS OTHERWISE SPECIFIED BY HHH ENGINEERING.******

MANUFACTURER: CUTLER-HAMMER MICROELECTRIC HYDEL
MFG. CAT# LM2 BS2-TCV SLC400RW

MET METER ENCLOSURE (CABINET), WOODEN BACKPANEL FOR MOUNTING METER BASE, DOORLESS FOR USE IN INSTALLATIONS WHERE METER IS RECESSED.

MANUFACTURER: HYDEL
MFG. CAT# ST301812SC (DOORLESS)

3.6 Metering

NOTE: ALL METER BASES INSTALLED IN HALTON HILLS MUST BE CSA APPROVED FOR USE IN CANADA.

CON FOUNDATION, PRECAST CONCRETE BASE, FOR LOW PROFILE, SINGLE PHASE, PADMOUNTED TRANSFORMERS, 25 KVA - 100 KVA, 28 KV, TOTAL WEIGHT APPROX. 1818 KG (4000 LBS), POLY SEAL CABLE ENTRY

MANUFACTURER:	ACTON PRECAST	BROOKLIN CONCRETE	ICS
MFG. CAT#	LP58P	BCP-110PC	ICS-189
OUTER DIMENSION	40"X58"X42" (D)	40"X58"X42" (D)	40"X58"X42" (D)
OPENING	34"X28"	34"X28"	34"X28"

CON FOUNDATION, PRECAST CONCRETE BASE, FOR SINGLE PHASE PADMOUNTED TRANSFORMERS, UP TO 100 KVA, TOTAL WEIGHT APPROX. 1818 KG (4000 LBS), 32 - POLY SEAL CABLE ENTRY

MANUFACTURER:	ACTON PRECAST	BROOKLIN CONCRETE	ICS
MFG. CAT#	LPC48	BCP-110PC	ICS-189
OUTER DIMENSION	48"X48"X46" (D)	40"X58"X42" (D)	40"X58"X42" (D)
OPENING	26"X33"	28"X34"	28"X34"

CON FOUNDATION, PRECAST CONCRETE BASE, FOR THREE PHASE PADMOUNTED TRANSFORMERS, UP TO 2000 KVA, TOTAL WEIGHT APPROX. 3629 KG (8000 LBS), 32 - POLY SEAL CABLE ENTRY (FOR TRANSFORMERS LARGER THAN 2000KVA, IT REMAINS THE DEVELOPERS RESPONSIBILITY TO ENSURE TRANSFORMER WILL PROPERLY SIT ON THE FOUNDATION AND BE SUPPORTED BY THE FOUNDATION)

MANUFACTURER:	ACTON PRECAST
MFG. CAT#	LPC80
OUTER DIMENSION	80"X72"X48" (D)
OPENING	18"X44"

CON FOUNDATION, PRECAST CONCRETE BASE, FOR PADMOUNTED SECTIONALIZING UNITS, TOTAL WEIGHT APPROX.1320 KGS (2900 LBS), POLY SEAL CABLE ENTRY

MANUFACTURER:	ACTON PRECAST	BROOKLIN CONCRETE	ICS
MFG. CAT#	K-BAR SWITCH	BCP-109	ICS-150
OUTER DIMENSION	48"X34"X42" (D)	49"X38"X42" (D)	45"X24"X42" (D)
OPENING	12"X36"	26"X37"	42"X12"

CON FOUNDATION, PRECAST CONCRETE BASE, CANADA POWER SWITCHGEAR, 28 KV, PADMOUNTED, SF6, 3 PHASE, 4 WAY, TOTAL WEIGHT APPROX. 2650 KG (5800 LBS), POLYSEAL CABLE ENTRY. (REF: HHH UD-27 LATEST REVISION).

MANUFACTURER:	ACTON PRECAST	BROOKLIN CONCRETE	ICS
MFG. CAT#	B9660 & P9660		
OUTER DIMENSION	96"X60"X48" (D)		
OPENING	71"X24"		

CON FOUNDATION, CONCRETE BASE, 78"X85"X48"D FOR 28KV S&C PADMOUNT SWITCHGEAR, TOTAL WEIGHT APPROX. 3500 KG (7650 LBS), POLY SEAL CABLE ENTRY

MANUFACTURER:	ACTON PRECAST	BROOKLIN CONCRETE	ICS
MFG. CAT#	SPECIAL ORDER	BCP 330-P	ICS-191
OUTER DIMENSION	78"X85"X48" (D)	78"X85"X48" (D)	78"X85"X48" (D)
OPENING	77"X36"	77"X36"	77"X36"

CON LID, CONCRETE, 96"X78"X6"(H) FOR RETROFITTING 28KV CANADA POWER SWITCHGEAR ONTO EXISTING S&C PADMOUNT SWITCHGEAR CONCRETE FOUNDATIONS, CONCRETE 32 Mpa, AIR 5-7%, APPROX. WEIGHT 3000 LBS, DESIGN LOAD 2,200 LBS. **USED ONLY IN CONJUNCTION WITH HHH UD-29 UPON APPROVAL FROM HHH ENGINEERING.

MANUFACTURER:	ACTON PRECAST
MFG. CAT#	P9678
OUTER DIMENSION	96"X78"X6" (H)
OPENING	71" (W) X24" (D)

Note: It is the developers responsibility to ensure that their equipment will sit properly on above listed concrete foundations. All equipment must be securely fastened to concrete lid/ foundation as applicable.

FAU

**UNDERGROUND FAULT INDICATOR, SINGLE PHASE, PULSE - PAUSE
- ZERO (PPZ), LOAD LEVELING, AUTOMATIC/ MANUAL RESET, 200A
TRIP, 4 HOUR TIME RESET, WITH FIBER OPTIC CABLE ASSEMBLY
(6FT CABLE).**

MANUFACTURER:	HORSTMANN
MFG. CAT#	29-3028-000
CABLE O.D.	22mm - 50mm
FIBER OPTIC CABLE ASSEMBLY CAT#:	49-6007-106

NOTES:

APPROVED BY HALTON HILLS HYDRO - JANUARY 27, 2004

HHH CAT #	DETAILED DESCRIPTION		
UGM	CABLE END CAP, HEAT SHRINK, FOR SEALING 1.77" to 3.15" O.D. CABLE		
MANUFACTURER: MFG. CAT#	3M SRE-45/100	RAYCHEM RSC-6/A	ILSCO 23210-B2
UGM	JACKET, COLD SHRINK, FOR 28" OPENING, 1.15 - 3.3" O.D. FOR #1/0 AWG, 28 KV SPLICES 3M CAT# 5451		
MANUFACTURER: MFG. CAT#	3M SJ-2A		
UGM	JACKET, TUBE, INSULATED, HEAT SHRINK, 15.5" LONG, 0.35 - 1.20" DIA, FOR #2-#4/0 AWG, 600V CABLE, RATED 1000V, CSA CERTIFIED		
MANUFACTURER: MFG. CAT#	3M ITCSN-1100-48	RAYCHEM WCM-33/8-1200-S	ILSCO 21412-B2
UGM	JACKET, TUBE, INSULATED, HEAT SHRINK, 15.5" LONG, 0.70 - 1.75" DIA, FOR 250-500 kCMIL, 600V CABLE, RATED 1000V, CSA CERTIFIED		
MANUFACTURER: MFG. CAT#	3M ITCSN-1500-48	RAYCHEM WCM-51/16-1200-S	ILSCO 21712-B
UGM	TAPE, RUBBER, SILICONE, SELF-FUSING, 1"x30"x20 MILS		
MANUFACTURER: MFG. CAT#	3M SCOTCH 70	PLYMOUTH 3455	ARMET AR386
UGM	TAPE, SEMI-CON, RUBBER BUTYL - 3/4"x15"x30 MILS		
MANUFACTURER: MFG. CAT#	3M 13	ROTUNDA 2525	PLYMOUTH 2104
UGM	TAPE, SELF AMALGAMATING, POLYETHYLENE - SAPT - 2"x30"x20 MILS, RATED UPTO 69 KV, MOISTURE AND OZONE RESISTANT		
MANUFACTURER: MFG. CAT#	3M 130C	ROTUNDA 2501	PLYMOUTH 2211
UGM	TAPE, BLACK, PVC - 3/4" x 66' x 8.5 MILS, ASTM-D-3005 & CSA 22.2		
MANUFACTURER: MFG. CAT#	3M SCOTCH SUPER 88	PLYMOUTH 4240-PREMIUM-85CW	ROTUNDA 6408B
UGM	TAPE, BLACK, PVC - 2" x 66' x 8.5 MILS, ASTM-D-3005 & CSA 22.2		
MANUFACTURER: MFG. CAT#	3M SCOTCH SUPER 88	PLYMOUTH 4311-PREMIUM-85CW	ROTUNDA 6408B
UGM	TAPE, COLOR CODING, RED, PVC - 3/4"x 66' X 7mils, ASTM-D-3005 & CSA 22.2		
MANUFACTURER: MFG. CAT#	3M SCOTCH 35-RED	PLYMOUTH 3704-PREMIUM 37-RED	ROTUNDA 2702-RED
UGM	TAPE, COLOR CODING, WHITE, PVC- 3/4" x 66' X 7mils, ASTM-D-3005 & CSA 22.2		
MANUFACTURER: MFG. CAT#	3M SCOTCH 35-WHITE	PLYMOUTH 3706-PREMIUM 37-WHITE	ROTUNDA 2702-WHITE
UGM	TAPE, COLOR CODING, BLUE, PVC - 3/4" x 66' X 7mils, ASTM-D-3005 & CSA 22.2		
MANUFACTURER: MFG. CAT#	3M SCOTCH 35-BLUE	PLYMOUTH 3705-PREMIUM 37-BLUE	ROTUNDA 2702-BLUE
UGM	LUBRICANT, CABLE PULLING, HEAVY DUTY, NON-TOXIC, PE & PVC COMPATIBLE, 5 GALLON CONTAINER		
MANUFACTURER: MFG. CAT#	3M WL-5	IDEAL YELLOW 77	BLACKBURN 15-632UT
UGM	OXIDE INHIBITOR COMPOUND, NON-PETROLEUM BASED, NON-TOXIC, 8 OZ SQUEEZE BOTTLE		
MANUFACTURER: MFG. CAT#	BLACKBURN CTB8	BURNDY PENETROXAL3	ELASTIMOLD 2201-8
MANUFACTURER: MFG. CAT#	ILSCO DB-OX(8 OZ)		
UGM	MARKER, BALL, "RED", ELECTRONIC, 4' DEPTH FOR THE LOCATING OF SPLICES / DUCT BANKS / SUBSURFACE EQUIPMENT		
MANUFACTURER: MFG. CAT#	3M 1402		
UGM	MARKER, BALL, "ORANGE", ELECTRONIC, 4' DEPTH FOR THE LOCATING OF FIBRE OPTIC PLANT		
MANUFACTURER: MFG. CAT#	3M 1401		
UGM	MARKER, DISC, "BLACK", ELECTRONIC, MID RANGE 6' DEPTH FOR THE LOCATING OF SPLICES / DUCT BANKS / SUBSURFACE EQUIPMENT		
MANUFACTURER: MFG. CAT#	3M 1256		

UGM	MARKER, DISC, "BLACK", ELECTRONIC, FULL RANGE, 8' DEPTH FOR THE LOCATING OF SPLICES / DUCT BANKS / SUBSURFACE EQUIPMENT			
MANUFACTURER:	3M			
MFG. CAT#	1251			
UGM035	GUARD, CABLE, STRAIGHT, 3-1/4" X 8', GALVANIZED STEEL, 14 GAUGE STEEL, CSA C83.53 SPECIFICATION			
MANUFACTURER:	HYDEL	MICROELECTRIC	SLACAN	
MFG. CAT#	AG3148	UG8314	7535	
MANUFACTURER:	KABAR	CHANCE		
MFG. CAT#	K48-9A	6535		
UGM036	GUARD, CABLE, FLARED BOTTOM, 3-1/4" X 8', GALVANIZED STEEL, CSA C83.54 SPECIFICATION			
MANUFACTURER:	HYDEL	MICROELECTRIC	KABAR	SLACAN
MFG. CAT#	AG3148F	UGF8314	K48-9F	61813
UGM37	THROAT CLIP, FOR 3-1/4" GUARD, CABLE, ALUMINUM ALLOY			
MANUFACTURER:	HYDEL	KABAR	JOSLYN	
MFG. CAT#	ATC314	K48-32	10881	
UGM038	STRAP, FOR 3-1/4" GUARD, CABLE, GALVANIZED STEEL, CSA C83.55			
MANUFACTURER:	HYDEL	MICROELECTRIC	SLACAN	
MFG. CAT#	3148UC	SUG314	22266	
MANUFACTURER:	KABAR	CHANCE		
MFG. CAT#	K48-23	6540		
UGM	PUTTY, ELECTRICAL INSULATING, 1-1/2" X 5', "SCOTCHFIL", RATED 600V			
MANUFACTURER:	3M			
MFG. CAT#	SCOTCHFIL			
LOC001	PADLOCK, SOLID BRASS SHACKLE AND BODY, KEYED A LIKE			
MANUFACTURER:	CISA		ABUS	
MFG. CAT#				
UGM	CLEANER, CABLE, FOR CLEANING CABLE INSULATION, (NON-TRACKING)			
MANUFACTURER:	BELO SAFETY SUPPLY	3M		
MFG. CAT#	51561	CC4		
UGM	CEMENT, CONDUIT, FOR PVC TYPE DB2/ES2 DUCT, 500 ML C/W SCREW TOP AND DAUBER			
MANUFACTURER:	ROYAL	IFEK	SMC	
MFG. CAT#	CC500	8100PT	1QTCEM	
BOL	BOLT, SILICON BRONZE, HEX HEAD, 1/2" X 1", ASTM B99			
MANUFACTURER:	H. PAULIN	BURNDY	BLACKBURN	
MFG. CAT#	5400-579	HEB50X100	50100BB	
BOL	BOLT, SILICON BRONZE, HEX HEAD, 1/2" X 2", ASTM B99			
MANUFACTURER:	H. PAULIN	BURNDY	BLACKBURN	
MFG. CAT#	5400-586	HEB50X200	50200BB	
NUT	NUT, SILICON BRONZE, FOR 1/2" BOLT, ASTM B99			
MANUFACTURER:	H. PAULIN	BURNDY	BLACKBURN	
MFG. CAT#	5426-022	HEB50	50010HN	
WAS	WASHER, SILICON BRONZE, FLAT, FOR 1/2" BOLT, ASTM B99			
MANUFACTURER:	H. PAULIN	BURNDY	BLACKBURN	
MFG. CAT#	5455-822	FW50	50040FW	
WAS	WASHER, SILICON BRONZE, SPLIT, FOR 1/2" BOLT, ASTM B99			
MANUFACTURER:	H. PAULIN	BURNDY	BLACKBURN	
MFG. CAT#	5458-022	SWS0	50030SW	
WAS	WASHER, "BELLEVILLE", STAINLESS STEEL, FOR 1/2" BOLT, FOR 4000 LBS FLAT LOAD, 55 FT-LBS TORQUE, .018" DISH, .125" THICKNESS, .531 ID.			
MANUFACTURER:	SPECIALTY STEELS	BLACKBURN		
MFG. CAT#	301SS	50050BW		
	CAUTION TAPE, RUGGED POLYETHYLENE, 6" WIDE, 1000' LENGTH, RED			
MANUFACTURER:	BLACKBURN	KLEIN	IDEAL	
MFG. CAT#	RT6	88003	RT6	
	DUCT SEALANT, ASBESTOS FREE, FORM FITTING, IN 1 LBS. SLUGS			
MANUFACTURER:	BLACKBURN	IBF		
MFG. CAT#	DX-5	DUCT1		
ROP	POLY ROPE, 3/8", 1500' METAL SPOOL, 2440 LBS TENSILE STRENGTH			

MANUFACTURER: MFG. CAT#	CHANCE C417-0324	CANADA CORDAGE PRH6-1500	POLYTWINE 38-1500
	TAGS, PRIMARY CABLE, WHITE, 2" X 2-1/2" RECTANGULAR		
MANUFACTURER: MFG. CAT#	UNDERGROUND PRODUCTS 100W		
	TAGS, PRIMARY CABLE, RED, 2" X 2-1/2" RECTANGULAR		
MANUFACTURER: MFG. CAT#	UNDERGROUND PRODUCTS 100R		
	TAGS, PRIMARY CABLE, BLUE, 2" X 2-1/2" RECTANGULAR		
MANUFACTURER: MFG. CAT#	UNDERGROUND PRODUCTS 100B		
	MARKERS, LETTERS, INDUSTRIAL REFLECTIVE YELLOW, 1-3/4" X 2-7/8" H		
MANUFACTURER: MFG. CAT#	ALMETEK PS2.5BY		
	MARKERS, NUMBERS, INDUSTRIAL REFLECTIVE YELLOW, 1-3/4" X 2-7/8" H		
MANUFACTURER: MFG. CAT#	ALMETEK PS2.5RY		
	SEALANT, FOUNDATION, TO BE USED BETWEEN COLLAR AND CONCRETE BASE, 1" WIDE		
MANUFACTURER: MFG. CAT#	HAMILTON KENT G-KENT SEALER #2		
	WRAP, TIE FOR 3" BUNDLE, 50 LBS UNLOCKING STRENGTH		
MANUFACTURER: MFG. CAT#	BURNDY TF6D	THOMAS & BETTS TY26MX	IDEAL 15-630
SAND	SANDFILL, UNIFORMLY GRADED CLEAN SAND WITH MAXIMUM AGGREGATE SIZE OF 2.0MM		
C. SLAB	CONCRETE SLAB, 24"X24"		
C. STONE	3/4" (20MM) CLEAR CRUSH STONE		
CONCRETE	CONCRETE, 28 DAY COMPRESSIVE STRENGTH OF 20MPa, MAXIMUM AGGREGATES WITH 10MM PEA GRAVEL, IN ACCORDANCE WITH CSA-A23.1-M90		
TAG	SECONDARY CABLE TAGS, TECH. PRODUCTS FASTTAG, MINIATURE MARKERS, 0-9, LETTERS AS APPLICABLE.		
MANUFACTURER: MFG. CAT#	TECH. PRODUCTS INC. 3DFYxx		
TAG	SECONDARY CABLE TAG HOLDERS, 2 LINES, FOR FASTTAG NUMBERS/ LETTERS (LENGTH TO FIT AN EXTRA TWO CHARACTERS)		
MANUFACTURER: MFG. CAT#	TECH. PRODUCTS INC. PRF2xx		
TAG	PRIMARY CABLE TAGS, 1" LETTER SIZE, VERTICAL, BLACK ON YELLOW, EVERLAST, NUMBERS 0-9.		
MANUFACTURER: MFG. CAT#	TECH. PRODUCTS INC. ELVKY001, ELVKY002, ELVKY003, ELVKY004, ELVKY005, ELVKY006, ELVKY007, ELVKY008, ELVKY009, ELVKY010		
TAG	PRIMARY CABLE TAGS, 1" LETTER SIZE, VERTICAL, BLACK ON YELLOW, EVERLAST, LETTERS P, F S, K, G.		
MANUFACTURER: MFG. CAT#	TECH. PRODUCTS INC. ELVKYP, ELVKYF, ELVKYS, ELVKYK, ELVKYG		
TAG	PRIMARY CABLE TAGS, 1" LETTER SIZE, VERTICAL, BLACK ON YELLOW, EVERLAST, WORDS - RISER, SWITCH, SWITCHGEAR, TRANS., BLUE, RED, YELLOW.		
MANUFACTURER: MFG. CAT#	TECH. PRODUCTS INC. ELVKY102 (RISER), ELVKY116 (SWITCH), ELVKY234 (SWITCHGEAR), ELVKY089 (TRANS.), ELVKY120 (BLUE), ELVKY119 (RED), ELVKY123 (YELLOW)		
TAG	PRIMARY TAG HOLDER, FOR 1" NUMBERS/ LETTES ABOVE, 7 TAG CAPACITY,		
MANUFACTURER: MFG. CAT#	TECH. PRODUCTS INC. PH107		