

1. DISTRIBUTION AND TRANSMISSION CABLES

ALL TRANSMISSION CABLES, (2 KV., ITEMS 11-16 INCLUSIVE) ARE FOR CIRCUITS WITH GROUNDED NEUTRAL, AND SHALL CONFORM STRICTLY WITH THE LATEST REVISION OF THE A.E.I.C. "SPECIFICATION FOR IMPREGNATED PAPER INSULATED, LEAD COVERED SOLID TYPE CABLE", 9TH EDITION, DATED APRIL, 1954, AND CONSTRUCTION OPTIONS AS NOTED IN SHEET 1.

ALL DISTRIBUTION CABLES, (7 & 5 KV, ITEMS 19 & 21 INCLUSIVE) ARE FOR CIRCUITS WITH UNDERGROUND NEUTRAL AND SHALL ALSO CONFORM WITH THE ABOVE SPECIFICATION, WITH CONSTRUCTION OPTIONS AS NOTED IN TABLE 1.

2. OVERHEAD LINE WIRE

OVERHEAD LINE WIRE SHALL BE IN ACCORDANCE WITH LATEST REVISION OF ASA C8.34 (NEOPRENE COVERING) OR THE LATEST REVISION OF ASA C8.35 (POLYETHYLENE COVERING).

3. 8/C,#8AWG, STREET LIGHTING CABLE, 7500 V.

THIS IS A SPECIAL CONSTRUCTION AND SHALL BE MADE STRICTLY IN ACCORDANCE WITH THE DESCRIPTION IN TABLE 1.
APPLICABLE REFERENCE SPECIFICATIONS SHOWN BELOW:

4. OTHER RUBBER OR THERMOPLASTIC INSULATED CABLES, LEADED & NON-LEADED

WIRE SIZE, INSULATION TYPE AND NORMAL THICKNESSES, OTHER CONSTRUCTION FEATURES SHALL BE AS SHOWN IN TABLE 1, AND APPLICABLE REFERENCE SPECIFICATIONS SHOWN BELOW:

			POLYVINYL- CHLORIDE 60°C (140°F)	POLYVINYL- CHLORIDE 75°C (167°F)	HIGH MOLECULAR WEIGHT NATURAL POLYETHYLENE	SYNTHETIC RUBBER 75°C(167°F) HEAT & MOISTURE RESISTANT	OZONE RESISTING BUTYL RUBBER
ORIGINAL	TENSILE STRENGTH PSI		2300, MIN.	2300, MIN.	1400, MIN.	700, MIN.	600, MIN.
	ELONGATION AT RUPTURE, PERCENT		250, MIN.	250, MIN.	250, MIN.	300, MIN. & (10.5) SET MAX.	350, MIN. & (10.5) SET MAX.
AIR OVEN TEST, TIME & TEMP, AS NOTED	TENSILE STRENGTH % OF ORIGINAL		65, MIN. 168 HRS., 100 ± 1°C (212 ± 1.8°F)	120, MAX. 80, MIN. 168 HRS., 120 ± 1°C (248 ± 1.8°F)	75, MIN. 48 HRS., 100 ± 1°C (212 ± 1.8°F)	—	60, MIN. 168 HRS., 100 ± 1°C (212 ± 1.8°F)
	ELONGATION % OF ORIGINAL		65, MIN. 168 HRS., 100 ± 1°C (212 ± 1.8°F)	75, MIN. 168 HRS., 120 ± 1°C (248 ± 1.8°F)	75, MIN. 48 HRS., 100 ± 1°C (212 ± 1.8°F)	—	60, MIN. 168 HRS., 100 ± 1°C (212 ± 1.8°F)
OXYGEN PRESSURE TEST	TENSILE STRENGTH % OF ORIGINAL		—	—	—	50, MIN. 168 HRS., 80 ± 1°C (176 ± 1.8°F)	—
	ELONGATION % OF ORIGINAL		—	—	—	50, MIN. 168 HRS., 80 ± 1°C (176 ± 1.8°F)	—
AIR PRESSURE HEAT TEST	TENSILE STRENGTH % OF ORIGINAL		—	—	—	50, MIN. 20 HRS., 127 ± 1°C (260 ± 1.8°F)	50, MIN. 40 HRS., 127 ± 1°C (260 ± 1.8°F)
	ELONGATION % OF ORIGINAL		—	—	—	50, MIN. 20 HRS., 127 ± 1°C (260 ± 1.8°F)	50, MIN. 40 HRS., 127 ± 1°C (260 ± 1.8°F)
HEAT DISTOR- TION 121 ± 1°C (250 ± 1.8°F)	% OF ORIGINAL		50, MAX.	25, MAX.	—	—	—
OIL IMMERSION 4 HRS., 70 ± 1°C (158 ± 1.8°F)	TENSILE STRENGTH % OF ORIGINAL		• 85, MIN.	•• 85, MIN.	—	—	—
	ELONGATION % OF ORIGINAL		• 85, MIN.	•• 85, MIN.	—	—	—
HEAT SHOCK 121 ± 1°C (250 ± 1.8°F)	—		NO CRACKS	NO CRACKS	—	—	—
COLD BEND	—		NO CRACKS -30 ± 1°C (-22 ± 1.8°F)	NO CRACKS -30 ± 1°C (-22 ± 1.8°F)	NO CRACKS -55 ± 1°C (-67 ± 1.8°F)	—	—
INSULATION RESISTANCE CONSTANT AT 15.6°C (60 ± 1.8°F)	—		1,000 MIN.	2,000 MIN.	50,000 MIN.	4,000 MIN.	20,000 MIN.
FLAME RESISTANCE PROPERTIES	—		SECT. 6.5 IPCEA S-61-402	SECT. 6.5 IPCEA S-61-402	—	—	—
ACCELERATED WATER ABSORPTION REQUIREMENT	ELECTRIC- AL METHOD	DIELECTRIC CONSTANT, 1 DAY	10, MAX.	10, MAX.	—	5, MAX.	—
		% CAPACI- TANCE INCREASE	1-14 DAYS-10,MAX. 7-14 DAYS-5,MAX.	1-14 DAYS-4.0,MAX. 7-14 DAYS-2.0,MAX.	—	1-14 DAYS-10.0,MAX. 7-14 DAYS-4.0,MAX.	1-14 DAYS-5.0,MAX. 7-14 DAYS-3.0,MAX.
	OR GRAVIMETRIC METHOD	TEMP.	50 ± 1°C (122 ± 1.8°F) 20 MILLIGRAMS PER SQ. 25.4mm(1") MAX.	75 ± 1°C (167 ± 1.8°F) 10 MILLIGRAMS PER SQ. 25.4mm(1") MAX.	—	75 ± 1°C (167 ± 1.8°F) 20 MILLIGRAMS PER SQ. 25.4mm(1") MAX.	75 ± 1°C (167 ± 1.8°F) 15 MILLIGRAMS PER SQ. 25.4mm(1") MAX.
TEST IN ACCORDANCE WITH LATEST REVISION OF:			IPCEA S-61-402 (EXCEPTIONS ARE NOTED ABOVE)		IPCEA S-61-402	IPCEA S-19-81 (EXCEPTIONS ARE NOTED ABOVE)	IPCEA S-19-81

FOR #6 AWG AND LARGER, USING BUFFED DIE-CUT SPECIMENS,
THE FOLLOWING VALUES SHALL APPLY:

- ELONGATION AFTER AIR OVEN TEST 45% MIN.
- ELONGATION AFTER AIR OVEN TEST 50% MIN.
- OR •• TENSILE STRENGTH AFTER OIL IMMERSION 80% MIN.
- OR •• ELONGATION AFTER OIL IMMERSION 60% MIN.

INSULATIONS

THE MINIMUM INSULATION THICKNESS OF ANY OF THESE CABLES SHALL NOT BE LESS THAN 90% OF THE NOMINAL THICKNESS SHOWN ON TABLE 1.

THE PHYSICAL AND AGING PROPERTIES OF THERMOPLASTIC AND RUBBER INSULATIONS SHALL BE AS FOLLOWS:

CONDUCTORS

ALL CONDUCTORS SHALL BE COPPER, COMPLYING WITH THE LATEST REVISIONS OF ASTM SPECIFICATIONS, AS FOLLOWS:

SOFT OR ANNEALED, BARE COPPER WIRE	ASTM B3
MEDIUM HARD DRAWN COPPER WIRE	ASTM B2
HARD DRAWN COPPER WIRE	ASTM B1
CONCENTRIC-LAY-STRANDED COPPER CONDUCTORS, HARD, MEDIUM HARD OR SOFT, COATED OR UNCOATED, AS REQUIRED.	ASTM B8
ROPE-LAY-STRANDED, SOFT, COPPER CONDUCTORS, COATED OR UNCOATED, AS REQUIRED.	ASTM B173
SOFT, SOLID COPPER CONDUCTORS, TINNED	ASTM B33
SOFT, SOLID COPPER CONDUCTORS, LEAD OR LEAD ALLOY COATED	ASTM B189

JACKETS

THE MINIMUM JACKET THICKNESS SHALL NOT BE LESS THAN 80% OF THE NOMINAL THICKNESS SHOWN ON TABLE 1.

		NEOPRENE BLACK,HEAVY DUTY	NEOPRENE BLACK GENERAL PURPOSE	POLYVINYL - CHLORIDE, BLACK	HEAT & LIGHT STABILIZED BLACK POLYETHYLENE COVER/G OVER LEAD SHEATH
ORIGINAL	TENSILE STRENGTH PSI	1000, MIN.	1500, MIN.	1500, MIN.	1400, MIN.
	ELONGATION AT RUPTURE, %	300, MIN. & (0.375) MAX.SET	250, MIN. & (0.375) MAX.SET	100, MIN.	350, MIN.
AIR OVEN TEST, TIME & TEMP, AS NOTED	TENSILE STRENGTH % OF ORIGINAL	_____	_____	75 MIN. 120 HRS. 121 ± 1°C (250 ± 1.8°F)	75, MIN.
	ELONGATION % OF ORIGINAL	_____	_____	60 MIN. 120 HRS. 121 ± 1°C (250 ± 1.8°F)	75, MIN.
OXYGEN PRESSURE TEST 168 HRS. 80± 1°C (176 ± 1.8°F)	TENSILE STRENGTH % OF ORIGINAL	50, MIN.	50, MIN.	_____	_____
	ELONGATION % OF ORIGINAL	50, MIN.	50, MIN.	_____	_____
AIR PRESSURE HEAT TEST 20 HRS. 127± 1°C (260 ± 1.8°F)	TENSILE STRENGTH % OF ORIGINAL	50, MIN.	50, MIN.	_____	_____
	ELONGATION % OF ORIGINAL	50, MIN.	50, MIN.	_____	_____
OIL IMMERSION TEST, TIME & TEMP. AS NOTED	TENSILE STRENGTH % OF ORIGINAL	60 MIN. 18 HRS 121 ± 1°C (250 ± 1.8°F)	60 MIN. 18 HRS 121 ± 1°C (250 ± 1.8°F)	60 MIN. 4 HRS 70 ± 1°C (158 ± 1.8°F)	_____
	ELONGATION % OF ORIGINAL	60 MIN. 18 HRS 121 ± 1°C (250 ± 1.8°F)	60 MIN. 18 HRS 121 ± 1°C (250 ± 1.8°F)	60 MIN. 4 HRS 70 ± 1°C (158 ± 1.8°F)	_____
HEAT DISTORTION PERCENT OF UNAGED VALUE	_____	_____	_____	50, MAX. 90 ± 1°C (194 ± 1.8°F)	25, MAX. 90 ± 1°C (194 ± 1.8°F)
HEAT SHOCK 121 ± 1°C (250 ± 1.8°F)	_____	_____	_____	NO CRACKS	_____
COLD BEND TEST-35 ± 1°C (-31 ± 1.8°F)	_____	_____	_____	NO CRACKS	NO CRACKS
ENVIRONMENTAL CRACKING	_____	_____	_____	_____	NO CRACKS
LIGHT ABSORPTIVITY	_____	_____	_____	_____	24,000, MIN.
TEST IN ACCORDANCE WITH LATEST REVISION OF:		IPCEA S-19-82		IPCEA S-61-402	IPCEA INTERIM REVISION #1 PUB. S-54-401 SEPT. 1959



T.E.D. DRAWING NO. 206

					 CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS CITY ENGINEERING DIVISION	SCALE: 051020 SCALE: 1" = 10'	DESIGNED BY	CC, KP, MA, KU	Prime Consultant	 TUCKER, YOUNG JACKSON, TULL INC. CONSULTING ENGINEERS PLANNERS 585 E LARNED SUITE 300 DETROIT, MICHIGAN 48226 (313) 963-0612 FAX (313) 963-2156 WWW.TYJTG.COM	Sub Consultants:  H. R. Gray  METCO MECHANICAL ELECTRICAL TOWER CONSTRUCTION 10000 E. LARNED SUITE 300 DETROIT, MI 48226 (313) 963-0612 FAX (313) 963-2156 WWW.METCOENGINEERS.COM Per Construction Review	PROJECT	ADA SIDEWALK RAMP CONSTRUCTION	CONTRACT NUMBER	DATE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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