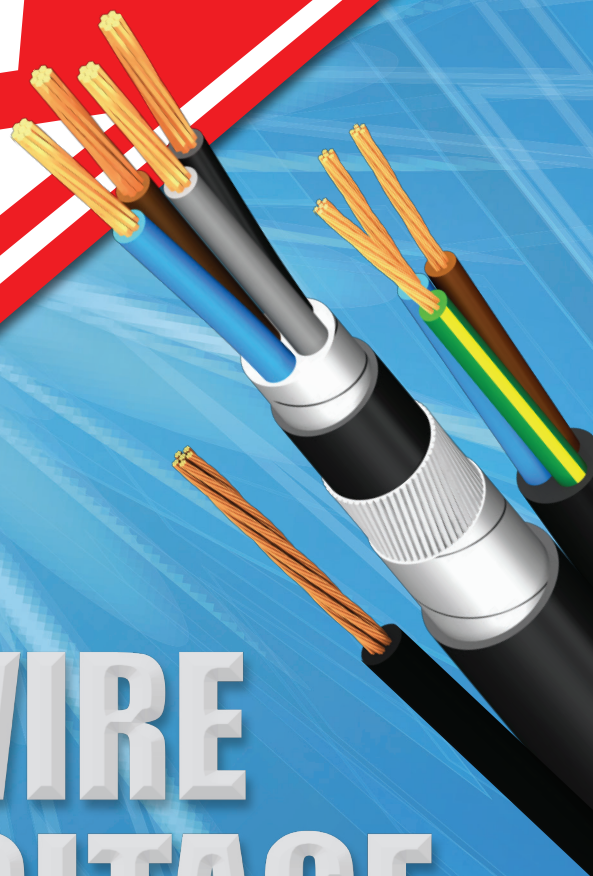
CTW



BUILDING WIRE AND LOW VOLTAGE POWER CABLE

CHAROONG THAI WIRE & CABLE
PUBLIC COMPANY LIMITED

CTW

บริษัท จรุงไทยไวร์แอนด์เคเบิ้ล จำกัด (มหาชน)

CTW ISO 9001

To be confident
in our international standard

ใบรับรองเลขที่ QMS03162/766

certification

ISO9001
QUALITY MANAGEMENT SYSTEM

ใบรับรองระบบบริหารงานคุณภาพ
ใบรับรองฉบับนี้ให้ไว้เพื่อแสดงว่า

บริษัท จรุงไทยไวร์แอนด์เคเบิ้ล จำกัด (มหาชน)

สถานประกอบการตั้งอยู่เลขที่ : 35/1 หมู่ 22 ถนนสุวินทวงศ์
ตำบลศาลาแดง อำเภอบางน้ำเปรี้ยว
จังหวัดฉะเชิงเทรา 24000

ได้รับการรับรองระบบบริหารงานคุณภาพตามมาตรฐานเลขที่
มอก. 9001-2552 (ISO 9001:2008)

สำหรับขอบข่ายตามเอกสารแนบท้าย

โดย by
สถาบันรับรองมาตรฐานไอเอสโอ
อุตสาหกรรมพัฒนามูลนิธิ
Management System Certification Institute (Thailand), Foundation for Industrial Development

ออกให้ ณ วันที่ Date of Issue 2 ตุลาคม 2555
มีผลถึง ณ วันที่ Valid Until 1 ตุลาคม 2558
ออกให้ครั้งแรก ณ วันที่ First Issued Date 2 ตุลาคม 2546

ดร.สันติ กนกธนาพร
ผู้อำนวยการสถาบันรับรองมาตรฐานไอเอสโอ
Dr. Santhi Kanoktanaporn
President

QMS002

COMPANY PROFILE:

Charoong Thai Wire & Cable Public Company Limited (CTW) is one of the largest manufacturers of The Electric Wire & Cable and Telecommunication Cables in Thailand. The company established since 1967,and had experience in developing high quality wire & cable products to Thailand market

The company had obtained the board of investment of Thailand (BOI) privileges to manufacturing and marketing Aluminium and Copper wires and cable for various of The Electricity Authorities in the country.

Under carefully control of its operation and expansion scheme. the company had gone through its time after time development in machineries and productions to meet all the customer's requirement, All functions including product development and total quality control have been emphasized to deliver high quality products to the market.

The company registered as a listed company and shares has been traded al the Securities Exchanges of Thailand (SET) in 1976. In connection to over all improvement in production capacity, quality and financial status. the company gradually increased its capital investment from Baht 10 million to 21,42,150,410 and eventually CTW has grown from strength to strength and increased its registered to 1,999,280,350 Baht in 2015 with a staff of nearly 510 employees

In 1977, the company began to install machineries to manufacture telephone cable and in order to meet the rapidly increasing demand and in advanced technology requirement, then highly skill and sophisticated technologies were to implemented, The company went ints Technical Collaboration with the Showa Electric Wire & Cable Co.,Ltd. Of Japan during 1982-1987 and Fujikura Ltd. of Japan since 1992. And also the new plant at Bangnarmprieo District, Chachoengsao Province had been set up to increase capacity of wire and cable products and also to produce the new line of product. The plant incorporates the latest technology and highest quality control standards throughout the production process. At present, bringing CTW to new technical, is its The Catenary Continuous Vulcanisation (CCV) Line for producing the Medium - High voltage power cables with most modern High Voltage Testing lab, the company went into Technical Collaboration with the Fujikura Ltd. of Japan since 1992. The other facility can also produce low voltage power cables, internal and external telecommunication cables, and aluminium cables.

The Company strictly applies the TQC (Total Quality Control) System in every production section, using advanced precision instruments. Production quality is tested at every stage of production process, and monitor again when the product is finished, to assure compliance with all international standard. i.e., TIS, IEC, ASTM, BS, DIN, VDE, UL, JIS, AS/NZS, ICEA, FAA etc. at the request of the customers, CTW has adopted ISO 9001 to ensure its business and operations management are in line with recognized global standards. We finally gain confidence and good reputation from our customers; EGAT, MEA, PEA, TOT CAT, NBIA, The Construction Company and many othe

Product Line:

The plant incorporates the latest technology and highest quality control standards throughout the production process. At present,

1. Aluminium cable plant.
2. Low voltage power cable plant.
3. High voltage power cable plant.
4. Telecommunication cable plant.

Production Capacity:

1. Aluminium weights of Aluminium wire & cable product (A) 1,200 MTS / Month.
2. Copper weights of Low voltage wire & cable products (C) 600 MTS / Month.
3. Copper weights of High voltage wire & cable products (K) 400 MTS / Month.
4. Lengths of Telecommunication cable products (T) 120,000 Pairs-Km / Month

Quality Policy & Assurance:

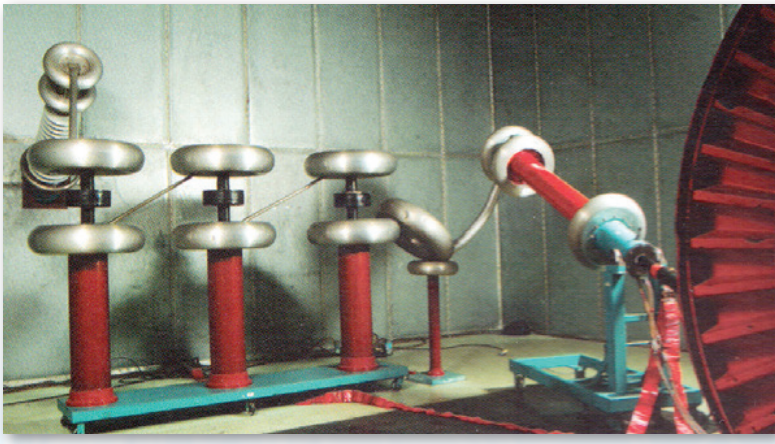
"CUSTOMER SATISFACTION AND CONTINUALLY IMPROVEMENT"

CTW follows continuous and strict procedures throughout every production process. Our quality control begins with the careful scrutinisation of product designs, raw materials and continues to the testing of final products; where every finished length of cable must also pass rigorous test to meet required specifications before it is shipped to our customers.

Our value customers:

CTW is upgrading the products operations through research, advanced technology and machinery, to serve the expanding needs of Thailand's economy at competitive prices, The company is committed to offer high quality products to achieve customer satisfaction. The company is trusted to supply wire and cable to various reputable firms and local state enterprises.

EGAT : Electricity Generating Authority of Thailand
PEA : Provincial Electricity Authority
MEA : Metropolitan Electricity Authority
TOT : TOT Corporation Public Company Limited
CAT : CAT Telecom Public Company Limited
NBIA : New Bangkok Internation Airport
Export : CTW has been exporting its quality cable to ASEAN region, Specifically Singapore, Indonesia, Philippines and Indochina for many year. etc.



Certification Awarded :

CTW is recognized as the premier electric wire and cables manufactures that achieved both local and international standard.

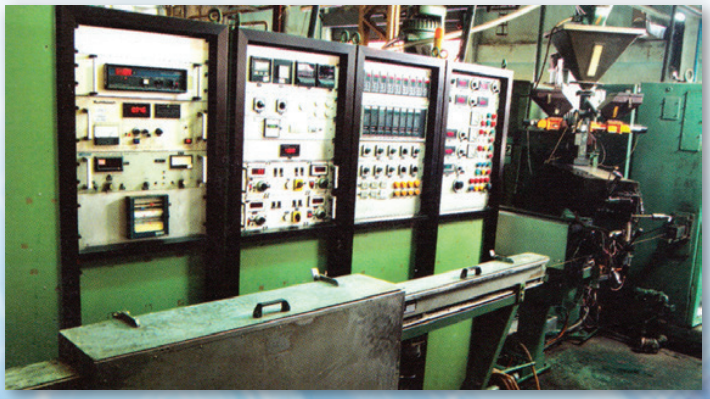
*The Thai industrial Standard Institute (TISI), Ministry of Industry has award its “Standard Mark”

TIS 11-2553
TIS 293-2541

TIS 64-2517
TIS 85-2548
TIS 118-2522
TIS-838-2531

** ISO 9001 (Quality Management System Certification)
- In order to improve the effectiveness of the quality management system and enhance customer satisfaction be meeting customer requirement.
- The plant is certified for the scope: Design and development and manufacture of electric wire/cablcable and telephone wire/cable.

Local accreditation : Approval by Management System Certification (Thailand) (MASCI)



1 **ALUMINIUM WIRE AND CABLE**
THWA, AAC, ACSR, etc.

2 **BUILDING WIRE AND LOW VOLTAGE POWER CABLES**
THW, VAF, VCT, NYY, CV, etc.

3 **MEDIUM AND HIGH VOLTAGE POWER CABLES**
24 kV-115 kV
Maximum Diameter 1,200 sq.mm.
PIC, SAC, CV, etc.

4 **FIRE RESISTANCE AND FLAME RETARDANT CABLES**
FRC, LSF, etc.

5 **TELECOMMUNICATION CABLES**
AP, AP-8, AP-FSF, TPEV, TIEV, etc.

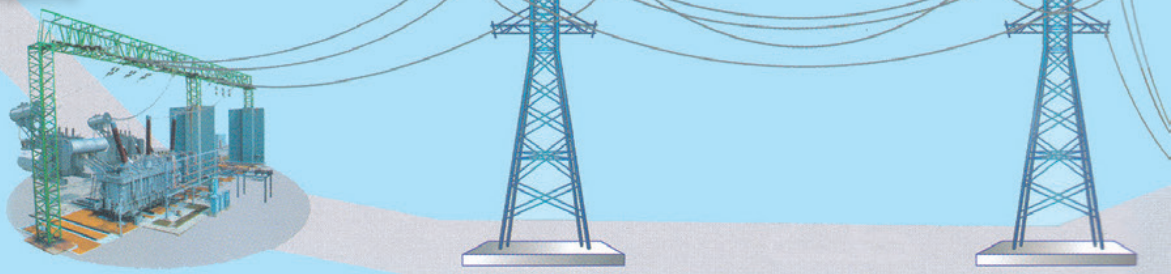
6 **CONTROL AND INSTRUMENT CABLES**
CVV, NYCY, RE-Y, etc.

CHAROONG THAI WIRE & CABLE
PUBLIC COMPANY LIMITED

WE BRING THE POWER TO YOU

Power Plant

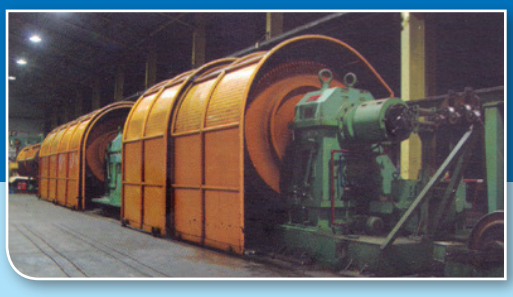
Arial Transmission
230 kV.

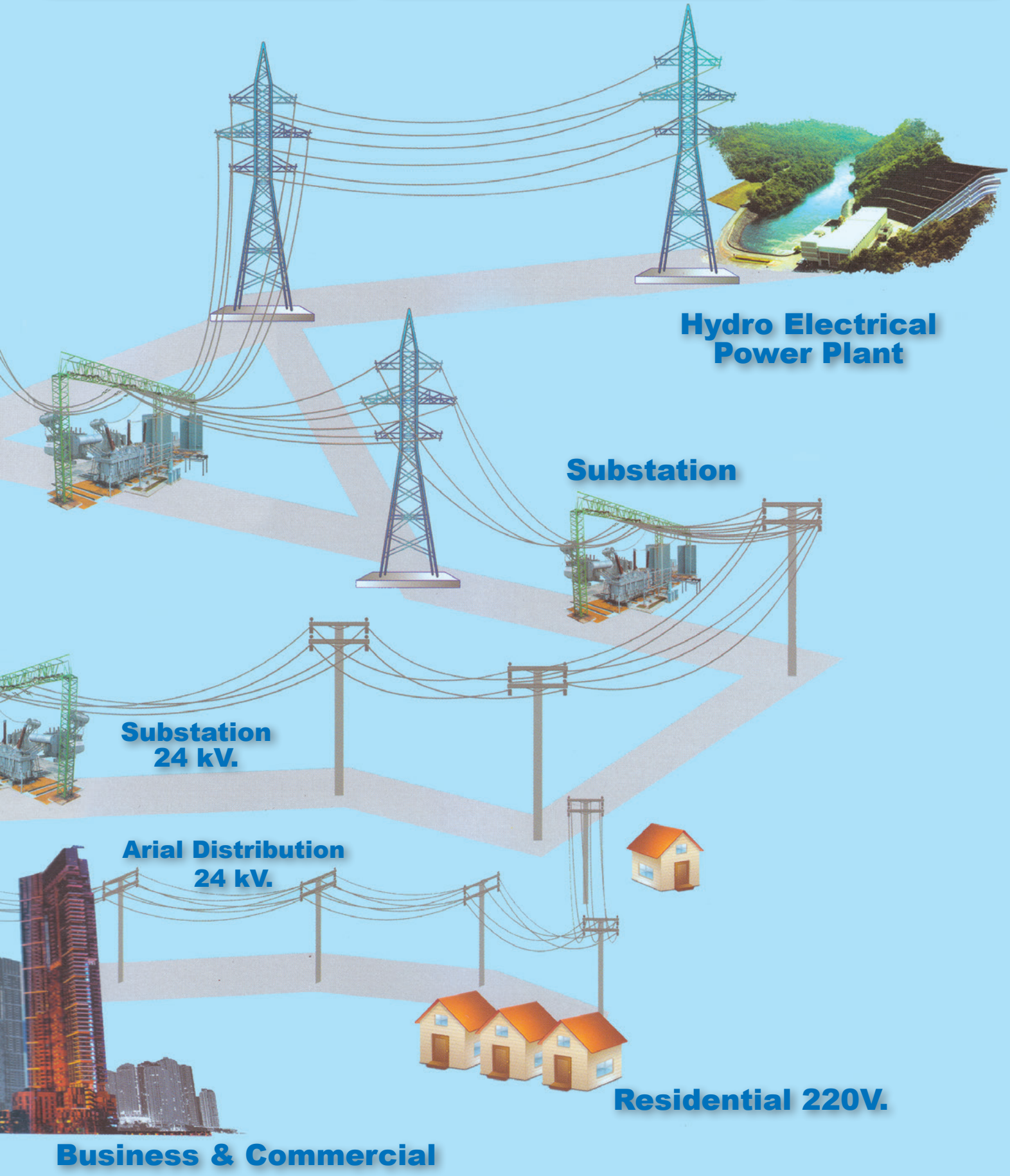


Step-Up Transmission
Substation

Factory

Transportation




Hydro Electrical
Power Plant
Substation
Substation
24 kV.
Arial Distribution
24 kV.
Residential 220V.
Business & Commercial

REFERENCE PROJECT

Real Estate & Property and Highlight Building.

- ณุศาศิริ เอกมัย
- Holiday Inn Phuket
- S&S Condo สุขุมวิท 101
- ชีวาทัย
- The Sixsence Hotel Phuket
- Casa เฟส1 & เฟส2
- พัทยา บีช Pattaya Beach Hotel
- Tuntect Factory
- Parkland [ศรีนครินทร์, วงศ์สว่าง, เพชรบุรี ฯลฯ]
- หอสมุดแห่งชาติ
- Marrioitt Rayong
- Thai Farmer Bank (Computer Center)
- Bank of Ayudthaya (Computer Center)
- คาซาลูนา ชลบุรี
- คอนโด Bridge สาทร-นราธิวาส
- โรงแรมแชงการีล่า เชียงใหม่
- The Pano Rama 3
- The Plaza Athenee
- นอร์ท ปาร์ค
- Le Raffine Condo Sukhumvit 32
- Beer Thai Factory Plant (Carlberg beer)
- Ao Po bay Marina
- S9 Condo บางใหญ่-รัตนาธิเบศน์
- We Condo
- Chapter one Condo
- The NYE ตากสิน-วงเวียนใหญ่
- The Reserve
- D Condo [ระยอง, เอแบค บางนา ฯลฯ]
- The Aspire [งามวงศ์วาน, สุขุมวิท 48 ฯลฯ]
- Box Hotel สุขุมวิท 31
- พัทยา พอร์ช อ.บางละมุง
- Centrio Condo Phuket
- Delong บ่อวิน
- บ้านกลางเมือง บางบอน
- ไซมิส นางลิ้นจี่
- โชว์รูม ซูซูกิ บางนา
- The Key ประชาชื่น & แจ้งวัฒนา
- โครงการอโวร่า 31
- WHIZDOM 2 อาคาร 2
- ทรู ทองหล่อ คอนโด
- ไซมิส สุขุมวิท 31 & สุขุมวิท 39
- M Sathon
- Thai Farmer Bank
- โครงการแสนสิริ บางนา
- Amway Ramkhamhaeng
- The Metro Rattanathibet
- The NYN Pattaya
- Elio สุขุมวิท 64
- แสนสิริ บางนา
- นิชดาธานี
- I-Condo งามวงศ์วาน
- โรงงานเถ้าแก่น้อย นพวงศ์
- WHA factory (M7 WHA MEGA)
- โรงงาน KCE ลาดกระบัง
- Unilever บางน้ำเปรี้ยว
- CP Morokot solar roof ชุมพร
- Perfect ราชพฤกษ์
- The ASCENT เอกมัย 19
- Tsix 5 Hotel Pattaya-Nua
- HST บางนา กม.7
- บ้านแสนดาว เขาใหญ่
- โครงการเรืองปัญญา
- The PLUM บางใหญ่
- TE นิคมเกตเวย์ ฉะเชิงเทรา
- THE MATRIX CONDOMINIUM
- THE EDITOR
- AMRA BANGKOK HOTEL
- HONDA 304
- เซ็นทริค ติวานนท์
- IDEO สาทร-ท่าพระ
- อโศก คอร์ท
- THE TRUST RESIDENCE
- Water Fall
- Holiday Inn
- Bayan Tree Resort and Spa (Samui)
- Metro Condominium
- Sathorn Heritage
- Bangkok Insurance Tower (ตึกกรุงเทพประกันภัย สาทร)
- Italian Thai Tower (อาคารอิตาเลี่ยนไทย)
- Retchada Square
- FMC Plant นิคมเหมราช
- The legacy Golf
- THE SERIES อุดมสุข
- Chidlom Tunnel
- BMA Flood Protection Tunnel
- ENCO
- Studio - One
- Resota
- The Renaisenco Hotel Phuket
- CP Orange Muangthong Base
- อมันตรา พัทยา
- Sky Walk สุขุมวิท
- Star View Condo
- Grand Four Wing
- อมารี [หัวหิน, พัทยา, Bangkok Hotel ฯลฯ]
- ลุมพินี Lumpini [จอมเทียนเฟส 1 &2, นาเกลือ, พัฒนาการ, พระราม 9, อ่อนนุช 46, อ่อนนุช 55, รามอินทรา กม.2, รามอินทรา กม.8, สุขสวัสดิ์, สุขุมวิท 24, พระราม 3, ลาดปลาเค้า, เมกะบางนา, พัทยาเหนือ ฯลฯ]

Department Store & Shopping Mall

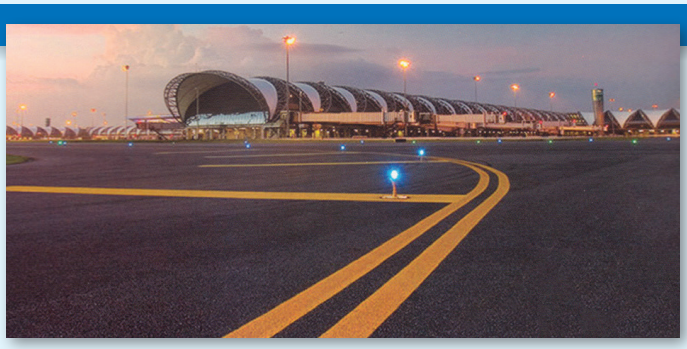
- สหไทย พลาซ่า (สุราษฎร์)
- จามจุรี สแควร์
- พาราไดซ์ (เสรีเซ็นเตอร์)
- CDS หาดใหญ่
- Siam Square One
- MEGA Bangna
- Terminal 21
- ตั้งฮั่วเส็ง ธนบุรี
- Sukhumvit City Tower (The Empolium Dep.)
- Homepro หาดใหญ่
- Makro [กัลปพฤกษ์, สุราษฎร์ ฯลฯ]
- ไทวัสดุ [นวมินทร์,วังน้อย ฯลฯ]
- Robinson
  [ตรัง, ร้อยเอ็ด, ฉะเชิงเทรา, ปราจีนฯ, สุพรรณบุรี, ศรีราชา ฯลฯ]
- Central World
- Central [ชลบุรี, ระยอง]
- Central [สีลม & วังบูรพา (Renovatc)]
- Central ลาดพร้าว
- Carrefour [เชียงใหม่, พระราม 4, ราษฎร์บูรณะ, อุดมสุข]
- Big C [ราชดำริ, น่าน1, น่าน3, หัวหมาก, หาดใหญ่, มุกดาหาร ฯลฯ]
- Tesco Lotus [กำแพงเพชร, บ่อวิน, กระทุ่มแบน, กาฬสินธุ์, เชียงใหม่ 1, เชียงใหม่ 2, ระยอง, แกลง, ภูเก็ต, เวียงงสร สุราษฎร์ธานี, บางเลน, คลองหลวง, น่าน, สุขาภิบาล, บ้านบึง ฯลฯ]

Oil & Gas , Industrial and Power Generative Plant

- Electricity Generating Authority of Thailand (EGAT)
- Provincial Electricity Authorization (PEA)
- Metropolitan Electricity Authorization (MEA)
- Communication Authority of Thailand (CAT)
- TOT Public Company Limited (TOT)
- TT&T Public Company Limited (TT&T)
- โรงไฟฟ้า GLOW 5 (Combined Cycle)
- โรงไฟฟ้า Gulf 7 Substation
  [GCRN, GNK2, GKP1, GKP2, GTLC, GNNK and GNLL Power-Plant]
- โรงไฟฟ้าขนอม
- อาคารวิจัย PTT วังน้อย
- Nam Thuen Power Plant
- โรงไฟฟ้าพระนครเหนือ Phase II
- Transmission System Expansion Projcet No.II
- CHANA Combined Cycle Power Plant (Block2)
- Rayong Olefine Cracker [เครือ SCG]
- โรงปูน ตราราชสีห์ [บ.ภูมิใจไทยซีเมนต์]
- Siam City Cement PLC. (ปูนตรานกอินทรีย์)
- Butterworth Penang
- Central Sub. [PTT]
- GAS Seperation Plant 6 (GSP6) [PTT]
- Ethane Seperation Plant 3 (ESP3) [PTT]
- Oil Tank [Thai Oil]
- PTT : Fire Alarm System
- North Bangkok Plant (GAS Pipeline Project)
- Oil Tank [ESSO]
- Rocs#1 [PTT]
- Siam City Cement Plant (K6)
- EGAT office Building
- PTT (Sriracha , Maptaput)

Mega Project & Public Utility

- ศูนย์ราชการพม่า (กรุงเนปิดอว์)
- ศูนย์ราชการแจ้งวัฒนะ (สัญญา 1-5)
- ศาลปกครองแจ้งวัฒนะ
- Suwanaphumi Airport
  [Air Field Pavement , Passenger Terminal (NBIA) ,
  Duck Bank (HV.), Airport Lighting 5 kV., Distribution Line,
  Land Side Road , Cattering (NBIA) , etc.]
- MRT Purple Line [Contract 1,2,3,4]
- MRT Blue Line [Contract 1,2,3,4]
- BTS (Taksin-Petchkasem)
- BTS Extension Onnut-Bearing
- SRT Double Track (รฟท.)
  [ST3 , ST4 , Track Rehcp , etc.]
- BTS (Depot Morchit)
- MRTA Subway Train (Metro Mall)
- Office Building MRTA (อาคาร รฟม.)
- Airport Rail Link (Signalling System)
- สำนักงานปลัดฯ ศรีสมาน
- ประปามหาสวัสดิ์
- กองทัพเรือพรานนก
- Lamchabang Deep See Port [A1 , A2 , C0 , A3]
- ฐานทัพเรือสัตหีบ
- สะพานข้ามแม่น้ำโขง (นครพนม)
- หอสมุดแห่งชาติ



- Toll Way Phase II
- Expressway (Bangna-Bangprakong)
- Asian Games Sport Complex (Rangsit)
- Government Hosing Authority of Thailand
  [Hnongjok , Bang Khun-Tien , Taladtai , Navanakorn ,
  บ้านคลองสวน , วัดศรีวารีน้อย, Suan Pul , Ban klong Suan ,
  12 Project Bann-auar-ar-thorn (ITD) , etc.]
- งานพืชสวนโลกเฉลิมพระเกียรติ ฯ ราชพฤกษ์ 2549

OUR VALUED CUSTOMERS

Department Store

Big C, Carrefour, เซ็นทรัล, centralworld, HomePro, homeworks, ROBINSON, TESCO Lotus, S.B. FURNITURE, Indexlivingmall

Goverment & State Enterprise Project

SUVARNABHUMI, CAT, TOT

High-Rise Building Project

L.P.N. DEVELOPMENT, BANYAN TREE, BSH, Chuva-Som, EastWater, SKY WALK, PANO

Industrial Project

TPCC, JOTUN, ptt Group, MITR PHOL, ThaiBev, Thaioil, SCG SIAM CEMENT GROUP, อินทรี

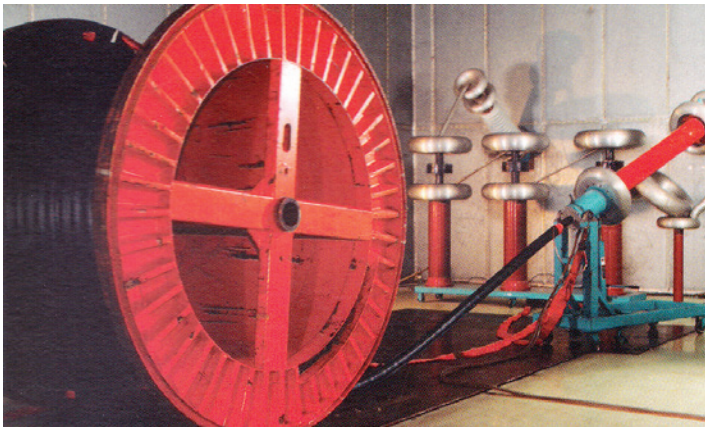
Telecommunication

dtac, AIS, true

CONTENT

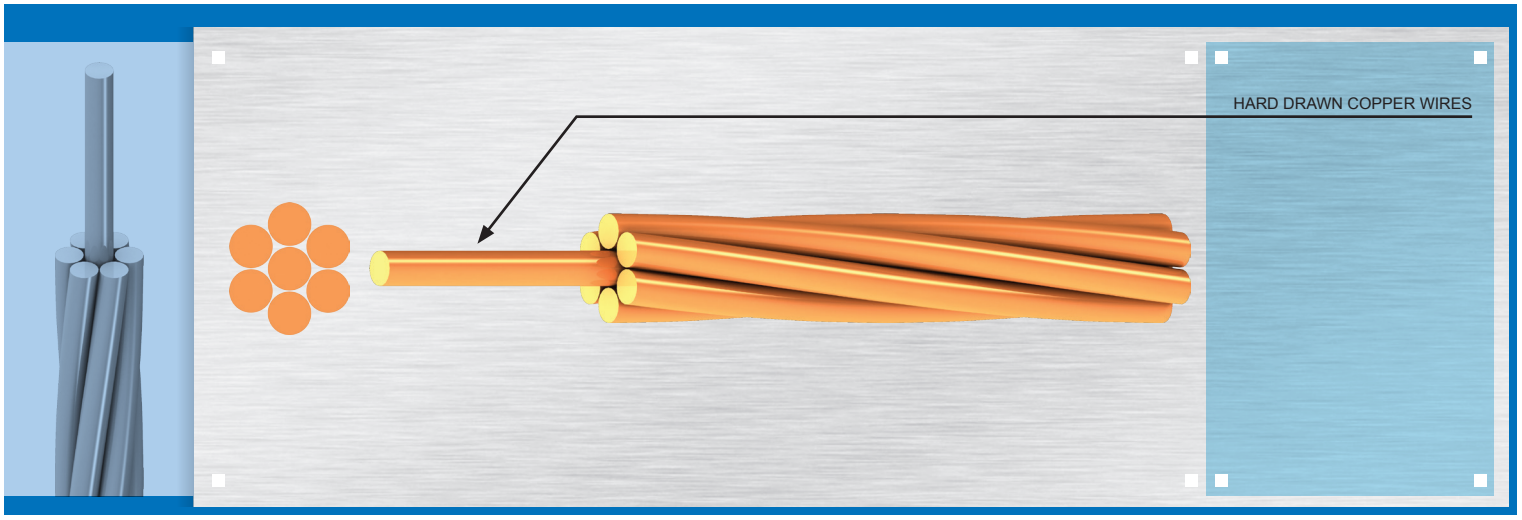
CONTENT

CONTENT



CABLE TYPE : CTW-CSC (HD)

BARE HARD DRAWN COPPER STRANDED CONDUCTOR



CONSTRUCTION

Conductor Hard drawn copper wires ,
Concentric stranded conductor
Size 10 sq.mm. up to 500 sq.mm.

Direction of outermost layer Z
(Right-Handed)

APPLICATION

Aerial power tranmission and overhead distribution line.

CLASSIFICATION

Based on 97% Conductivity.
Max. Volume Resistivity at 20°C
0.01777 Ω−mm^2/m

REFERENCE

TIS 64-2517

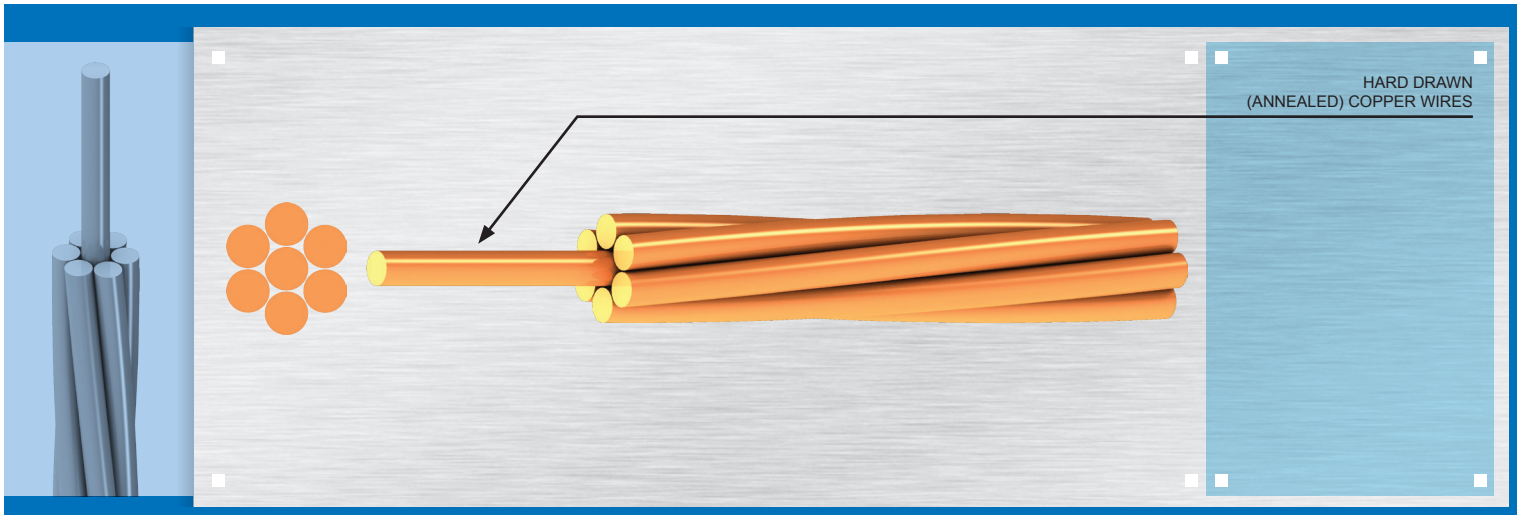
NOTE

CTW-CSC (HD)		Number and Dia. of Wire	Overall Diameter	Maximum Conductor Resistance at 20°C	Breaking Strength	Cable Weight (Approx.)	Standard Packing
PRODUCT CODE	SIZE sq.mm.	No./mm	mm	Ω/km	kgf	kg/km	m/R
C00013010	10	7/1.35	4.05	1.80548	438	90	1,000
C00013016	16	7/1.70	5.10	1.13857	694	143	1,000
C00013025	25	7/2.14	6.42	0.71851	1,076	227	1,000
C00013035	35	7/2.52	7.56	0.51815	1,459	314	1,000
C00013050	50	7/3.02	9.06	0.35896	2,095	452	1,000
C00013050*	50	19/1.78	8.90	0.38252	2,021	428	1,000
C00013070	70	19/2.14	10.70	0.26466	2,921	618	1,000
C00013095	95	19/2.52	12.60	0.19183	3,961	858	1,000
C00013120	120	19/2.85	14.25	0.14922	5,067	1,097	1,000
C00013150	150	37/2.25	15.75	0.12384	6,289	1,334	1,000
C00013185	185	37/2.52	17.64	0.09873	7,713	1,673	1,000
C00013240	240	61/2.25	20.25	0.07528	10,369	2,200	1,000
C00013300	300	61/2.52	22.68	0.06002	12,717	2,760	1,000
C00013400	400	61/2.85	25.65	0.04692	16,266	3,530	1,000
C00013500	500	61/3.20	28.80	0.03703	20,506	4,451	1,000

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-CSC (SD)

BARE ANNEALED COPPER STRANDED CONDUCTOR



CONSTRUCTION

Conductor Soft drawn copper wires,
Concentric stranded conductor
Size 10 sq.mm. up to 500 sq.mm.

Direction of outermost layer S
(Left-Handed)

APPLICATION

For conductor insulated with various materials. The cable being suitable for used in distribution line and grounded electric system.

CLASSIFICATION

Based on 100% Conductivity.
Max. Volume Resistivity at 20°C
0.017241 Ω−mm^2/m

REFERENCE

TIS 11-2553
ASTM B3 & B8

NOTE

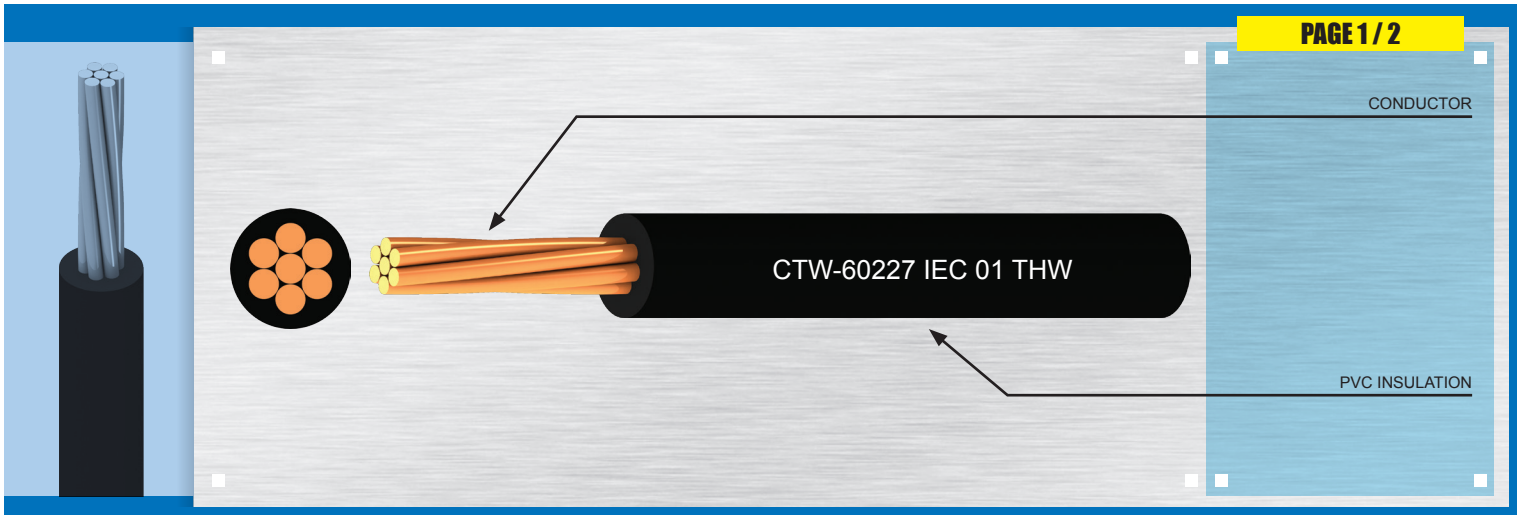
CTW-CSC (SD)		Number and Dia. of Wire	Overall Diameter	Maximum Conductor Resistance at 20°C	Cable Weight (Approx.)	Standard Packing
PRODUCT CODE	SIZE sq.mm.	No./mm	mm	Ω/km	kg/km	m/R
C00014010	10	7/1.35	4.05	1.830	90	1,000
C00014016	16	7/1.70	5.10	1.150	143	1,000
C00014025	25	7/2.14	6.54	0.727	227	1,000
C00014035	35	19/1.53	7.56	0.524	314	1,000
C00014050	50	19/1.78	8.90	0.387	428	1,000
C00014070	70	19/2.14	10.70	0.268	618	1,000
C00014095	95	19/2.52	12.60	0.193	858	1,000
C00014120	120	19/2.85	14.25	0.153	1,097	1,000
C00014150	150	37/2.25	15.75	0.124	1,334	1,000
C00014185	185	37/2.52	17.64	0.0991	1,673	1,000
C00014240	240	61/2.25	20.25	0.0754	2,200	1,000
C00014300	300	61/2.52	22.68	0.0601	2,760	1,000
C00014400	400	61/2.85	25.65	0.0470	3,530	1,000
C00014500	500	61/3.20	28.80	0.0366	4,451	1,000

C = Packing in coil
R = Packing in reel

CHAROONG THAI WIRE & CABLE PUBLIC COMPANY LIMITED

CABLE TYPE : CTW-60227 IEC 01 THW

450/750 V 70°C PVC INSULATED , SINGLE CORE



CONSTRUCTION

Conductor Anneal copper, solid or stranded
Sizes 1.5 sq.mm. up to 400 sq.mm.

Insulation Polyvinyl chloride (PVC/C)
(Any colour as requested)

APPLICATION

Building wiring for installation in wire way or raceway, dry location.
Do not install in conduit and direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

REFERENCE

TIS 11-2553 Part 3 Table 1
IEC 60227 Part 3 Table 1
AC Test Voltage : 2.5 kV

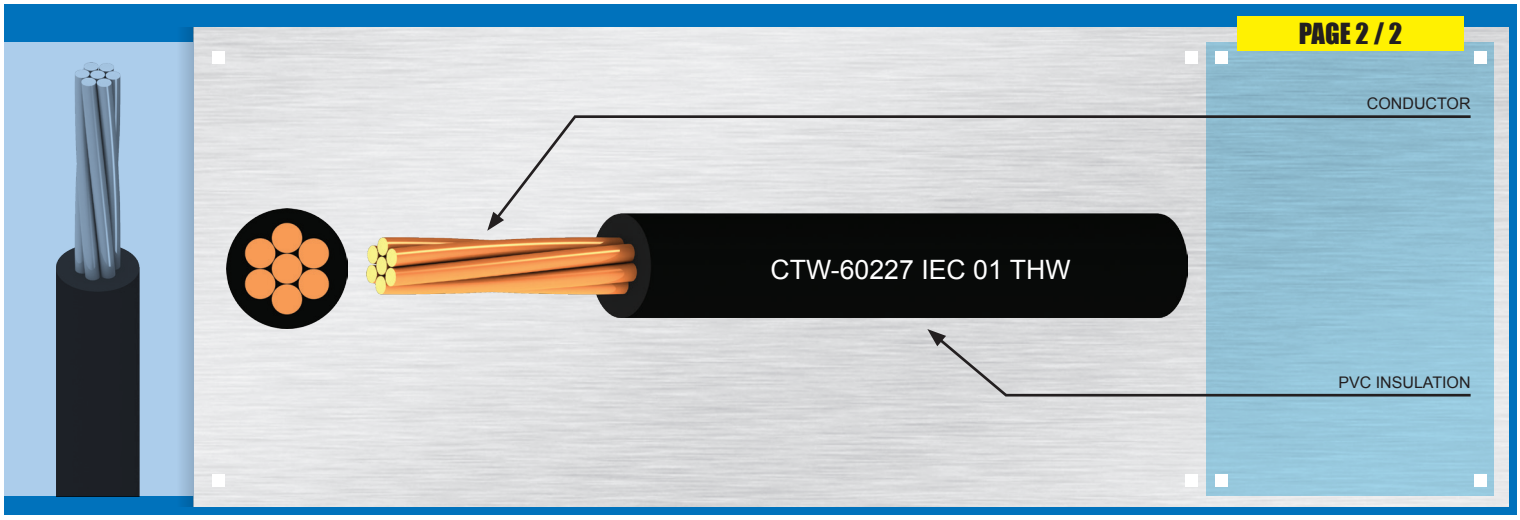
NOTE

CTW-60227 IEC 01		Conductor			Thickness of Insulation	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)						
		sq.mm.	No.	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFD011501	1 x 1.5	1.5	1	1.37	0.7	3.2	20	12.10	0.0110	100/C
CFD014501	1 x 1.5	1.5	7	1.56	0.7	3.3	25	12.10	0.0100	100/C
CFD011502	1 x 2.5	2.5	1	1.74	0.8	3.9	35	7.41	0.0100	100/C
CFD014502	1 x 2.5	2.5	7	2.01	0.8	4.0	40	7.41	0.0090	100/C
CFD011004	1 x 4	4	1	2.21	0.8	4.4	50	4.61	0.0085	100/C
CFD014004	1 x 4	4	7	2.52	0.8	4.6	55	4.61	0.0077	100/C
CFD011006	1 x 6	6	1	2.70	0.8	5.0	70	3.08	0.0070	100/C
CFD014006	1 x 6	6	7	3.09	0.8	5.2	75	3.08	0.0065	100/C
CFD011010	1 x 10	10	1	3.52	1.0	6.4	115	1.83	0.0070	100/C
CFD014010	1 x 10	10	7	3.99	1.0	6.7	125	1.83	0.0065	100/C
CFD014016	1 x 16	16	7	5.04	1.0	7.8	185	1.15	0.0050	100/C
CFD014025	1 x 25	25	7	6.33	1.2	9.7	290	0.727	0.0050	100/C
CFD014035	1 x 35	35	7	7.47	1.2	10.9	390	0.524	0.0043	100/C
CFD014050	1 x 50	50	19	8.80	1.4	12.8	520	0.387	0.0043	500/R
CFD014070	1 x 70	70	19	10.55	1.4	14.6	730	0.268	0.0035	500/R
CFD014095	1 x 95	95	19	12.45	1.6	17.1	1,010	0.193	0.0035	500/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-60227 IEC 01 THW

450/750 V 70°C PVC INSULATED , SINGLE CORE



CONSTRUCTION

Conductor Anneal copper, solid or stranded
Sizes 1.5 sq.mm. up to 400 sq.mm.

Insulation Polyvinyl chloride (PVC/C)
(Any colour as requested)

APPLICATION

Building wiring for installation in wire way or raceway, dry location.
Do not install in conduit and direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

REFERENCE

TIS 11-2553 Part 3 Table 1
IEC 60227 Part 3 Table 1
AC Test Voltage : 2.5 kV

NOTE

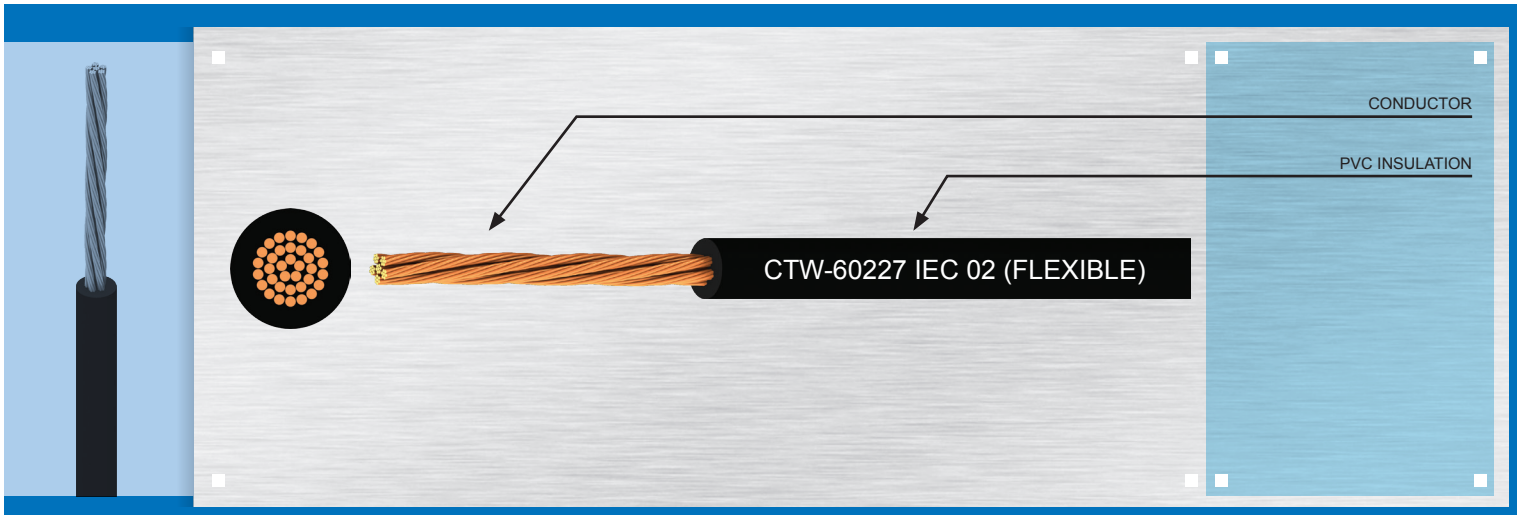
CTW-60227 IEC 01		Conductor			Thickness of Insulation	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)						
		sq.mm.	No.	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFD014120	1 x 120	120	37	14.00	1.6	18.8	1,250	0.153	0.0032	500/R
CFD014150	1 x 150	150	37	15.54	1.8	20.9	1,540	0.1240	0.0032	500/R
CFD014185	1 x 185	185	37	17.43	2.0	23.3	1,930	0.0991	0.0032	500/R
CFD014240	1 x 240	240	61	19.98	2.2	26.6	2,510	0.0754	0.0032	500/R
CFD014300	1 x 300	300	61	22.41	2.4	29.6	3,140	0.0601	0.0030	500/R
CFD014400	1 x 400	400	61	25.29	2.6	33.2	3,990	0.0470	0.0028	500/R

C = Packing in coil
R = Packing in reel

CHAROONG THAI WIRE & CABLE PUBLIC COMPANY LIMITED

CABLE TYPE : CTW-60227 IEC 02 (FLEXIBLE)

450/750 V 70°C PVC INSULATED, FLEXIBLE SINGLE CORE



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 1.5 sq.mm. up to 240 sq.mm.

Insulation Polyvinyl chloride (PVC/C)
(Any colour as requested)

APPLICATION

Building wiring for installation in wire way or raceway, dry location.
Do not install in conduit and direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

REFERENCE

TIS 11-2553 Part 3 Table 3
IEC 60227 Part 3 Table 3
AC Test Voltage : 2.5 kV

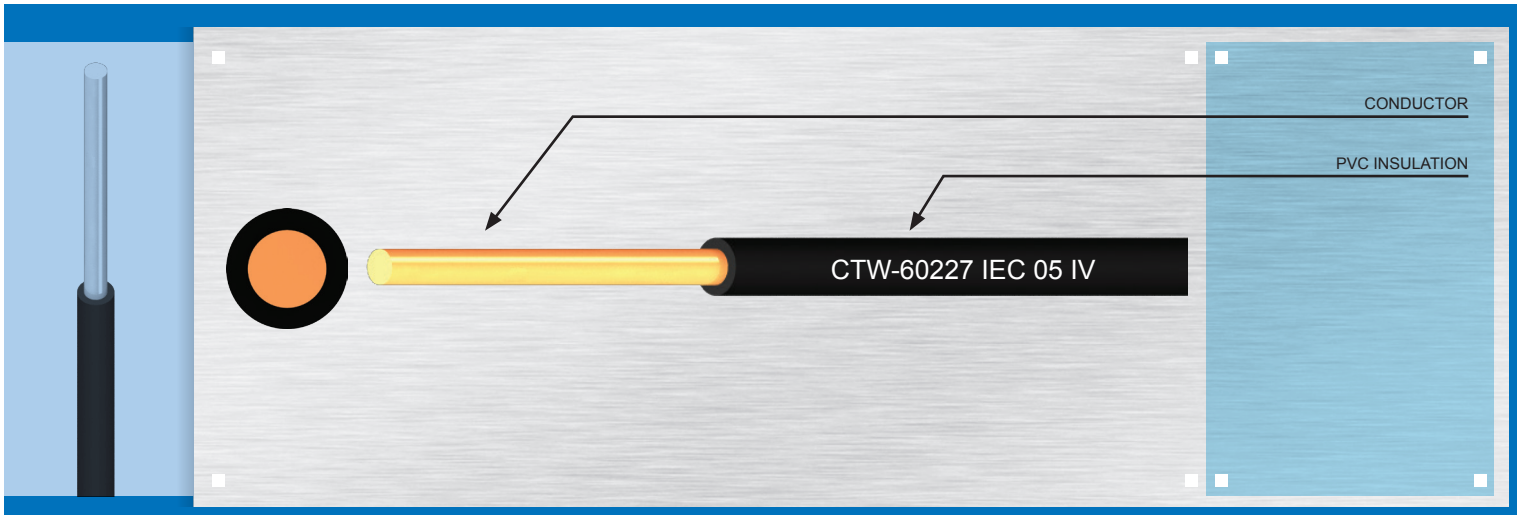
NOTE

CTW-60227 IEC 02		Conductor			Thickness of Insulation	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number and Dia. of Wire	Diameter (Approx.)						
		sq.mm.	No./mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFF016501	1 x 1.5	1.5	30/0.26	1.58	0.7	3.4	25	13.30	0.0100	100/C
CFF016502	1 x 2.5	2.5	50/0.26	2.04	0.8	4.1	35	7.98	0.0090	100/C
CFF016004	1 x 4	4	56/0.31	2.59	0.8	4.8	55	4.95	0.0070	100/C
CFF016006	1 x 6	6	84/0.31	3.59	0.8	5.3	80	3.30	0.0060	100/C
CFF016010	1 x 10	10	80/0.41	4.67	1.0	6.8	130	1.91	0.0056	100/C
CFF016016	1 x 16	16	126/0.41	5.86	1.0	8.1	195	1.21	0.0046	100/C
CFF016025	1 x 25	25	196/0.41	7.31	1.2	10.2	295	0.78	0.0044	100/C
CFF016035	1 x 35	35	276/0.41	8.67	1.2	11.7	405	0.554	0.0038	500/R
CFF016050	1 x 50	50	396/0.41	10.51	1.4	13.9	550	0.386	0.0037	500/R
CFF016070	1 x 70	70	360/0.51	12.52	1.4	16.0	760	0.272	0.0032	500/R
CFF016095	1 x 95	95	475/0.51	14.38	1.6	18.2	1,000	0.206	0.0032	500/R
CFF016120	1 x 120	120	608/0.51	16.32	1.6	20.2	1,255	0.161	0.0029	500/R
CFF016150	1 x 150	150	756/0.51	18.20	1.8	22.5	1,560	0.129	0.0029	500/R
CFF016185	1 x 185	185	925/0.51	20.13	2.0	24.9	1,910	0.106	0.0029	500/R
CFF016240	1 x 240	240	1,221/0.51	23.16	2.2	28.4	2,505	0.0801	0.0028	500/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-60227 IEC 05 IV

300/500 V 70°C PVC INSULATED, SINGLE CORE



CONSTRUCTION

Conductor Anneal copper, solid
Sizes 0.5 sq.mm. up to 1 sq.mm.

Insulation Polyvinyl chloride (PVC/C)
(Any colour as requested)

APPLICATION

Building wiring for installation in wire way or raceway, dry location.
Do not install in conduit and direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 3 Table 5
IEC 60227 Part 3 Table 5
AC Test Voltage : 2.0 kV

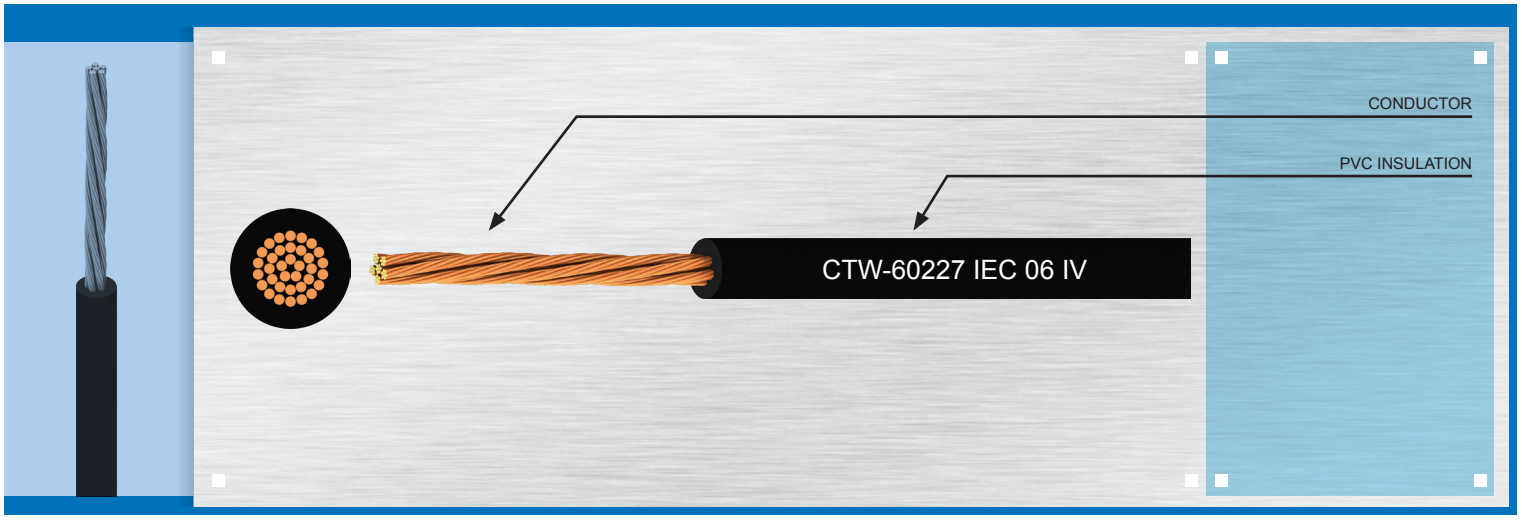
NOTE

CTW-60227 IEC 05		Conductor			Thickness of Insulation	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number and Dia. of Wire	Diameter (Approx.)						
		sq.mm.	No./mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFG011005	1 x 0.5	0.5	1/0.80	0.80	0.6	2.3	10	36.0	0.015	100/C
CFG011075	1 x 0.75	0.75	1/0.97	0.97	0.6	2.5	15	24.5	0.012	100/C
CFG011001	1 x 1	1	1/1.13	1.13	0.6	2.7	20	18.1	0.011	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-60227 IEC 06 IV

300/500 V 70°C PVC INSULATED, FLEXIBLE SINGLE CORE



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 0.5 sq.mm. up to 1 sq.mm.

Insulation Polyvinyl chloride (PVC/C)
(Any colour as requested)

APPLICATION

Building wiring for installation in wire way or raceway, dry location.
Do not install in conduit and direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 3 Table 7
IEC 60227 Part 3 Table 7
AC Test Voltage : 2.0 kV

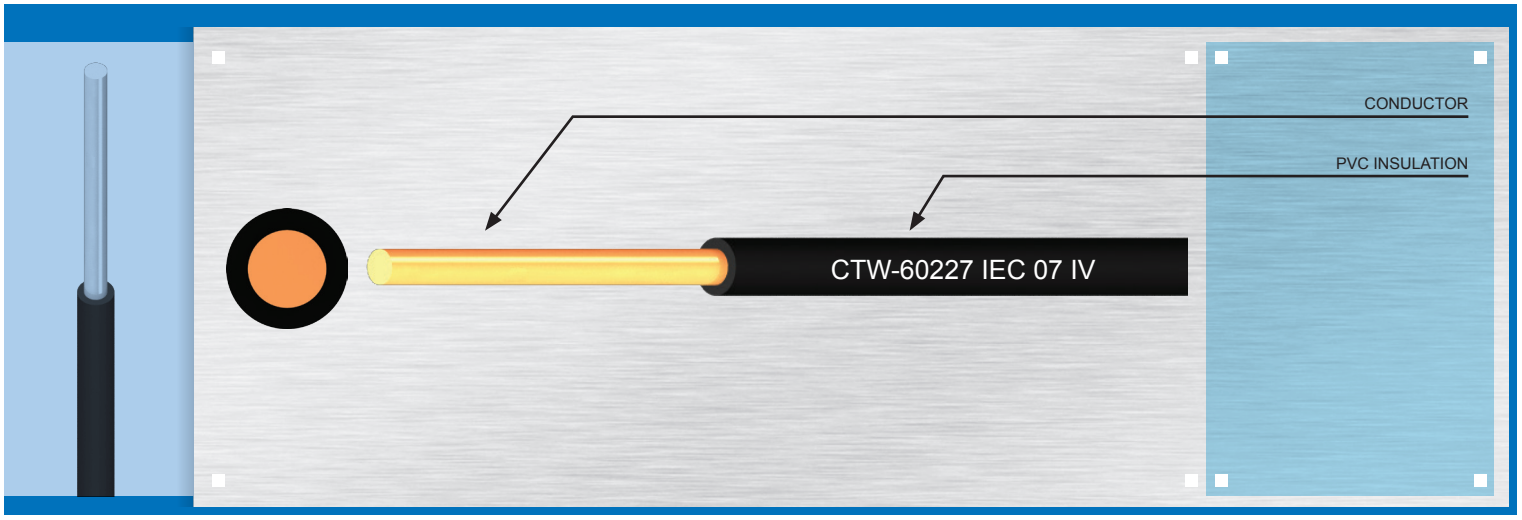
NOTE

CTW-60227 IEC 06		Conductor			Thickness of Insulation	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number and Dia. of Wire	Diameter (Approx.)						
		sq.mm.	No./mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFH016005	1 x 0.5	0.5	16/0.21	0.92	0.6	2.5	10	39.0	0.013	100/C
CFH016075	1 x 0.75	0.75	24/0.21	1.13	0.6	2.7	15	26.0	0.011	100/C
CFH016001	1 x 1	1	32/0.21	1.30	0.6	2.8	20	19.5	0.010	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-60227 IEC 07 HIV

300/500 V 90°C PVC INSULATED, SINGLE CORE



CONSTRUCTION

Conductor Anneal copper, Solid
Sizes 0.5 sq.mm. up to 2.5 sq.mm.

Insulation Polyvinyl chloride (PVC/E)
(Any colour as requested)

APPLICATION

Building wiring for installation in wire way or raceway, dry location.
Do not install in conduit and direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 3 Table 9
IEC 60227 Part 3 Table 9
AC Test Voltage : 2.0 kV

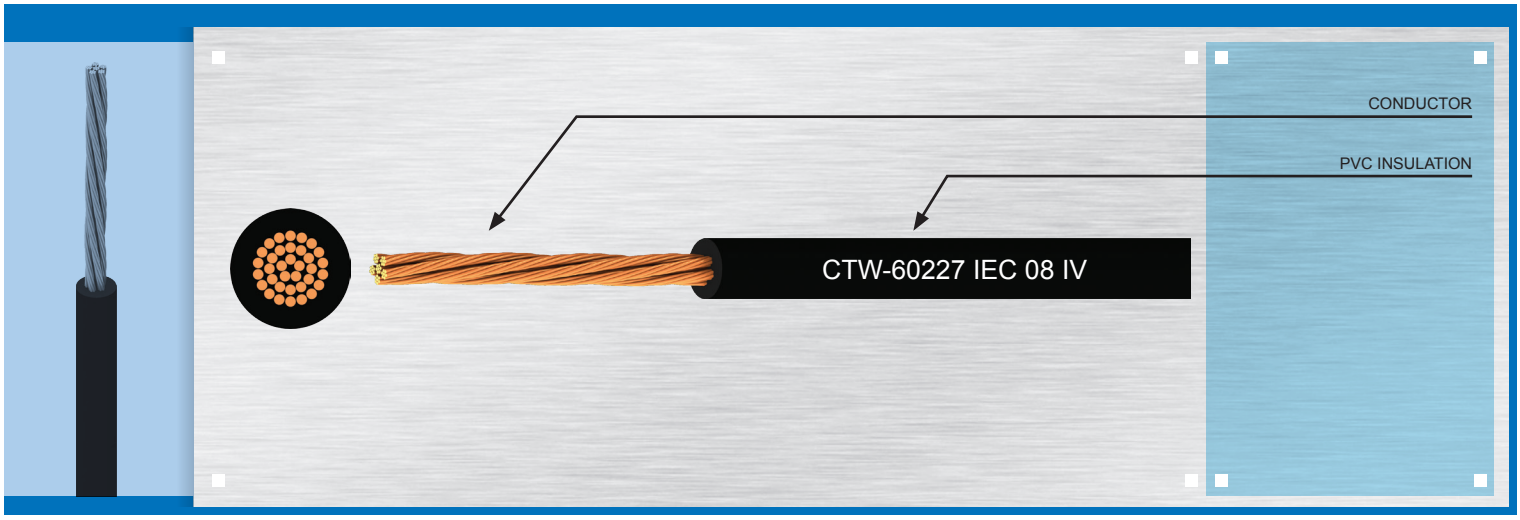
NOTE

CTW-60227 IEC 07		Conductor			Thickness of Insulation	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number and Dia. of Wire	Diameter (Approx.)						
		sq.mm.	No./mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFI011005	1 x 0.5	0.5	1/0.80	0.80	0.6	2.3	10	36.0	0.015	100/C
CFI011075	1 x 0.75	0.75	1/0.97	0.97	0.6	2.5	15	24.5	0.013	100/C
CFI011001	1 x 1	1	1/1.13	1.13	0.6	2.7	20	18.1	0.012	100/C
CFI011501	1 x 1.5	1.5	1/1.38	1.38	0.7	3.2	25	12.1	0.011	100/C
CFI011502	1 x 2.5	2.5	1/1.77	1.77	0.8	3.9	35	7.41	0.009	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-60227 IEC 08 HIV

300/500 V 90°C PVC INSULATED, FLEXIBLE SINGLE CORE



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 0.5 sq.mm. up to 2.5 sq.mm.

Insulation Polyvinyl chloride (PVC/E)
(Any colour as requested)

APPLICATION

Building wiring for installation in wire way or raceway, dry location.
Do not install in conduit and direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 3 Table 11
IEC 60227 Part 3 Table 11
AC Test Voltage : 2.0 kV

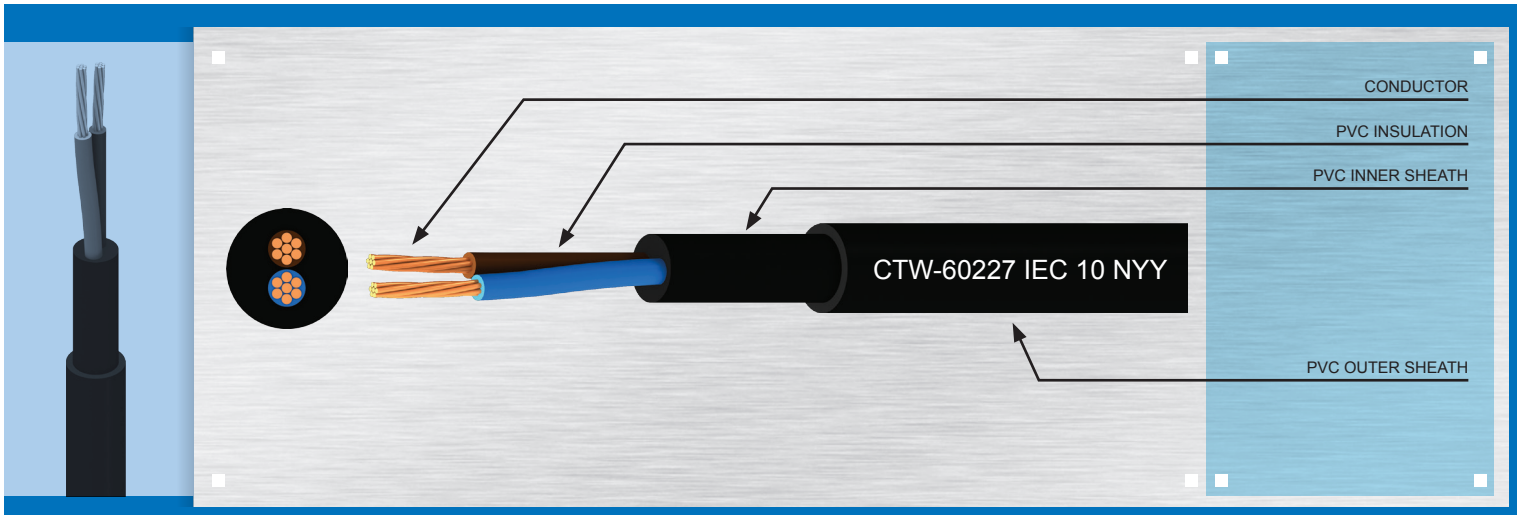
NOTE

CTW-60227 IEC 08		Conductor			Thickness of Insulation	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number and Dia. of Wire	Diameter (Approx.)						
		sq.mm.	No./mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFJ016005	1 x 0.5	0.5	16/0.21	0.92	0.6	2.5	10	39.0	0.013	100/C
CFJ016075	1 x 0.75	0.75	24/0.21	1.13	0.6	2.7	15	26.0	0.012	100/C
CFJ016001	1 x 1	1	32/0.21	1.30	0.6	2.8	20	19.5	0.010	100/C
CFJ016501	1 x 1.5	1.5	30/0.26	1.57	0.7	3.4	25	13.3	0.009	100/C
CFJ016502	1 x 2.5	2.5	50/0.26	2.03	0.8	4.1	35	7.98	0.009	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW 60227 IEC 10 NYY

300/500 V 70°C PVC INSULATED AND DOUBLE SHEATHED, TWO CORES



CONSTRUCTION

Conductor Anneal copper, solid or stranded
Sizes 1.5 sq.mm. up to 35 sq.mm.

Insulation Polyvinyl chloride (PVC/C)
Colour : Blue, Brown

Inner sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

Outer sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

APPLICATION

Building wiring for installation in wire way or raceway or on cable tray, dry location.
Do not install in conduit and direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 4 Table 1
IEC 60227 Part 4 Table 1
AC Test Voltage : 2.0 kV

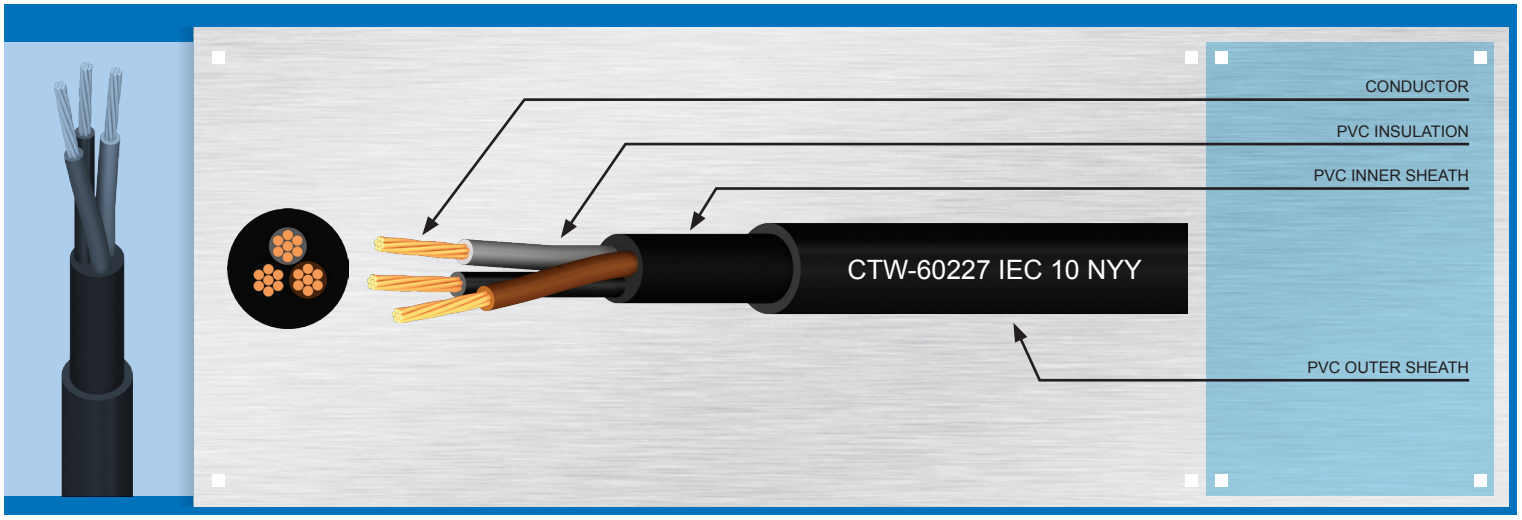
NOTE

CTW-60227 IEC 10		Conductor			Thickness of Insulation	Thickness of Inner Sheath	Thickness of Outer Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)								
		sq.mm.	No.	mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFL021501	2 x 1.5	1.5	1	1.37	0.7	0.4	1.2	10.0	140	12.10	0.0110	100/C
CFL024501	2 x 1.5	1.5	7	1.56	0.7	0.4	1.2	10.5	155	12.10	0.0100	100/C
CFL021502	2 x 2.5	2.5	1	1.74	0.8	0.4	1.2	11.5	185	7.41	0.0100	100/C
CFL024502	2 x 2.5	2.5	7	2.01	0.8	0.4	1.2	12.0	205	7.41	0.0090	100/C
CFL021004	2 x 4	4	1	2.21	0.8	0.4	1.2	12.5	230	4.61	0.0085	100/C
CFL024004	2 x 4	4	7	2.52	0.8	0.4	1.2	13.0	260	4.61	0.0077	100/C
CFL021006	2 x 6	6	1	2.70	0.8	0.4	1.2	13.5	295	3.08	0.0700	100/C
CFL024006	2 x 6	6	7	3.08	0.8	0.4	1.2	14.0	325	3.08	0.0065	100/C
CFL021010	2 x 10	10	1	3.52	1.0	0.6	1.4	16.5	465	1.83	0.0070	500/R
CFL024010	2 x 10	10	7	3.99	1.0	0.6	1.4	17.5	520	1.83	0.0065	500/R
CFL024016	2 x 16	16	7	5.04	1.0	0.6	1.4	20.0	710	1.15	0.0052	500/R
CFL024025	2 x 25	25	7	6.33	1.2	0.8	1.4	24.0	1,050	0.727	0.0050	500/R
CFL024035	2 x 35	35	7	7.47	1.2	1.0	1.6	27.5	1,380	0.524	0.0044	500/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW 60227 IEC 10 NYY

300/500 V 70°C PVC INSULATED AND DOUBLE SHEATHED, THREE CORES



CONSTRUCTION

Conductor Anneal copper, solid or stranded
Sizes 1.5 sq.mm. up to 35 sq.mm.

Insulation Polyvinyl chloride (PVC/C)
Colour : Brown, Black, Grey.

Inner sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

Outer sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

** Product code “CGO03XXXX” for colour : Blue, Brown, Green with Yellow stripe **

APPLICATION

Building wiring for installation in wire way or raceway or on cable tray, dry location.
Do not install in conduit and direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 4 Table 1
IEC 60227 Part 4 Table 1
AC Test Voltage : 2.0 kV

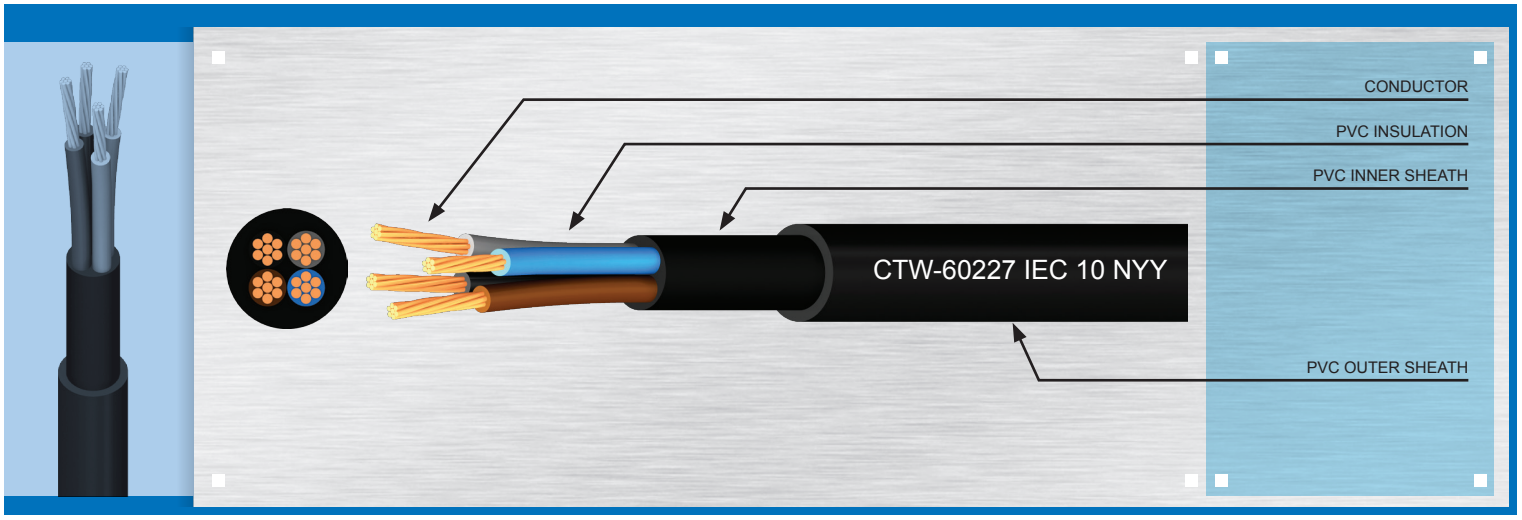
NOTE

CTW-60227 IEC 10		Conductor			Thickness of Insulation	Thickness of Inner Sheath	Thickness of Outer Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)								
		sq.mm.	No.	mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFL031501	3 x 1.5	1.5	1	1.37	0.7	0.4	1.2	10.5	165	12.10	0.0110	100/C
CFL034501	3 x 1.5	1.5	7	1.56	0.7	0.4	1.2	11.0	185	12.10	0.0100	100/C
CFL031502	3 x 2.5	2.5	1	1.74	0.8	0.4	1.2	12.0	220	7.41	0.0100	100/C
CFL034502	3 x 2.5	2.5	7	2.01	0.8	0.4	1.2	12.5	240	7.41	0.0090	100/C
CFL031004	3 x 4	4	1	2.21	0.8	0.4	1.2	13.0	280	4.61	0.0085	100/C
CFL034004	3 x 4	4	7	2.52	0.8	0.4	1.2	13.5	315	4.61	0.0077	100/C
CFL031006	3 x 6	6	1	2.70	0.8	0.4	1.4	14.5	375	3.08	0.0070	100/C
CFL034006	3 x 6	6	7	3.08	0.8	0.4	1.4	15.5	415	3.08	0.0065	100/C
CFL031010	3 x 10	10	1	3.52	1.0	0.6	1.4	17.5	575	1.83	0.0070	500/R
CFL034010	3 x 10	10	7	3.99	1.0	0.6	1.4	19.0	640	1.83	0.0065	500/R
CFL034016	3 x 16	16	7	5.04	1.0	0.8	1.4	21.5	895	1.15	0.0052	500/R
CFL034025	3 x 25	25	7	6.33	1.2	0.8	1.6	26.0	1,335	0.727	0.0050	500/R
CFL034035	3 x 35	35	7	7.47	1.2	1.0	1.6	29.0	1,735	0.524	0.0044	500/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW 60227 IEC 10 NYY

300/500 V 70°C PVC INSULATED AND DOUBLE SHEATHED, FOUR CORES



CONSTRUCTION

Conductor Anneal copper, solid or stranded
Sizes 1.5 sq.mm. up to 35 sq.mm.

Insulation Polyvinyl chloride (PVC/C)
Colour : Blue, Brown, Black, Grey.

Inner sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

Outer sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

** Product code “CGO04XXXX” for colour : Brown, Black, Grey, Green with Yellow stripe **

APPLICATION

Building wiring for installation in wire way or raceway or on cable tray, dry location.
Do not install in conduit and direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 4 Table 1
IEC 60227 Part 4 Table 1
AC Test Voltage : 2.0 kV

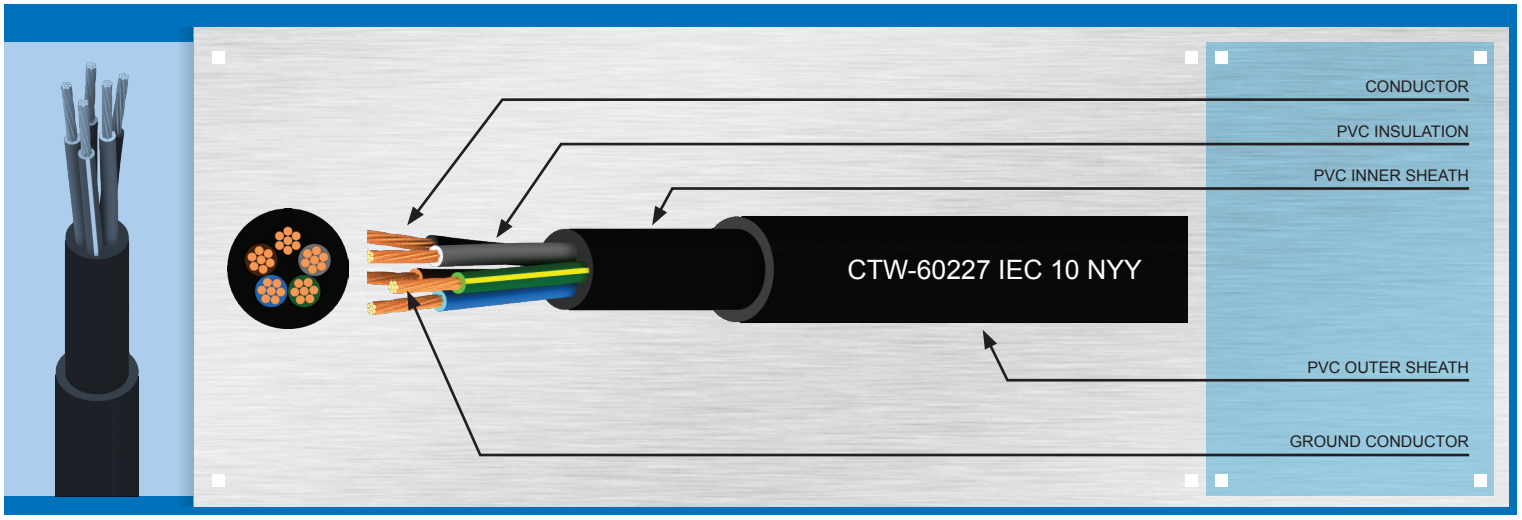
NOTE

CTW-60227 IEC 10		Conductor			Thickness of Insulation	Thickness of Inner Sheath	Thickness of Outer Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)								
		sq.mm.	No.	mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFL041501	4 x 1.5	1.5	1	1.37	0.7	0.4	1.2	11.5	195	12.10	0.0110	100/C
CFL044501	4 x 1.5	1.5	7	1.56	0.7	0.4	1.2	12.0	220	12.10	0.0100	100/C
CFL041502	4 x 2.5	2.5	1	1.74	0.8	0.4	1.2	13.0	265	7.41	0.0100	100/C
CFL044502	4 x 2.5	2.5	7	2.01	0.8	0.4	1.2	13.5	290	7.41	0.0090	100/C
CFL041004	4 x 4	4	1	2.21	0.8	0.4	1.4	14.5	360	4.61	0.0085	100/C
CFL044004	4 x 4	4	7	2.52	0.8	0.4	1.4	15.0	395	4.61	0.0077	100/C
CFL041006	4 x 6	6	1	2.70	0.8	0.6	1.4	16.0	475	3.08	0.0070	100/C
CFL044006	4 x 6	6	7	3.08	0.8	0.6	1.4	17.0	525	3.08	0.0065	100/C
CFL041010	4 x 10	10	1	3.52	1.0	0.6	1.4	19.0	715	1.83	0.0070	500/R
CFL044010	4 x 10	10	7	3.99	1.0	0.6	1.4	20.5	795	1.83	0.0065	500/R
CFL044016	4 x 16	16	7	5.04	1.0	0.8	1.4	23.5	1,115	1.15	0.0052	500/R
CFL044025	4 x 25	25	7	6.33	1.2	1.0	1.6	28.5	1,695	0.727	0.0050	500/R
CFL044035	4 x 35	35	7	7.47	1.2	1.0	1.6	32.0	2,180	0.524	0.0044	500/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW 60227 IEC 10 NYY

300/500 V 70°C PVC INSULATED AND DOUBLE SHEATHED, FIVE CORES



CONSTRUCTION

Conductor Anneal copper, solid or stranded
Sizes 1.5 sq.mm. up to 35 sq.mm.

Insulation Polyvinyl chloride (PVC/C)
Colour : Blue, Brown, Black, Grey, Green with Yellow stripe.

Inner sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

Outer sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

APPLICATION

Building wiring for installation in wire way or raceway or on cable tray, dry location.
Do not install in conduit and direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 4 Table 1
IEC 60227 Part 4 Table 1
AC Test Voltage : 2.0 kV

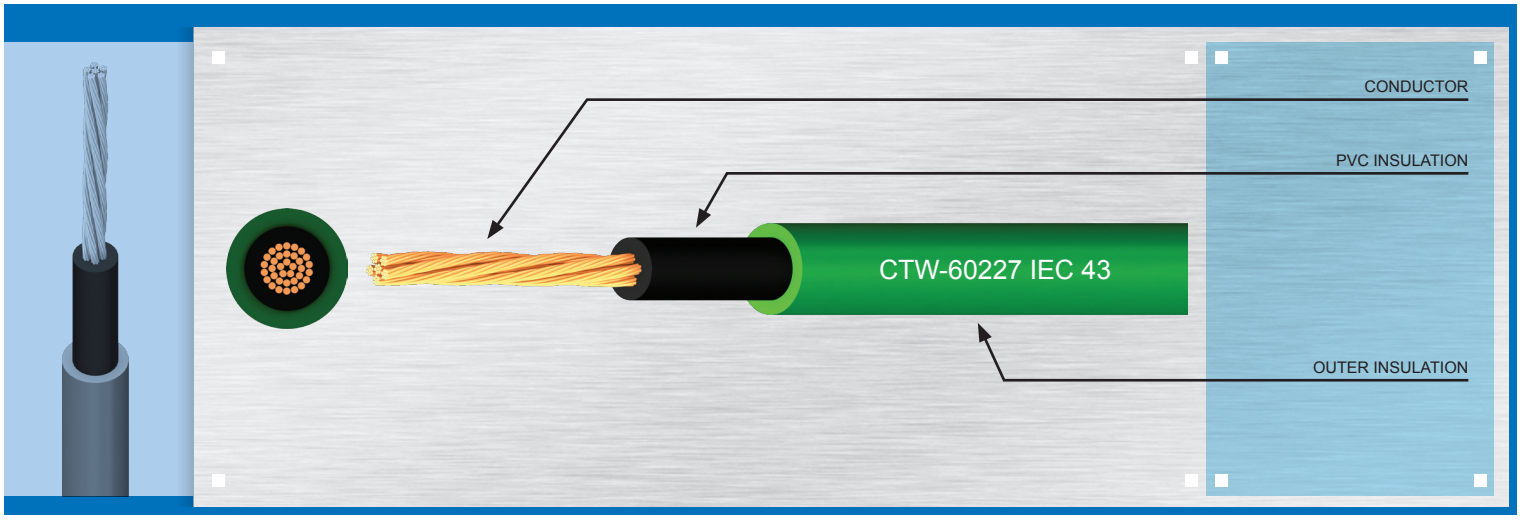
NOTE

CTW-60227 IEC 10		Conductor			Thickness of Insulation	Thickness of Inner Sheath	Thickness of Outer Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)								
		sq.mm.	No.	mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CGO051501	5 x 1.5	1.5	1	1.37	0.7	0.4	1.2	12.0	230	12.10	0.0110	100/C
CGO054501	5 x 1.5	1.5	7	1.56	0.7	0.4	1.2	12.5	255	12.10	0.0100	100/C
CGO051502	5 x 2.5	2.5	1	1.74	0.8	0.4	1.2	14.0	315	7.41	0.0100	100/C
CGO054502	5 x 2.5	2.5	7	2.01	0.8	0.4	1.2	14.5	350	7.41	0.0090	100/C
CGO051004	5 x 4	4	1	2.21	0.8	0.6	1.4	16.0	340	4.61	0.0085	100/C
CGO054004	5 x 4	4	7	2.52	0.8	0.6	1.4	17.0	495	4.61	0.0077	100/C
CGO051006	5 x 6	6	1	2.70	0.8	0.6	1.4	17.5	575	3.08	0.0070	100/C
CGO054006	5 x 6	6	7	3.08	0.8	0.6	1.4	18.5	635	3.08	0.0065	100/C
CGO051010	5 x 10	10	1	3.52	1.0	0.6	1.4	21.0	865	1.83	0.0070	500/R
CGO054010	5 x 10	10	7	3.99	1.0	0.6	1.4	22.0	965	1.83	0.0065	500/R
CGO054016	5 x 16	16	7	5.04	1.0	0.8	1.6	26.0	1,370	1.15	0.0052	500/R
CGO054025	5 x 25	25	7	6.33	1.2	1.0	1.6	31.5	2,060	0.727	0.0050	500/R
CGO054035	5 x 35	35	7	7.47	1.2	1.2	1.6	35.0	2,685	0.524	0.0044	500/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW 60227 IEC 43

300/300 V 70°C PVC DOUBLE INSULATED, FLEXIBLE SINGLE CORE



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 0.5 sq.mm. up to 0.75 sq.mm.

Inner Insulation Polyvinyl chloride (PVC/D)
Colour : Black

Outer Insulation Polyvinyl chloride (PVC/D)
Colour : Green

APPLICATION

Using for decorative lights in building.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 300 volts.

REFERENCE

TIS 11-2553 Part 5 Table 3
IEC 60227 Part 5 Table 3
AC Test Voltage : 2.0 kV

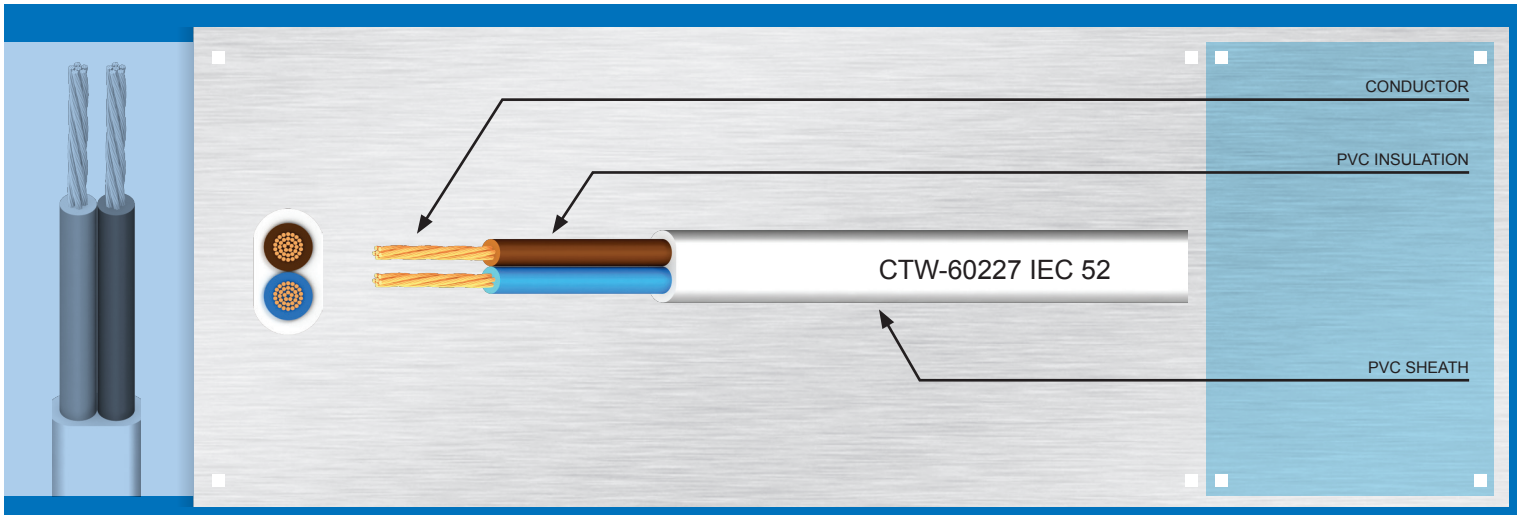
NOTE

CTW-60227 IEC 43		Conductor			Thickness of each layer Insulation (Min.)	Overall Insulation Thickness (Min.)	Overall Insulation Thickness (Mean)	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)								
		sq.mm.	No./mm	mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFN016005	1 x 0.5	0.5	16/0.21	0.92	0.20	0.6	0.7	2.7	10	39.0	0.0140	100/C
CFN016075	1 x 0.75	0.75	24/0.21	1.13	0.20	0.6	0.7	2.9	15	26.0	0.0120	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW 60227 IEC 52

300/300 V 70°C PVC INSULATED AND SHEATHED, FLAT TYPE, FLEXIBLE TWO CORES



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 0.5 sq.mm. up to 0.75 sq.mm.

Insulation Polyvinyl chloride (PVC/D)
Colour : Blue, Brown

Sheath Polyvinyl chloride (PVC/ST5)
Colour : White

APPLICATION

Using for electrical home apparatus (small indoor electrical appliances such as desk-lamp, fan etc.)

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 300 volts.

REFERENCE

TIS 11-2553 Part 5 Table 7
IEC 60227 Part 5 Table 7
AC Test Voltage : 2.0 kV

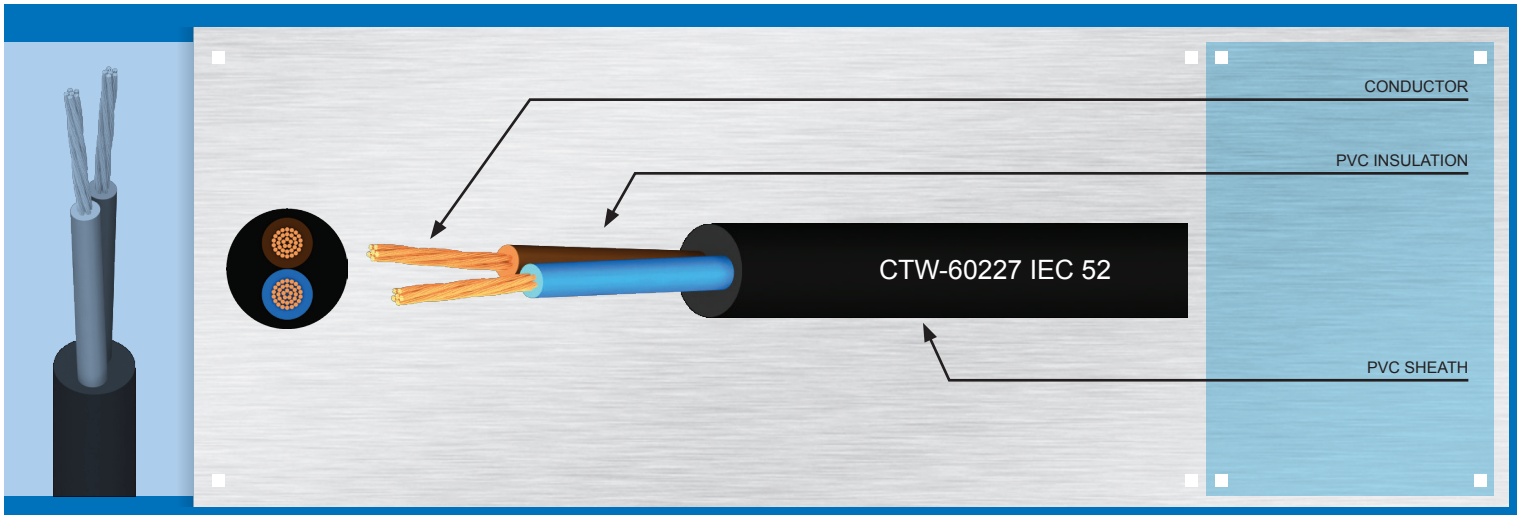
NOTE

CTW-60227 IEC 52		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFP026005	2 x 0.5	0.5	16/0.21	0.92	0.5	0.6	3.7 x 5.9	35	39.0	0.012	100/C
CFP026075	2 x 0.75	0.75	24/0.21	1.13	0.5	0.6	3.8 x 6.3	45	26.0	0.010	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-60227 IEC 52

300/300 V 70°C PVC INSULATED AND SHEATHED, FLEXIBLE TWO CORES



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 0.5 sq.mm. up to 0.75 sq.mm.

Insulation Polyvinyl chloride (PVC/D)
Colour : Blue, Brown

Sheath Polyvinyl chloride (PVC/ST5)
Colour : Black

APPLICATION

Using for electrical home apparatus (small indoor electrical appliances such as desk-lamp, fan etc.)

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 300 volts.

REFERENCE

TIS 11-2553 Part 5 Table 7
IEC 60227 Part 5 Table 7
AC Test Voltage : 2.0 kV

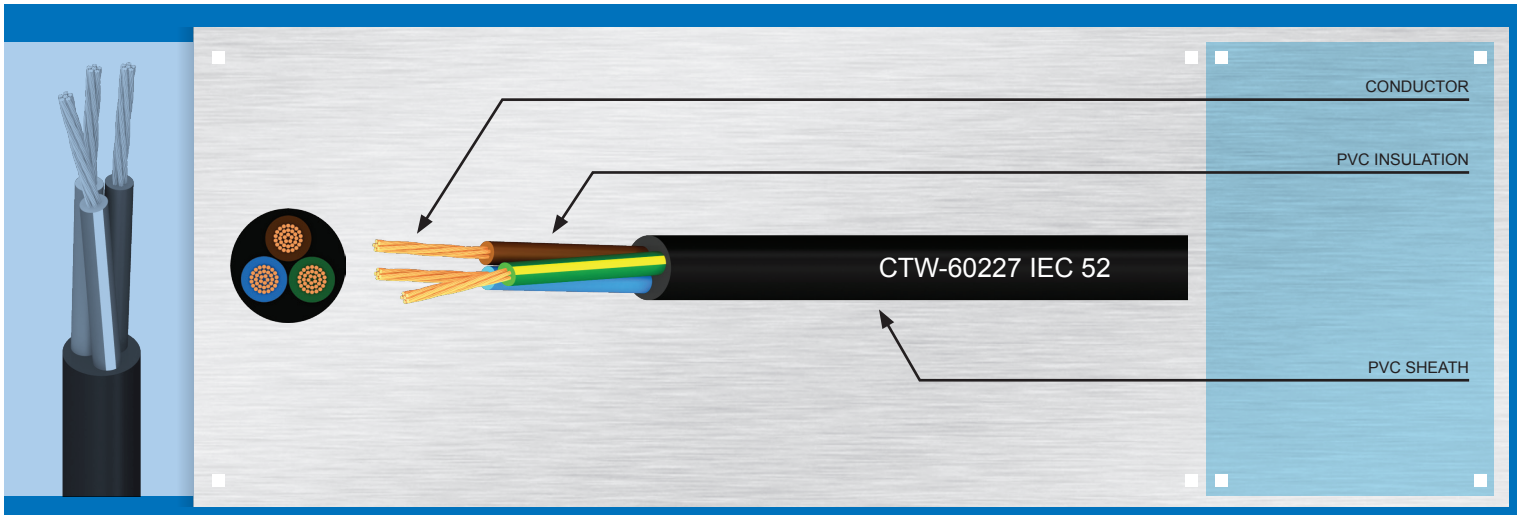
NOTE

CTW-60227 IEC 52		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFP026005	2 x 0.5	0.5	16/0.21	0.92	0.5	0.6	5.9	45	39.0	0.012	100/C
CFP026075	2 x 0.75	0.75	24/0.21	1.13	0.5	0.6	6.3	55	26.0	0.010	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-60227 IEC 52

300/300 V 70°C PVC INSULATED AND SHEATHED, FLEXIBLE THREE CORES



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 0.5 sq.mm. up to 0.75 sq.mm.

Insulation Polyvinyl chloride (PVC/D)
Colour : Blue, Brown,
Green with Yellow stripe

Sheath Polyvinyl chloride (PVC/ST5)
Colour : Black

APPLICATION

Using for electrical home apparatus (small indoor electrical appliances such as desk-lamp,fans etc.)

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 300 volts.

REFERENCE

TIS 11-2553 Part 5 Table 7
IEC 60227 Part 5 Table 7
AC Test Voltage : 2.0 kV

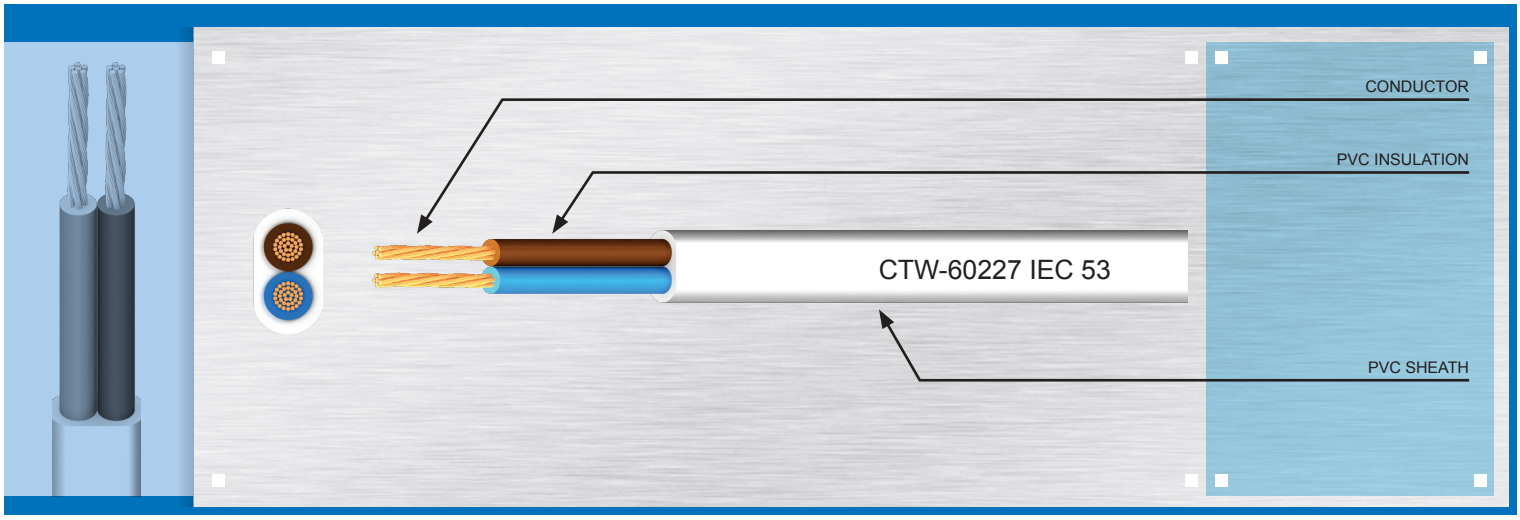
NOTE

CTW-60227 IEC 52		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFP036005	3 x 0.5	0.5	16/0.21	0.92	0.5	0.6	6.3	55	39.0	0.012	100/C
CFP036075	3 x 0.75	0.75	24/0.21	1.13	0.5	0.6	6.7	70	26.0	0.010	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-60227 IEC 53

300/500 V 70°C PVC INSULATED AND SHEATHED, FLAT TYPE, FLEXIBLE TWO CORES



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 0.75 sq.mm. up to 2.5 sq.mm.

Insulation Polyvinyl chloride (PVC/D)
Colour : Blue, Brown

Sheath Polyvinyl chloride (PVC/ST5)
Colour : White

APPLICATION

Using for electrical home apparatus (Heavy duty), down light etc

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 5 Table 9
IEC 60227 Part 5 Table 9
AC Test Voltage : 2.0 kV

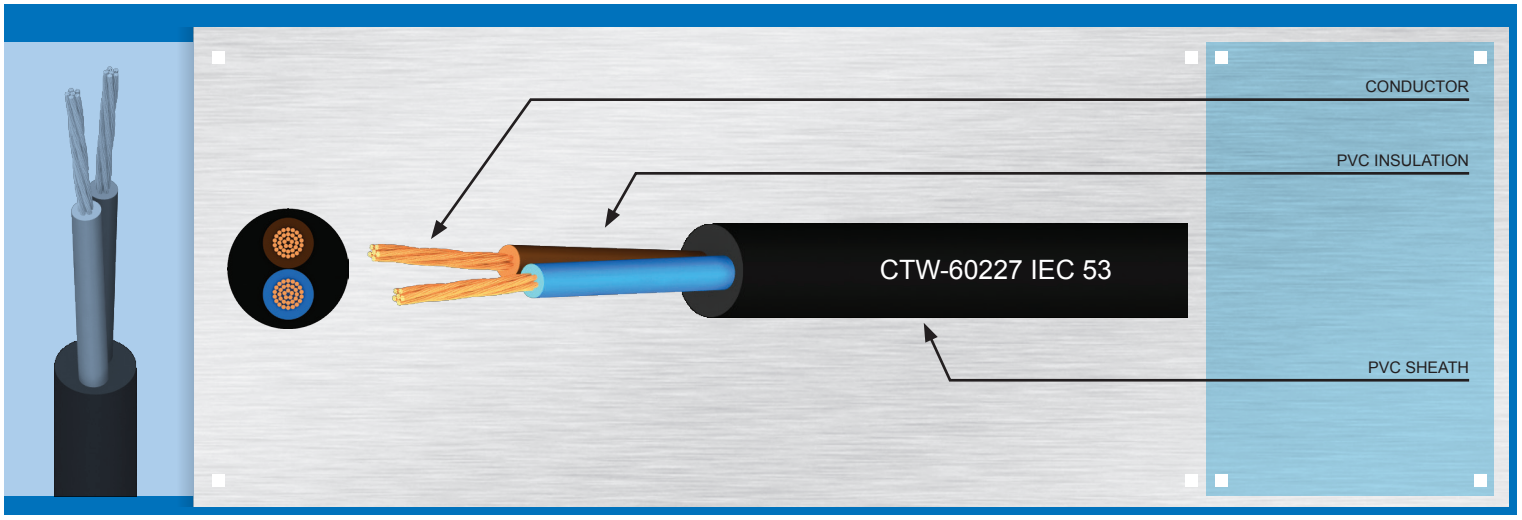
NOTE

CTW-60227 IEC 53		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFR026075	2 x 0.75	0.75	24/0.21	1.13	0.6	0.8	4.5x7.2	70	26.0	0.011	100/C
CFR026001	2 x 1	1	32/0.21	1.31	0.6	0.8	4.7x7.5	80	19.5	0.010	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW 60227 IEC 53

300/500 V 70°C PVC INSULATED AND SHEATHED, FLEXIBLE TWO CORE



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 0.75 sq.mm. up to 2.5 sq.mm.

Insulation Polyvinyl chloride (PVC/D)
Colour : Blue, Brown

Sheath Polyvinyl chloride (PVC/ST5)
Colour : Black

APPLICATION

Using for electrical home apparatus (Heavy duty), down light etc.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 5 Table 9
IEC 60227 Part 5 Table 9
AC Test Voltage : 2.0 kV

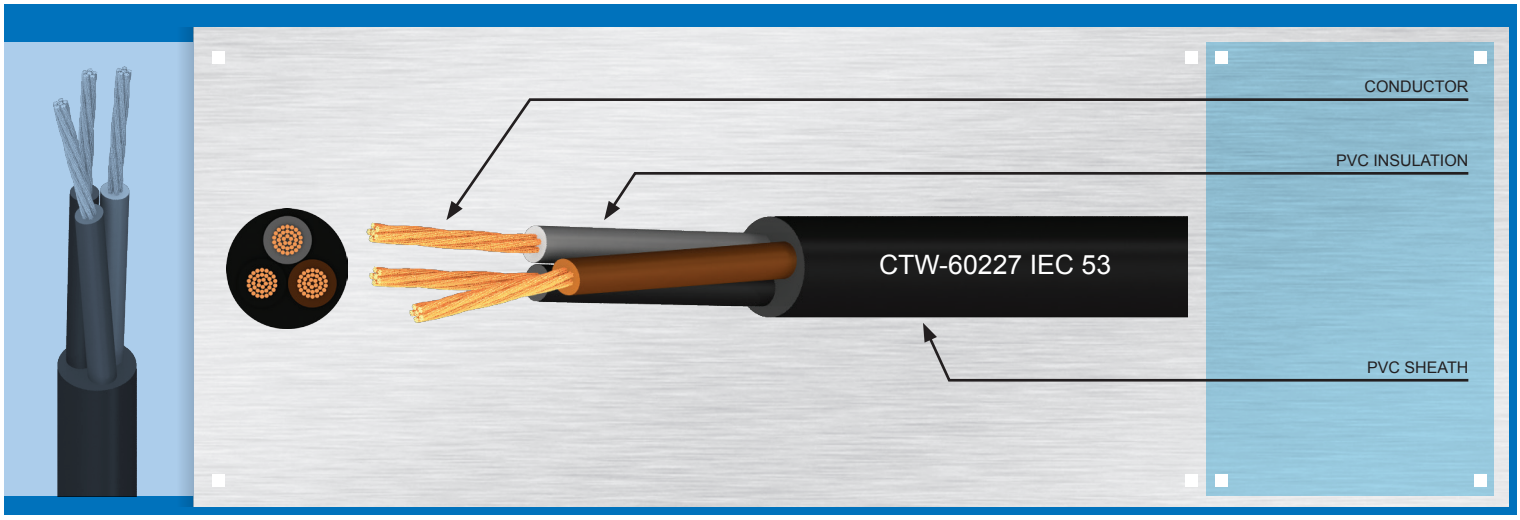
NOTE

CTW-60227 IEC 53		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFR026075	2 x 0.75	0.75	24/0.21	1.13	0.6	0.8	7.2	70	26.0	0.011	100/C
CFR026001	2 x 1	1	32/0.21	1.31	0.6	0.8	7.5	80	19.5	0.010	100/C
CFR026501	2 x 1.5	1.5	30/0.26	1.58	0.7	0.8	8.6	105	13.3	0.010	100/C
CFR026502	2 x 2.5	2.5	50/0.26	2.04	0.8	1.0	10.6	155	7.98	0.009	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-60227 IEC 53

300/500 V 70°C PVC INSULATED AND SHEATHED, FLEXIBLE THREE CORES



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 0.75 sq.mm. up to 2.5 sq.mm.

Insulation Polyvinyl chloride (PVC/D)
Colour : Brown, Black, Grey

Sheath Polyvinyl chloride (PVC/ST5)
Colour : Black

** Product code “CGP036XXX” for colour : Blue, Brown, Green with Yellow stripe **

APPLICATION

Using for electrical home apparatus (Heavy duty), down light etc.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 5 Table 9
IEC 60227 Part 5 Table 9
AC Test Voltage : 2.0 kV

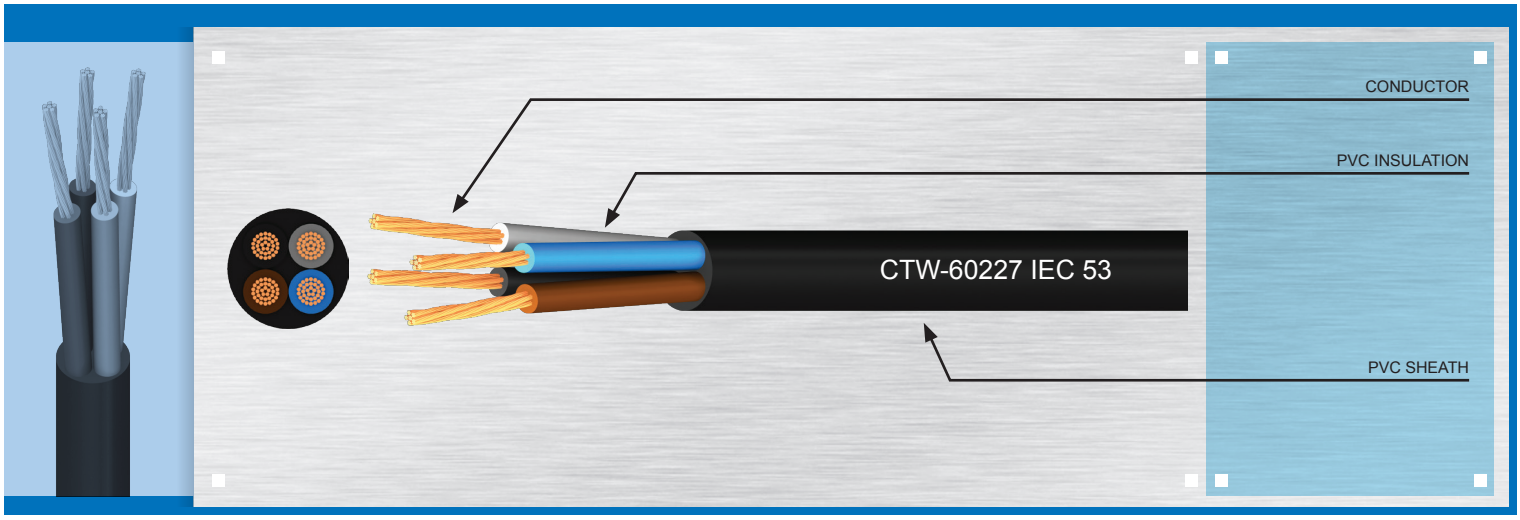
NOTE

CTW-60227 IEC 53		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFR036075	3 x 0.75	0.75	24/0.21	1.13	0.6	0.8	7.6	80	26.0	0.011	100/C
CFR036001	3 x 1	1	32/0.21	1.31	0.6	0.8	8.0	95	19.5	0.010	100/C
CFR036501	3 x 1.5	1.5	30/0.26	1.58	0.7	0.9	9.4	130	13.3	0.010	100/C
CFR036502	3 x 2.5	2.5	50/0.26	2.04	0.8	1.1	11.4	190	7.98	0.009	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-60227 IEC 53

300/500 V 70°C PVC INSULATED AND SHEATHED, FLEXIBLE FOUR CORES



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 0.75 sq.mm. up to 2.5 sq.mm.

Insulation Polyvinyl chloride (PVC/D)
Colour : Blue, Brown, Black, Grey

Sheath Polyvinyl chloride (PVC/ST5)
Colour : Black

** Product code “CGP036XXX” for colour :
Blue, Brown, Black, Green with Yellow stripe **

APPLICATION

Using for electrical home apparatus (Heavy duty), down light etc.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 5 Table 9
IEC 60227 Part 5 Table 9
AC Test Voltage : 2.0 kV

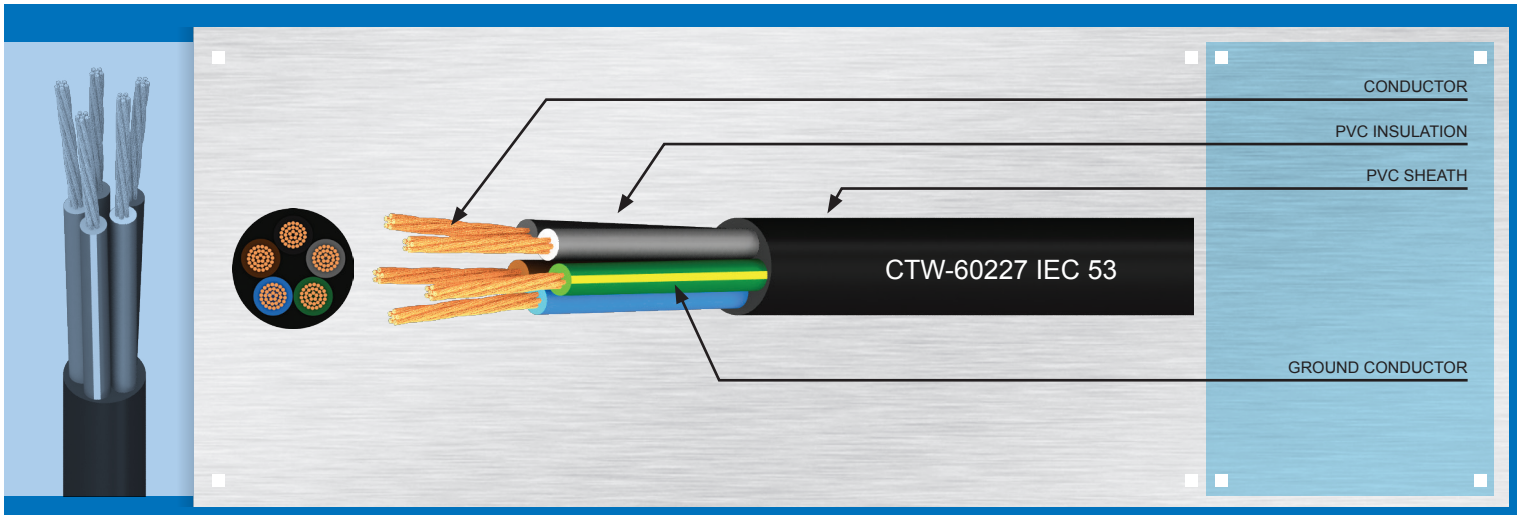
NOTE

CTW-60227 IEC 53		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFR046075	4 x 0.75	0.75	24/0.21	1.13	0.6	0.8	8.3	100	26.0	0.011	100/C
CFR046001	4 x 1	1	32/0.21	1.31	0.6	0.9	9.0	120	19.5	0.010	100/C
CFR046501	4 x 1.5	1.5	30/0.26	1.58	0.7	1.0	10.5	160	13.3	0.010	100/C
CFR046502	4 x 2.5	2.5	50/0.26	2.04	0.8	1.1	12.5	235	7.98	0.009	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-60227 IEC 53

300/500 V 70°C PVC INSULATED AND SHEATHED, FLEXIBLE FIVE CORES



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 0.75 sq.mm. up to 2.5 sq.mm.

Insulation Polyvinyl chloride (PVC/D)
Colour : Bule, Brown, Black, Grey, Green with Yellow stripe

Sheath Polyvinyl chloride (PVC/ST5)
Colour : Black

APPLICATION

Using for electrical home apparatus (Heavy duty), down light etc.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 5 Table 9
IEC 60227 Part 5 Table 9
AC Test Voltage : 2.0 kV

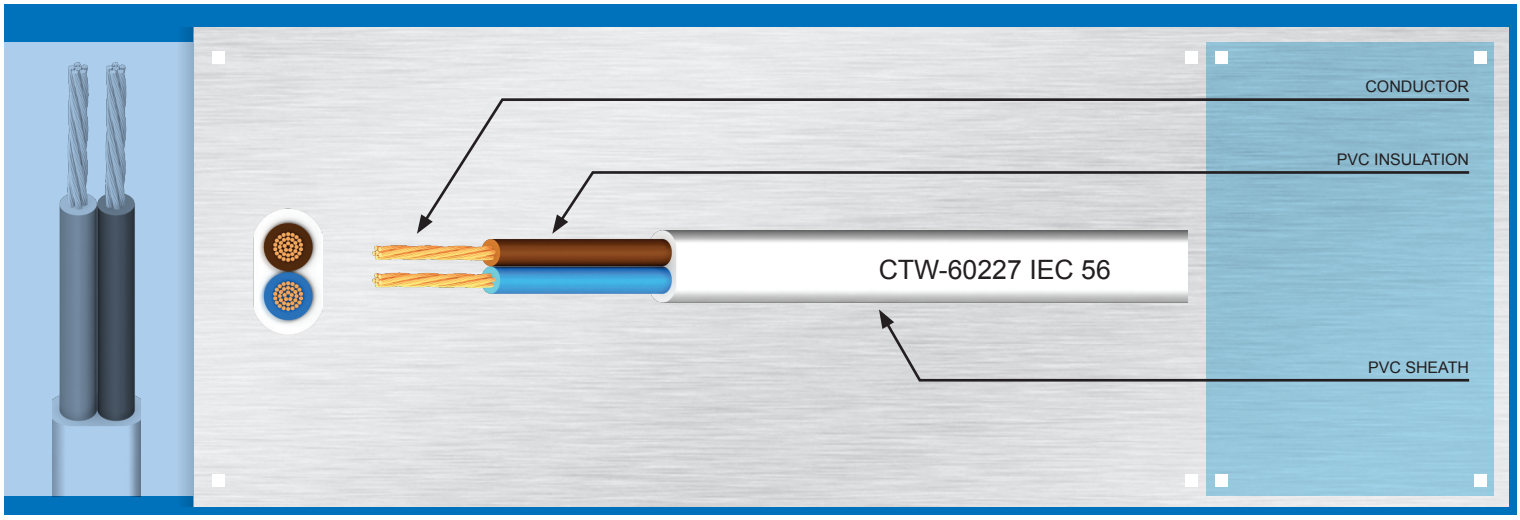
NOTE

CTW-60227 IEC 53		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CGP056075	5 x 0.75	0.75	24/0.21	1.13	0.6	0.9	9.3	120	26.0	0.011	100/C
CGP056001	5 x 1	1	32/0.21	1.31	0.6	0.9	9.8	140	19.5	0.010	100/C
CGP056501	5 x 1.5	1.5	30/0.26	1.58	0.7	1.1	11.6	190	13.3	0.010	100/C
CGP056502	5 x 2.5	2.5	50/0.26	2.04	0.8	1.2	13.9	280	7.98	0.009	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW 60227 IEC 56

300/300 V 90°C PVC INSULATED AND SHEATHED, FLAT TYPE, FLEXIBLE TWO CORES



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 0.5 sq.mm. up to 0.75 sq.mm.

Insulation Polyvinyl chloride (PVC/E)
Colour : Blue, Brown

Sheath Polyvinyl chloride (PVC/ST10)
Colour : White

APPLICATION

Using for electrical home apparatus.
(Heavy duty)

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 300 volts.

REFERENCE

TIS 11-2553 Part 5 Table 11
IEC 60227 Part 5 Table 11
AC Test Voltage : 2.0 kV

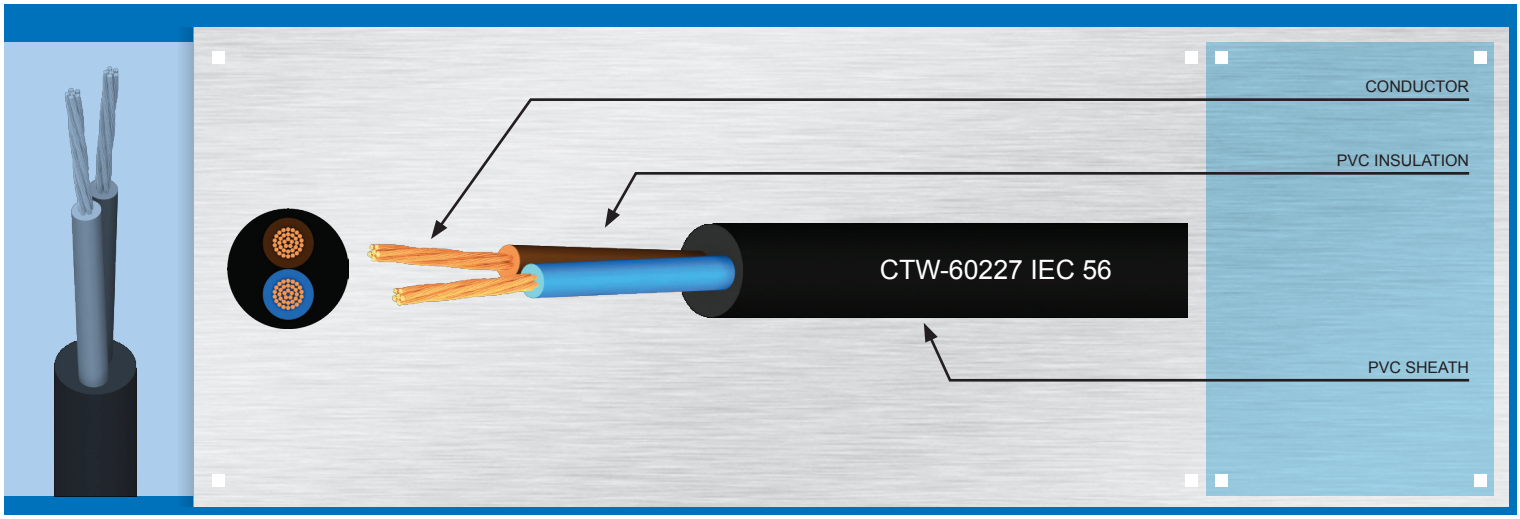
NOTE

CTW-60227 IEC 56		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 90°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFS026005	2 x 0.5	0.5	16/0.21	0.92	0.5	0.6	3.7 x 5.9	35	39.0	0.012	100/C
CFS026075	2 x 0.75	0.75	24/0.21	1.13	0.5	0.6	3.8 x 6.3	45	26.0	0.010	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-60227 IEC 56

300/300 V 90°C PVC INSULATED AND SHEATHED, FLEXIBLE TWO CORES



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 0.5 sq.mm. up to 0.75 sq.mm.

Insulation Polyvinyl chloride (PVC/E)
Colour : Blue, Brown

Sheath Polyvinyl chloride (PVC/ST10)
Colour : Black

APPLICATION

Using for electrical home apparatus.
(Heavy duty)

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 300 volts.

REFERENCE

TIS 11-2553 Part 5 Table 11
IEC 60227 Part 5 Table 11
AC Test Voltage : 2.0 kV

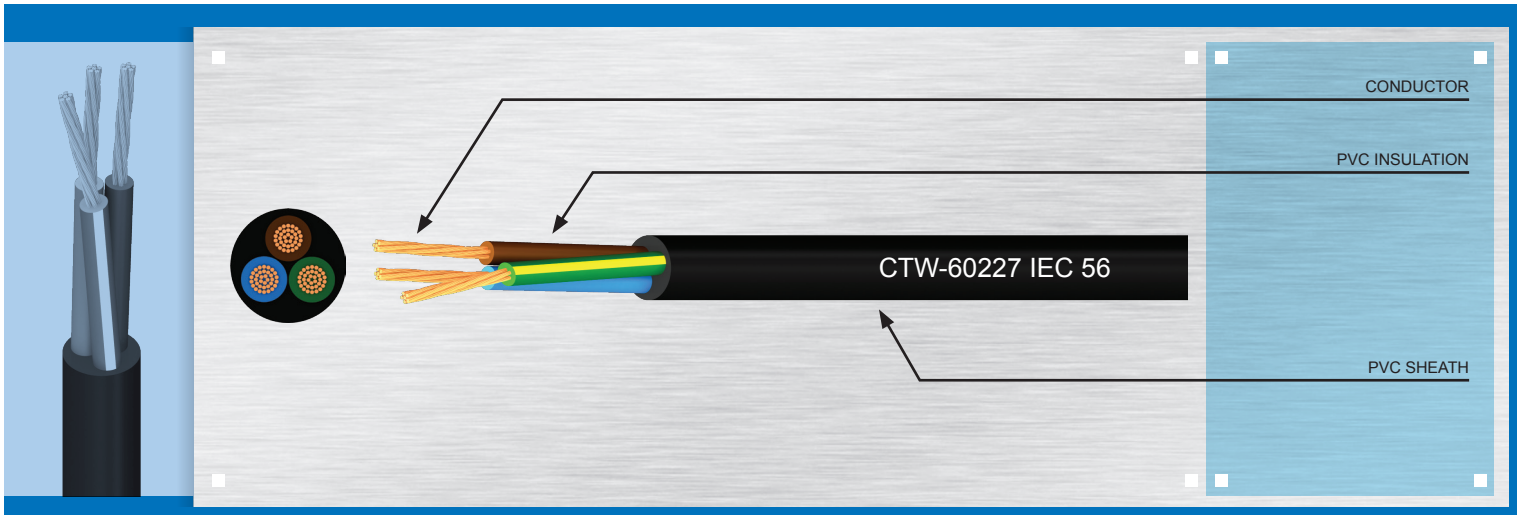
NOTE

CTW-60227 IEC 56		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 90°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFT026005	2 x 0.5	0.5	16/0.21	0.92	0.5	0.6	5.9	45	39.0	0.012	100/C
CFT026075	2 x 0.75	0.75	24/0.21	1.13	0.5	0.6	6.3	55	26.0	0.010	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-60227 IEC 56

300/300 V 90°C PVC INSULATED AND SHEATHED, FLEXIBLE THREE CORES



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 0.5 sq.mm. up to 0.75 sq.mm.

Insulation Polyvinyl chloride (PVC/E)
Colour : Blue, Brown,
Green with Yellow Stripe

Sheath Polyvinyl chloride (PVC/ST10)
Colour : Black

APPLICATION

Using for electrical home apparatus.
(Heavy duty)

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 300 volts.

REFERENCE

TIS 11-2553 Part 5 Table 11
IEC 60227 Part 5 Table 11
AC Test Voltage : 2.0 kV

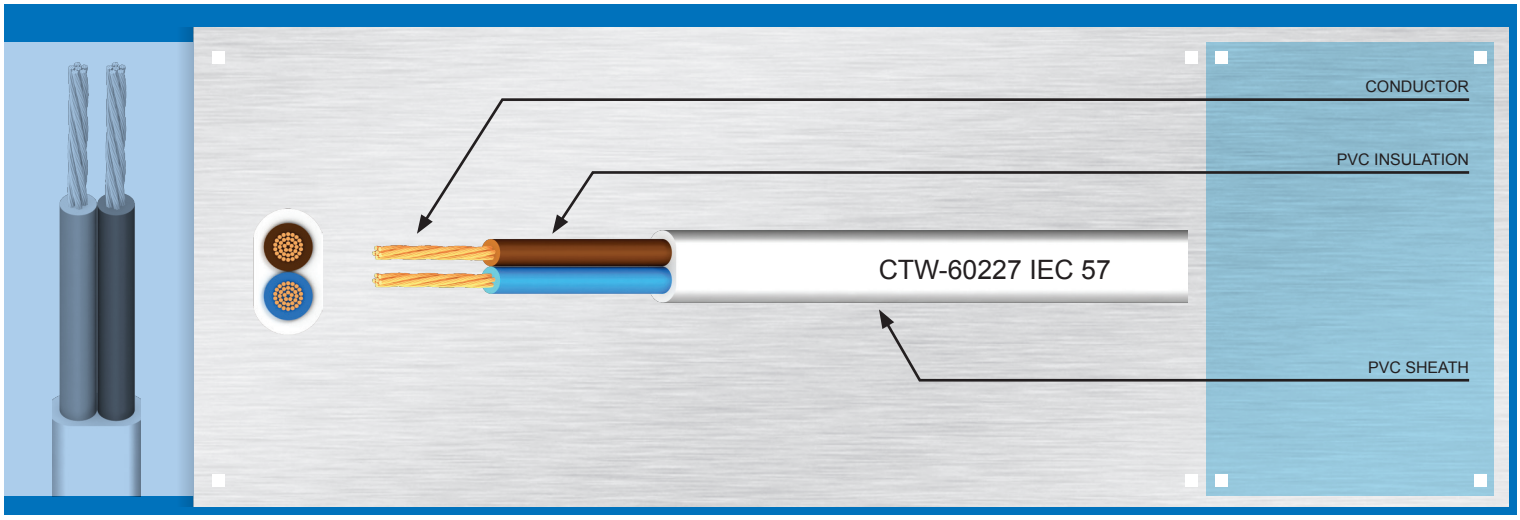
NOTE

CTW-60227 IEC 56		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFT036005	3 x 0.5	0.5	16/0.21	0.92	0.5	0.6	6.3	55	39.0	0.012	100/C
CFT036075	3 x 0.75	0.75	32/0.21	1.13	0.5	0.6	6.7	70	26.0	0.010	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-60227 IEC 57

300/500 V 90°C PVC INSULATED AND SHEATHED, FLAT TYPE, FLEXIBLE TWO CORES



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 0.75 sq.mm. up to 1 sq.mm.

Insulation Polyvinyl chloride (PVC/E)
Colour : Blue, Brown

Sheath Polyvinyl chloride (PVC/ST10)
Colour : White

APPLICATION

Using for electrical home apparatus (Heavy duty), down light etc.

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 5 Table 13
IEC 60227 Part 5 Table 13
AC Test Voltage : 2.0 kV

NOTE

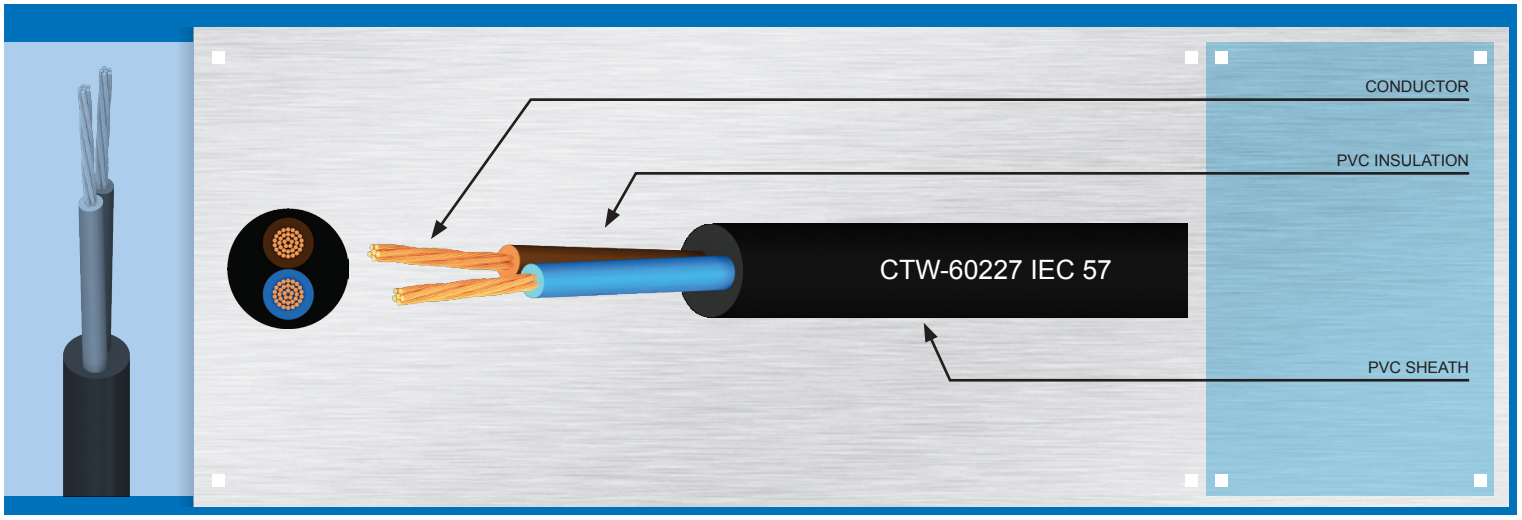
CTW-60227 IEC 57		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFU026075	2 x 0.75	0.75	24/0.21	1.13	0.6	0.8	4.5 x 7.2	50	26.0	0.011	100/C
CFU026001	2 x 1	1	32/0.21	1.31	0.6	0.8	4.7 x 7.5	60	19.5	0.010	100/C

C = Packing in coil
R = Packing in reel

CHAROONG THAI WIRE & CABLE PUBLIC COMPANY LIMITED

CABLE TYPE : CTW-60227 IEC 57

300/500 V 90°C PVC INSULATED AND SHEATHED, FLEXIBLE TWO CORES



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 0.75 sq.mm. up to 2.5 sq.mm.

Insulation Polyvinyl chloride (PVC/E)
Colour : Blue, Brown

Sheath Polyvinyl chloride (PVC/ST10)
Colour : Black

APPLICATION

Using for electrical home apparatus (Heavy duty), down light etc.

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 5 Table 13
IEC 60227 Part 5 Table 13
AC Test Voltage : 2.0 kV

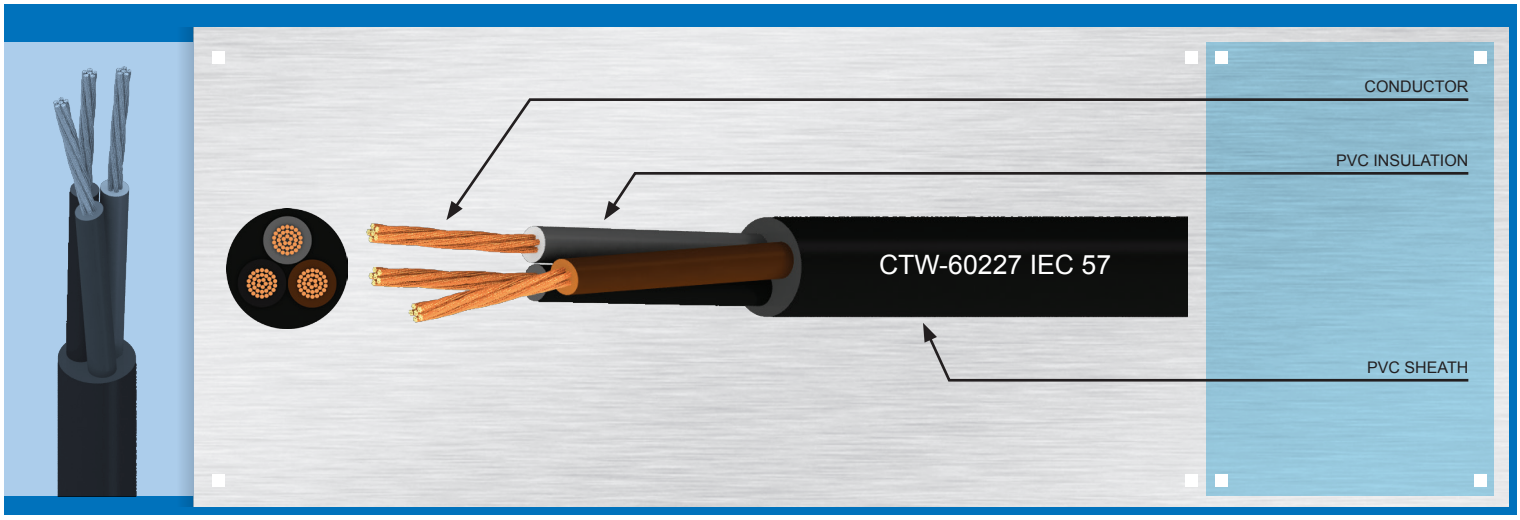
NOTE

CTW-60227 IEC 57		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFV026075	2 x 0.75	0.75	24/0.21	1.13	0.6	0.8	7.2	70	26.0	0.011	100/C
CFV026001	2 x 1	1	32/0.21	1.31	0.6	0.8	7.5	80	19.5	0.010	100/C
CFV026501	2 x 1.5	1.5	30/0.26	1.58	0.7	0.8	8.6	105	13.3	0.010	100/C
CFV026502	2 x 2.5	2.5	50/0.26	2.04	0.8	1.0	10.6	155	7.98	0.009	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-60227 IEC 57

300/500 V 90°C PVC INSULATED AND SHEATHED, FLEXIBLE THREE CORES



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 0.75 sq.mm. up to 2.5 sq.mm.

Insulation Polyvinyl chloride (PVC/E)
Colour : Brown, Black, Grey

Sheath Polyvinyl chloride (PVC/ST10)
Colour : Black

** Product code “CGQ036XXX” for colour :
Blue, Brown, Green with Yellow stripe **

APPLICATION

Using for electrical home apparatus (Heavy duty), down light etc.

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 5 Table 13
IEC 60227 Part 5 Table 13
AC Test Voltage : 2.0 kV

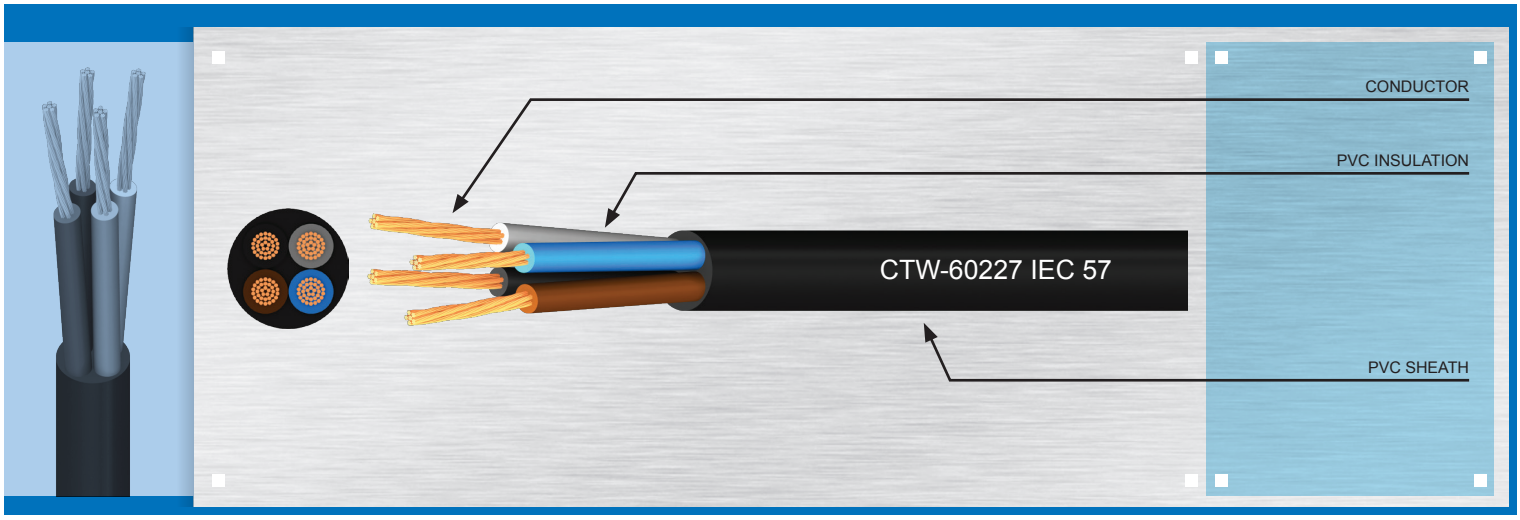
NOTE

CTW-60227 IEC 57		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 90°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFV036075	3 x 0.75	0.75	24/0.21	1.13	0.6	0.8	7.6	80	26.0	0.011	100/C
CFV036001	3 x 1	1	32/0.21	1.31	0.6	0.8	8.0	95	19.5	0.010	100/C
CFV036501	3 x 1.5	1.5	30/0.26	1.58	0.7	0.9	9.4	130	13.3	0.010	100/C
CFV036502	3 x 2.5	2.5	50/0.26	2.04	0.8	1.1	11.4	190	7.98	0.009	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-60227 IEC 57

300/500 V 90°C PVC INSULATED AND SHEATHED, FLEXIBLE FOUR CORES



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 0.75 sq.mm. up to 2.5 sq.mm.

Insulation Polyvinyl chloride (PVC/E)
Colour : Blue, Brown, Black, Grey

Sheath Polyvinyl chloride (PVC/ST10)
Colour : Black

** Product code “CGQ046XXX” for colour :
Brown, Black, Grey, Green with Yellow stripe **

APPLICATION

Using for electrical home apparatus (Heavy duty), down light etc.

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 5 Table 13
IEC 60227 Part 5 Table 13
AC Test Voltage : 2.0 kV

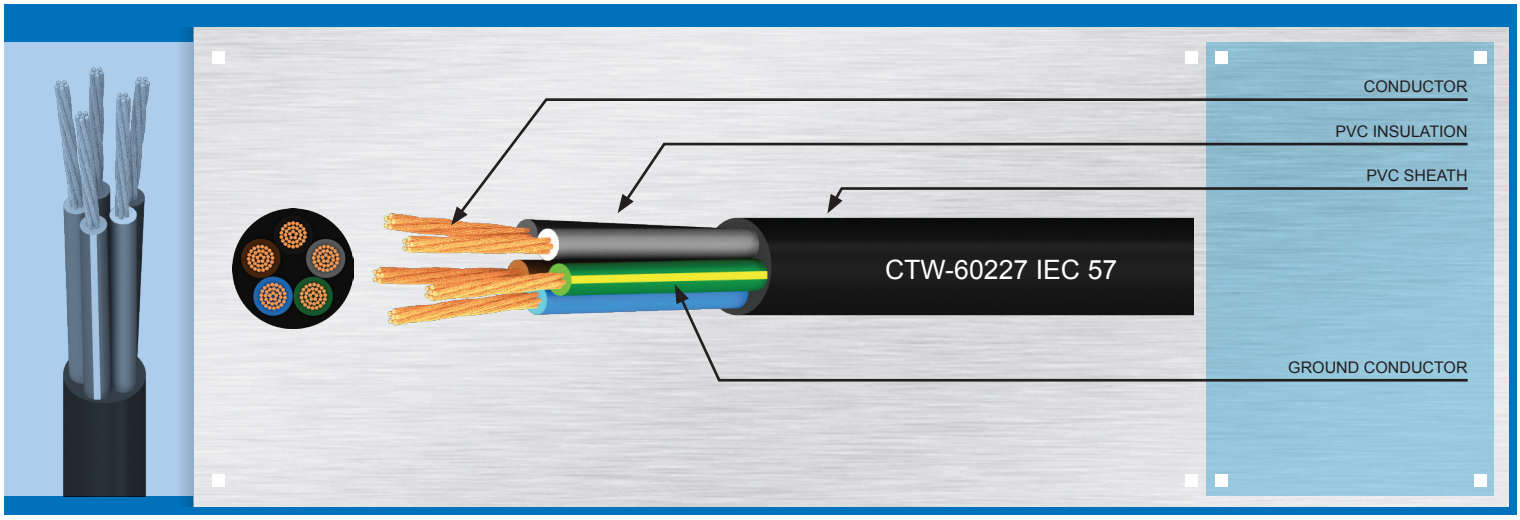
NOTE

CTW-60227 IEC 57		Conductor			Thickness of Insulation	Thickness of Inner Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 90°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFV046075	4 x 0.75	0.75	24/0.21	1.13	0.6	0.8	8.3	100	26.0	0.011	100/C
CFV046001	4 x 1	1	32/0.21	1.31	0.6	0.9	9.0	120	19.5	0.010	100/C
CFV046501	4 x 1.5	1.5	30/0.26	1.58	0.7	1.0	10.5	160	13.3	0.010	100/C
CFV046502	4 x 2.5	2.5	50/0.26	2.04	0.8	1.1	12.5	235	7.98	0.009	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-60227 IEC 57

300/500 V 90°C PVC INSULATED AND SHEATHED, FLEXIBLE FIVE CORES



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 0.75 sq.mm. up to 2.5 sq.mm.

Insulation Polyvinyl chloride (PVC/E)
Colour : Blue, Brown, Black, Grey, Green with Yellow stripe

Sheath Polyvinyl chloride (PVC/ST10)
Colour : Black

APPLICATION

Using for electrical home apparatus (Heavy duty), down light etc.

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 5 Table 13
IEC 60227 Part 5 Table 13
AC Test Voltage : 2.0 kV

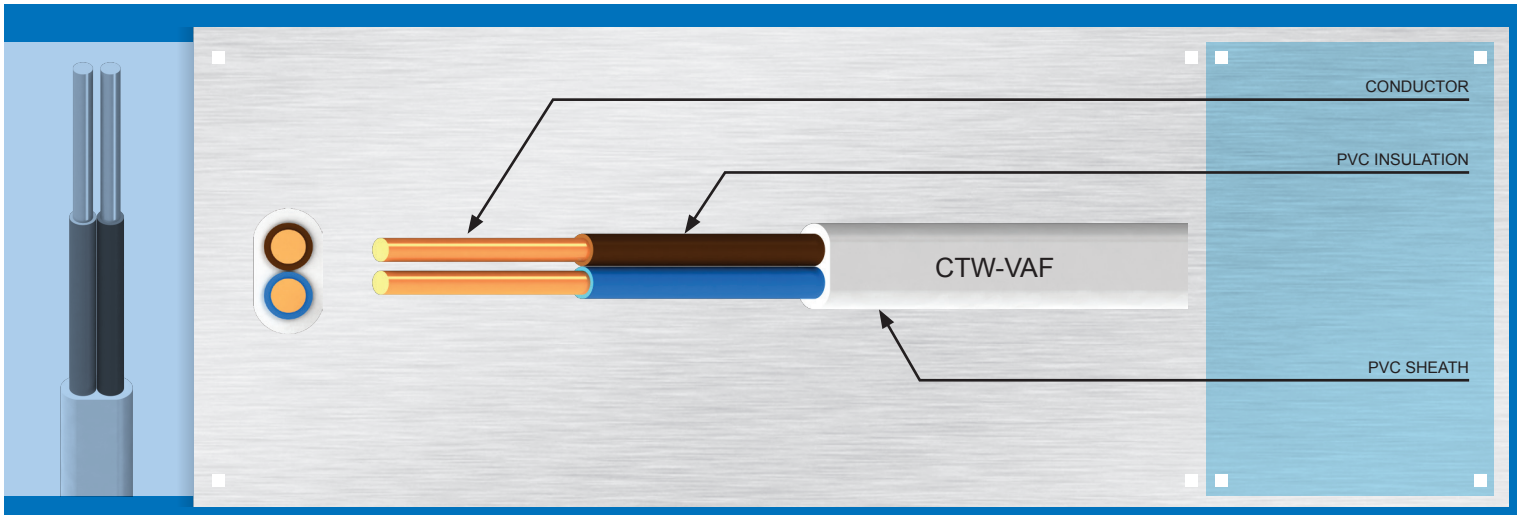
NOTE

CTW-60227 IEC 57		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 90°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CGQ056075	5 x 0.75	0.75	24/0.21	1.13	0.6	0.9	9.3	125	26.0	0.011	100/C
CGQ056001	5 x 1	1	32/0.21	1.31	0.6	0.9	9.8	140	19.5	0.010	100/C
CGQ056501	5 x 1.5	1.5	30/0.26	1.58	0.7	1.1	11.6	200	13.3	0.010	100/C
CGQ056502	5 x 2.5	2.5	50/0.26	2.04	0.8	1.2	13.9	290	7.98	0.009	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-VAF

300/500 V 70ºC PVC INSULATED AND SHEATHED, FLAT TYPE, TWO CORES



CONSTRUCTION

Conductor Anneal copper, solid or stranded
Sizes 1 sq.mm. up to 16 sq.mm.

Insulation Polyvinyl chloride (PVC/C)
Colour : Blue, Brown

Sheath Polyvinyl chloride (PVC/ST4)
Colour : White

APPLICATION

Using for surface or above ceilling wiring, direct embedded in plaster.
Do not using in conduit and burial in ground.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 101 Table 1
AC Test Voltage : 2.0 kV

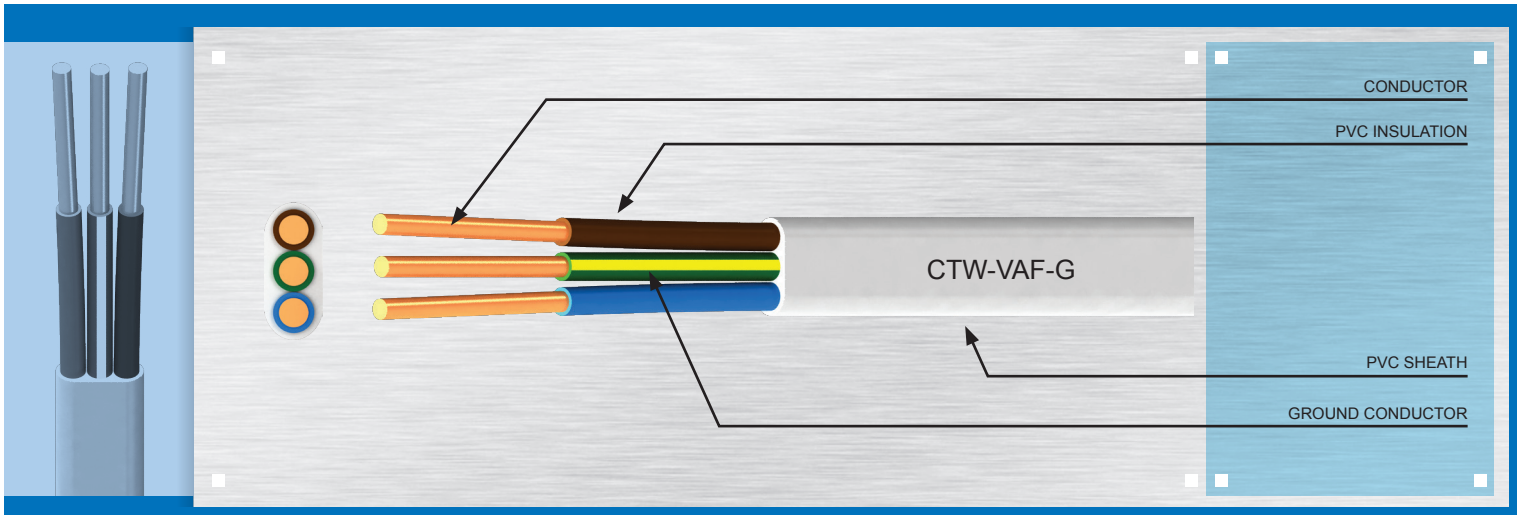
NOTE

CTW-VAF		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)							
		sq.mm.	No.	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFW021001	2 x 1	1	1	1.12	0.6	0.9	4.7 x 7.4	60	18.10	0.0110	100/C
CFW021501	2 x 1.5	1.5	1	1.37	0.7	0.9	5.4 x 8.4	75	12.10	0.0110	100/C
CFW021502	2 x 2.5	2.5	1	1.74	0.8	1.0	6.2 x 9.8	110	7.41	0.0100	100/C
CFW024004	2 x 4	4	7	2.52	0.8	1.1	7.2 x 11.5	165	4.61	0.0077	100/C
CFW024006	2 x 6	6	7	3.09	0.8	1.1	8.0 x 13.0	215	3.08	0.0065	100/C
CFW024010	2 x 10	10	7	3.99	1.0	1.2	9.6 x 16.0	335	1.83	0.0065	100/C
CFW024016	2 x 16	16	7	5.04	1.0	1.3	11.0 x 18.5	480	1.15	0.0052	100/C

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-VAF-G

300/500 V 70ºC PVC INSULATED AND SHEATHED, FLAT TYPE, TWO CORES WITH GROUND



CONSTRUCTION

Conductor Anneal copper, solid or stranded
Sizes 1 sq.mm. up to 16 sq.mm.

Insulation Polyvinyl chloride (PVC/C)
Colour : Blue, Brown, Green with Yellow stripe

Sheath Polyvinyl chloride (PVC/ST4)
Colour : White

APPLICATION

Using for surface or above ceilling wiring, in wire way.
Do not wiring in conduit and burial inground.
The cable being suitable for use in grounded electrical system.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 500 volts.

REFERENCE

TIS 11-2553 Part 101 Table 1
AC Test Voltage : 2.0 kV

NOTE

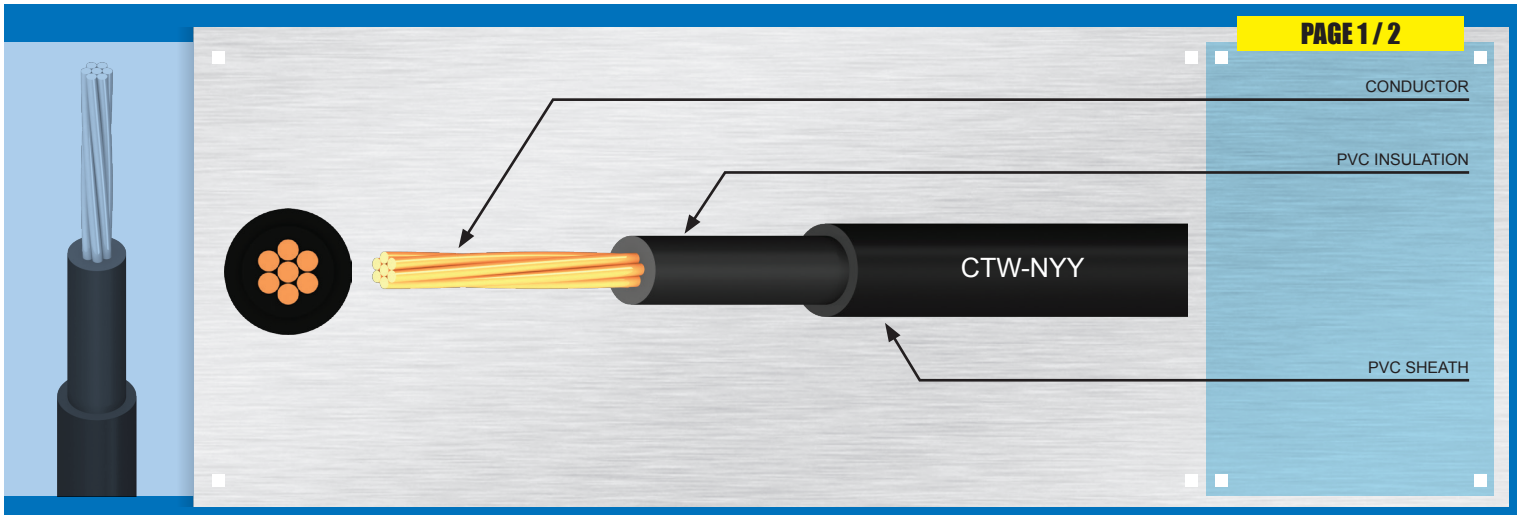
CTW-VAF-G		Phase Core			Ground Core			Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C (Phase)	Maximum Conductor Resistance at 20°C (Ground)	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Number of Wire	Diameter (Approx)	Thickness of Insulation	Number of Wire	Diameter (Approx)	Thickness of Insulation							
		No.	mm	mm	No.	mm	mm	mm	mm	kg/km	Ω/km	Ω/km	MΩ-km	m
CFX021001	2 x 1/1	1	1.12	0.6	1	1.12	0.6	0.9	4.7 x 9.8	85	18.10	18.10	0.0110	100/C
CFX021501	2 x 1.5/1.5	1	1.37	0.7	1	1.37	0.7	0.9	5.4 x 11.5	110	12.10	12.10	0.0110	100/C
CFX021502	2 x 2.5/2.5	1	1.74	0.8	1	1.74	0.8	1.0	6.2 x 13.5	160	7.41	7.41	0.0100	100/C
CFX024004	2 x 4/4	7	2.52	0.8	7	2.52	0.8	1.1	7.4 x 16.5	240	4.61	4.61	0.0077	100/C
CFX024006	2 x 6/6	7	3.09	0.8	7	3.09	0.8	1.1	8.0 x 18.0	315	3.08	3.08	0.0065	100/C
CFX024010	2 x 10/10	7	3.99	1.0	7	3.99	1.0	1.2	9.6 x 22.5	495	1.83	1.83	0.0065	100/C
CFX024016	2 x 16/16	7	5.04	1.0	7	5.04	1.0	1.3	11.0 x 26.5	710	1.15	1.15	0.0052	100/C

C = Packing in coil
R = Packing in reel

CHAROONG THAI WIRE & CABLE PUBLIC COMPANY LIMITED

CABLE TYPE : CTW-NYY

450/750 V 70°C PVC INSULATED AND SHEATHED, SINGLE CORE



CONSTRUCTION

Conductor Anneal copper, solid or stranded
Sizes 1 sq.mm. up to 500 sq.mm.

Insulation Polyvinyl chloride (PVC/C)
Colour : Black

Sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

APPLICATION

Building wiring for installation on cable tray, conduits and direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

REFERENCE

TIS 11-2553 Part 101 Table 3
AC Test Voltage : 2.5 kV

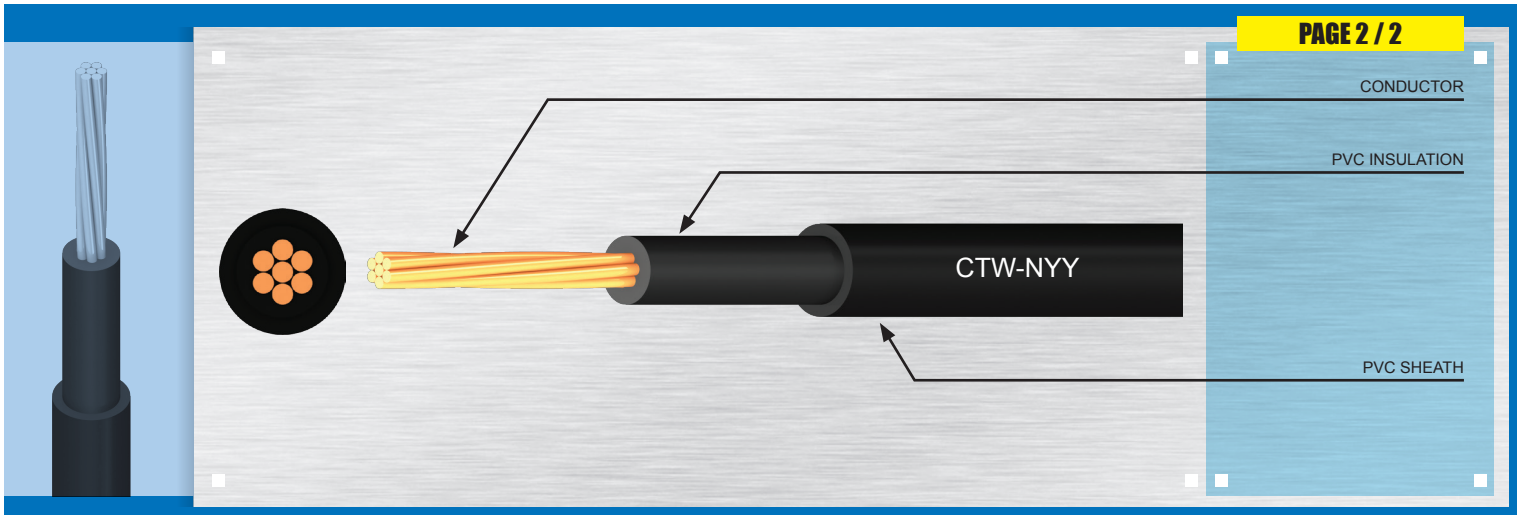
NOTE

CTW-NYY		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFE011001	1 x 1	1	1	1.12	1.5	1.8	8.6	90	18.10	0.0207	100/C
CFE014001	1 x 1	1	7	1.29	1.5	1.8	8.8	95	18.10	0.0200	100/C
CFE011501	1 x 1.5	1.5	1	1.37	1.5	1.8	9.0	100	12.10	0.0184	100/C
CFE014501	1 x 1.5	1.5	7	1.56	1.5	1.8	9.2	105	12.10	0.0175	100/C
CFE011502	1 x 2.5	2.5	1	1.74	1.5	1.8	9.4	110	7.41	0.0157	100/C
CFE014502	1 x 2.5	2.5	7	2.01	1.5	1.8	9.8	120	7.41	0.0146	100/C
CFE011004	1 x 4	4	1	2.21	1.5	1.8	10.0	135	4.61	0.0135	100/C
CFE014004	1 x 4	4	7	2.52	1.5	1.8	10.5	140	4.61	0.0124	100/C
CFE014006	1 x 6	6	7	3.09	1.5	1.8	11.0	170	3.08	0.0107	100/C
CFE014010	1 x 10	10	7	3.99	1.5	1.8	12.0	225	1.83	0.0088	500/R
CFE014016	1 x 16	16	7	5.04	1.5	1.8	13.0	300	1.15	0.0074	500/R
CFE014025	1 x 25	25	7	6.33	1.5	1.8	14.5	410	0.727	0.0061	500/R
CFE014035	1 x 35	35	7	7.47	1.5	1.8	16.0	520	0.524	0.0053	500/R
CFE014050	1 x 50	50	19	8.80	1.5	1.8	17.0	655	0.387	0.0046	500/R
CFE014070	1 x 70	70	19	10.55	1.5	1.8	19.0	880	0.268	0.0039	500/R
CFE014095	1 x 95	95	19	12.45	1.7	1.8	21.5	1,180	0.193	0.0038	500/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-NYY

450/750 V 70°C PVC INSULATED AND SHEATHED, SINGLE CORE



CONSTRUCTION

Conductor Anneal copper, solid or stranded
Sizes 1 sq.mm. up to 500 sq.mm.

Insulation Polyvinyl chloride (PVC/C)
Colour : Black

Sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

APPLICATION

Building wiring for installation on cable tray, conduits and direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

REFERENCE

TIS 11-2553 Part 101 Table 3
AC Test Voltage : 2.5 kV

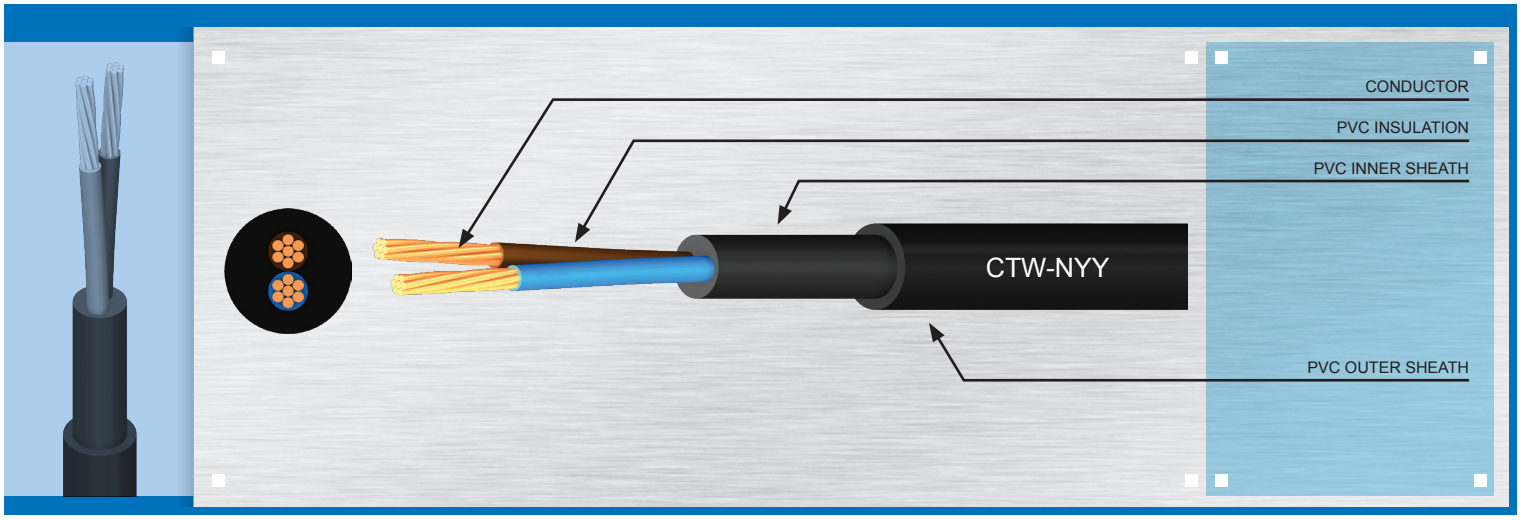
NOTE

CTW-NYY		Conductor			Thickness of Insulation	Thickess of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFE014120	1 x 120	120	37	14.00	1.7	1.8	23.0	1,440	0.153	0.0034	500/R
CFE014150	1 x 150	150	37	15.54	1.9	2.0	26.0	1,765	0.1240	0.0034	500/R
CFE014185	1 x 185	185	37	17.43	2.1	2.0	28.0	2,175	0.0991	0.0034	500/R
CFE014240	1 x 240	240	61	19.98	2.3	2.2	31.5	2,820	0.0754	0.0033	500/R
CFE014300	1 x 300	300	61	22.41	2.5	2.2	35.0	3,480	0.0601	0.0032	500/R
CFE014400	1 x 400	400	61	25.29	2.7	2.2	38.5	4,370	0.0470	0.0030	500/R
CFE014500	1 x 500	500	61	28.71	3.1	2.4	43.0	5,500	0.0366	0.0031	500/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-NYY

450/750 V 70°C PVC INSULATED AND DOUBLE SHEATHED, TWO CORES



CONSTRUCTION

Conductor Anneal copper, stranded
Sizes 50 sq.mm. up to 300 sq.mm.

Insulation Polyvinyl chloride (PVC/C)
Colour : Blue, Brown

Inner sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

Outer sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

APPLICATION

Building wiring for installation on cable tray, conduits and direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

REFERENCE

TIS 11-2553 Part 101 Table 4
AC Test Voltage : 2.5 kV

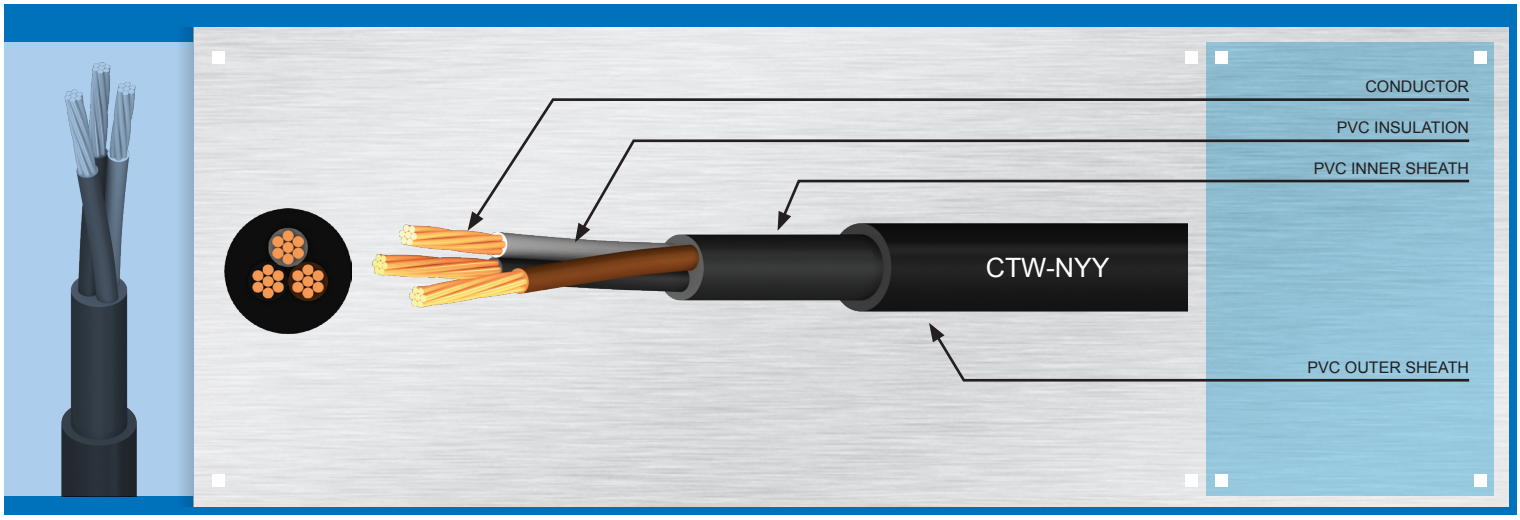
NOTE

CTW-NYY		Conductor			Thickness of Insulation	Thickness of Inner Sheath	Thickness of Outer Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)								
		sq.mm.	No./mm	mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFE024050	2 x 50	50	19	8.80	1.5	1.2	2.2	33.5	1,830	0.387	0.0046	500/R
CFE024070	2 x 70	70	19	10.55	1.5	1.5	2.2	38.0	2,460	0.268	0.0039	500/R
CFE024095	2 x 95	95	19	12.45	1.7	1.5	2.2	42.5	3,235	0.193	0.0038	500/R
CFE024120	2 x 120	120	37	14.00	1.7	1.5	2.4	46.5	3,945	0.153	0.0034	500/R
CFE024150	2 x 150	150	37	15.54	1.9	1.8	2.6	52.0	4,860	0.124	0.0034	500/R
CFE024185	2 x 185	185	37	17.43	2.1	1.8	2.8	57.0	5,875	0.0991	0.0034	500/R
CFE024240	2 x 240	240	61	19.98	2.3	2.0	3.0	64.0	7,700	0.0754	0.0033	300/R
CFE024300	2 x 300	300	61	22.41	2.5	2.0	3.2	70.5	9,460	0.0601	0.0032	300/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-NYY

450/750 V 70°C PVC INSULATED AND DOUBLE SHEATHED, THREE CORES



CONSTRUCTION

Conductor	Anneal copper, stranded Sizes 50 sq.mm. up to 300 sq.mm.
Insulation	Polyvinyl chloride (PVC/C) Colour : Brown, Black, Grey
Inner sheath	Polyvinyl chloride (PVC/ST4) Colour : Black
Outer sheath	Polyvinyl chloride (PVC/ST4) Colour : Black

APPLICATION

Building wiring for installation on cable tray, conduits and direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

REFERENCE

TIS 11-2553 Part 101 Table 4
AC Test Voltage : 2.5 kV

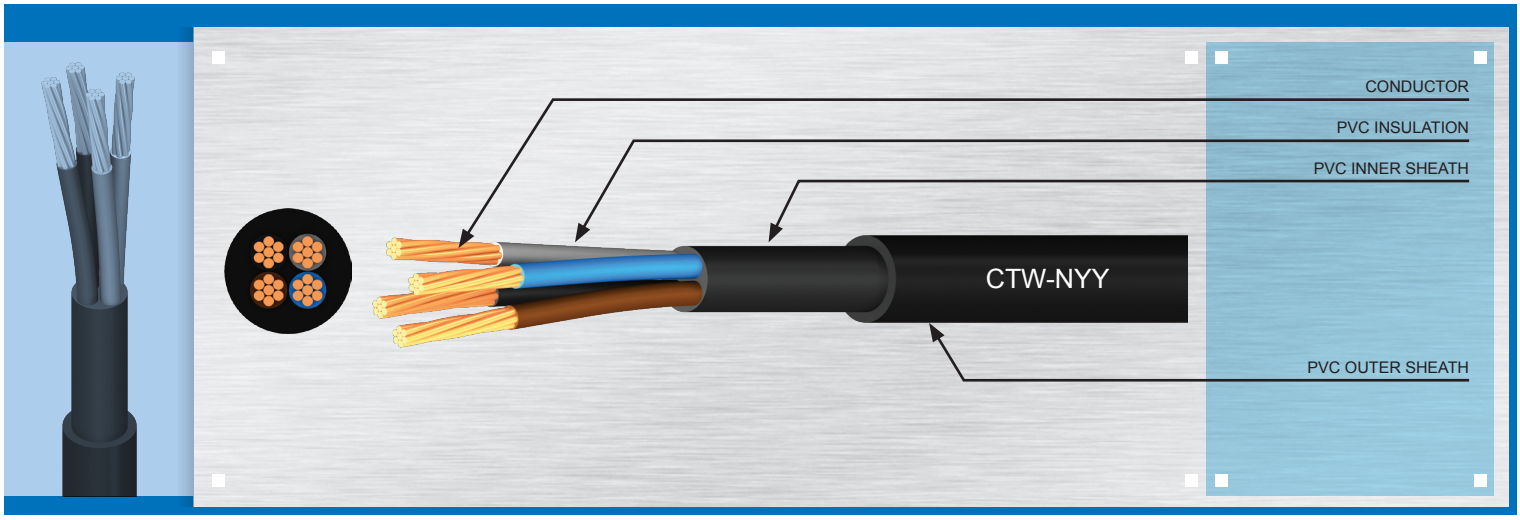
NOTE

CTW-NYY		Conductor			Thickness of Insulation	Thickness of Inner Sheath	Thickness of Outer Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)								
		sq.mm.	No./mm	mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFE034050	3 x 50	50	19	8.80	1.5	1.5	2.2	36.0	2,380	0.387	0.0046	500/R
CFE034070	3 x 70	70	19	10.55	1.5	1.5	2.2	40.5	3,160	0.268	0.0039	500/R
CFE034095	3 x 95	95	19	12.45	1.7	1.5	2.4	46.0	4,235	0.193	0.0038	500/R
CFE034120	3 x 120	120	37	14.90	1.7	1.8	2.6	50.5	5,245	0.153	0.0034	500/R
CFE034150	3 x 150	150	37	15.54	1.9	1.8	2.8	56.0	6,370	0.124	0.0034	300/R
CFE034185	3 x 185	185	37	17.43	2.1	2.0	3.0	61.5	7,905	0.0991	0.0034	300/R
CFE034240	3 x 240	240	61	19.98	2.3	2.0	3.2	69.0	10,135	0.0754	0.0033	200/R
CFE034300	3 x 300	300	61	22.41	2.5	2.2	3.4	76.0	12,555	0.0601	0.0032	200/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-NYY

450/750 V 70°C PVC INSULATED AND DOUBLE SHEATHED, FOUR CORES



CONSTRUCTION

Conductor Anneal copper, stranded
Sizes 50 sq.mm. up to 300 sq.mm.

Insulation Polyvinyl chloride (PVC/C)
Colour : Blue, Brown, Black, Grey

Inner sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

Outer sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

APPLICATION

Building wiring for installation on cable tray, conduits and direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

REFERENCE

TIS 11-2553 Part 101 Table 4
AC Test Voltage : 2.5 kV

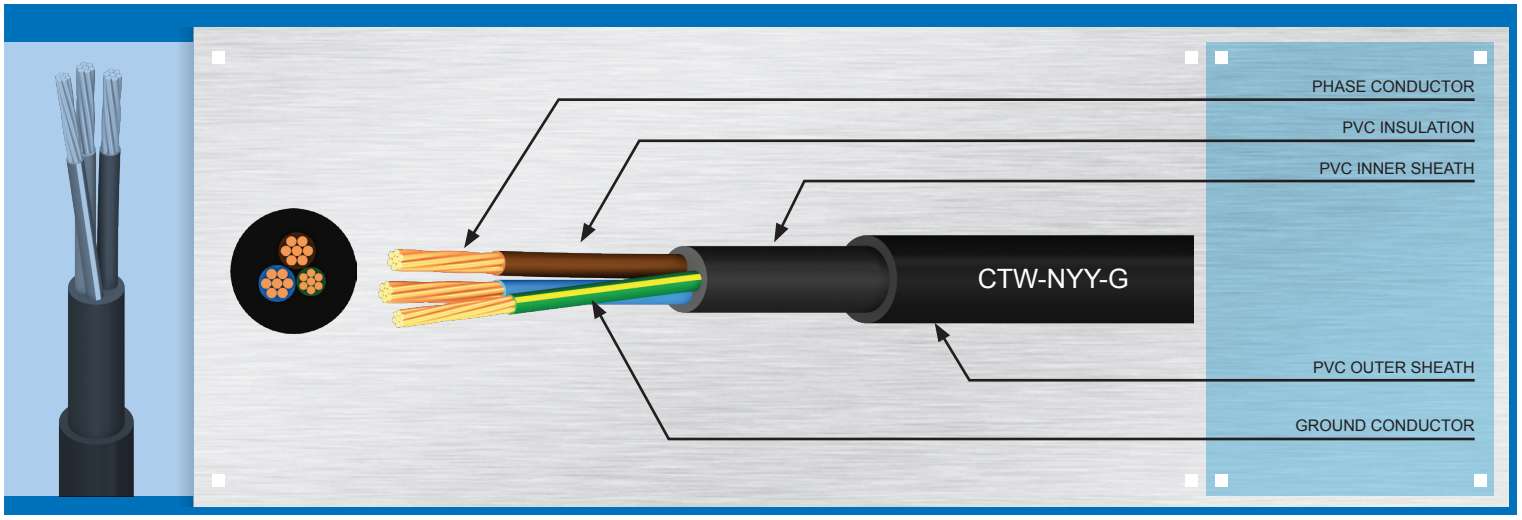
NOTE

CTW-NYY		Conductor			Thickness of Insulation	Thickness of Inner Sheath	Thickness of Outer Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)								
		sq.mm.	No./mm	mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFE044050	4 x 50	50	19	8.80	1.5	1.5	2.2	39.5	2,985	0.387	0.0046	500/R
CFE044070	4 x 70	70	19	10.55	1.5	1.5	2.4	44.5	4,035	0.268	0.0039	500/R
CFE044095	4 x 95	95	19	12.45	1.7	1.8	2.6	51.5	5,485	0.193	0.0038	500/R
CFE044120	4 x 120	120	37	14.90	1.7	1.8	2.8	56.0	6,700	0.153	0.0034	200/R
CFE044150	4 x 150	150	37	15.54	1.9	2.0	3.0	62.0	8,195	0.124	0.0034	300/R
CFE044185	4 x 185	185	37	17.43	2.1	2.0	3.2	68.0	10,120	0.0991	0.0034	200/R
CFE044240	4 x 240	240	61	19.98	2.3	2.2	3.4	76.5	13,055	0.0754	0.0033	200/R
CFE044300	4 x 300	300	61	22.41	2.5	2.2	3.8	85.0	16,170	0.0601	0.0032	100/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-NYY-G

450/750 V 70°C PVC INSULATED AND DOUBLE SHEATHED, TWO CORES WITH GROUND



CONSTRUCTION

Conductor Annealed copper, stranded
- Size 25 sq.mm. up to 300 sq.mm. (Phase Core)
- Size 16 sq.mm. up to 150 sq.mm. (Ground Core)

Insulation Polyvinyl chloride (PVC/C)
Colour : Blue, Brown, Green with Yellow stripe

Inner Sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

Outer Sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

APPLICATION

Building wiring for installation on cable tray, conduit, direct burial in ground.
The cable being suitable for use in grounded electrical system.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

REFERENCE

TIS 11-2553 Part 101 Table 5
AC Test Voltage : 2.5 kV

NOTE

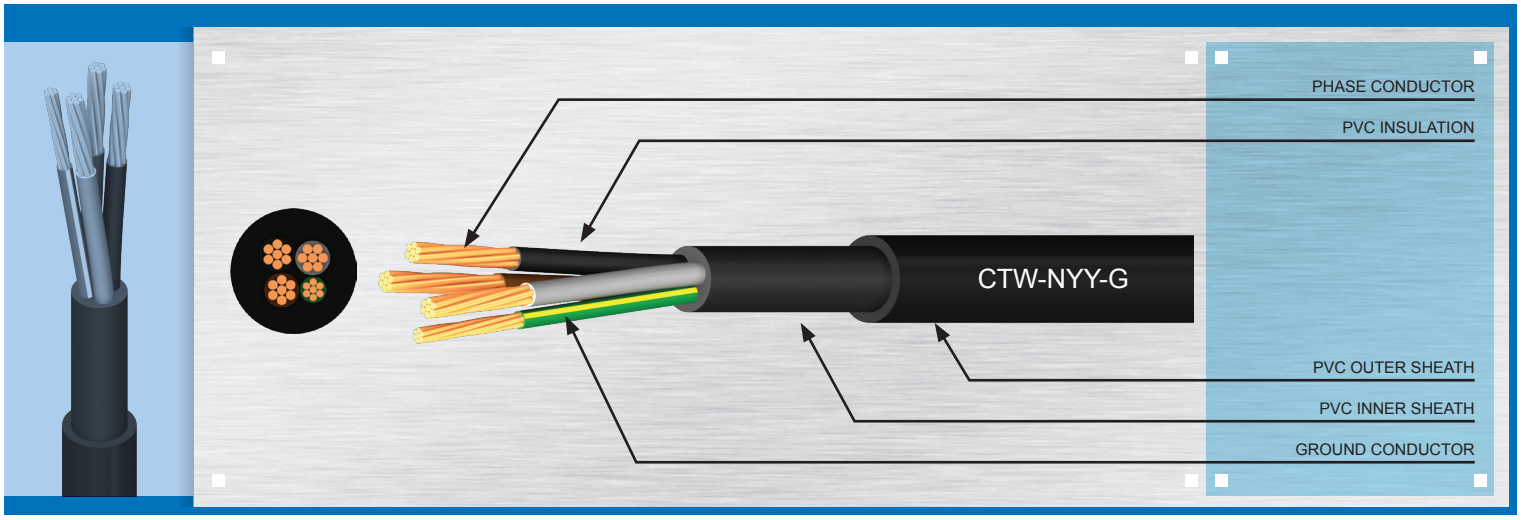
CTW-NYY-G		Phase Core			Ground Core			Thickness of inner Sheath	Thickness of outer Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C (Phase)	Maximum Conductor Resistance at 20°C (Ground)	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Number of Wire	Diameter (Approx)	Thickness of Insulation	Number of Wire	Diameter (Approx)	Thickness of Insulation								
		No.	mm	mm	No.	mm	mm	mm	mm	mm	kg/km	Ω/km	Ω/km	MΩ-km	m
CFY024025	2 x 25/16	7	6.33	1.3	7	5.04	1.1	1.2	2.0	28.0	1,300	0.727	1.150	0.0054	500/R
CFY024035	2 x 35/16	7	7.47	1.3	7	5.04	1.1	1.2	2.0	30.0	1,560	0.524	1.150	0.0047	500/R
CFY024050	2 x 50/25	19	8.80	1.5	7	6.33	1.3	1.2	2.2	34.0	2,090	0.387	0.727	0.0046	500/R
CFY024070	2 x 70/35	19	10.55	1.5	7	7.47	1.3	1.5	2.2	38.5	2,800	0.268	0.524	0.0039	500/R
CFY024095	2 x 95/50	19	12.45	1.7	19	8.80	1.5	1.5	2.2	43.5	3,695	0.193	0.387	0.0038	500/R
CFY024120	2 x 120/70	37	14.00	1.7	19	10.35	1.5	1.5	2.4	47.5	4,610	0.153	0.268	0.0034	500/R
CFY024150	2 x 150/95	37	15.54	1.9	19	12.45	1.7	1.8	2.6	53.0	5,815	0.124	0.193	0.0034	500/R
CFY024185	2 x 185/95	37	17.43	2.1	19	12.45	1.7	1.8	2.8	57.5	6,840	0.0991	0.193	0.0034	300/R
CFY024240	2 x 240/120	61	19.98	2.3	37	14.00	1.7	2.0	3.0	64.5	8,740	0.0754	0.153	0.0033	300/R
CFY024300	2 x 300/150	61	22.41	2.5	37	15.54	1.9	2.0	3.2	71.0	10,725	0.0601	0.124	0.0032	200/R

C = Packing in coil
R = Packing in reel

CHAROONG THAI WIRE & CABLE PUBLIC COMPANY LIMITED

CABLE TYPE : CTW-NYY-G

450/750 V 70ºC PVC INSULATED AND DOUBLE SHEATHED, THREE CORES WITH GROUND



CONSTRUCTION

Conductor Annealed copper, stranded
- Size 25 sq.mm. up to 300 sq.mm. (Phase Core)
- Size 16 sq.mm. up to 150 sq.mm. (Ground Core)

Insulation Polyvinyl chloride (PVC/C)
Colour : Brown, Black, Grey, Green with Yellow stripe

Inner Sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

Outer Sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

APPLICATION

Building wiring for installation on cable tray, conduit, direct burial in ground.
The cable being suitable for use in grounded electrical system.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

REFERENCE

TIS 11-2553 Part 101 Table 5
AC Test Voltage : 2.5 kV

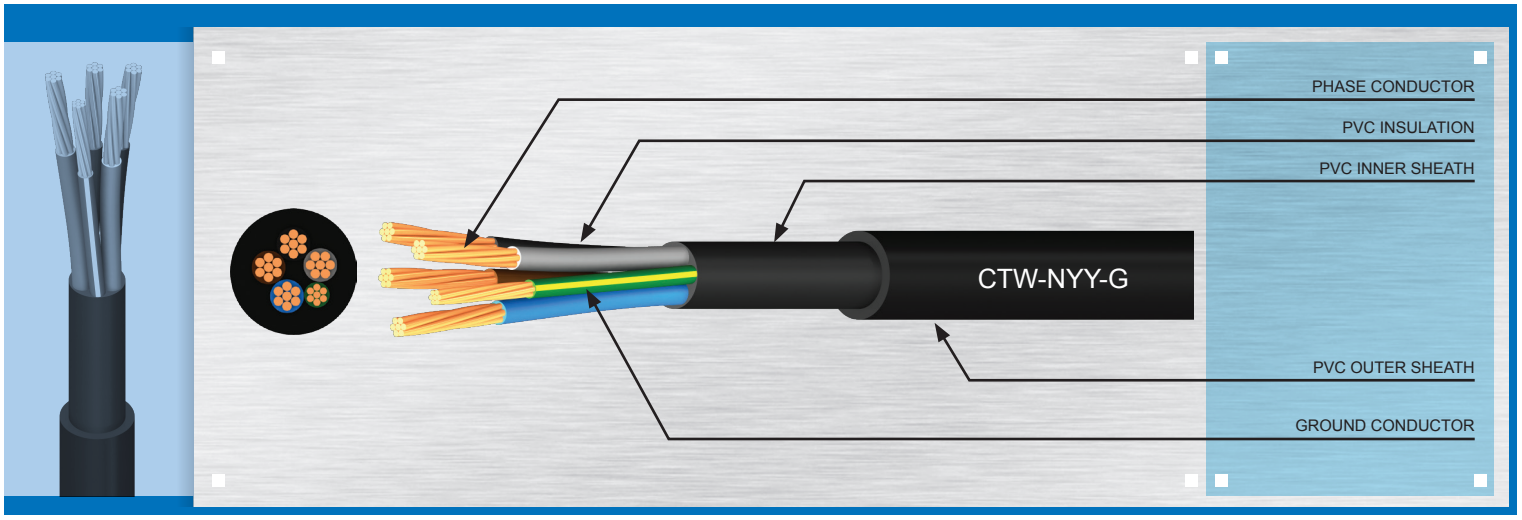
NOTE

CTW-NYY-G		Phase Core			Ground Core			Thickness of inner Sheath	Thickness of outer Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C (Phase)	Maximum Conductor Resistance at 20°C (Ground)	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Number of Wire	Diameter (Approx)	Thickness of Insulation	Number of Wire	Diameter (Approx)	Thickness of Insulation								
		No.	mm	mm	No.	mm	mm	mm	mm	mm	kg/km	Ω/km	Ω/km	MΩ-km	m
CFY034025	3 x 25/16	7	6.33	1.3	7	5.04	1.1	1.2	2.0	30.5	1,655	0.727	1.150	0.0054	500/R
CFY034035	3 x 35/16	7	7.47	1.3	7	5.04	1.1	1.2	2.0	33.0	2,025	0.524	1.150	0.0047	500/R
CFY034050	3 x 50/25	19	8.80	1.5	7	6.33	1.3	1.5	2.2	38.5	2,760	0.387	0.727	0.0046	500/R
CFY034070	3 x 70/35	19	10.55	1.5	7	7.47	1.3	1.5	2.2	42.5	3,655	0.268	0.524	0.0039	500/R
CFY034095	3 x 95/50	19	12.45	1.7	19	8.80	1.5	1.5	2.4	48.5	4,895	0.193	0.387	0.0038	500/R
CFY034120	3 x 120/70	37	14.00	1.7	19	10.35	1.5	1.8	2.6	53.5	6,160	0.153	0.268	0.0034	300/R
CFY034150	3 x 150/95	37	15.54	1.9	19	12.45	1.7	1.8	2.8	59.0	7,615	0.124	0.193	0.0034	300/R
CFY034185	3 x 185/95	37	17.43	2.1	19	12.45	1.7	2.0	3.0	64.5	9,145	0.0991	0.193	0.0034	300/R
CFY034240	3 x 240/120	61	19.98	2.3	37	14.00	1.7	2.0	3.2	72.0	11,650	0.0754	0.153	0.0033	200/R
CFY034300	3 x 300/150	61	22.41	2.5	37	15.54	1.9	2.2	3.4	79.5	14,410	0.0601	0.124	0.0032	200/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-NYY-G

450/750 V 70ºC PVC INSULATED AND DOUBLE SHEATHED, FOUR CORES WITH GROUND



CONSTRUCTION

Conductor Annealed copper, stranded
- Size 25 sq.mm. up to 300 sq.mm. (Phase Core)
- Size 16 sq.mm. up to 150 sq.mm. (Ground Core)

Insulation Polyvinyl chloride (PVC/C)
Colour : Blue, Brown, Black, Grey, Green with Yellow stripe

Inner Sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

Outer Sheath Polyvinyl chloride (PVC/ST4)
Colour : Black

APPLICATION

Building wiring for installation on cable tray, conduit, direct burial in ground.
The cable being suitable for use in grounded electrical system.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

REFERENCE

TIS 11-2553 Part 101 Table 5
AC Test Voltage : 2.5 kV

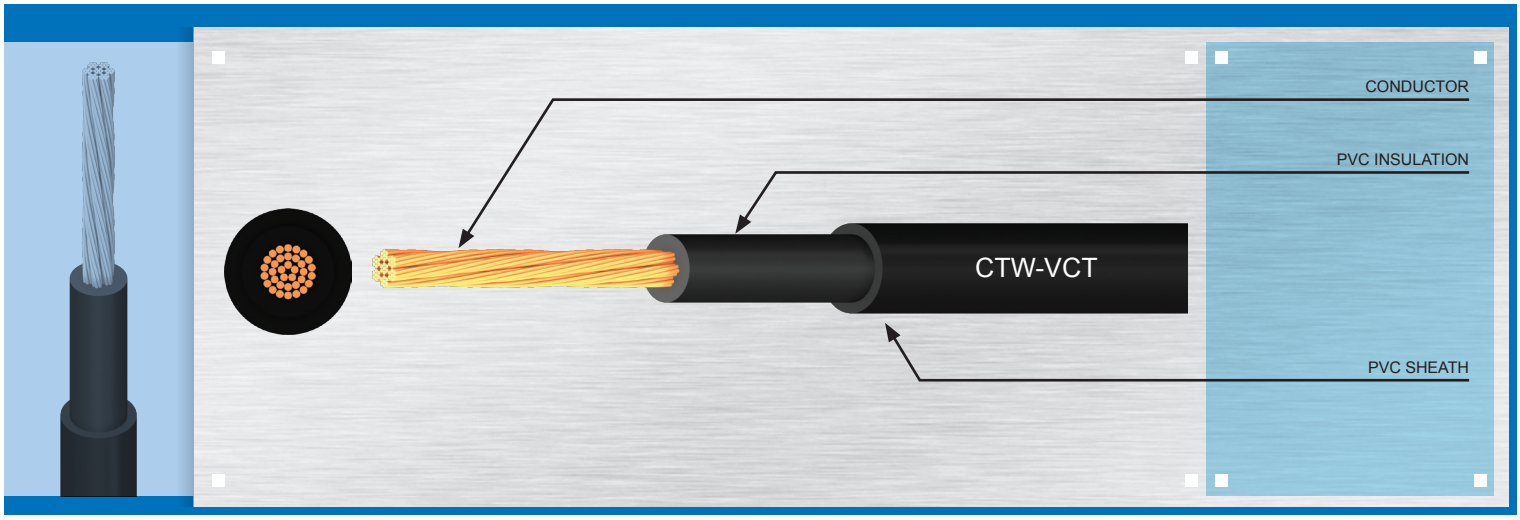
NOTE

CTW-NYY-G		Phase Core			Ground Core			Thickness of inner Sheath	Thickness of outer Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C (Phase)	Maximum Conductor Resistance at 20°C (Ground)	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Number of Wire	Diameter (Approx)	Thickness of Insulation	Number of Wire	Diameter (Approx)	Thickness of Insulation								
		No.	mm	mm	No.	mm	mm	mm	mm	mm	kg/km	Ω/km	Ω/km	MΩ-km	m
CFY044025	4 x 25/16	7	6.33	1.3	7	5.04	1.1	1.2	2.0	34.0	2,030	0.727	1.150	0.0054	500/R
CFY044035	4 x 35/16	7	7.47	1.3	7	5.04	1.1	1.5	2.2	39.0	2,600	0.524	1.150	0.0047	500/R
CFY044050	4 x 50/25	19	8.80	1.5	7	6.33	1.3	1.5	2.2	43.5	3,420	0.387	0.727	0.0046	500/R
CFY044070	4 x 70/35	19	10.55	1.5	7	7.47	1.3	1.5	2.4	49.0	4,605	0.268	0.524	0.0039	500/R
CFY044095	4 x 95/50	19	12.45	1.7	19	8.80	1.5	1.8	2.6	56.5	6,245	0.193	0.387	0.0038	300/R
CFY044120	4 x 120/70	37	14.00	1.7	19	10.35	1.5	1.8	2.8	61.5	7,730	0.153	0.268	0.0034	300/R
CFY044150	4 x 150/95	37	15.54	1.9	19	12.45	1.7	2.0	3.0	68.0	9,580	0.124	0.193	0.0034	300/R
CFY044185	4 x 185/95	37	17.43	2.1	19	12.45	1.7	2.0	3.2	75.0	11,530	0.0991	0.193	0.0034	200/R
CFY044240	4 x 240/120	61	19.98	2.3	37	14.00	1.7	2.2	3.4	84.5	14,800	0.0754	0.153	0.0033	200/R
CFY044300	4 x 300/150	61	22.41	2.5	37	15.54	1.9	2.2	3.8	93.5	18,310	0.0601	0.124	0.0032	100/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-VCT

450/750 V 70ºC PVC INSULATED AND SHEATHED, FLEXIBLE SINGLE CORE



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 4 sq.mm. up to 35 sq.mm.

Insulation Polyvinyl chloride (PVC/D)
Colour : Black

Sheath Polyvinyl chloride (PVC/ST5)
Colour : Black

APPLICATION

Building wiring for installation on cable tray, in conduit, direct burial in ground and using for electrical home apparatus.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

REFERENCE

TIS 11-2553 Part 101 Table 7
AC Test Voltage : 2.5 kV

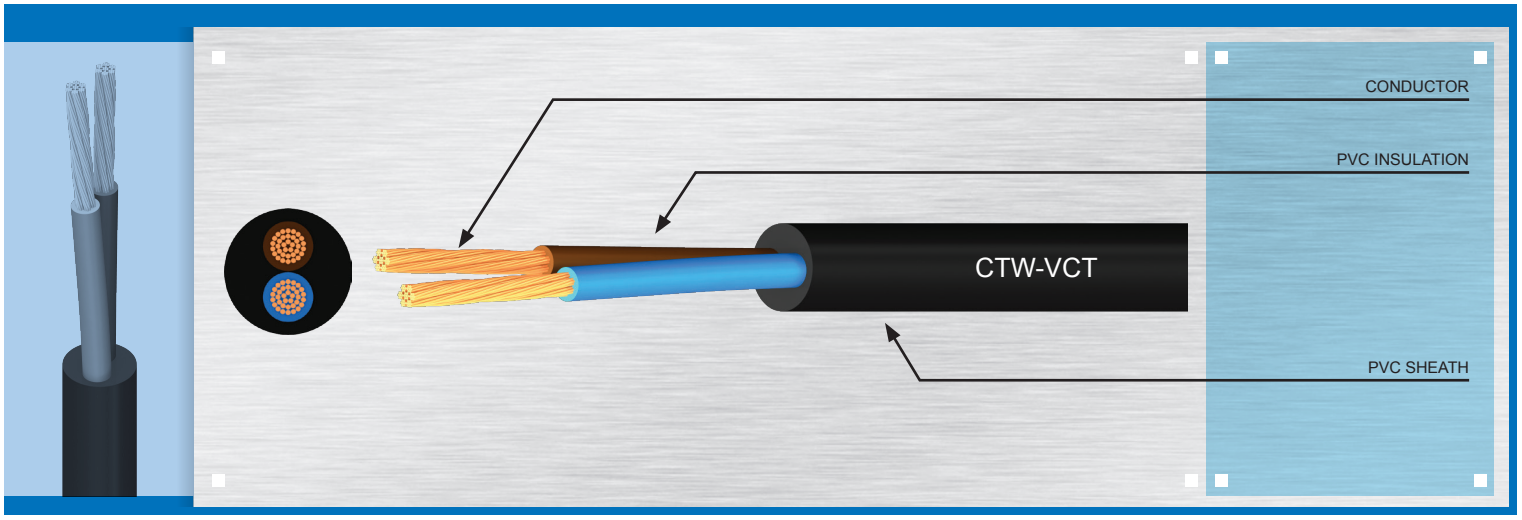
NOTE

CTW-VCT		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFZ016004	1 x 4	4	56/0.31	2.59	0.9	1.4	8.6	100	4.95	0.0084	100/C
CFZ016006	1 x 6	6	84/0.31	3.59	0.9	1.4	9.4	135	3.30	0.0071	100/C
CFZ016010	1 x 10	10	80/0.41	4.67	1.1	1.8	12.0	215	1.91	0.0068	100/C
CFZ016016	1 x 16	16	126/0.41	5.86	1.1	1.8	13.5	290	1.21	0.0050	500/R
CFZ016025	1 x 25	25	196/0.41	7.31	1.3	2.2	16.0	435	0.780	0.0048	500/R
CFZ016035	1 x 35	35	276/0.41	8.67	1.3	2.2	17.5	555	0.554	0.0041	500/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-VCT

450/750 V 70º C PVC INSULATED AND SHEATHED, FLEXIBLE TWO CORES



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 4 sq.mm. up to 35 sq.mm.

Insulation Polyvinyl chloride (PVC/D)
Colour : Blue, Brown

Sheath Polyvinyl chloride (PVC/ST5)
Colour : Black

APPLICATION

Building wiring for installation on cable tray, in conduit, direct burial in ground and using for electrical home apparatus.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

REFERENCE

TIS 11-2553 Part 101 Table 7
AC Test Voltage : 2.5 kV

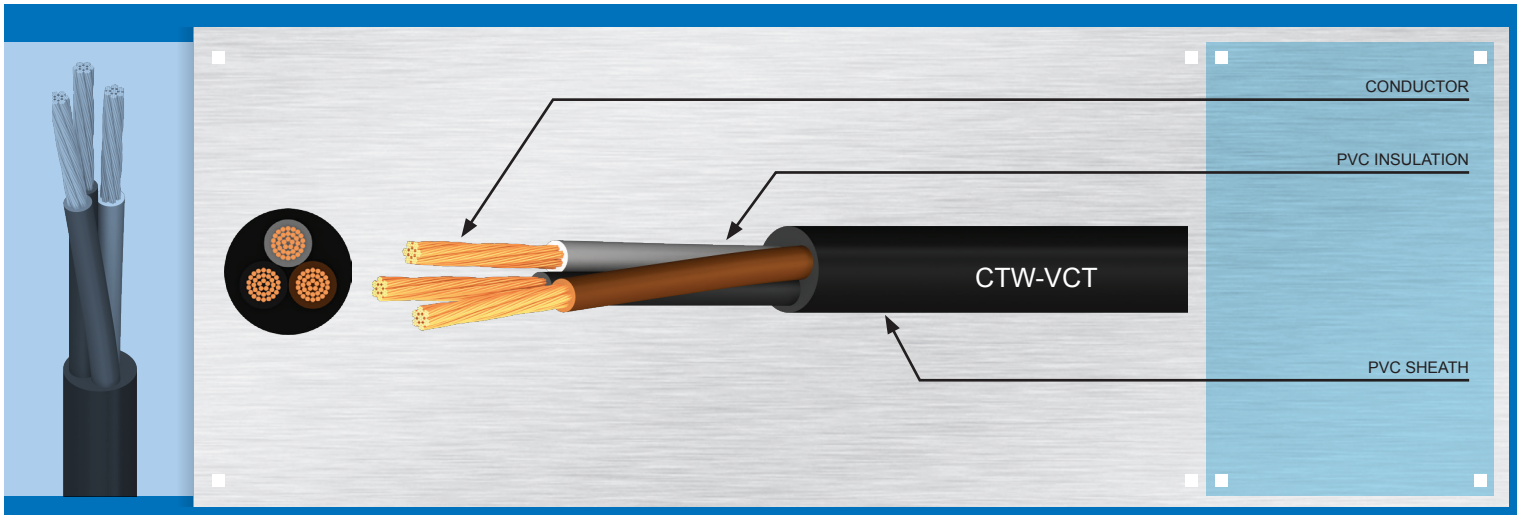
NOTE

CTW-VCT		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFZ026004	2 x 4	4	56/0.31	2.59	0.9	1.6	14.5	250	4.95	0.0084	500/R
CFZ026006	2 x 6	6	84/0.31	3.59	0.9	1.6	16.0	330	3.30	0.0071	500/R
CFZ026010	2 x 10	10	80/0.41	4.67	1.1	1.8	20.0	515	1.91	0.0068	500/R
CFZ026016	2 x 16	16	126/0.41	5.86	1.1	2.2	23.0	735	1.21	0.0050	500/R
CFZ026025	2 x 25	25	196/0.41	7.31	1.3	2.4	27.5	1,075	0.780	0.0048	500/R
CFZ026035	2 x 35	35	276/0.41	8.67	1.3	2.6	31.0	1,410	0.554	0.0041	500/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-VCT

450/750 V 70ºC PVC INSULATED AND SHEATHED, FLEXIBLE THREE CORES



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 4 sq.mm. up to 35 sq.mm.

Insulation Polyvinyl chloride (PVC/D)
Colour : Brown, Black, Grey

Sheath Polyvinyl chloride (PVC/ST5)
Colour : Black

APPLICATION

Building wiring for installation on cable tray, in conduit, direct burial in ground and using for electrical home apparatus.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

REFERENCE

TIS 11-2553 Part 101 Table 7
AC Test Voltage : 2.5 kV

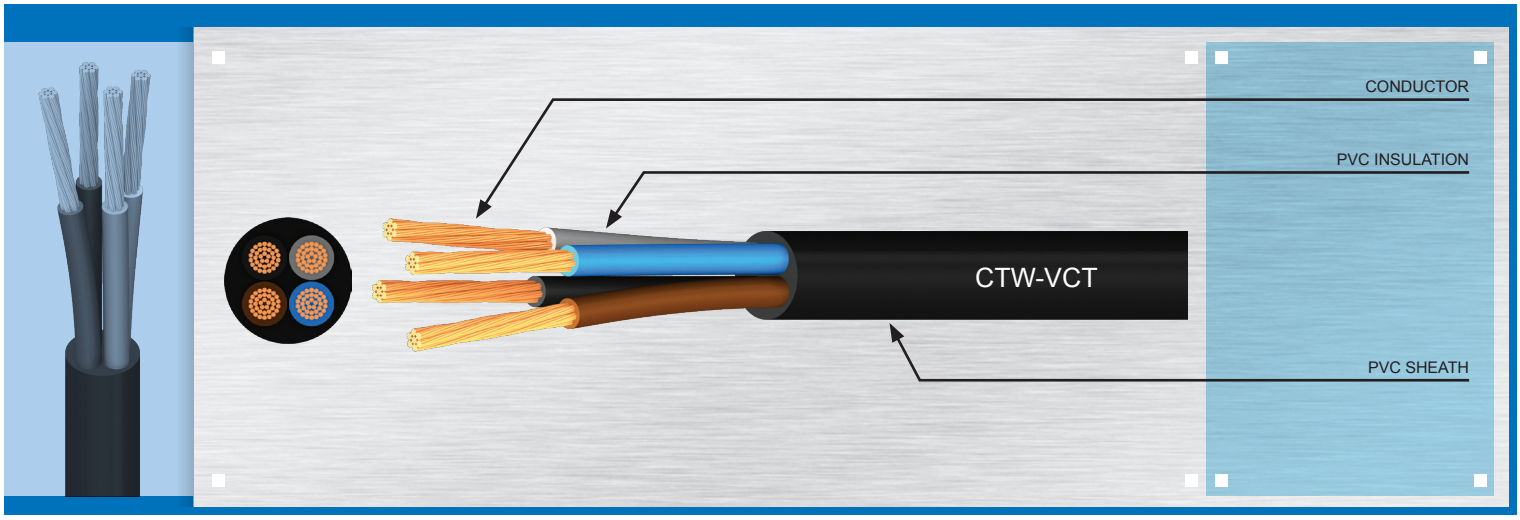
NOTE

CTW-VCT		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFZ036004	3 x 4	4	56/0.31	2.59	0.9	1.6	15.5	295	4.95	0.0084	500/R
CFZ036006	3 x 6	6	84/0.31	3.59	0.9	1.8	17.5	435	3.30	0.0071	500/R
CFZ036010	3 x 10	10	80/0.41	4.67	1.1	2.0	21.5	655	1.91	0.0068	500/R
CFZ036016	3 x 16	16	126/0.41	5.86	1.1	2.4	25.0	945	1.21	0.0050	500/R
CFZ036025	3 x 25	25	196/0.41	7.31	1.3	2.6	30.0	1,385	0.780	0.0048	500/R
CFZ036035	3 x 35	35	276/0.41	8.67	1.3	2.8	33.5	1,815	0.554	0.0041	500/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW VCT

450/750 V 70ºC PVC INSULATED AND SHEATHED, FLEXIBLE FOUR CORES



CONSTRUCTION

Conductor Anneal copper, bunch stranded
Sizes 4 sq.mm. up to 35 sq.mm.

Insulation Polyvinyl chloride (PVC/D)
Colour : Blue, Brown, Black, Grey

Sheath Polyvinyl chloride (PVC/ST5)
Colour : Black

APPLICATION

Building wiring for installation on cable tray, in conduit, direct burial in ground and using for electrical home apparatus.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

REFERENCE

TIS 11-2553 Part 101 Table 7
AC Test Voltage : 2.5 kV

NOTE

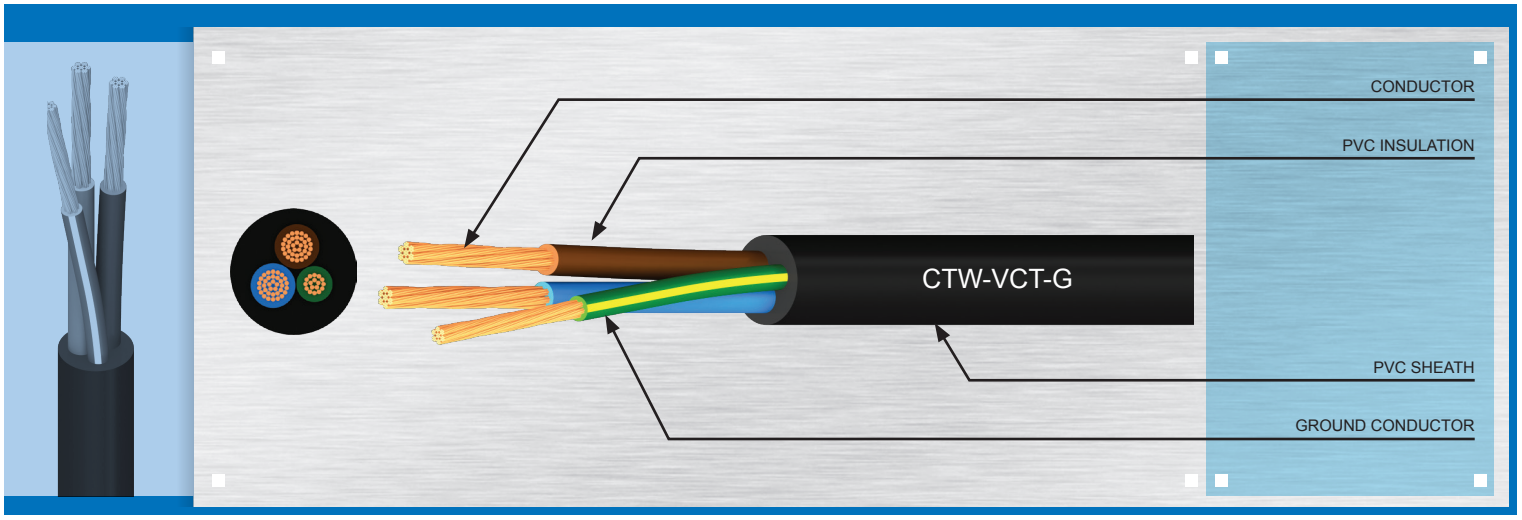
CTW-VCT		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Min. Number and Max. Dia.of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
CFZ046004	4 x 4	4	56/0.31	2.59	0.9	1.8	17.0	375	4.95	0.0084	500/R
CFZ046006	4 x 6	6	84/0.31	3.59	0.9	2.0	19.5	545	3.30	0.0071	500/R
CFZ046010	4 x 10	10	80/0.41	4.67	1.1	2.2	24.0	830	1.91	0.0068	500/R
CFZ046016	4 x 16	16	126/0.41	5.86	1.1	2.6	28.0	1,195	1.21	0.0050	500/R
CFZ046025	4 x 25	25	196/0.41	7.31	1.3	2.8	33.0	1,755	0.780	0.0048	500/R
CFZ046035	4 x 35	35	276/0.41	8.67	1.3	3.1	37.0	2,325	0.554	0.0041	500/R

C = Packing in coil
R = Packing in reel

CHAROONG THAI WIRE & CABLE PUBLIC COMPANY LIMITED

CABLE TYPE : CTW-VCT-G

450/750 V 70ºC PVC INSULATED AND SHEATHED, FLEXIBLE TWO CORES WITH GROUND



CONSTRUCTION

Conductor Annealed copper, bunch stranded
- Size 4 sq.mm. up to 35 sq.mm. (Phase Core)
- Size 4 sq.mm. up to 16 sq.mm. (Ground Core)

Insulation Polyvinyl chloride (PVC/D)
Colour : Blue, Brown, Green with Yellow stripe

Sheath Polyvinyl chloride (PVC/ST5)
Colour : Black

APPLICATION

Building wiring for installation on cable tray, conduit, direct burial in ground and using for electrical home apparatus.
The cable being suitable for use in grounded electrical system.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

REFERENCE

TIS 11-2553 Part 101 Table 8
AC Test Voltage : 2.5 kV

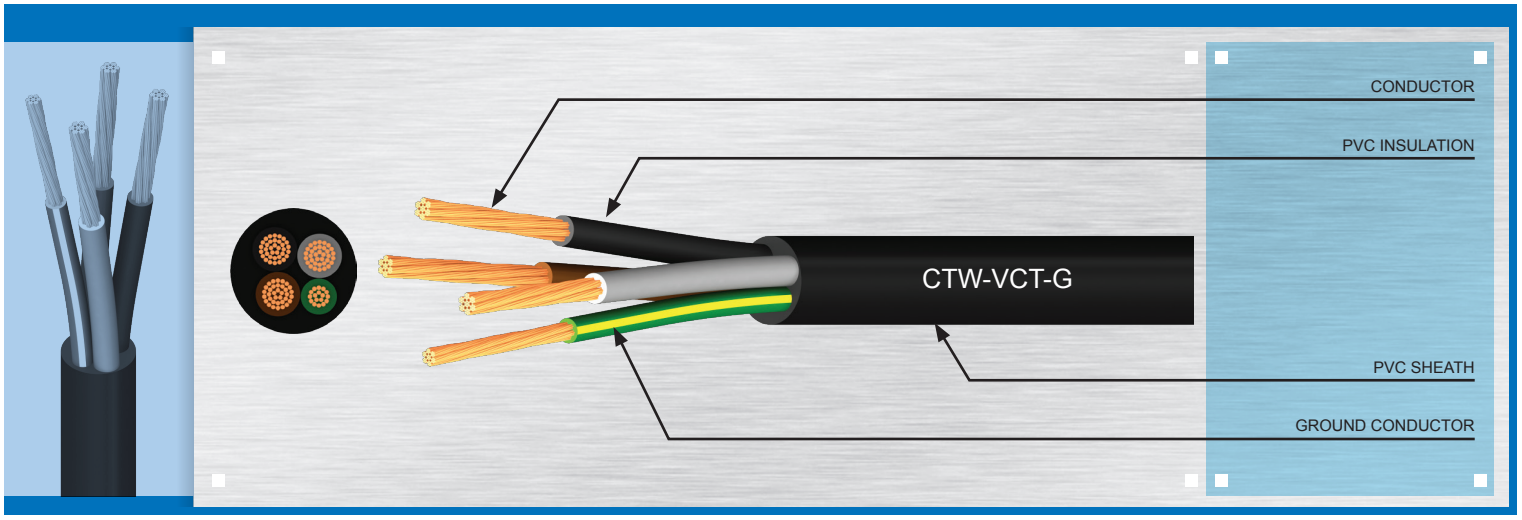
NOTE

CTW-VCT-G		Phase Core		Ground Core		Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C (Phase)	Maximum Conductor Resistance at 20°C (Ground)	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Min. Number and Max. Dia.of Wire	Thickness of Insulation	Min. Number and Max. Dia.of Wire	Thickness of Insulation							
		No./mm	mm	No./mm	mm	mm	mm	kg/km	Ω/km	Ω/km	MΩ-km	m
CGA026004	2 x 4/4	56/0.31	0.9	56/0.31	0.9	1.6	15.5	295	4.95	4.95	0.0084	500/R
CGA026006	2 x 6/6	84/0.31	0.9	84/0.31	0.9	1.8	17.5	435	3.30	3.30	0.0071	500/R
CGA026010	2 x 10/10	80/0.41	1.1	80/0.41	1.1	2.0	21.5	695	1.91	1.91	0.0068	500/R
CGA026016	2 x 16/16	126/0.41	1.1	126/0.41	1.1	2.4	25.0	995	1.21	1.21	0.0050	500/R
CGA026025	2 x 25/16	196/0.41	1.3	126/0.41	1.1	2.6	28.5	1,370	0.780	1.21	0.0048	500/R
CGA026035	2 x 35/16	276/0.41	1.3	126/0.41	1.1	2.8	31.5	1,695	0.554	1.21	0.0041	500/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-VCT-G

450/750 V 70ºC PVC INSULATED AND SHEATHED, FLEXIBLE THREE CORES WITH GROUND



CONSTRUCTION

Conductor Annealed copper, bunch stranded
- Size 4 sq.mm. up to 35 sq.mm. (Phase Core)
- Size 4 sq.mm. up to 16 sq.mm. (Ground Core)

Insulation Polyvinyl chloride (PVC/D)
Colour : Brown, Black, Grey, Green with Yellow stripe

Sheath Polyvinyl chloride (PVC/ST5)
Colour : Black

APPLICATION

Building wiring for installation on cable tray, conduit, direct burial in ground and using for electrical home apparatus.
The cable being suitable for use in grounded electrical system.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

REFERENCE

TIS 11-2553 Part 101 Table 8
AC Test Voltage : 2.5 kV

NOTE

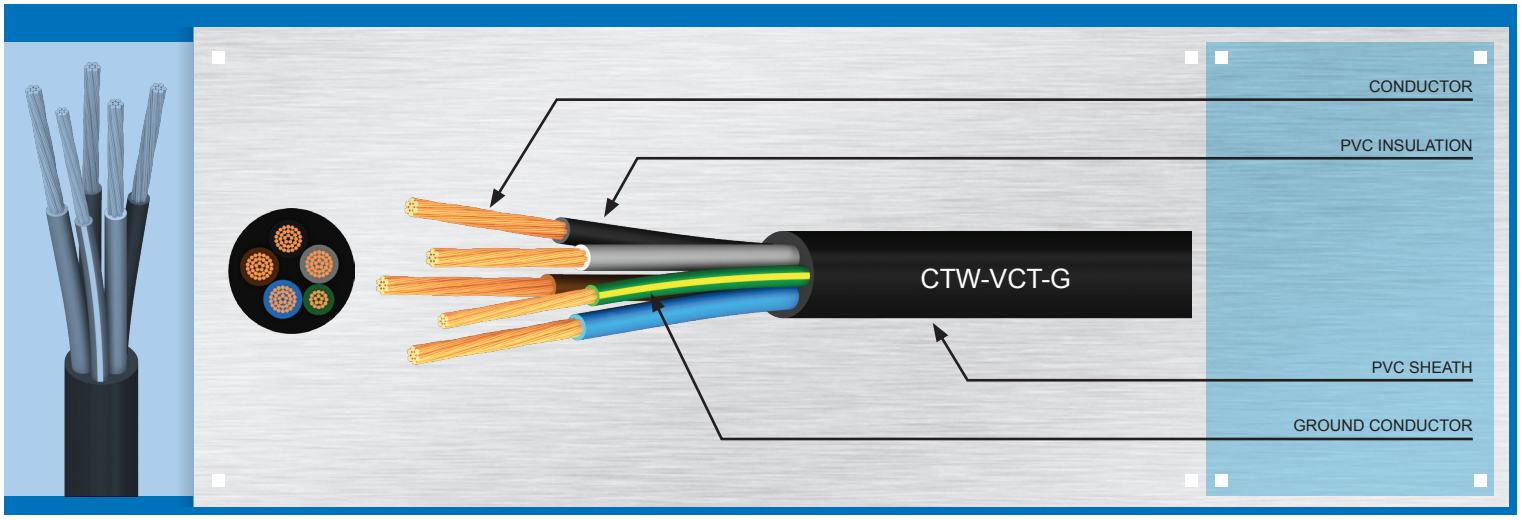
CTW-VCT-G		Phase Core		Ground Core		Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C (Phase)	Maximum Conductor Resistance at 20°C (Ground)	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Min. Number and Max. Dia.of Wire	Thickness of Insulation	Min. Number and Max. Dia.of Wire	Thickness of Insulation							
		No./mm	mm	No./mm	mm	mm	mm	kg/km	Ω/km	Ω/km	MΩ-km	m
CGA036004	3 x 4/4	56/0.31	0.9	56/0.31	0.9	1.8	17.0	375	4.95	4.95	0.0084	500/R
CGA036006	3 x 6/6	84/0.31	0.9	84/0.31	0.9	2.0	19.5	545	3.30	3.30	0.0071	500/R
CGA036010	3 x 10/10	80/0.41	1.1	80/0.41	1.1	2.2	24.0	830	1.91	1.91	0.0068	500/R
CGA036016	3 x 16/16	126/0.41	1.1	126/0.41	1.1	2.6	28.0	1,190	1.21	1.21	0.0050	500/R
CGA036025	3 x 25/16	196/0.41	1.3	126/0.41	1.1	2.8	33.0	1,670	0.780	1.21	0.0048	500/R
CGA036035	3 x 35/16	276/0.41	1.3	126/0.41	1.1	3.1	37.0	2,120	0.554	1.21	0.0041	500/R

C = Packing in coil
R = Packing in reel

CHAROONG THAI WIRE & CABLE PUBLIC COMPANY LIMITED

CABLE TYPE : CTW-VCT-G

450/750 V 70ºC PVC INSULATED AND SHEATHED, FLEXIBLE FOUR CORES WITH GROUND



CONSTRUCTION

Conductor Annealed copper, bunch stranded
- Size 4 sq.mm. up to 35 sq.mm. (Phase Core)
- Size 4 sq.mm. up to 16 sq.mm. (Ground Core)

Insulation Polyvinyl chloride (PVC/D)
Colour : Blue, Brown, Black, Grey, Green with Yellow stripe

Sheath Polyvinyl chloride (PVC/ST5)
Colour : Black

APPLICATION

Building wiring for installation on cable tray, conduit, direct burial in ground and using for electrical home apparatus.
The cable being suitable for use in grounded electrical system.

CLASSIFICATION

Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

REFERENCE

TIS 11-2553 Part 101 Table 8
AC Test Voltage : 2.5 kV

NOTE

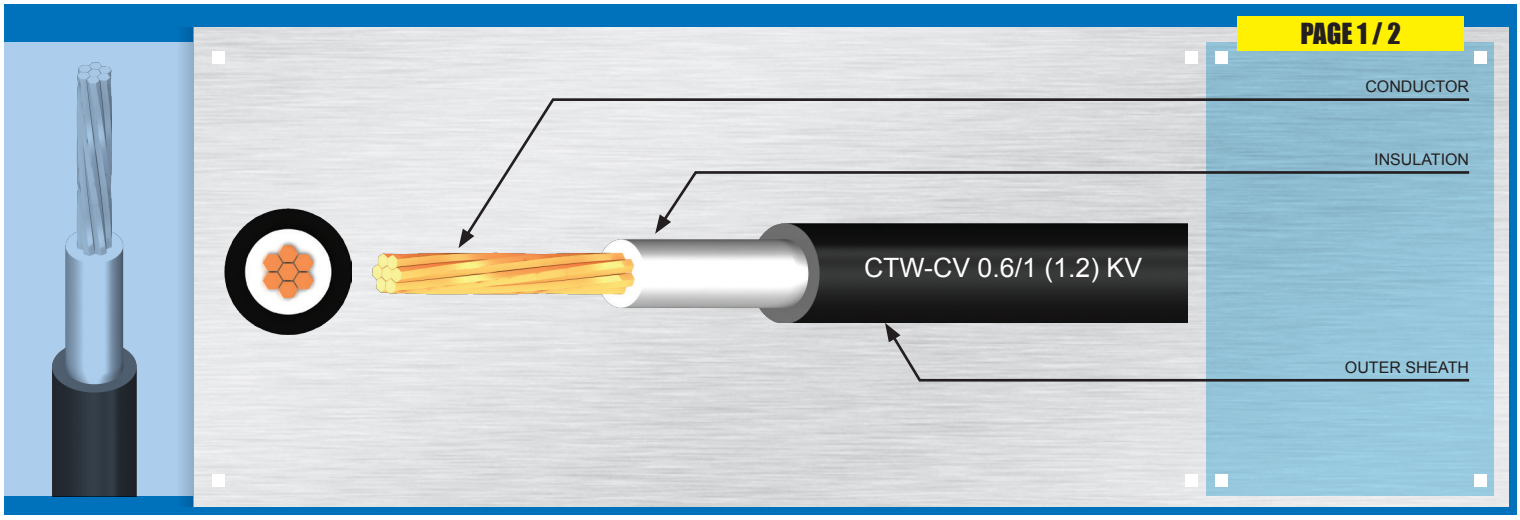
CTW-VCT-G		Phase Core		Ground Core		Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C (Phase)	Maximum Conductor Resistance at 20°C (Ground)	Minimum Insulation Resistance at 70°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Min. Number and Max. Dia.of Wire	Thickness of Insulation	Min. Number and Max. Dia.of Wire	Thickness of Insulation							
		No./mm	mm	No./mm	mm	mm	mm	kg/km	Ω/km	Ω/km	MΩ-km	m
CGA046004	4 x 4/4	56/0.31	0.9	56/0.31	0.9	1.8	18.5	450	4.95	4.95	0.0084	500/R
CGA046006	4 x 6/6	84/0.31	0.9	84/0.31	0.9	2.0	21.5	660	3.30	3.30	0.0071	500/R
CGA046010	4 x 10/10	80/0.41	1.1	80/0.41	1.1	2.2	26.5	1,005	1.91	1.91	0.0068	500/R
CGA046016	4 x 16/16	126/0.41	1.1	126/0.41	1.1	2.6	30.5	1,445	1.21	1.21	0.0050	500/R
CGA046025	4 x 25/16	196/0.41	1.3	126/0.41	1.1	2.8	36.5	2,050	0.780	1.21	0.0048	500/R
CGA046035	4 x 35/16	276/0.41	1.3	126/0.41	1.1	3.1	41.5	2,640	0.554	1.21	0.0041	500/R

C = Packing in coil
R = Packing in reel

CHAROONG THAI WIRE & CABLE PUBLIC COMPANY LIMITED

CABLE TYPE : CTW-CV SINGLE CORE CU/XLPE/PVC 0.6/1(1.2) kV

LOW VOLTAGE CROSS-LINKED POLYETHYLENE POWER CABLE COPPER CONDUCTOR WITHOUT ARMOUR



CONSTRUCTION

Conductor Compact or Round concentric lay stranded copper
- CR : Concentric lay stranded of conductor : ≤ 10 sq.mm.
- CP : Compact round concentric lay stranded of conductor : > 10 sq.mm.

Insulation Cross-linked polyethylene (XLPE)
Colour : Natural

Sheath Polyvinyl chloride (PVC:ST2)
Optional : Polyethylene (PE:ST7)
Colour : Black

APPLICATION

Preferably used for installation exposed or in raceway wet or dry location or direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 1,000 volts.

REFERENCE

TIS 2143
IEC 60228, IEC 60502-1
AC Test Voltage : 3.5 kV

NOTE

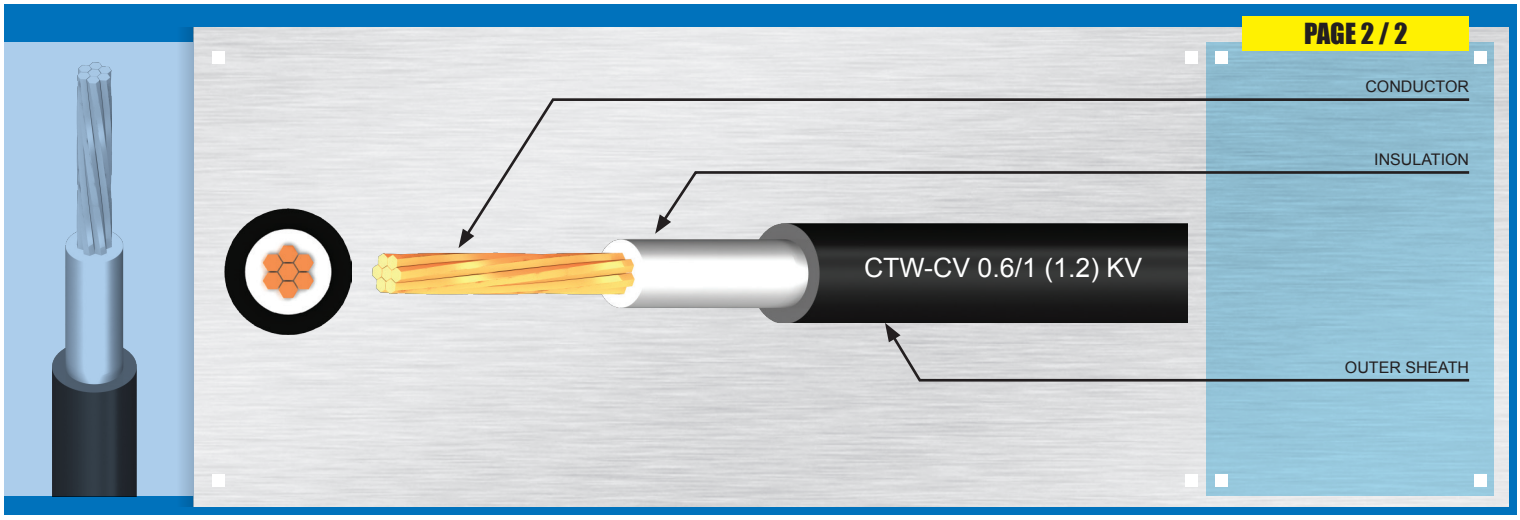
A special FR-PVC or Low Smoke Halogen Free (LSHF)* Flame Retardant Sheath can be supplied in accordance with IEC 60332-3,
*For LSHF : IEC 60754, IEC 61034

CTW-CV		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 90°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)							
		sq.mm.	No.	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
C28014501	1 x 1.5	1.5	7:CR	1.56	0.7	1.4	7.5	55	12.10	1.1098	1,000/R
C28014502	1 x 2.5	2.5	7:CR	2.01	0.7	1.4	8.0	70	7.41	0.9229	1,000/R
C28014004	1 x 4	4	7:CR	2.52	0.7	1.4	8.5	90	4.61	0.7762	1,000/R
C28014006	1 x 6	6	7:CR	3.09	0.7	1.4	9.0	115	3.08	0.6598	1,000/R
C28014010	1 x 10	10	7:CR	3.99	0.7	1.4	10.0	160	1.83	0.5340	1,000/R
C28018016	1 x 16	16	7:CP	4.69	0.7	1.4	10.5	215	1.15	0.4636	1,000/R
C28018025	1 x 25	25	7:CP	5.90	0.9	1.4	12.0	315	0.727	0.4612	1,000/R
C28018035	1 x 35	35	7:CP	6.95	0.9	1.4	13.5	420	0.524	0.3996	1,000/R
C28018050	1 x 50	50	19:CP	8.33	1.0	1.4	15.0	575	0.387	0.3704	1,000/R
C28018070	1 x 70	70	19:CP	9.73	1.1	1.4	16.5	775	0.268	0.3482	1,000/R
C28018095	1 x 95	95	19:CP	11.45	1.1	1.5	18.5	1,025	0.193	0.3007	1,000/R
C28018120	1 x 120	120	19:CP	12.95	1.2	1.5	20.0	1,275	0.153	0.2890	1,000/R
C28018150	1 x 150	150	37:CP	14.27	1.4	1.6	22.0	1,585	0.124	0.3014	1,000/R
C28018185	1 x 185	185	37:CP	15.98	1.6	1.6	24.5	1,940	0.0991	0.3047	1,000/R
C28018240	1 x 240	240	37:CP	18.47	1.7	1.7	27.5	2,495	0.0754	0.2813	1,000/R
C28018300	1 x 300	300	61:CP	20.68	1.8	1.8	30.0	3,090	0.0601	0.2664	500/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-CV SINGLE CORE CU/XLPE/PVC 0.6/1(1.2) kV

LOW VOLTAGE CROSS-LINKED POLYETHYLENE POWER CABLE COPPER CONDUCTOR WITHOUT ARMOUR



CONSTRUCTION

Conductor Compact or Round concentric lay stranded copper
- CR : Concentric lay stranded of conductor : ≤ 10 sq.mm.
- CP : Compact round concentric lay stranded of conductor : > 10 sq.mm.

Insulation Cross-linked polyethylene (XLPE)
Colour : Natural

Sheath Polyvinyl chloride (PVC:ST2)
Optional : Polyethylene (PE:ST7)
Colour : Black

APPLICATION

Preferably used for installation exposed or in raceway wet or dry location or direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 1,000 volts.

REFERENCE

TIS 2143
IEC 60228, IEC 60502-1
AC Test Voltage : 3.5 kV

NOTE

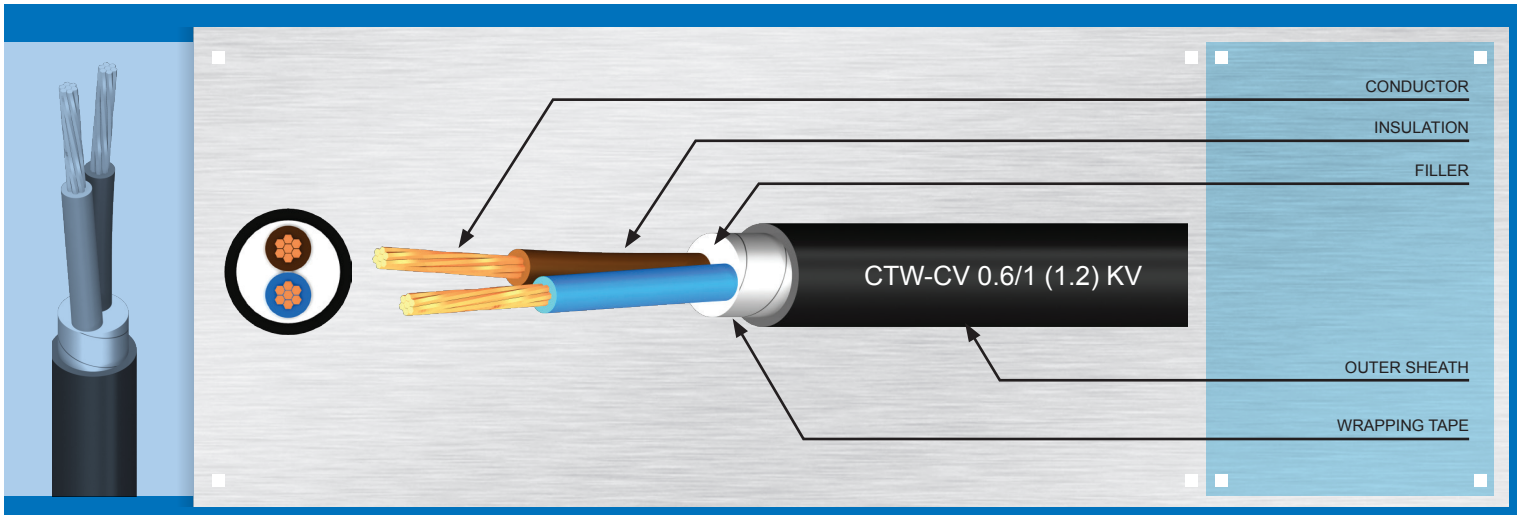
A special FR-PVC or Low Smoke Halogen Free (LSHF)* Flame Retardant Sheath can be supplied in accordance with IEC 60332-3,
*For LSHF : IEC 60754, IEC 61034

CTW-CV		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 90°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)							
		sq.mm.	No.	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
C28018400	1 x 400	400	61:CP	23.39	2.0	1.9	33.5	4,070	0.0470	0.2609	500/R
C28018500	1 x 500	500	61:CP	26.67	2.2	2.0	38.0	5,070	0.0366	0.2513	500/R
C28018630	1 x 630	630	91:CP	30.20	2.4	2.2	42.5	6,370	0.0283	0.2420	300/R
C28018800	1 x 800	800	91:CP	34.00	2.6	2.3	47.0	8,030	0.0221	0.2328	300/R
C28018000	1 x 1000	1000	127:CP	40.00	2.8	2.4	54.0	10,020	0.0176	0.2138	250/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-CV TWO CORES CU/XLPE/PVC 0.6/1(1.2) kV

LOW VOLTAGE CROSS-LINKED POLYETHYLENE POWER CABLE COPPER CONDUCTOR WITHOUT ARMOUR



CONSTRUCTION

Conductor	Compact or Round concentric lay stranded copper - CR : Concentric lay stranded of conductor : ≤ 10 sq.mm. - CP : Compact round concentric lay stranded of conductor : > 10 sq.mm.
Insulation	Cross-linked polyethylene (XLPE) Colour : Blue, Brown
Filler	PVC/PE Rod or Polypropylene (Nonhygroscopic material)
Wrapping Tape	Polyester (Mylar) and / or Spunboun tape
Sheath	Polyvinyl chloride (PVC:ST2) Optional : Polyethylene (PE:ST7) Colour : Black

APPLICATION

Preferably used for installation exposed or in raceway wet or dry location or direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 1,000 volts.

REFERENCE

TIS 2143
IEC 60228, IEC 60502-1
AC Test Voltage : 3.5 kV

NOTE

A special FR-PVC or Low Smoke Halogen Free (LSHF)* Flame Retardant Sheath can be supplied in accordance with IEC 60332-3,
*For LSHF : IEC 60754, IEC 61034

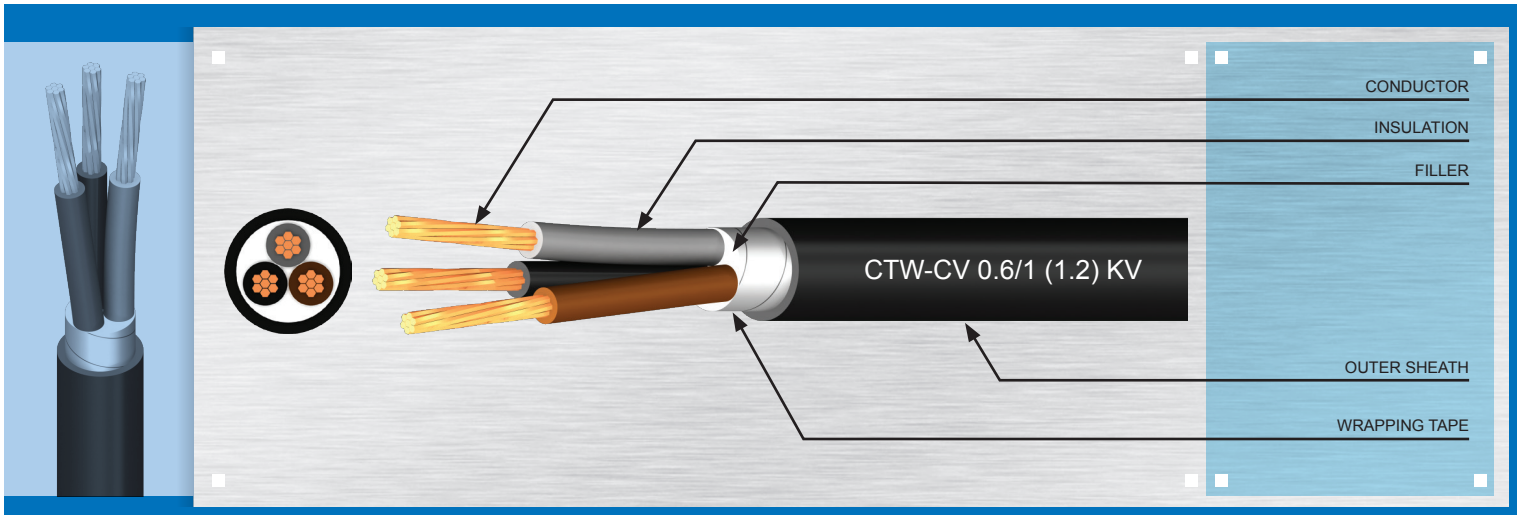
CTW-CV		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 90ºC	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)							
		sq.mm.	No.	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
C28024501	2 x 1.5	1.5	7:CR	1.56	0.7	1.8	11.5	145	12.1	1.1098	1,000/R
C28024502	2 x 2.5	2.5	7:CR	2.01	0.7	1.8	12.5	180	7.41	0.9229	1,000/R
C28024004	2 x 4	4	7:CR	2.52	0.7	1.8	13.5	230	4.61	0.7762	1,000/R
C28024006	2 x 6	6	7:CR	3.09	0.7	1.8	14.5	295	3.08	0.6598	1,000/R
C28024010	2 x 10	10	7:CR	3.99	0.7	1.8	17.0	380	1.83	0.5340	1,000/R
C28028016	2 x 16	16	7:CP	4.69	0.7	1.8	18.5	505	1.15	0.4636	1,000/R
C28028025	2 x 25	25	7:CP	5.90	0.9	1.8	21.5	745	0.727	0.4612	1,000/R
C28028035	2 x 35	35	7:CP	6.95	0.9	1.8	24.0	975	0.524	0.3996	1,000/R
C28028050	2 x 50	50	19:CP	8.33	1.0	1.8	27.0	1,330	0.387	0.3704	1,000/R
C28028070	2 x 70	70	19:CP	9.73	1.1	1.8	30.5	1,785	0.268	0.3482	1,000/R
C28028095	2 x 95	95	19:CP	11.45	1.1	1.9	34.5	2,355	0.193	0.3007	1,000/R
C28028120	2 x 120	120	19:CP	12.95	1.2	2.0	38.0	2,945	0.153	0.2890	1,000/R
C28028150	2 x 150	150	37:CP	14.27	1.4	2.2	42.5	3,665	0.124	0.3014	500/R
C28028185	2 x 185	185	37:CP	15.98	1.6	2.3	47.0	4,500	0.0991	0.3047	500/R
C28028240	2 x 240	240	37:CP	18.47	1.7	2.5	53.0	5,785	0.0754	0.2813	250/R
C28028300	2 x 300	300	61:CP	20.68	1.8	2.6	58.5	7,145	0.0601	0.2664	250/R
C28028400	2 x 400	400	61:CP	23.39	2.0	2.9	65.5	9,405	0.0470	0.2609	250/R

C = Packing in coil
R = Packing in reel

CHAROONG THAI WIRE & CABLE PUBLIC COMPANY LIMITED

CABLE TYPE : CTW-CV THREE CORES CU/XLPE/PVC 0.6/1(1.2) kV

LOW VOLTAGE CROSS-LINKED POLYETHYLENE POWER CABLE COPPER CONDUCTOR WITHOUT ARMOUR



CONSTRUCTION

Conductor	Compact or Round concentric lay stranded copper - CR : Concentric lay stranded of conductor : ≤ 10 sq.mm. - CP : Compact round concentric lay stranded of conductor : > 10 sq.mm.
Insulation	Cross-linked polyethylene (XLPE) Colour : Brown, Black, Grey
Filler	PVC/PE Rod or Polypropylene (Nonhygroscopic material)
Wrapping Tape	Polyester (Mylar) and / or Spunboun tape
Sheath	Polyvinyl chloride (PVC:ST2) Optional : Polyethylene (PE:ST7) Colour : Black

APPLICATION

Preferably used for installation exposed or in raceway wet or dry location or direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 1,000 volts.

REFERENCE

TIS 2143
IEC 60228, IEC 60502-1
AC Test Voltage : 3.5 kV

NOTE

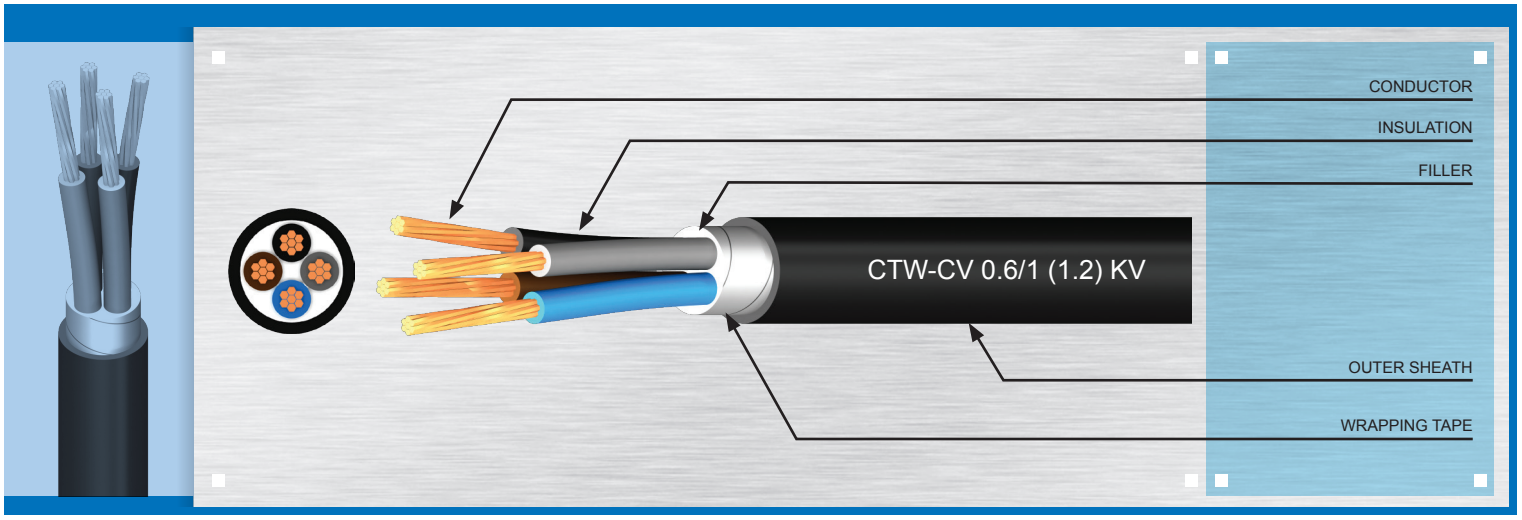
A special FR-PVC or Low Smoke Halogen Free (LSHF)* Flame Retardant Sheath can be supplied in accordance with IEC 60332-3,
*For LSHF : IEC 60754, IEC 61034

CTW-CV		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 90°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)							
		sq.mm.	No./mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
C28034501	3 x 1.5	1.5	7:CR	1.56	0.7	1.8	12.0	165	12.1	1.1098	1,000/R
C28034502	3 x 2.5	2.5	7:CR	2.01	0.7	1.8	13.0	210	7.41	0.9229	1,000/R
C28034004	3 x 4	4	7:CR	2.52	0.7	1.8	14.0	275	4.61	0.7762	1,000/R
C28034006	3 x 6	6	7:CR	3.09	0.7	1.8	15.5	360	3.08	0.6598	1,000/R
C28034010	3 x 10	10	7:CR	3.99	0.7	1.8	18.0	495	1.83	0.5340	1,000/R
C28038016	3 x 16	16	7:CP	4.69	0.7	1.8	19.5	670	1.15	0.4636	1,000/R
C28038025	3 x 25	25	7:CP	5.90	0.9	1.8	23.0	995	0.727	0.4612	1,000/R
C28038035	3 x 35	35	7:CP	6.95	0.9	1.8	25.5	1,320	0.524	0.3996	1,000/R
C28038050	3 x 50	50	19:CP	8.33	1.0	1.8	29.0	1,820	0.387	0.3704	1,000/R
C28038070	3 x 70	70	19:CP	9.73	1.1	1.9	33.0	2,480	0.268	0.3482	1,000/R
C28038095	3 x 95	95	19:CP	11.45	1.1	2.0	37.0	3,285	0.193	0.3007	500/R
C28038120	3 x 120	120	19:CP	12.95	1.2	2.1	41.0	4,110	0.153	0.2890	500/R
C28038150	3 x 150	150	37:CP	14.27	1.4	2.3	45.5	5,120	0.124	0.3014	500/R
C28038185	3 x 185	185	37:CP	15.98	1.6	2.4	50.5	6,300	0.0991	0.3047	500/R
C28038240	3 x 240	240	37:CP	18.47	1.7	2.6	57.0	8,100	0.0754	0.2813	250/R
C28038300	3 x 300	300	61:CP	20.68	1.8	2.7	62.5	10,025	0.0601	0.2664	250/R
C28038400	3 x 400	400	61:CP	23.39	2.0	3.0	70.5	13,220	0.0470	0.2609	250/R

C = Packing in coil
R = Packing in reel

CABLE TYPE : CTW-CV FOUR CORES CU/XLPE/PVC 0.6/1(1.2) kV

LOW VOLTAGE CROSS-LINKED POLYETHYLENE POWER CABLE COPPER CONDUCTOR WITHOUT ARMOUR



CONSTRUCTION

Conductor	Compact or Round concentric lay stranded copper - CR : Concentric lay stranded of conductor : ≤ 10 sq.mm. - CP : Compact round concentric lay stranded of conductor : > 10 sq.mm.
Insulation	Cross-linked polyethylene (XLPE) Colour : Blue, Brown, Black, Grey
Filler	PVC/PE Rod or Polypropylene (Nonhygroscopic material)
Wrapping Tape	Polyester (Mylar) and / or Spunboun tape
Sheath	Polyvinyl chloride (PVC:ST2) Optional : Polyethylene (PE:ST7) Colour : Black

APPLICATION

Preferably used for installation exposed or in raceway wet or dry location or direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 1,000 volts.

REFERENCE

TIS 2143
IEC 60228, IEC 60502-1
AC Test Voltage : 3.5 kV

NOTE

A special FR-PVC or Low Smoke Halogen Free (LSHF)* Flame Retardant Sheath can be supplied in accordance with IEC 60332-3,
*For LSHF : IEC 60754, IEC 61034

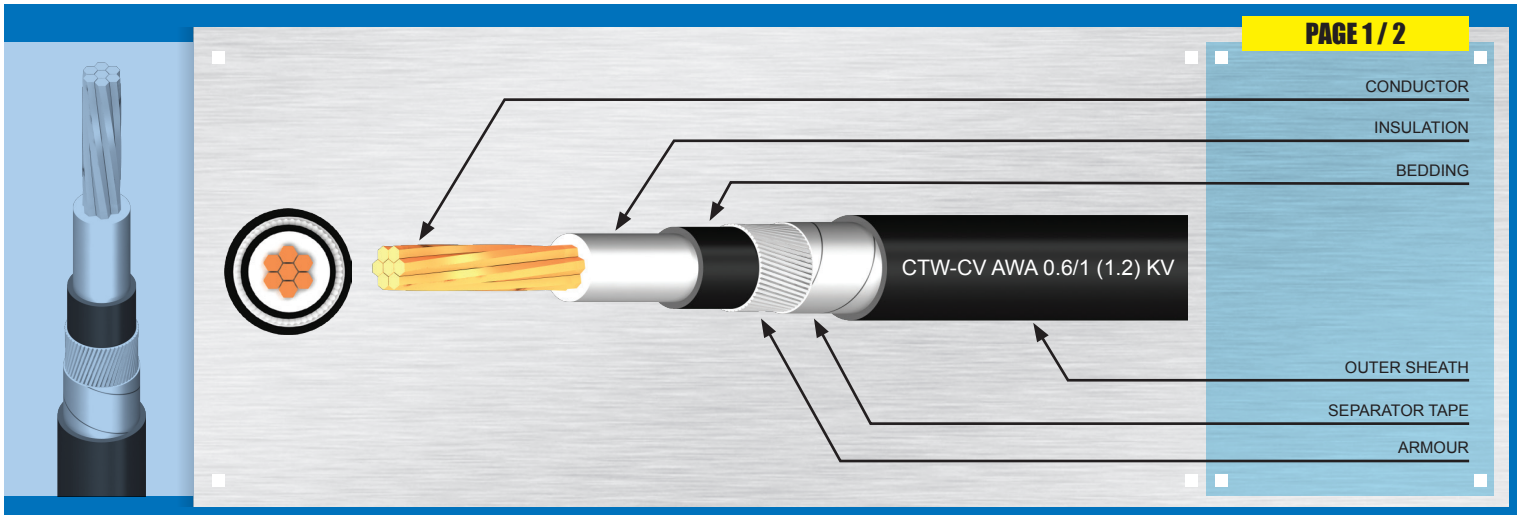
CTW-CV		Conductor			Thickness of Insulation	Thickness of Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 90°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)							
		sq.mm.	No.	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
C28044501	4 x 1.5	1.5	7:CR	1.56	0.7	1.8	13.0	195	12.1	1.1098	1,000/R
C28044502	4 x 2.5	2.5	7:CR	2.01	0.7	1.8	14.0	250	7.41	0.9229	1,000/R
C28044004	4 x 4	4	7:CR	2.52	0.7	1.8	15.0	335	4.61	0.7762	1,000/R
C28044006	4 x 6	6	7:CR	3.09	0.7	1.8	16.5	435	3.08	0.6598	1,000/R
C28044010	4 x 10	10	7:CR	3.99	0.7	1.8	19.5	625	1.83	0.5340	1,000/R
C28048016	4 x 16	16	7:CP	4.69	0.7	1.8	21.0	860	1.15	0.4636	1,000/R
C28048025	4 x 25	25	7:CP	5.90	0.9	1.8	25.0	1,285	0.727	0.4612	1,000/R
C28048035	4 x 35	35	7:CP	6.95	0.9	1.8	28.0	1,715	0.524	0.3996	1,000/R
C28048050	4 x 50	50	19:CP	8.33	1.0	1.8	32.0	2,365	0.387	0.3704	1,000/R
C28048070	4 x 70	70	19:CP	9.73	1.1	2.0	36.5	3,255	0.268	0.3482	500/R
C28048095	4 x 95	95	19:CP	11.45	1.1	2.1	41.0	4,315	0.193	0.3007	500/R
C28048120	4 x 120	120	19:CP	12.95	1.2	2.3	45.5	5,430	0.153	0.2890	500/R
C28048150	4 x 150	150	37:CP	14.27	1.4	2.4	50.5	6,740	0.124	0.3014	250/R
C28048185	4 x 185	185	37:CP	15.98	1.6	2.6	56.0	8,310	0.0991	0.3047	250/R
C28048240	4 x 240	240	37:CP	18.47	1.7	2.8	63.5	10,700	0.0754	0.2813	250/R
C28048300	4 x 300	300	61:CP	20.68	1.8	3.0	70.0	13,275	0.0601	0.2664	200/R
C28048400	4 x 400	400	61:CP	23.39	2.0	3.3	78.5	17,515	0.0470	0.2609	150/R

C = Packing in coil
R = Packing in reel

CHAROONG THAI WIRE & CABLE PUBLIC COMPANY LIMITED

CABLE TYPE : CTW-CV-AWA SINGLE CORE CU/XLPE/AWA/PVC 0.6/1(1.2) kV

LOW VOLTAGE CROSS-LINKED POLYETHYLENE POWER CABLE COPPER CONDUCTOR WITH ALUMINIUM WIRE ARMOUR



CONSTRUCTION

Conductor	Compact or Round concentric lay stranded copper - CR : Concentric lay stranded of conductor : ≤ 10 sq.mm. - CP : Compact round concentric lay stranded of conductor : > 10 sq.mm.
Insulation	Cross-linked polyethylene (XLPE) Colour : Natural
Bedding	Polyvinyl chloride (PVC:ST2) Optional : Polyethylene (PE:ST7) Colour : Black
Armour	Aluminium Wire (AWA)
Separator Tape	Polyester and/or Spunbond tape
Outer Sheath	Polyvinyl chloride (PVC:ST2) Optional : Polyethylene (PE:ST7) Colour : Black

APPLICATION

Preferably used for installation exposed or in raceway wet or dry location or direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 1,000 volts.

REFERENCE

TIS 2143
IEC 60228, IEC 60502-1
AC Test Voltage : 3.5 kV

NOTE

A special FR-PVC or Low Smoke Halogen Free (LSHF)* Flame Retardant Sheath can be supplied in accordance with IEC 60332-3,
*For LSHF : IEC 60754, IEC 61034

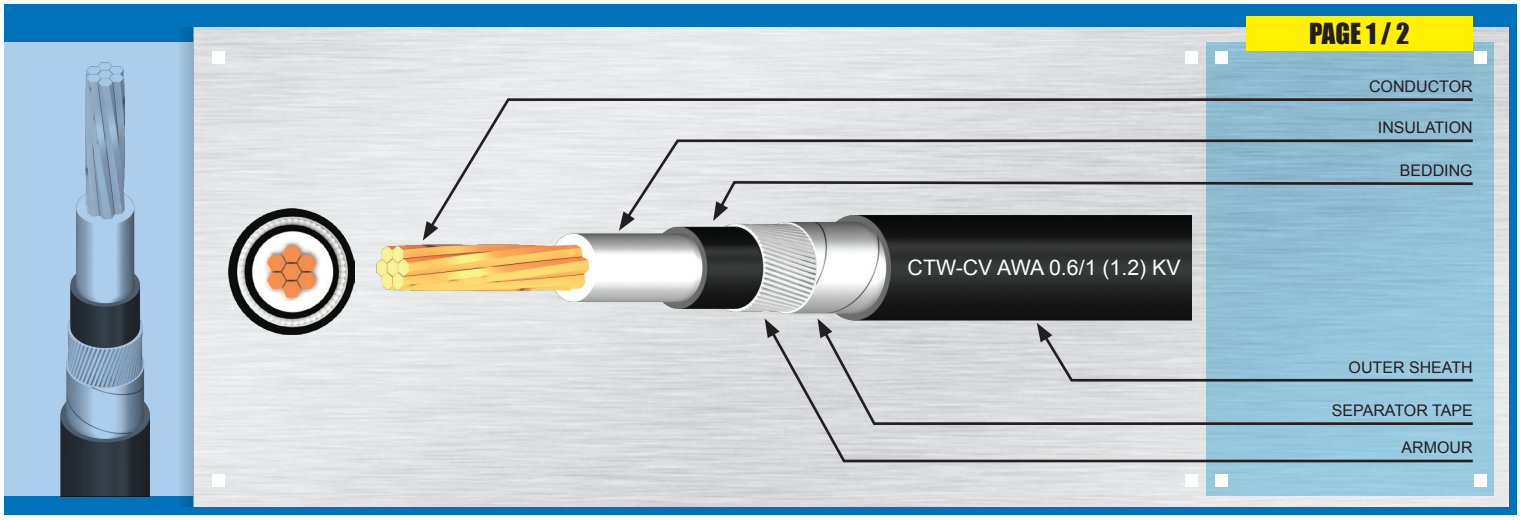
CTW-CV		Conductor			Thickness of Insulation	Thickness of Bedding	Armour Wire Diameter	Thickness of Outer Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 90°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)									
		sq.mm.	No.	mm	mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
C30014501	1 x 1.5	1.5	7:CR	1.56	0.7	1.0	0.90	1.4	11.0	135	12.1	1.1098	1,000/R
C30014502	1 x 2.5	2.5	7:CR	2.01	0.7	1.0	0.90	1.4	11.5	155	7.41	0.9229	1,000/R
C30014004	1 x 4	4	7:CR	2.52	0.7	1.0	0.90	1.4	12.0	180	4.61	0.7762	1,000/R
C30014006	1 x 6	6	7:CR	3.09	0.7	1.0	0.90	1.4	12.5	210	3.08	0.6598	1,000/R
C30014010	1 x 10	10	7:CR	3.99	0.7	1.0	0.90	1.4	13.5	265	1.83	0.5340	1,000/R
C30018016	1 x 16	16	7:CP	4.69	0.7	1.0	0.90	1.4	14.5	330	1.15	0.4636	1,000/R
C30018025	1 x 25	25	7:CP	5.90	0.9	1.0	0.90	1.4	16.0	445	0.727	0.4612	1,000/R
C30018035	1 x 35	35	7:CP	6.95	0.9	1.0	0.90	1.4	17.0	560	0.524	0.3996	1,000/R
C30018050	1 x 50	50	19:CP	8.33	1.0	1.0	1.25	1.5	19.5	770	0.387	0.3704	1,000/R
C30018070	1 x 70	70	19:CP	9.73	1.1	1.0	1.25	1.5	21.0	995	0.268	0.3482	1,000/R
C30018095	1 x 95	95	19:CP	11.45	1.1	1.0	1.25	1.6	23.0	1,265	0.193	0.3007	1,000/R
C30018120	1 x 120	120	19:CP	12.95	1.2	1.0	1.60	1.7	25.5	1,595	0.153	0.2890	1,000/R
C30018150	1 x 150	150	37:CP	14.27	1.4	1.0	1.60	1.7	27.5	1,940	0.124	0.3014	1,000/R
C30018185	1 x 185	185	37:CP	15.98	1.6	1.0	1.60	1.8	30.0	2,325	0.0991	0.3047	1,000/R
C30018240	1 x 240	240	37:CP	18.47	1.7	1.0	1.60	1.9	33.0	2,925	0.0754	0.2813	500/R
C30018300	1 x 300	300	61:CP	20.68	1.8	1.0	1.60	1.9	35.5	3,560	0.0601	0.2664	500/R

C = Packing in coil
R = Packing in reel

CHAROONG THAI WIRE & CABLE PUBLIC COMPANY LIMITED

CABLE TYPE : CTW-CV-AWA SINGLE CORE CU/XLPE/AWA/PVC 0.6/1(1.2) kV

LOW VOLTAGE CROSS-LINKED POLYETHYLENE POWER CABLE COPPER CONDUCTOR WITH ALUMINIUM WIRE ARMOUR



CONSTRUCTION

Conductor Compact or Round concentric lay stranded copper
- CR : Concentric lay stranded of conductor : ≤ 10 sq.mm.
- CP : Compact round concentric lay stranded of conductor : > 10 sq.mm.

Insulation Cross-linked polyethylene (XLPE)
Colour : Natural

Bedding Polyvinyl chloride (PVC:ST2)
Optional : Polyethylene (PE:ST7) Colour : Black

Armour Aluminium Wire (AWA)

Separator Tape Polyester and/or Spunbond tape

Outer Sheath Polyvinyl chloride (PVC:ST2)
Optional : Polyethylene (PE:ST7) Colour : Black

APPLICATION

Preferably used for installation exposed or in raceway wet or dry location or direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 1,000 volts.

REFERENCE

TIS 2143
IEC 60228, IEC 60502-1
AC Test Voltage : 3.5 kV

NOTE

A special FR-PVC or Low Smoke Halogen Free (LSHF)* Flame Retardant Sheath can be supplied in accordance with IEC 60332-3,
*For LSHF : IEC 60754, IEC 61034

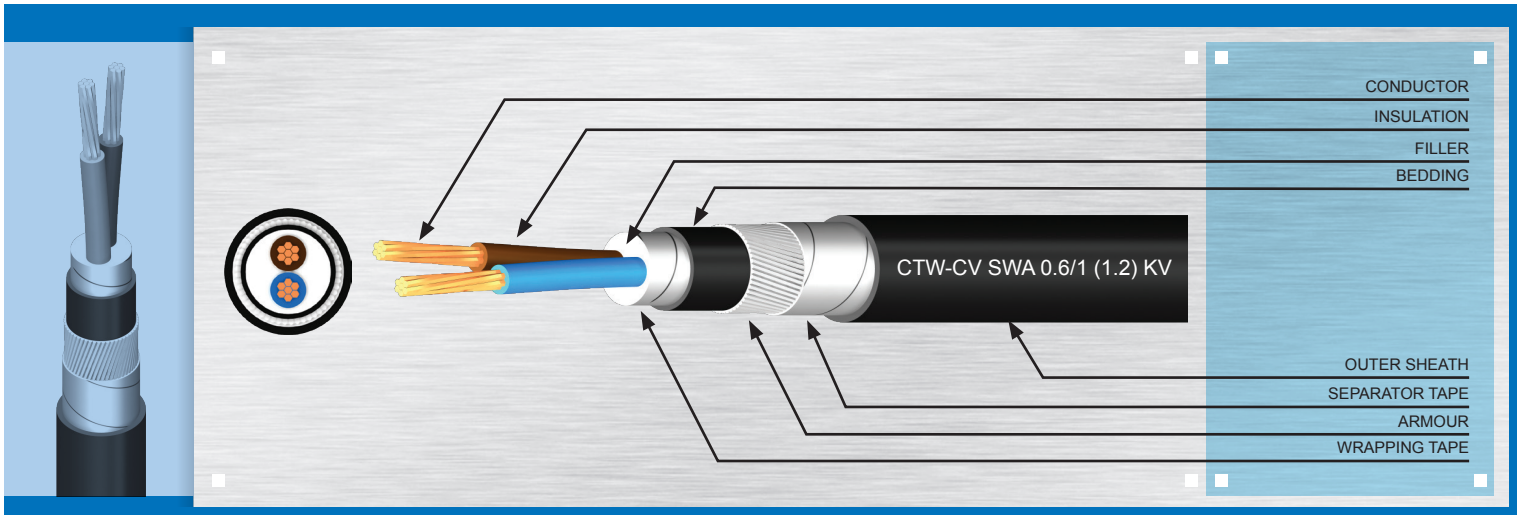
CTW-CV		Conductor			Thickness of Insulation	Thickness of Bedding	Armour Wire Diameter	Thickness of Outer Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 90°C	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)									
		sq.mm.	No.	mm	mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
C30018400	1 x 400	400	61:CP	23.39	2.0	1.2	2.00	2.1	40.5	4,725	0.0470	0.2609	500/R
C30018500	1 x 500	500	61:CP	26.67	2.2	1.2	2.00	2.2	45.0	5,815	0.0366	0.2513	500/R
C30018630	1 x 630	630	91:CP	30.20	2.4	1.2	2.00	2.3	49.0	7,175	0.0283	0.2420	250/R
C30018800	1 x 800	800	91:CP	34.00	2.6	1.4	2.50	2.5	55.5	9,155	0.0221	0.2328	250/R
C30018000	1 x 1000	1000	127:CP	40.00	2.8	1.4	2.50	2.7	62.5	11,300	0.0176	0.2138	250/R

C = Packing in coil
R = Packing in reel

CHAROONG THAI WIRE & CABLE PUBLIC COMPANY LIMITED

CABLE TYPE : CTW-CV-SWA TWO CORES CU/XLPE/SWA/PVC 0.6/1(1.2) kV

LOW VOLTAGE CROSS-LINKED POLYETHYLENE POWER CABLE COPPER CONDUCTOR WITH GALVANIZED STEEL WIRE ARMOUR



CONSTRUCTION

Conductor	Compact or Round concentric lay stranded copper - CR : Concentric lay stranded of conductor : ≤ 10 sq.mm. - CP : Compact round concentric lay stranded of conductor : > 10 sq.mm.
Insulation	Cross-linked polyethylene (XLPE) Colour : Blue, Brown
Bedding	Polyvinyl chloride (PVC:ST2) Optional : Polyethylene (PE:ST7) Colour : Black
Armour	Galvanized Steel Wire (SWA)
Separator Tape	Polyester and/or Spunbond tape
Outer Sheath	Polyvinyl chloride (PVC:ST2) Optional : Polyethylene (PE:ST7) Colour : Black

APPLICATION

Preferably used for installation exposed or in raceway wet or dry location or direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 1,000 volts.

REFERENCE

TIS 2143
IEC 60228, IEC 60502-1
AC Test Voltage : 3.5 kV

NOTE

A special FR-PVC or Low Smoke Halogen Free (LSHF)* Flame Retardant Sheath can be supplied in accordance with IEC 60332-3,
*For LSHF : IEC 60754, IEC 61034

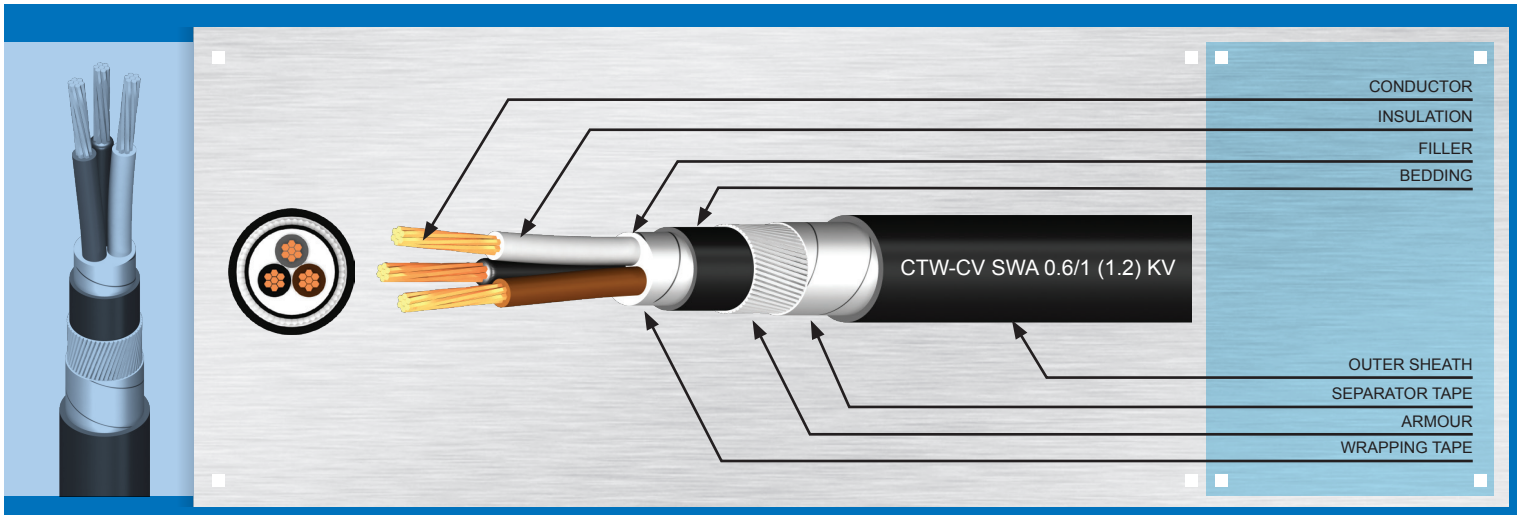
CTW-CV-SWA		Conductor			Thickness of Insulation	Thickness of Bedding	Armour Wire Diameter	Thickness of Outer Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 90ºC	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number and Dia. of Wire	Diameter (Approx.)									
		sq.mm.	No./mm	mm	mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
C31024501	2 x 1.5	1.5	7:CR	1.56	0.7	1.0	0.90	1.8	15.0	370	12.1	1.1098	1,000/R
C31024502	2 x 2.5	2.5	7:CR	2.01	0.7	1.0	0.90	1.8	16.0	420	7.41	0.9229	1,000/R
C31024004	2 x 4	4	7:CR	2.52	0.7	1.0	0.90	1.8	17.0	495	4.61	0.7762	1,000/R
C31024006	2 x 6	6	7:CR	3.09	0.7	1.0	0.90	1.8	18.0	585	3.08	0.6598	1,000/R
C31024010	2 x 10	10	7:CR	3.99	0.7	1.0	1.25	1.8	21.5	835	1.83	0.5340	1,000/R
C31028016	2 x 16	16	7:CP	4.69	0.7	1.0	1.25	1.8	22.5	995	1.15	0.4636	1,000/R
C31028025	2 x 25	25	7:CP	5.90	0.9	1.0	1.60	1.8	27.0	1,470	0.727	0.4612	1,000/R
C31028035	2 x 35	35	7:CP	6.95	0.9	1.0	1.60	1.8	29.0	1,775	0.524	0.3996	1,000/R
C31028050	2 x 50	50	19:CP	8.33	1.0	1.0	1.60	1.8	32.5	2,245	0.387	0.3704	1,000/R
C31028070	2 x 70	70	19:CP	9.73	1.1	1.0	1.60	2.0	36.0	2,825	0.268	0.3482	1,000/R
C31028095	2 x 95	95	19:CP	11.45	1.1	1.2	2.00	2.1	41.0	3,840	0.193	0.3007	500/R
C31028120	2 x 120	120	19:CP	12.95	1.2	1.2	2.00	2.2	45.0	4,600	0.153	0.2890	500/R
C31028150	2 x 150	150	37:CP	14.27	1.4	1.2	2.00	2.3	49.0	5,455	0.124	0.3014	500/R
C31028185	2 x 185	185	37:CP	15.98	1.6	1.4	2.50	2.5	55.0	6,980	0.0991	0.3047	250/R
C31028240	2 x 240	240	37:CP	18.47	1.7	1.4	2.50	2.7	61.5	8,590	0.0754	0.2813	250/R
C31028300	2 x 300	300	61:CP	20.68	1.8	1.6	2.50	2.8	67.5	10,310	0.0601	0.2664	250/R
C31028400	2 x 400	400	61:CP	23.39	2.0	1.6	2.50	3.1	74.5	12,880	0.0470	0.2609	200/R

C = Packing in coil
R = Packing in reel

CHAROONG THAI WIRE & CABLE PUBLIC COMPANY LIMITED

CABLE TYPE : CTW-CV-SWA THREE CORES CU/XLPE/SWA/PVC 0.6/1(1.2) kV

LOW VOLTAGE CROSS-LINKED POLYETHYLENE POWER CABLE COPPER CONDUCTOR WITH GALVANIZED STEEL WIRE ARMOUR



CONSTRUCTION

Conductor	Compact or Round concentric lay stranded copper - CR : Concentric lay stranded of conductor : ≤ 10 sq.mm. - CP : Compact round concentric lay stranded of conductor : > 10 sq.mm.
Insulation	Cross-linked polyethylene (XLPE) Colour : Brown, Black, Grey
Bedding	Polyvinyl chloride (PVC:ST2) Optional : Polyethylene (PE:ST7) Colour : Black
Armour	Galvanized Steel Wire (SWA)
Separator Tape	Polyester and/or Spunbond tape
Outer Sheath	Polyvinyl chloride (PVC:ST2) Optional : Polyethylene (PE:ST7) Colour : Black

APPLICATION

Preferably used for installation exposed or in raceway wet or dry location or direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 1,000 volts.

REFERENCE

TIS 2143
IEC 60228, IEC 60502-1
AC Test Voltage : 3.5 kV

NOTE

A special FR-PVC or Low Smoke Halogen Free (LSHF)* Flame Retardant Sheath can be supplied in accordance with IEC 60332-3,
*For LSHF : IEC 60754, IEC 61034

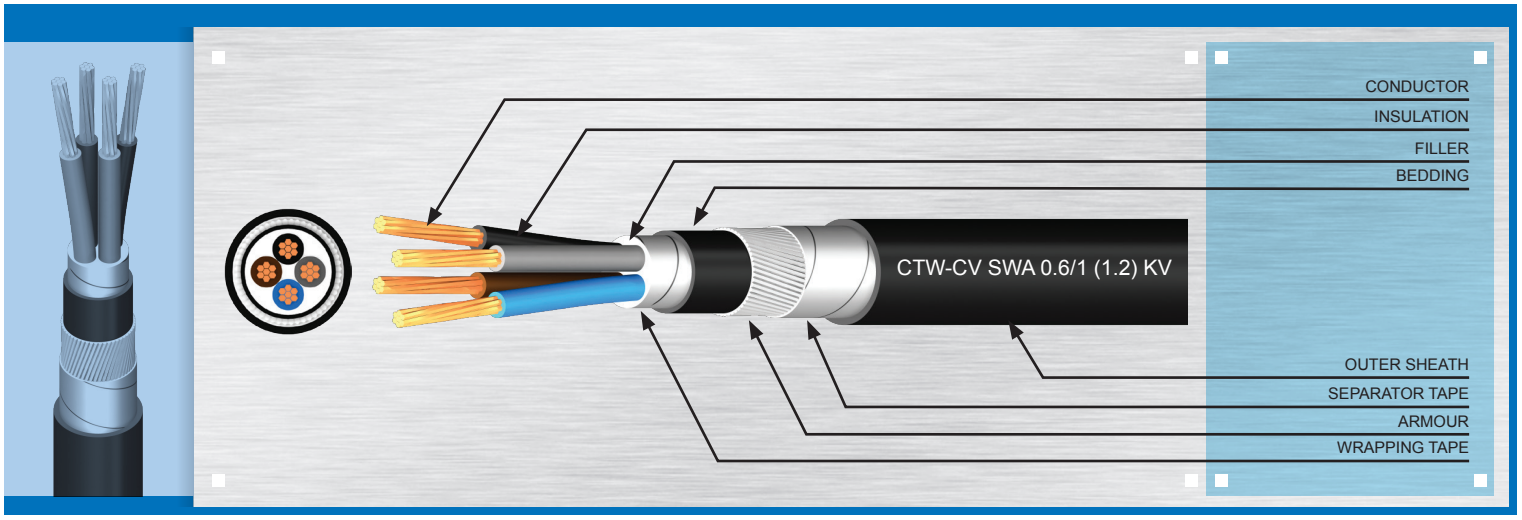
CTW-CV-SWA		Conductor			Thickness of Insulation	Thickness of Bedding	Armour Wire Diameter	Thickness of Outer Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 90ºC	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)									
		sq.mm.	No.	mm	mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
C31034501	3 x 1.5	1.5	7:CR	1.56	0.7	1.0	0.90	1.8	15.5	400	12.1	1.1098	1,000/R
C31034502	3 x 2.5	2.5	7:CR	2.01	0.7	1.0	0.90	1.8	16.5	465	7.41	0.9229	1,000/R
C31034004	3 x 4	4	7:CR	2.52	0.7	1.0	0.90	1.8	18.0	555	4.61	0.7762	1,000/R
C31034006	3 x 6	6	7:CR	3.09	0.7	1.0	0.90	1.8	19.0	665	3.08	0.6598	1,000/R
C31034010	3 x 10	10	7:CR	3.99	0.7	1.0	1.25	1.8	22.5	970	1.83	0.5340	1,000/R
C31038016	3 x 16	16	7:CP	4.69	0.7	1.0	1.25	1.8	24.0	1,185	1.15	0.4636	1,000/R
C31038025	3 x 25	25	7:CP	5.90	0.9	1.0	1.60	1.8	28.0	1,760	0.727	0.4612	1,000/R
C31038035	3 x 35	35	7:CP	6.95	0.9	1.0	1.60	1.8	30.5	2,175	0.524	0.3996	1,000/R
C31038050	3 x 50	50	19:CP	8.33	1.0	1.0	1.60	1.9	34.5	2,790	0.387	0.3704	1,000/R
C31038070	3 x 70	70	19:CP	9.73	1.1	1.2	2.00	2.0	39.5	3,880	0.268	0.3482	500/R
C31038095	3 x 95	95	19:CP	11.45	1.1	1.2	2.00	2.2	43.5	4,860	0.193	0.3007	500/R
C31038120	3 x 120	120	19:CP	12.95	1.2	1.2	2.00	2.3	48.0	5,840	0.153	0.2890	500/R
C31038150	3 x 150	150	37:CP	14.27	1.4	1.4	2.50	2.5	53.5	7,510	0.124	0.3014	250/R
C31038185	3 x 185	185	37:CP	15.98	1.6	1.4	2.50	2.6	59.0	8,990	0.0991	0.3047	250/R
C31038240	3 x 240	240	37:CP	18.47	1.7	1.6	2.50	2.8	65.5	11,145	0.0754	0.2813	250/R
C31038300	3 x 300	300	61:CP	20.68	1.8	1.6	2.50	3.0	71.5	13,425	0.0601	0.2664	200/R
C31038400	3 x 400	400	61:CP	23.39	2.0	1.6	2.50		79.5	17,005	0.0470	0.2609	150/R

C = Packing in coil
R = Packing in reel

CHAROONG THAI WIRE & CABLE PUBLIC COMPANY LIMITED

CABLE TYPE : CTW-CV-SWA FOUR CORES CU/XLPE/SWA/PVC 0.6/1(1.2) kV

LOW VOLTAGE CROSS-LINKED POLYETHYLENE POWER CABLE COPPER CONDUCTOR WITH GALVANIZED STEEL WIRE ARMOUR



CONSTRUCTION

Conductor	Compact or Round concentric lay stranded copper - CR : Concentric lay stranded of conductor : ≤ 10 sq.mm. - CP : Compact round concentric lay stranded of conductor : > 10 sq.mm.
Insulation	Cross-linked polyethylene (XLPE) Colour : Blue, Brown, Black, Grey
Bedding	Polyvinyl chloride (PVC:ST2) Optional : Polyethylene (PE:ST7) Colour : Black
Armour	Galvanized Steel Wire (SWA)
Separator Tape	Polyester and/or Spunbond tape
Outer Sheath	Polyvinyl chloride (PVC:ST2) Optional : Polyethylene (PE:ST7) Colour : Black

APPLICATION

Preferably used for installation exposed or in raceway wet or dry location or direct burial in ground.

CLASSIFICATION

Maximum conductor temperature 90°C
Circuit voltage does not exceed 1,000 volts.

REFERENCE

TIS 2143
IEC 60228, IEC 60502-1
AC Test Voltage : 3.5 kV

NOTE

A special FR-PVC or Low Smoke Halogen Free (LSHF)* Flame Retardant Sheath can be supplied in accordance with IEC 60332-3,
*For LSHF : IEC 60754, IEC 61034

CTW-CV-SWA		Conductor			Thickness of Insulation	Thickness of Bedding	Armour Wire Diameter	Thickness of Outer Sheath	Overall Diameter (Approx.)	Cable Weight (Approx.)	Maximum Conductor Resistance at 20°C	Minimum Insulation Resistance at 90ºC	Standard Packing
PRODUCT CODE	SIZE sq.mm.	Nominal Cross-Sectional Area	Number of Wire	Diameter (Approx.)									
		sq.mm.	No.	mm	mm	mm	mm	mm	mm	kg/km	Ω/km	MΩ-km	m
C31044501	4 x 1.5	1.5	7:CR	1.56	0.7	1.0	0.90	1.8	16.5	445	12.1	1.1098	1,000/R
C31044502	4 x 2.5	2.5	7:CR	2.01	0.7	1.0	0.90	1.8	17.5	530	7.41	0.9229	1,000/R
C31044004	4 x 4	4	7:CR	2.52	0.7	1.0	0.90	1.8	19.0	640	4.61	0.7762	1,000/R
C31044006	4 x 6	6	7:CR	3.09	0.7	1.0	1.25	1.8	21.0	880	3.08	0.6598	1,000/R
C31044010	4 x 10	10	7:CR	3.99	0.7	1.0	1.25	1.8	24.0	1,140	1.83	0.5340	1,000/R
C31048016	4 x 16	16	7:CP	4.69	0.7	1.0	1.60	1.8	26.5	1,565	1.15	0.4636	1,000/R
C31048025	4 x 25	25	7:CP	5.90	0.9	1.0	1.60	1.8	30.5	2,125	0.727	0.4612	1,000/R
C31048035	4 x 35	35	7:CP	6.95	0.9	1.0	1.60	1.9	33.0	2,645	0.524	0.3996	1,000/R
C31048050	4 x 50	50	19:CP	8.33	1.0	1.0	1.60	2.0	37.5	3,450	0.387	0.3704	500/R
C31048070	4 x 70	70	19:CP	9.73	1.1	1.2	2.00	2.2	43.0	4,800	0.268	0.3482	500/R
C31048095	4 x 95	95	19:CP	11.45	1.1	1.2	2.00	2.3	47.5	6,045	0.193	0.3007	500/R
C31048120	4 x 120	120	19:CP	12.95	1.2	1.4	2.50	2.5	54.0	7,800	0.153	0.2890	250/R
C31048150	4 x 150	150	37:CP	14.27	1.4	1.4	2.50	2.6	59.0	9,430	0.124	0.3014	250/R
C31048185	4 x 185	185	37:CP	15.98	1.6	1.4	2.50	2.8	64.5	11,255	0.0991	0.3047	250/R
C31048240	4 x 240	240	37:CP	18.47	1.7	1.6	2.50	3.0	72.0	14,075	0.0754	0.2813	200/R
C31048300	4 x 300	300	61:CP	20.68	1.8	1.6	2.50	3.2	79.0	16,980	0.0601	0.2664	150/R
C31048400	4 x 400	400	61:CP	23.39	2.0	1.8	3.15	3.5	89.5	22,745	0.0470	0.2609	100/R

C = Packing in coil
R = Packing in reel

CHAROONG THAI WIRE & CABLE
PUBLIC COMPANY LIMITED

TECHNICAL DATA & GENERAL INFORMATION

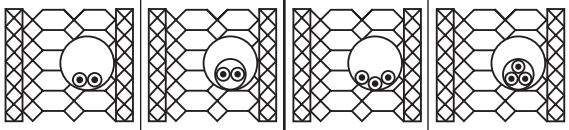
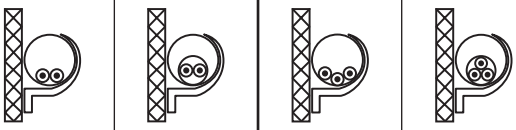
Table 5-8 : Correction factor for groups of more than one circuit

Group of circuit	Correction factor
2	0.80
3	0.70
4	0.65
5	0.60
6	0.57
7	0.54
8	0.52
9	0.50
10-12	0.45
13-16	0.41
17-20	0.38

Note (Table 5-8)

1) These factors are applicable to uniform groups of cables, equally loaded.
2) The correction factor are applied to:
   - groups of two or three or four Single core cables
   - multi cores cables.
3) If a system consists of both two or three or four cables, the total number of cables is taken as the number of circuits, and the correction factor is applied to the table for two or three or four loaded conductors for the two or three or four core cables respectively.
4) If a group consists of n Single core cables it may either be considered as n/2 circuits of two loaded conductor or n/3 circuits of three loaded conductor.

Table 5-20 : Current-carrying capacities in amperes for copper conductor, PVC insulated, with or without sheathed for rated voltage 0.6/1 kV, conductor temperature 70ºC / ambient temperature 40ºC in conduit

	Group for installation method : Group 1				Group for installation method : Group 2			
No. of conductor	2		3		2		3	
Single / Multi cores	Single core	Multi cores	Single core	Multi cores	Single core	Multi cores	Single core	Multi cores
Installation methods								
Type of cable	60227 IEC 01, 60227 IEC 02, 60227 IEC 05, 60227 IEC 06, 60227 IEC 10, NYY, NYY-G, VCT, VCT-G, IEC 60502-1 and special cable such as flame retardant (FR), low smoke and halogen free (LSHF) etc.							
Size (sq.mm.)	Current-carrying capacities (amperes)							
1	10	10	9	9	12	11	10	10
1.5	13	12	12	11	15	14	13	13
2.5	17	16	16	15	21	20	18	17
4	23	22	21	20	28	26	24	23
6	30	28	27	25	36	33	31	30
10	40	37	37	34	50	45	44	40
16	53	50	49	45	66	60	59	54
25	70	65	64	59	88	78	77	70
35	86	80	77	72	109	97	96	86
50	104	96	94	86	131	116	117	103
70	131	121	118	109	167	146	149	130
95	158	145	143	131	202	175	180	156
120	183	167	164	150	234	202	208	179
150	209	191	188	171	261	224	228	196
185	238	216	213	194	297	256	258	222
240	279	253	249	227	348	299	301	258
300	319	291	285	259	398	343	343	295
400	-	-	-	-	475	-	406	-
500	-	-	-	-	545	-	464	-

Note (Table 5-20)

1) Where the ambient temperature in the intended location of the cable differs from 40ºC (reference ambient temperature), the correction factor given in Table 5-43.
2) If installation more than 1 circuit in single conduit , the correction factor given in Table 5-8.
3) Installation method given in Table 5-47.
4) Type of cable given in Table 5-48.

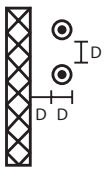
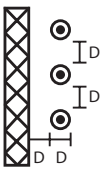
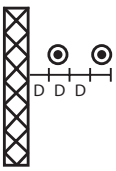
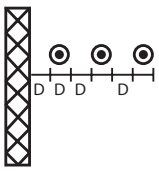
Table 5-21 : Current-carrying capacities in amperes for copper insulated conductor with sheathed for rated voltage 0.6/1 kV, conductor temperature 70ºC or 90ºC / ambient temperature 40ºC on wall

	Group for installation method : Group 3				
No. of conductor	2	Not more than 3		Not more than 3	
Type of cable	Flat	Round		Round	
Single / Multi cores	Multi cores	Single core		Multi cores	
Type of insulation	PVC	PVC	XLPE	PVC	XLPE
Conductor temperature	70°C	70°C	90°C	70°C	90°C
Installation methods		 or 		 or 	
Type of cable	VAF, VAF-G	NYY, IEC 60502-1	IEC 60502-1	NYY, NYY-G, 60227 IEC 10, IEC 60502-1	IEC 60502-1
Size (sq.mm.)	Current-carrying capacities (amperes)				
1	14	12	16	12	15
1.5	17	16	21	15	20
2.5	23	22	28	21	27
4	32	29	37	28	36
6	41	37	49	36	47
10	56	51	67	50	65
16	74	69	90	66	87
25	-	90	118	84	108
35	-	112	147	104	134
50	-	145	190	125	163
70	-	186	244	160	208
95	-	227	297	194	253
120	-	264	345	225	293
150	-	304	397	260	338
185	-	348	455	297	386
240	-	411	537	351	455
300	-	474	620	404	524
400	-	552	722	-	-
500	-	629	823	-	-

Note (Table 5-21)

1) Where the ambient temperature in the intended location of the cable differs from 40ºC (reference ambient temperature), the correction factor given in Table 5-43
2) Installation method given in Table 5-47
3) Type of cable given in Table 5-48

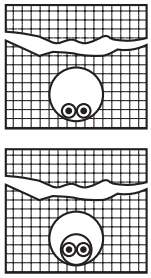
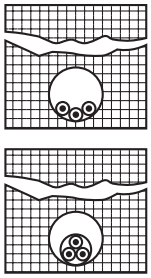
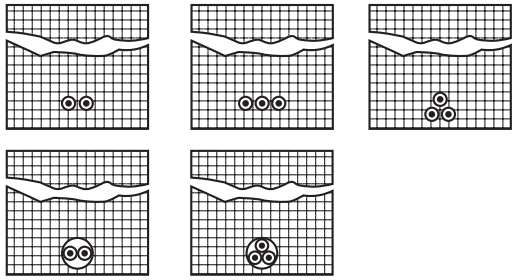
Table 5-22 : Current-carrying capacities in amperes accordance TIS 11-2553 for copper conductor, PVC insulated for rated voltage 450/750 V, conductor temperature 70°C / ambient temperature 40°C on insulator

	Group for installation method : Group 4	
Installation methods	 or 	 or 
Type of cable	60227 IEC 01, 60227 IEC 10, NYY	
Size (sq.mm.)	Current-carrying capacities (amperes)	
4	30	37
6	39	48
10	56	67
16	78	92
25	113	127
35	141	157
50	171	191
70	221	244
95	271	297
120	315	345
150	365	397
185	418	453
240	495	535
300	573	617
400	692	741

Note (Table 5-22)

1) Installation method given in Table 5-47
2) Type of cable given in Table 5-48

Table 5-23 : Current-carrying capacities in amperes for copper conductor, PVC insulated with sheathed for rated voltage 0.6/1 kV, conductor temperature 70ºC / ambient temperature 30ºC in duct in the ground or direct buria

	Group for installation method : Group 5		Group for installation method : Group 6
No. of conductor	2	3	Not more than 3
Type of cable	Single core and Multi cores	Single core and Multi cores	Single core and Multi cores
Installation methods			
Type of cable	NYY, NYY-G, IEC 60502-1		
Size (sq.mm.)	Current-carrying capacities (amperes)		
1	17	15	21
1.5	21	19	26
2.5	28	25	35
4	36	33	45
6	46	41	57
10	62	55	76
16	81	72	99
25	106	94	128
35	129	114	154
50	153	136	181
70	190	168	223
95	232	204	267
120	265	234	304
150	303	266	342
185	344	303	386
240	404	361	448
300	462	404	507
400	529	462	577
500	605	527	654

Note (Table 5-23)

1) Where the ambient temperature in the intended location of the cable differs from 30ºC (reference ambient temperature), the correction factor given in Table 5-44
2) If installation more than 1 circuit , the correction factor given in table 5-45 or 5-46.
3) If installation more than 1 circuit in single conduit , the correction factor given in Table 5-8.
4) Installation method given in Table 5-47.
5) Type of cable given in Table 5-48.

Table 5-24 : Current-carrying capacities in amperes accordance TIS 11-2553 for copper conductor, PVC insulated for rated voltage 300/500 V, conductor temperature 70ºC or 90ºC / ambient temperature 40ºC in free air

Conductor Temperature	70ºC	90ºC
Type of cable	60227 IEC 05, 60227 IEC 06	60227 IEC 07, 60227 IEC 08
Size (sq.mm.)	Current-carrying capacities (amperes)	
0.5	3	3
0.75	6	6
1	10[2)]	10
1.5	-	16
2.5	-	25

Note (Table 5-24)

1) Where the ambient temperature in the intended location of the cable differs from 40ºC (reference ambient temperature), the correction factor given in below table.

- For insulated with PVC 70ºC.

Ambient Temperature (Degree celsius)	31-35	36-40	41-45	46-50	51-55
Correction factor	1.11	1.00	0.87	0.71	0.50

- For insulated with PVC 90ºC.

Ambient Temperature (Degree celsius)	31-50	51-55	56-60	61-65	66-70
Correction factor	1.00	0.96	0.83	0.67	0.47

2) Current-carrying capacities for 60227 IEC 06 only.

3) Type of cable given in Table 5-48.

Table 5-25 : Current-carrying capacities in amperes accordance TIS 11-2553 for flexible copper conductor, PVC insulated for rated voltage 300/500 V, conductor temperature 70ºC or 90ºC / ambient temperature 40ºC in free air

No. of conductor	2	3
Type of cable	60227 IEC 52 , 60227 IEC 53 , 60227 IEC 56 , 60227 IEC 57	
Size (sq.mm.)	Current-carrying capacities (amperes)	
0.5	3	3
0.75	6	6
1	10	10
1.5	16	16
2.5	25	20

Note (Table 5-25)

1) Where the ambient temperature in the intended location of the cable differs from 40ºC (reference ambient temperature), the correction factor given in below table.

- For insulated with PVC 70ºC.

Ambient Temperature (Degree celsius)	31-35	36-40	41-45	46-50	51-55
Correction factor	1.11	1.00	0.87	0.71	0.50

- For insulated with PVC 90ºC.

Ambient Temperature (Degree celsius)	31-50	51-55	56-60	61-65	66-70
Correction factor	1.00	0.96	0.83	0.67	0.47

2) Type of cable given in Table 5-48.

Table 5-26 : Current-carrying capacities in amperes accordance TIS 11-2553 for flexible copper conductor, PVC insulated for rated voltage 450/750 V, conductor temperature 70ºC / ambient temperature 40ºC in free air

No./Type of conductor	Single core 2 wires or 2 cores with or without ground	3 , 4 , 5 Cores
Type of cable	60227 IEC 02 , VCT , VCT-G	VCT , VCT-G
Size (sq.mm.)	Current-carrying capacities (amperes)	
1.5	16	-
2.5	25	-
4	30	26
6	39	34
10	51	47
16	73	63
25	97	83
35	140	102
50	175	-
70	216	-
95	258	-
120	302	-
150	347	-
185	394	-
240	471	-

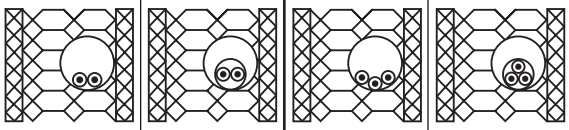
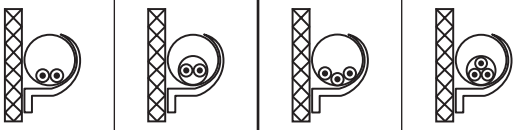
Note (Table 5-26)

1) Where the ambient temperature in the intended location of the cable differs from 40ºC (reference ambient temperature), the correction factor given in below table.

Ambient Temperature (Degree celsius)	31-35	36-40	41-45	46-50	51-55
Correction factor	1.11	1.00	0.87	0.71	0.50

2) Type of cable given in Table 5-48.

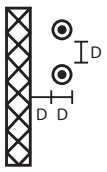
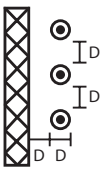
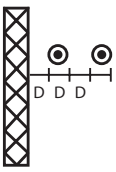
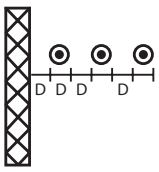
Table 5-27 : Current-carrying capacities in amperes for copper conductor, XLPE insulated, with sheathed for rated voltage 0.6/1 kV, conductor temperature 90ºC / ambient temperature 40ºC in conduit

	Group for installation method : Group 1				Group for installation method : Group 2			
No. of conductor	2		3		2		3	
Single / Multi cores	Single core	Multi cores	Single core	Multi cores	Single core	Multi cores	Single core	Multi cores
Installation methods								
Type of cable	IEC 60502-1 and special cable such as flame retardant (FR), low smoke and halogen free (LSHF) etc.							
Size (sq.mm.)	Current-carrying capacities (amperes)							
1	13	13	12	12	15	15	14	14
1.5	17	17	15	15	21	20	18	18
2.5	24	23	21	20	28	27	25	24
4	32	30	28	27	38	36	34	32
6	41	38	36	35	49	46	44	40
10	56	52	49	46	68	63	60	55
16	74	69	66	62	91	83	80	73
25	96	90	86	81	121	108	106	96
35	119	110	106	99	149	133	131	116
50	144	132	128	118	180	159	159	140
70	182	167	163	149	230	201	202	177
95	219	200	197	179	278	241	245	212
120	253	230	227	207	322	278	284	244
150	289	264	259	236	358	304	311	273
185	329	299	295	268	409	349	349	309
240	386	351	346	315	480	418	410	362
300	442	402	396	360	549	484	468	414
400	-	-	-	-	622	-	531	-
500	-	-	-	-	713	-	606	-

Note (Table 5-27)

1) Where the ambient temperature in the intended location of the cable differs from 40ºC (reference ambient temperature), the correction factor given in Table 5-43.
2) If installation more than 1 circuit in single conduit , the correction factor given in Table 5-8.
3) Installation method given in Table 5-47.
4) Type of cable given in Table 5-48.

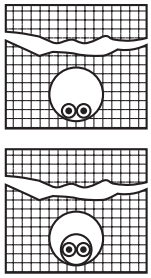
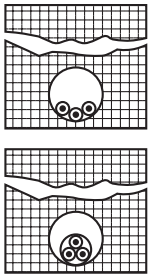
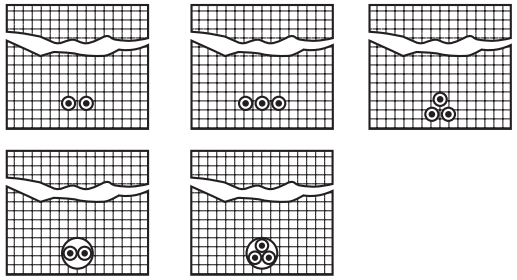
Table 5-28 : Current-carrying capacities in amperes for copper conductor, XLPE insulated for rated voltage 0.6/1 kV, conductor temperature 90ºC / ambient temperature 40ºC on insulator

	Group for installation method : Group 4	
Installation methods	 or 	 or 
Type of cable	IEC 60502-1	
Size (sq.mm.)	Current-carrying capacities (amperes)	
4	47	54
6	60	68
10	82	90
16	110	124
25	147	166
35	183	206
50	224	250
70	289	321
95	354	391
120	413	455
150	480	525
185	551	602
240	654	711
300	758	821
400	917	987
500	1064	1140

Note (Table 5-28)

1) Installation method given in Table 5-47.

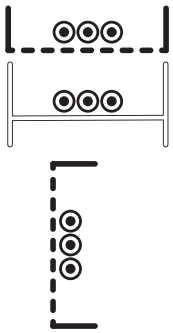
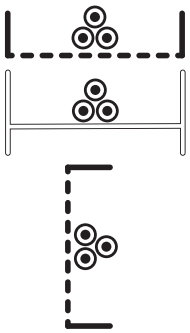
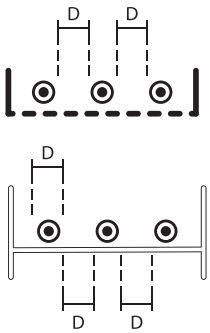
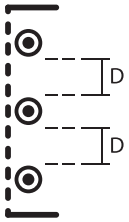
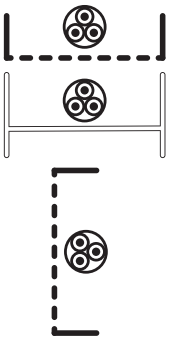
Table 5-29 : Current-carrying capacities in amperes for copper conductor, XLPE insulated for rated voltage 0.6/1 kV, conductor temperature 90°C / ambient temperature 30°C in duct in the ground or direct burial

	Group for installation method : Group 5		Group for installation method : Group 6
No. of conductor	2	3	Not more than 3
Type of cable	Single core and Multi cores	Single core and Multi cores	Single core and Multi cores
Installation methods			
Type of cable	IEC 60502-1		
Size (sq.mm.)	Current-carrying capacities (amperes)		
1.5	25	22	33
2.5	33	29	43
4	43	38	55
6	54	47	70
10	71	63	92
16	94	83	119
25	124	109	152
35	150	132	184
50	180	159	217
70	223	196	266
95	271	238	318
120	313	275	362
150	355	312	406
185	406	356	459
240	477	418	533
300	543	475	601
400	625	545	684
500	717	623	777

Note (Table 5-29)

1) Where the ambient temperature in the intended location of the cable differs from 30°C (reference ambient temperature), the correction factor given in Table 5-44
2) If installation more than 1 circuit , the correction factor given in table 5-45 or 5-46.
3) If installation more than 1 circuit in single conduit , the correction factor given in Table 5-8.
4) Installation method given in Table 5-47.
5) Type of cable given in Table 5-48.

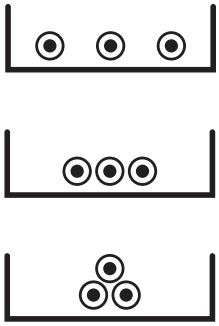
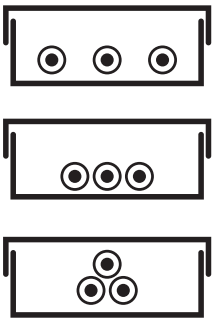
Table 5-30 : Current-carrying capacities in amperes for copper conductor, PVC insulated, with sheathed for rated voltage 0.6/1 kV, conductor temperature 70ºC / ambient temperature 40ºC install in perforated trays or ladder cleats

	Group for installation method : Group 7				
Single / Multi cores	Single core				Multi cores
Installation methods					
Type of cable	60227 IEC 10, NYY, NYY-G and special cable flame retardant (FR), low smoke and halogen free (LSHF) etc.				
Size (sq.mm.)	Current-carrying capacities (amperes)				
1	-	-	-	-	13
1.5	-	-	-	-	16
2.5	-	-	-	-	22
4	-	-	-	-	30
6	-	-	-	-	37
10	-	-	-	-	52
16	-	-	-	-	70
25	99	96	127	113	88
35	124	119	157	141	110
50	151	145	191	171	133
70	196	188	244	221	171
95	239	230	297	271	207
120	279	268	345	315	240
150	324	310	397	365	278
185	371	356	453	418	317
240	441	422	535	495	374
300	511	488	617	573	432
400	599	571	741	692	-
500	686	652	854	800	-

Note (Table 5-30)

1) Where the ambient temperature in the intended location of the cable differs from 40ºC (reference ambient temperature), the correction factor given in Table 5-43.
2) If installation more than 1 circuit , the correction factor given in table 5-40 or 5-41 for Single core and Multi cores respectively.
3) Installation method given in Table 5-47.
4) Type of cable given in Table 5-48.

Table 5-31 : Current-carrying capacities in amperes for copper conductor, PVC insulated with sheathed for rated voltage 0.6/1 kV, conductor temperature 70ºC / ambient temperature 40ºC install in ventilated or unventilated cable channel

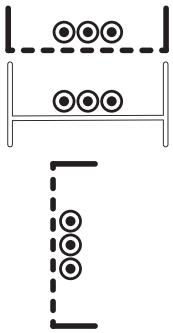
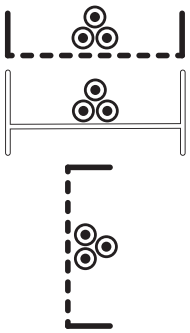
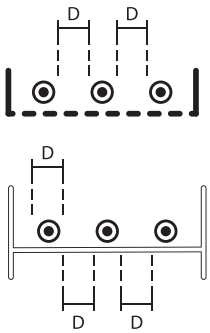
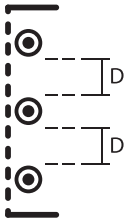
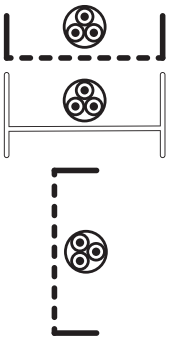
	Group for installation method : Group 7			
Single / Multi cores	Single core			Multi cores
Installation methods				
Type of cable	60227 IEC 10, NYY, NYY-G, IEC 60502-1 and special cable flame retardant (FR), low smoke and halogen free (LSHF) etc.			
Size (sq.mm.)	Current-carrying capacities (amperes)			
1	-	-	12	10
1.5	-	-	15	13
2.5	-	-	21	17
4	-	-	28	23
6	-	-	36	30
10	-	-	50	40
16	-	-	66	54
25	90	77	84	70
35	112	96	104	86
50	145	117	125	103
70	186	149	160	130
95	227	180	194	156
120	264	208	225	179
150	304	228	260	196
185	348	258	297	222
240	411	301	351	258
300	474	343	404	295
400	552	406	-	-
500	629	464	-	-

Note (Table 5-31)

1) Where the ambient temperature in the intended location of the cable differs from 40ºC (reference ambient temperature), the correction factor given in Table 5-43.
2) If number of conductor more than 1 circuit for install in ventilated, correction factor given in table 5-8 and table 5-41 for install in unventilated.

Exception : If spacing for circuit more than two time of cable diameter, the correction factor do not apply.

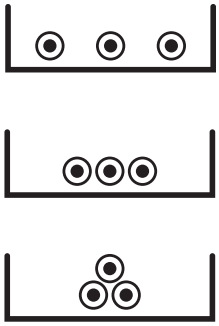
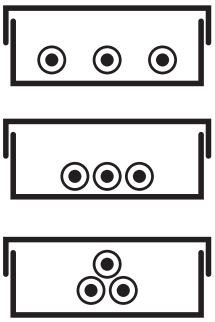
Table 5-32 : Current-carrying capacities in ampares for copper conductor, XLPE insulated with sheathed for rated voltage 0.6/1 kV, conductor temperature 90ºC / ambient temperature 40ºC install in perforated trays or ladder cleats

	Group for installation method : Group 7				
Single / Multi cores	Single core				Multi cores
Installation methods					
Type of cable	IEC 60502-1 and special cable flame retardant (FR), low smoke and halogen free (LSHF) etc.				
Size (sq.mm.)	Current-carrying capacities (amperes)				
1	-	-	-	-	16
1.5	-	-	-	-	21
2.5	-	-	-	-	29
4	-	-	-	-	38
6	-	-	-	-	49
10	-	-	-	-	68
16	-	-	-	-	91
25	128	123	166	147	116
35	160	154	206	183	144
50	197	188	250	224	175
70	254	244	321	289	224
95	311	298	391	354	271
120	364	349	455	413	315
150	422	404	525	480	363
185	485	464	602	551	415
240	577	552	711	654	490
300	670	640	821	758	565
400	790	749	987	917	-
500	908	861	1,140	1,064	-

Note (Table 5-32)

1) Where the ambient temperature in the intended location of the cable differs from 40ºC (reference ambient temperature), the correction factor given in Table 5-43.
2) If installation more than 1 circuit , the correction factor given in table 5-40 or 5-41 for Single core and Multi cores respectively.
3) Installation method given in Table 5-47.

Table 5-33 : Current-carrying capacities in amperes for copper conductor, XLPE insulated with sheathed for rated voltage 0.6/1 kV, conductor temperature 90ºC / ambient temperature 40ºC install in ventilated / unventilated cable channel

	Group for installation method : Group 7			
Single / Multi cores	Single core			Multi cores
Installation methods				
Type of cable	IEC 60502-1 and special cable flame retardant (FR), low smoke and halogen free (LSHF) etc.			
Size (sq.mm.)	Current-carrying capacities (amperes)			
1	-	-	15	14
1.5	-	-	20	18
2.5	-	-	27	24
4	-	-	36	32
6	-	-	47	40
10	-	-	65	55
16	-	-	87	73
25	118	106	108	96
35	147	131	134	116
50	190	159	163	140
70	244	202	208	177
95	297	245	253	212
120	345	284	293	244
150	397	311	338	273
185	455	349	386	309
240	537	410	455	362
300	620	468	524	414
400	722	531	-	-
500	823	606	-	-

Note (Table 5-33)

1) Where the ambient temperature in the intended location of the cable differs from 40ºC (reference ambient temperature), the correction factor given in Table 5-43.
2) If number of conductor more than 1 circuit for install in ventilated, correction factor given in table 5-8 and table 5-41 for install in unventilated.

Exception : If spacing for circuit more than two time of cable diameter, the correction factor do not apply.

Table 5-40 : The correction factor for grounps more than one circuit for Single core cable install on tray

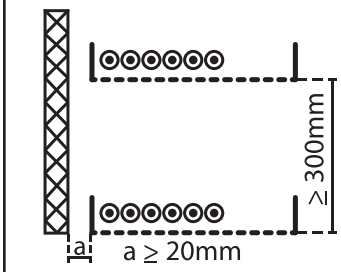
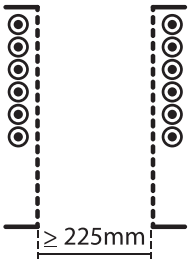
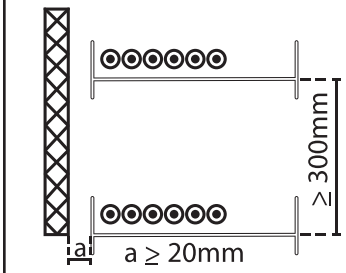
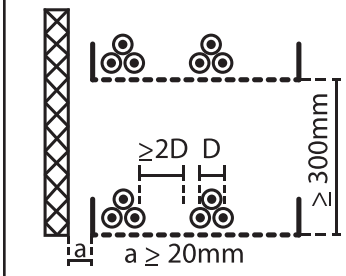
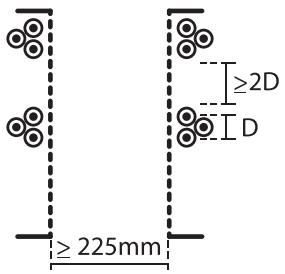
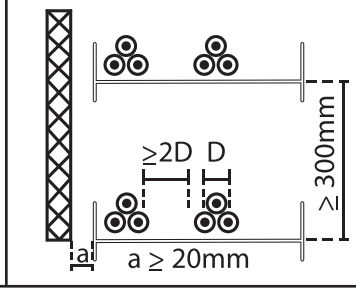
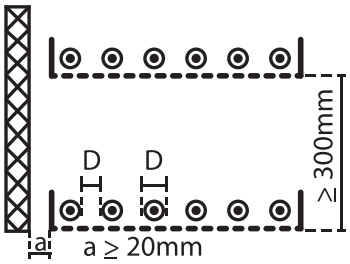
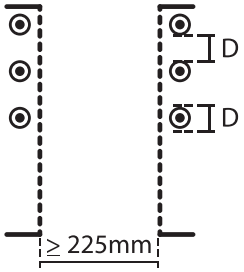
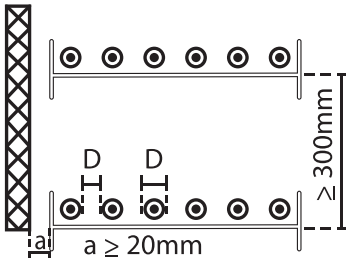
Installation method		No. of cable tray	Number of circuit per cable tray						
			1	2	3	4	5-6	7-9	
Perforated tray (note2)		1	1.00	0.91	0.87	0.82	0.78	0.77	Cable in horizontal formation
		2	0.96	0.87	0.81	0.78	0.74	0.69	
		3	0.95	0.85	0.78	0.75	0.70	0.65	
Vertical perforated trays (note 3)		1	1.00	0.86	0.80	0.75	0.71	0.70	Cable in vertical formation
		2	0.95	0.84	0.77	0.72	0.67	0.66	
Ladder cleats (note2)		1	1.00	0.97	0.96	0.94	0.93	0.92	Cable in horizontal formation
		2	0.98	0.93	0.89	0.88	0.86	0.83	
		3	0.97	0.90	0.86	0.83	0.80	0.77	
Perforated tray (note2)		1	1.00	0.98	0.96	0.93	0.89	-	Cable in trefoil formation space between circuit more than 2 time of cable diameter
		2	0.97	0.93	0.89	0.85	0.80	-	
		3	0.96	0.92	0.86	0.82	0.76	-	
Vertical perforated trays (note 3)		1	1.00	0.91	0.89	0.88	0.87	-	
		2	1.00	0.90	0.86	0.85	0.83	-	
Ladder cleats (note2)		1	1.00	1.00	1.00	1.00	1.00	-	
		2	0.97	0.95	0.93	0.92	0.91	-	
		3	0.96	0.94	0.90	0.89	0.86	-	

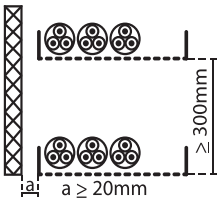
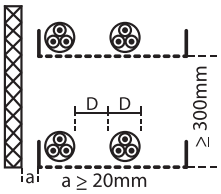
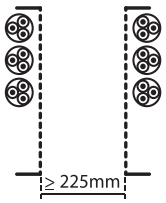
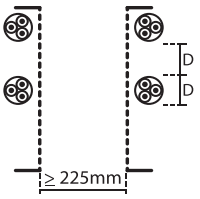
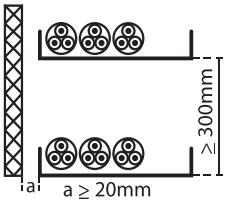
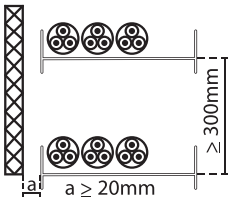
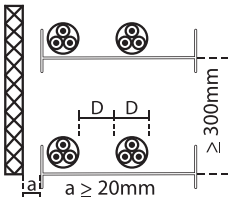
Table 5-40 : The correction factor for grounps more than one circuit for Single core cable install on tray

Installation method		No. of cable tray	Number of circuit per cable tray						
			1	2	3	4	5-6	7-9	
Perforated tray (note2)		1	1.00	0.93	0.9	0.87	0.83	-	Spacing between cable not less than diameter of cable
		2	0.97	0.89	0.85	0.81	0.76	-	
		3	0.96	0.88	0.82	0.78	0.72	-	
Vertical perforated trays (note 3)		1	1.00	0.91	0.89	0.88	0.87	-	
		2	0.94	0.90	0.86	0.85	0.83	-	
Ladder cleats (note2)		1	1.00	0.97	0.96	0.96	0.96	-	
		2	0.97	0.94	0.93	0.92	0.91	-	
		3	0.96	0.93	0.92	0.91	0.88	-	

Note (Table 5-40)

1) Factors are given for single layer of cables (or trefoil groups) only as shown in table and do not apply when cables are installed in more than one layer touching each other.
2) Values are given for vertical spacing between trays of at least 300 mm. and at least 20 mm. between the trays and any wall only.
3) Values are given for horizental spacing between trays of at least 225 mm. with trays mounted back to back only.
4) For trays having more than one circuit, the correction factor should be considered as a maximum circuit in tray.

Table 5-41 : The correction factor for groups more than one circuit for Multi cores cable install on perforated or unperforated tray or ladder cleats

Installation method		No. of tray	Number of cable tray					
			1	2	3	4	5-6	7-9
Perforated tray (note2)		1	1.00	0.88	0.82	0.77	0.73	0.72
		2	1.00	0.87	0.8	0.77	0.73	0.68
		3	1.00	0.86	0.79	0.76	0.71	0.66
		4-6	1.00	0.84	0.77	0.73	0.68	0.64
		1	1.00	1.00	0.98	0.95	0.91	-
		2	1.00	0.99	0.96	0.92	0.87	-
		3	1.00	0.98	0.95	0.91	0.85	-
Vertical perforated trays (note 3)		1	1.00	0.88	0.82	0.77	0.73	0.72
		2	1.00	0.88	0.81	0.76	0.71	0.70
		1	1.00	0.91	0.89	0.88	0.87	-
		2	1.00	0.91	0.88	0.87	0.85	-
Unperforated tray (note2)		1	0.97	0.84	0.78	0.75	0.71	0.68
		2	0.97	0.83	0.76	0.72	0.68	0.63
		3	0.97	0.82	0.75	0.71	0.66	0.61
		4-6	0.97	0.81	0.73	0.69	0.63	0.58
Ladder cleats (note2)		1	1.00	0.87	0.82	0.80	0.79	0.78
		2	1.00	0.86	0.80	0.78	0.76	0.73
		3	1.00	0.85	0.79	0.76	0.73	0.70
		4-6	1.00	0.84	0.77	0.73	0.68	0.64
		1	1.00	1.00	1.00	1.00	1.00	-
		2	1.00	0.99	0.98	0.97	0.96	-
		3	1.00	0.98	0.97	0.96	0.93	-

Note (Table 5-41)

1) Factors are given for single layer of cables (or trefoil groups) only given in table and do not apply when cables are installed in more than one layer touching each other.
2) Values are given for vertical spacing between trays of at least 300 mm. and at least 20 mm. between the trays and any wall only.
3) Values are given for horizental spacing between trays of at least 225 mm. with trays mounted back to back only.
4) For trays having more than one circuit, the correction factor should be considered as a maximum circuit in tray.

Table 5-43 : Correction factor for ambient air temperatures other than 40ºC to be applied to current-carrying capacities for cables in free air

Ambient Temperature (Degree celsius)	Insulation			
	PVC	XLPE or EPR	MI	
			70ºC	110ºC
11-15	1.34	1.23	1.41	1.21
16-20	1.29	1.19	1.34	1.16
21-25	1.22	1.14	1.26	1.13
26-30	1.15	1.10	1.18	1.09
31-35	1.08	1.05	1.09	1.04
36-40	1.00	1.00	1.00	1.00
41-45	0.91	0.96	0.91	0.96
46-50	0.82	0.90	0.79	0.91
51-55	0.70	0.84	0.67	0.87
56-60	0.57	0.78	0.53	0.82
61-65	-	0.71	-	0.76
66-70	-	0.64	-	0.70
71-75	-	0.55	-	0.65
76-80	-	0.45	-	0.59
81-85	-	-	-	0.51
86-90	-	-	-	0.43
91-95	-	-	-	0.35

Table 5-44 : Correction factors for ambient ground temperatures other than 30ºC to be apllied to the current-carrying capacities for the cables in ducts in the ground

Ambient temperature (Degree celsius)	Insulation	
	PVC	XLPE or EPR
11-15	1.18	1.12
16-20	1.12	1.08
21-25	1.07	1.03
26-30	1.00	1.00
31-35	0.94	0.96
36-40	0.87	0.91
41-45	0.80	0.86
46-50	0.71	0.82
51-55	0.62	0.76
56-60	0.51	0.70
61-65	-	0.65
66-70	-	0.57
71-75	-	0.49
76-80	-	0.41

Table 5-45 and Table 5-46 : Correction factor for Single core or Multi cores, rated voltaed 0.6/1 kV when group of circuit more than 1 circuit, flat horizental.

Table 5-45 : Correction factor for Single core or Multi cores, rated voltaed 0.6/1 kV install in direct burial when group of circuit more than 1 circuit, flat horizental.

No. of circuit	Space between outside of each cable (mm.)				
	Touching	1 time of cable diameter	125	250	500
2	0.75	0.80	0.85	0.90	0.90
3	0.65	0.7 0	0.75	0.80	0.85
4	0.60	0.60	0.70	0.75	0.80
5	0.55	0.55	0.65	0.70	0.80
6	0.50	0.55	0.60	0.70	0.80

Table 5-46 : Correction factor for Single core or Multi cores, rated voltaed 0.6/1 kV, install in conduit in direct burial when group of circuit more than 1 circuit, flat horizental.

No. of circuit	Space between outside of conduit (mm.)			
	Touching	125	500	1,000
2	0.85	0.90	0.95	0.95
3	0.75	0.85	0.90	0.95
4	0.70	0.80	0.85	0.90
5	0.65	0.80	0.85	0.90
6	0.60	0.80	0.80	0.90

Table 5-47 : Schedule of reference method of installation which form the basis of the tabulated current-carrying capacities

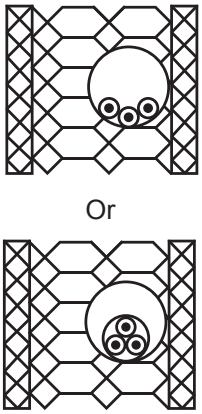
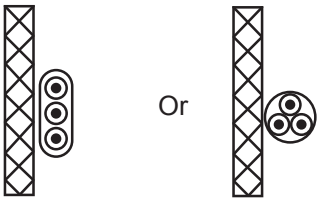
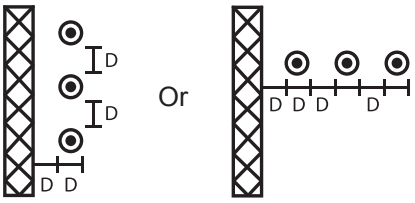
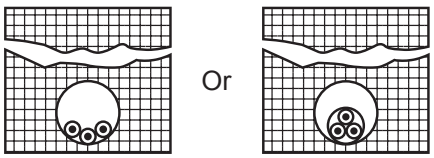
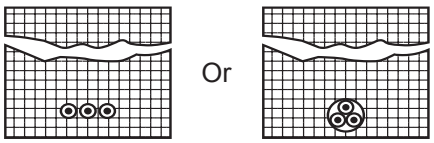
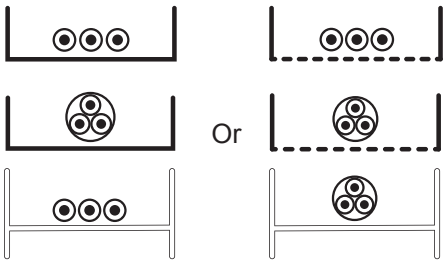
	Methods of Installation	Group of Installation	Note
Insulated conductors single core or multi cores with or without sheathed wiring in metallic or non-metallic conduit in thermal insulated wall.		Group 1	Ceiling or thermal insulated wall has a thermal conductant not less than 10 $W/m^2 \cdot K$
Insulated conductors single core or multi cores with or without sheathed wiring in metallic or non-metallic conduit in concrete wall.		Group 2	The inner skin of the concrete has a thermal conductant not greater than 2 k.m/w
Single core or multi cores cable, insulated and sheathed on a wall		Group 3	-
Single core or multi cores cable, insulated with or without sheathed wiring in spacing on insulator.		Group 4	Spacing between cable and cable, wall and cable not less than diameter of cable.
Single core or multi cores cable with sheathed install in duct in ground.		Group 5	-
Single core or multi cores cable with sheathed install direct burial.		Group 6	-

Table 5-47 (continue) : Schedule of reference method of installation which form the basis of the tabulated current-carrying capacities

	Methods of Installation	Group of Installation	Note
Single core or multi cores cable with sheathed install on perforated or unperforated tray or ladder cleats.	 Or	Group 7	Perforated tray must have ventilated area not less than 30 percent of surface tray.

Note (Table 5-47)

** If no confirmation that thermal conductant not less than 10 $W/m^2 \cdot K$, consider that install in conduit in ceiling or thermal insulated wall shall be apply current-carrying capacities in group 1.

WIRE GAUGES

Gauge				Diameter		Sectional Area			Weight	
B.W.G.	A.W.G.	S.W.G.	mm.G.	Mil	mm.	Cir. Mil	In^2	mm^2	lb/1,000 ft.	kg./km.
5/0	-	7/0	-	500	12.700	250,000	0.1964	126.7	756.9	1,126
-	-	-	12	472.4	12.000	223,162	0.1753	113.1	675.6	1,005
-	-	6/0	-	464	11.786	215,296	0.1691	109.1	651.7	969.9
-	4/0	-	-	460	11.684	211,600	0.1662	107.2	640.5	953
4/0	-	-	-	454	11.532	206,100	0.1619	104.4	624	928.1
-	-	5/0	-	432	10.973	186,624	0.1466	94.56	565	840.6
3/0	-	-	-	425	10.795	180,600	0.1419	91.52	546.9	813.6
-	3/0	-	-	409.6	10.404	167,772	0.1318	85.03	508	755.9
-	-	4/0	-	400	10.160	160,000	0.1257	81.07	484.5	720.7
-	-	-	10	393.7	10.000	155,000	0.1217	78.54	468	698.2
2/0	-	-	-	380	9.652	144,400	0.1134	73.17	437.1	650.5
-	-	3/0	-	372	9.440	138,384	0.1087	70.12	418.9	623.4
-	2/0	-	-	364.8	9.266	133,079	0.1045	67.42	402.7	599.4
-	-	-	9	354.3	9.000	125,528	0.09859	63.62	380	565.6
-	-	2/0	-	348	8.839	121,104	0.09512	61.36	366.6	545.5
0	-	-	-	340	8.636	115,600	0.09079	58.58	349.9	520.8
-	0	-	-	324.9	8.250	105,560	0.08291	53.49	319.5	475.5
-	-	0	-	324	8.230	104,976	0.08245	53.19	317.8	472.8
-	-	-	8	315	8.000	99,225	0.07793	50.27	300.3	446.9
1	-	1	-	300	7.629	90,000	0.07069	45.60	272.4	405.4
-	1	-	-	289.3	7.348	83,694	0.06573	42.41	253.3	377
2	-	-	-	284	7.214	80,660	0.06335	40.87	244.2	363.3
-	-	2	-	276	7.010	76,176	0.05983	39.60	230.6	343.2
-	-	-	7	275.6	7.000	75,955	0.05966	38.48	229.9	342.1
3	-	-	-	259	6.579	67,080	0.05269	33.99	203.1	302.2
-	2	-	-	257.6	6.544	66,358	0.05212	33.63	200.9	299
-	-	-	6.5	255.9	6.500	65,485	0.05143	22.18	189.2	295
-	-	3	-	252	6.401	63,504	0.04988	32.18	192.2	286.1
4	-	-	-	238	6.045	56,640	0.04449	28.70	171.5	255.1
-	-	-	6.0	236.2	6.000	55,790	0.04382	28.27	168.9	251.1
-	-	4	-	232	5.893	53,824	0.04227	27.27	162.9	242.4
-	3	-	-	229.4	5.827	52,624	0.04133	26.66	159.3	237
5	-	-	-	220	5.588	48,400	0.03801	24.52	146.5	218
-	-	-	5.5	216.5	5.500	46,872	0.03681	23.72	141.9	210.9
-	-	5	-	212	5.385	44,944	0.03530	22.77	136	202.4
-	4	-	-	204.3	5.189	41,738	0.03278	21.15	126.3	188
6	-	-	-	203	5.156	41,210	0.03237	20.88	124.8	185.6
-	-	-	5.0	196.9	5.000	38,770	0.03045	19.63	117.4	174.5
-	-	6	-	192	4.877	36,864	0.02895	18.68	111.6	166.3
-	5	-	-	181.9	4.621	33,088	0.02599	16.77	100.2	149.1
7	-	-	-	180	4.572	32,400	0.02545	16.42	98.08	146
-	-	-	4.5	177.2	4.500	31,400	0.02466	15.90	95.04	141.4
-	-	7	-	176	4.470	30,976	0.02433	15.70	93.77	139.6
8	-	-	-	165	4.191	27,220	0.02138	13.80	82.40	122.7
-	6	-	-	162	4.115	26,244	0.02061	13.30	79.43	118.2
-	-	8	-	160	4.064	25,600	0.02011	12.97	44.50	115.30
-	-	-	4.0	157.5	4.000	24,806	0.01948	12.57	75.08	111.80

WIRE GAUGES

Gauge				Diameter		Sectional Area			Weight	
B.W.G.	A.W.G.	S.W.G.	mm.G.	Mil	mm.	Cir. Mil	In^2	mm^2	lb/1,000 ft.	kg./km.
9	-	-	-	148	3.759	21,900	0.01720	11.10	66.29	98.68
-	7	-	-	144.3	3.665	20,822	0.01635	10.55	63.01	93.79
-	-	9	-	144	3.658	20,736	0.01629	10.52	62.78	93.52
-	-	-	3.5	137.8	3.500	18,989	0.01491	9.621	57.46	58.53
10	-	-	-	134	3.404	17,960	0.01410	9.098	54.34	80.88
-	8	-	-	128.5	3.264	16,512	0.01297	8.368	49.99	74.39
-	-	10	-	128	3.251	16,384	0.01287	8.302	49.60	73.81
-	-	-	3.2	126	3.200	15,876	0.01247	8.042	48.06	71.49
11	-	-	-	120	3.048	14,400	0.01131	7.297	43.59	64.87
-	-	11	-	116	2.946	13,456	0.01057	6.818	40.74	60.61
-	9	-	-	114.4	2.906	13,087	0.01028	6.632	39.62	58.96
-	-	-	2.9	114.2	2.900	13,042	0.01024	6.605	39.47	58.72
12	-	-	-	109	2.769	11,880	0.009331	6.020	35.96	53.52
-	-	12	-	104	2.642	10,816	0.008495	5.481	32.74	48.73
-	-	-	2.6	102.4	2.600	10,486	0.008246	5.309	31.78	47.29
-	10	-	-	101.9	2.588	10,384	0.008156	5.262	31.43	46.78
13	-	-	-	95	2.413	9,025	0.007088	4.573	27.32	40.65
-	-	13	-	92	2.337	8,464	0.006648	4.289	25.62	38.13
-	11	-	-	90.74	2.305	8,234	0.006467	4.172	24.92	37.09
-	-	-	2.3	90.55	2.300	8,199	0.006439	4.155	24.82	36.94
14	-	-	-	83	2.108	6,889	0.005411	3.491	20.85	31.04
-	12	-	-	80.81	2.053	6,530	0.005129	3.309	19.77	29.42
-	-	14	-	80	2.032	6,400	0.005027	3.243	19.37	28.83
-	-	-	2.0	78.74	2.000	6,200	0.004869	3.142	18.77	27.93
15	-	15	-	72	1.829	5,184	0.004072	2.627	18.46	27.36
-	13	-	-	71.96	1.828	5,178	0.004067	2.624	15.67	23.33
-	-	-	1.8	70.87	1.800	5,023	0.003945	2.545	15.20	22.63
16	-	-	-	65	1.651	4,225	0.003318	2.141	12.79	19.03
-	14	-	-	64.08	1.628	4,106	0.003225	2.081	12.43	18.50
-	-	16	-	64	1.626	4,096	0.003217	2.075	12.40	18.45
-	-	-	1.6	62.99	1.600	3,968	0.003116	2.011	12.01	17.88
17	-	-	-	58	1.473	3,364	0.002642	1.705	10.18	15.16
-	15	-	-	57.07	1.450	3,257	0.002558	1.650	9.859	14.67
-	-	17	-	56	1.422	3,136	0.002463	1.589	9.493	14.13
-	-	-	1.4	55.12	1.400	3,038	0.002386	1.539	9.196	13.68
-	16	-	-	50.82	1.291	2,583	0.002029	1.309	7.820	11.64
18	-	-	-	49	1.245	2,401	0.001886	1.217	7.269	10.82
-	-	18	-	48	1.219	2,304	0.001810	1.167	6.976	10.38
-	-	-	1.2	47.24	1.200	2,232	0.001753	1.131	6.756	10.06
-	17	-	-	45.26	1.150	2,048	0.001608	1.037	6.197	9.219
19	-	-	-	42	1.067	1,764	0.001385	0.8938	5.388	7.946
-	18	-	-	40.30	1.024	1,624	0.001275	0.8226	4.914	7.313
-	-	19	-	40	1.016	1,600	0.001257	0.8107	4.845	7.207
-	-	-	1.0	39.37	1.000	1,550	0.001217	0.7854	4.690	6.982
-	-	20	-	36	0.9144	1,296	0.001018	0.6576	3.923	5.838
-	19	-	-	35.89	0.9116	1,288	0.001012	0.6529	3.900	5.804
-	-	-	0.90	35.43	0.9000	1,255	0.0009857	0.6362	3.799	5.656

WIRE GAUGES

Gauge				Diameter		Sectional Area			Weight	
B.W.G.	A.W.G.	S.W.G.	mm.G.	Mil	mm.	Cir. Mil	In^2	mm^2	lb/1,000 ft.	kg./km.
20	-	-	-	35	0.8890	1,225	0.0009621	0.6207	3.708	5.518
21	-	21	-	32	0.8128	1,024	0.0008042	0.5189	3.099	4.613
-	20	-	-	31.96	0.8118	1,021	0.0008019	0.5174	3.091	4.600
-	-	-	0.80	31.50	0.8000	992.3	0.0007794	0.5027	3.004	4.469
-	21	-	-	28.46	0.7229	810	0.0006362	0.4105	2.452	3.649
22	-	22	-	28	0.7112	784	0.0006158	0.3973	2.373	3.532
-	-	-	0.70	27.56	0.7000	759.6	0.0005966	0.3848	2.299	3.421
-	-	-	0.65	25.59	0.6500	654.8	0.0005143	0.3318	1.982	2.950
-	22	-	-	25.35	0.6438	642.6	0.0005047	0.3256	1.945	2.895
23	-	-	-	25	0.6350	625	0.0004909	0.3167	1.892	2.816
-	-	23	-	24	0.6096	576	0.0004524	0.2919	1.744	2.595
-	-	-	0.60	23.62	0.6000	557.9	0.0004382	0.2827	1.689	2.513
-	23	-	-	22.57	0.5733	509.4	0.0004001	0.2581	1.542	2.295
24	-	24	-	22	0.5583	484	0.0003801	0.2452	1.465	2.180
-	-	-	0.50	21.65	0.5500	468.7	0.0003681	0.2376	1.419	2.112
-	24	-	-	20.10	0.5106	404	0.0003173	0.2047	1.223	1.820
25	-	25	-	20	0.5080	400	0.0003142	0.2027	1.211	1.802
-	-	-	0.50	19.69	0.5000	387.7	0.0003045	0.1963	1.174	1.745
26	-	26	-	18	0.4572	324	0.0002545	0.1642	0.9809	1.460
-	25	-	-	17.90	0.4547	320.4	0.0002516	0.1623	0.9697	1.443
-	-	-	0.45	17.72	0.4500	314	0.0002466	0.1590	0.9504	1.414
-	-	27	-	16.4	0.4166	269	0.0002113	0.1363	0.8146	1.212
27	-	-	-	16	0.4064	256	0.0002011	0.1297	0.7750	1.153
-	26	-	-	15.94	0.4049	254.1	0.0001996	0.1288	0.7693	1.145
-	-	-	0.40	15.75	0.4000	248.1	0.0001946	0.1257	0.7512	1.118
-	-	28	-	14.8	0.3759	219	0.0001720	0.1110	0.6629	0.9868
-	27	-	-	14.20	0.3606	201.6	0.0001583	0.1021	0.6101	0.9077
28	-	-	-	14	0.3556	196	0.0001539	0.09932	0.5931	0.8330
-	-	-	0.35	13.78	0.3500	189.9	0.0001491	0.09621	0.5746	0.8553
-	-	29	-	13.6	0.3454	185	0.0001453	0.09372	0.5600	0.8332
29	-	-	-	13	0.3302	169	0.0001327	0.08563	0.5114	0.7613
-	28	-	-	12.64	0.3211	159.8	0.0001255	0.08097	0.4837	0.7198
-	-	-	0.30	12.60	0.3200	158.8	0.0001246	0.08042	0.4805	0.7149
-	-	30	-	12.4	0.3150	153.8	0.0001208	0.07791	0.4656	0.6926
30	-	-	-	12	0.3048	144	0.0001131	0.07297	0.4359	0.6487
-	-	31	-	11.6	0.2946	134.6	0.0001057	0.06818	0.4074	0.6061
-	-	-	0.29	11.42	0.2900	130.4	0.0001024	0.06605	0.3947	0.5872
-	29	-	-	11.26	0.2859	126.8	0.00009959	0.06425	0.3838	0.5712
-	-	32	-	10.8	0.2743	116.6	0.00009158	0.05913	0.3530	0.5257
-	-	-	26	10.24	0.2600	104.9	0.00008239	0.05309	0.3175	0.4720
-	30	-	-	10.03	0.2546	100.6	0.00007901	0.05097	0.3045	0.4531
31	-	33	-	10	0.2540	100	0.00007954	0.05067	0.3027	0.4505
-	-	34	-	9.2	0.2337	84.64	0.00006648	0.04289	0.2562	0.3813
-	-	-	0.23	9.055	0.2300	81.99	0.00006440	0.04155	0.2482	0.3694
32	-	-	-	9	0.2286	81.102	0.00006362	0.04104	0.2452	0.3649
-	31	-	-	8.928	0.2238	79.71	0.00006260	0.04039	0.2413	0.3591
-	-	35	-	8.4	0.2134	70.56	0.00005542	0.03575	0.2136	0.3178

WIRE GAUGES

Gauge				Diameter		Sectional Area			Weight	
B.W.G.	A.W.G.	S.W.G.	mm.G.	Mil	mm.	Cir. Mil	In^2	mm^2	lb/1,000 ft.	kg./km.
33	-	-	-	8	0.2032	64	0.00005027	0.03243	0.1937	0.2883
-	32	-	-	7.950	0.2019	63.20	0.00004964	0.03203	0.1913	0.2847
-	-	-	0.20	7.874	0.2000	62	0.00004869	0.03142	0.1877	0.2793
-	-	36	-	7.6	0.1930	57.76	0.00004536	0.02927	0.1748	0.2602
-	-	-	0.18	7.087	0.1800	50.23	0.00003945	0.02545	0.1520	0.2263
-	33	-	-	7.080	0.1798	50.13	0.00003937	0.02540	0.1517	0.2258
34	-	-	-	7	0.1778	49	0.00003848	0.02483	0.1483	0.2207
-	-	37	-	6.8	0.1727	46.24	0.00003632	0.02343	0.1400	0.2083
-	34	-	-	6.305	0.1601	39.75	0.00003122	0.02014	0.1203	0.1790
-	-	-	0.16	6.299	0.1600	39.68	0.00003116	0.02011	0.1201	0.1788
-	-	38	-	6	0.1524	36	0.00002827	0.01824	0.1090	0.1622
-	35	-	-	5.615	0.1426	31.53	0.00002476	0.01597	0.09543	0.1420
-	-	-	0.14	5.512	0.1400	30.38	0.00002386	0.01539	0.09196	0.1368
-	-	39	-	5.2	0.1321	27.04	0.00002124	0.01370	0.08186	0.1218
35	36	-	-	5.000	0.1270	25	0.00001963	0.01267	0.07565	0.1126
-	-	40	-	4.8	0.1219	23.04	0.00001810	0.01167	0.06976	0.1037
-	-	-	0.12	4.724	0.1200	22.32	0.00001753	0.01131	0.06756	0.1006
-	37	-	-	4.453	0.1131	19.83	0.00001557	0.01005	0.06001	0.08934
-	-	41	-	4.4	0.1118	19.36	0.00001521	0.009810	0.05812	0.08721
36	-	42	-	4	0.1016	16.00	0.00001257	0.008107	0.04845	0.07207
-	38	-	-	3.965	0.1007	15.72	0.00001235	0.007968	0.04760	0.07084
-	-	-	0.10	3.937	0.1000	15.50	0.00001217	0.007854	0.04690	0.06982
-	-	43	-	3.6	0.09114	12.96	0.00001018	0.006567	0.03923	0.05838
-	39	-	-	3.531	0.08969	12.47	0.000009794	0.006319	0.03775	0.05618
-	-	44	-	3.2	0.08138	10.24	0.000008042	0.005819	0.03099	0.04613
-	40	-	-	3.145	0.07987	9.891	0.000007768	0.005012	0.02994	0.04456
-	41	45	-	3.800	0.07113	7.842	0.000006159	0.003973	0.02374	0.03532
-	42	-	-	2.494	0.06334	6.219	0.000004884	0.003151	0.01882	0.02801
-	-	46	-	2.4	0.06096	5.760	0.000004528	0.002929	0.01744	0.02595
-	43	-	-	2.221	0.05641	4.932	0.000003873	0.002495	0.01498	0.02222
-	-	47	-	2	0.05080	4.000	0.000003142	0.002027	0.01211	0.01802
-	44	-	-	1.987	0.05023	3.911	0.000003072	0.001982	0.01184	0.01762
-	-	-	0.05	1.969	0.05000	3.877	0.000003045	0.001963	0.01174	0.01745
-	45	-	-	1.761	0.04473	3.102	0.000002436	0.001572	0.009383	0.01398
-	-	48	-	1.6	0.04064	2.560	0.000002011	0.001297	0.007750	0.01153
-	46	-	-	1.568	0.03984	2.460	0.000001931	0.001246	0.007446	0.01108
-	47	-	-	1.397	0.03547	1.951	0.000001532	0.0009884	0.005904	0.008787
-	48	-	-	1.224	0.03159	1.547	0.000001215	0.0007838	0.004683	0.006968
-	-	49	-	1.2	0.03048	1.440	0.000001131	0.0007297	0.004359	0.006487
-	49	-	-	1.108	0.02813	1.227	0.0000009635	0.0006216	0.003713	0.005526
-	-	50	-	1	0.02540	1.000	0.0000007854	0.0005067	0.003027	0.004505
-	50	-	-	0.986	0.02505	0.9728	0.0000007641	0.0004929	0.002945	0.004382

NOTE : B.W.G. - Birmingham Iron Wire Gauge
A.W.G. - American Wire Gauge
S.W.G. - British Standard Wire Gauge
mm.G. - Millimeter Gauge

STANDARD COEFFICIENT OF CNVERSION

Item		Descriptions			
1. LENGTH	1 micron	= 0.001 mm	= 3.94 x 10^{-5} in.		
	1 mil	= 0.0254 mm.	= 0.001 in.		
	1 mm	= 39.37 mils	= 0.03937 in.		
	1 cm	= 0.3937 in.	= 0.0328 ft.		
	1 inch	= 25.4 mm.	= 0.083 ft.	= 0.0278 yd.	= 2.54 cm.
	1 feet	= 0.305 m.	= 0.333 yd.		
	1 yard	= 0.914 m.	= 91.44 cm.		
	1 meter	= 39.37 in.	= 3.28 ft	= 1.094 yd.	
	1 kilometer	= 3,281 ft.	= 1,094 yd.	= 0.6213 mile	
	1 mile	= 5,280 ft.	= 1,760 yd.	= 1,609 m	= 1.609 km.
2. AREA	1 MCM	= 1000 CM	(Circular Mil)	= 0.5067 mm^2	= 1/1000 in^2
	1 CM	= 0.0005067 $mm.^2$	= 0.0000007854 $in.^2$		= 0.7854 sq.mil.
	1 mm^2	= 1973 CM.	= 0.00155 $in.^2$	= 1,550 sq.mil.	
	1 in^2	= 1273240 CM.	= 645.1 $mm.^2$	= 0.0069 $ft.^2$	
	1 yd^2	= 1,296 $in.^2$	= 0.83613 $m.^2$		
	1 m^2	= 1,550 $in.^2$	= 10.7 $ft.^2$	= 1.195 $yd.^2$	
	1 km^2	= 0.001562 $mile^2$			
	1 $mile^2$	= 27,880,000 ft^2	= 3,098,000 $yd.^2$	= 2,590,000 m^2	= 7.48 gal
3. VOLUME	1 cm^3	= 0.061 $in.^3$			
	1 in^3	= 16.39 $cm.^3$	= 0.0036 gal.	= 0.0005787 $ft.^3$	
	1 l	= 1,000 $cm.^3$	= 61.023 $in.^3$	= 0.2642 gal.	= 0.03531 $ft.^3$
	1 gal	= 3,785 $cm.^3$	= 231 $in.^3$	= 0.1337 $ft.^3$	= 0.004951 $yd.^3$
	1 ft^3	= 28,317 $cm.^3$	= 1,728 $in.^3$	= 28.32 l.	= 7.48 gal.
	1 yd^3	= 46,656 $in.^3$	= 0.7676 $m.^3$		
	1 m^3	= 61,023 $in.^3$	= 35.31 $ft.^3$	= 1.308 $yd.^3$	
4. WEIGHT	1 g.	= 15.43 gr.	= 0.03527 oz.	= 0.002205 lb.	
	1 oz.	= 437.5 gr.	= 28.35 g.	= 0.0625 lb.	
	1 lb.	= 7,000 gr.	= 453.6 g.	= 16 oz.	= 0.4536 kg.
	1 kg.	= 15,432 gr.	= 35.27 oz.	= 2.205 lb.	
	1 ton (short)	= 2,000 lb.	= 907.2 kg.	= 0.8928 ton (long)	
	1 ton (long)	= 2,240 lb.	= 1.12 ton (short)	= 1.016 ton (metric)	
	1 ton (metric)	= 2,240.62 lb.			
5. ENERGY	1 B.t.u.	= 1,055 joules	= 778.1 ft.-lb.	= 252 g.-cal.	= 107.6 kg.-m.
		= 0.2930 watt-hr.			
	1 watt-hr.	= 3,600 joules	= 2,655.4 ft.-lb.	= 860 g.-cal.	= 367.1 kg.-m.
		= 3,413 B.t.u.	= 0.001341 hp.-hr		
	1 hp.-hr.	= 2,684,000 joules	= 1,980,000 ft.-lb.	= 273,700 kg.-cm	
		= 745.6 watt-hr.			
	1 kw-hr.	= 2,655,000 ft.-lb.	= 367,100 kg.-m.	= 1.34 hp.-hr.	
6. POWER	1 watt	= 44.26 ft.-lb./min	= 6.119 kg.-m./min.	= 0.001341 hp.	
	1 hp.	= 33,000 ft.-lb./min		= 745.6 watts	= 550 ft.-lb./sec.
		= 76.04 kg.-m./sec.			
	1 kw.	= 44,256.7 ft.-lb./min		= 101.979 kg.-m./sec.	= 1.341 hp.
		= 1,000 watts.			
7. TEMPERATURE	Temp°C	= 5/9 (temp°F-32)			
	Temp°F	= (9/5 x temp °C)+32			

SYMBOLS OF ELECTRICAL UNITS

Electrical Unit		Symbol
CURRENT	(AMPERE)	A
VOLTAGE	(VOLT)	V (kV)
RESISTANCE	(OHM)	Ω (kΩ , M Ω)
ELECTRIC POWER	(WATT)	W (kW, MW.)
ELECTRIC ENERGY	(WATT HOUR)	Wh (kWh)
HORSE POWER		HP
POWER FACTOR	(COS ϴ)	P.F.
FREQUENCY	(HERTZ)	Hz
CAPACITANCE	(FARAD)	F (μF , pF)
APPARENT POWER	(VOLTAMPERE)	VA (kVA)
DIRECT CURRENT		DC
ALTERNATIVE CURRENT		AC
EFFICIENCY		Eff.
MAXIMUM VALUES	(VOLTAMPARE)	Em, Im
AVERAGE VALUES	(VOLTAMPARE)	Eav, Lav
EFFECTIVE VALUES	(VOLTAMPARE)	E, I
INSTANTANEOUS VALUES	(VOLTAMPARE)	e, I

ELECTRICAL FORMULAS

ELECTRICAL FORMULAS FOR DETERMINING AMPERE, KILOVOLT - AMPERE AND POWER

Direct Current	Alternating Current	
	Single Phase	Three Phase
$A = \frac{kW \times 1000}{V}$	$A = \frac{kW \times 1000}{V \times P.F.}$	$A = \frac{kW \times 1000}{1.73 \times V \times P.F.}$
$A = \frac{kVA \times 1000}{V}$	$A = \frac{kVA \times 1000}{V}$	$A = \frac{kVA \times 1000}{1.73 \times V}$
$A = \frac{HP \times 746}{V \times (\%Eff.)}$	$A = \frac{HP \times 746}{V \times (\%Eff.) \times P.F.}$	$A = \frac{HP \times 746}{1.73 \times V \times (\%Eff.) \times P.F.}$
$kW = \frac{A \times V}{1000}$	$kW = \frac{A \times V \times P.F.}{1000}$	$kW = \frac{A \times V \times 1.73 \times P.F.}{1000}$
$kVA = \frac{A \times V}{1000}$	$kVA = \frac{A \times V}{1000}$	$kVA = \frac{A \times V \times 1.73}{1000}$
$HP = \frac{KW \times 1000}{V}$	$HP = \frac{A \times V \times (\%Eff.) \times P.F.}{746}$	$HP = \frac{A \times V \times 1.73(\%Eff.) \times P.F.}{746}$

APPROXIMATE MOTOR AMPERERES PER TERMINAL :

	220 V a - C = 4	amperes per H.P.
3 phase	220 V a - C = 2.5	amperes per H.P.
3 phase	380 V a - C = 1.41	amperes per H.P.
3 phase	440 V a - C = 1.25	amperes per H.P.
3 phase	550 V a - C = 1	amperes per H.P.

TABLE OF DIMENSION FOR MOTOR STARTERS

The figures are based on normal 3 - phase motors for a.c. at 50 c.p.s. 1400 - 1450 r.p.m.

Motor ratings in HP at service voltage						Rating of motor starter A	Reply Setting A	Max. Quick-blow back-up fuse A	Min. cross section of cables mm²
220 V		380 V		440 V					
HP	Full load current A	HP	Full load current A	HP	Full load current A				
		0.05		0.05		15	0.15 - 0.25	1	1.5
0.05		0.1		0.1		15	0.25 - 0.4	2	1.5
		0.15		0.2		15	0.4 - 0.65	4	1.5
0.1		0.2		0.25	0.5	15	0.4 - 0.65	4	1.5
0.15		0.25	0.6	0.5	0.9	15	0.6 - 1.0	6	1.5
0.25	1.1	0.5	1.0			15	1.0 - 1.6	6	1.5
		0.75	1.5	0.75	1.2	15	1.0 - 1.6	6	1.5
0.5	1.8	1.0	1.9	1.0	1.6	15	1.5 - 2.5	15 (10)	1.5
0.75	2.5	1.5	2.6	2	3.2	15	2.5 - 4	25 (15)	1.5
1.0	3.2	2	3.4	2.5	3.9	15	2.5 - 4	25 (15)	1.5
1.5	4.4	2.5	4.2	3	4.5	15	4 - 6.5	25 (20)	1.5
2.0	5.8	3	4.9	4	6.0	15	4 - 6.5	25 (20)	1.5
2.5	7.3	4	6.3	5	7.5	15	6 - 10	35 (25)	1.5
3	8.4	5	7.8	6	8.5	15	6 - 10	35 (25)	1.5
4	11	6	9.3	7.5	11.0	15	9 - 14	35	1.5
5	13.5	7.5	11.5			15	9 - 14	35	1.5
		10	15	10	14	25	13 - 20	60	2.5
7.5	19.5	15	22	15	21	25	16 - 25	60	4
10	26	20	29	20	27	60	20 - 31	100	6
15	39	25	36	30	39	60	28 - 43	125	10
20	51	30	42			60	40 - 60	160	16
		35	50	35	46	60	40 - 60	160	16
		40	56	40	52	60	40 - 60	160	16
25	63	50	69	50	65	100	50 - 75	200	16
35	91	60	83	60	76	100	70 - 100	200	25
40	100	75	104	75	96	200	84 - 120	400	35
50	125	100	136	100	125	200	105 - 150	500	50
75	184	125	167	125	155	200	140 - 200	500	95
		150	200	150	180	350	175 - 250	600	120
100	245	175	235	175	215	350	175 - 250	600	120
120	295	200	268	200	240	350	210 - 300	850	150
150	370	250	335	250	300	600	280 - 400	850	240
175	425	300	400	300	360	600	350 - 500	1000	400
200	475	350	470	350	410	600	350 - 500	1000	400
225	540	400	535	400	450	600	420 - 600	1000	

POWER FACTOR CORRECTION FACTOR FOR POWER CAPACITOR

Table value x kW load = kVAR of capacitors needed to correct from exiting to desired power factor.

EXIGTING POWER FACTOR (%)	Corrected Power Factor					
	100%	95%	90%	85%	80%	75%
50	1.732	1.403	1.247	1.112	0.982	0.850
52	1.643	1.314	1.158	1.023	0.893	0.761
54	1.558	1.229	1.073	0.938	0.808	0.676
55	1.518	1.189	1.033	0.898	0.768	0.636
56	1.479	1.150	0.994	0.859	0.729	0.597
58	1.404	1.075	0.919	0.784	0.654	0.522
60	1.333	1.004	0.848	0.713	0.583	0.451
62	1.265	0.936	0.780	0.645	0.515	0.383
64	1.201	0.872	0.716	0.581	0.451	0.319
65	1.168	0.839	0.683	0.548	0.418	0.286
66	1.139	0.810	0.654	0.519	0.389	0.257
68	1.078	0.749	0.593	0.458	0.328	0.196
70	1.020	0.691	0.535	0.400	0.270	0.138
72	0.964	0.635	0.479	0.344	0.214	0.082
74	0.909	0.580	0.424	0.289	0.159	0.027
75	0.882	0.553	0.397	0.262	0.132	
76	0.855	0.526	0.370	0.235	0.105	
78	0.802	0.473	0.317	0.182	0.052	
80	0.750	0.421	0.265	0.130		
82	0.698	0.369	0.213	0.078		
84	0.646	0.317	0.161			
85	0.620	0.291	0.135			
86	0.594	0.265	0.109			
88	0.540	0.211	0.055			
90	0.485	0.156				
92	0.426	0.097				
94	0.363	0.034				
95	0.329					

Typical Problem : With a load of 500 kW. at 80% power factor it is desired to find the kVAR of capacitors required to correct the power factor to 90%

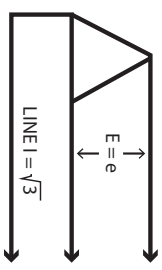
Solution : From the table select the multiplying factor 0.265 corresponding to the existing 80% and the corrected 90% power factor

0.265 X 500 = 132.5 kVAR of capacitors required

POWER TRANSFORMER CURRENT CAPACITY

Transformer Size (kVA)	12 kV Primary Current (A)		Secondary Current (A)			
			220V		380V	
	1 Ø	3 Ø	1 Ø	3 Ø Δ	1 Ø	3 Ø Y
5	0.4	0.2	22.7	13.1	13.2	7.6
10	0.8	0.5	45.5	26.3	26.4	15.2
15	1.3	0.7	68.2	39.4	39.5	22.8
20	1.7	0.9	90.9	52.5	52.6	30.4
25	2.1	1.2	113.5	65.6	65.8	37.9
30	2.5	1.4	136.4	78.7	78.9	45.6
37.5	3.1	1.8	170.5	98.4	98.7	56.9
45	3.8	2.2	204.5	118.1	118.4	68.4
50	4.2	2.4	227.3	131.2	131.6	75.9
67.5	5.6	3.3	306.8	177.3	177.6	102.6
75	6.3	3.6	340.9	196.8	197.4	113.9
100	8.3	4.8	454.5	262.4	263.2	151.9
112.5	9.4	5.4	511.4	294.2	296.0	170.9
150	12.5	7.2	681.8	393.7	394.7	227.9
167	13.9	8.0	759.1	438.3	439.5	253.7
200	16.7	9.6	909.1	524.9	526.3	303.9
225	18.8	10.8	1,022.7	590.5	592.0	341.9
250	20.8	12.0	1,136.4	656.1	657.9	379.8
300	25.0	14.4	1,363.6	787.3	789.5	455.8
333	27.8	16.0	1,513.6	873.9	876.3	505.9
350	29.2	16.8	1,590.9	918.5	921.1	531.8
400	33.3	19.3	1,818.2	1,049.8	1,052.6	607.8
450	37.5	21.7	2,045.5	1,180.9	1,184.2	683.7
500	41.7	24.0	2,272.7	1,312.2	1,315.8	759.7
550	45.8	26.5	2,500.0	1,443.2	1,447.4	835.7
600	50.0	28.9	2,727.3	1,574.6	1,579.9	911.6
650	54.1	31.3	2,954.3	1,709.9	1,710.5	987.6
700	58.3	33.7	3,181.8	1,836.4	1,842.4	1,063.6
750	62.7	36.1	3,409.1	1,968.3	1,973.7	1,139.5
800	66.7	38.5	3,636.4	2,099.5	2,105.3	1,215.5
900	75.0	43.3	4,090.9	2,361.9	2,369.4	1,367.5
1000	83.3	48.1	4,545.5	2,624.4	2,631.6	1,519.4

△ △ Or DELTA-DELTA CONNECTION



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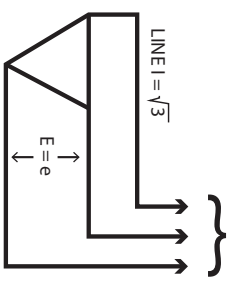
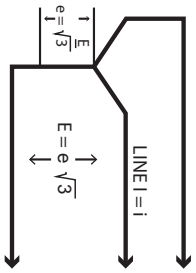


SECONDARY

Y Y Or STAR-STAR CONNECTION



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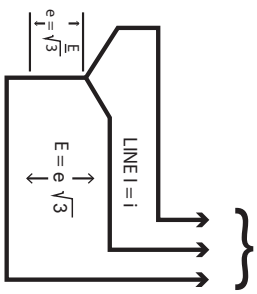

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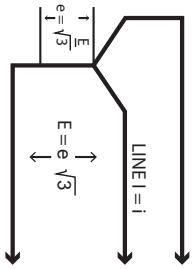

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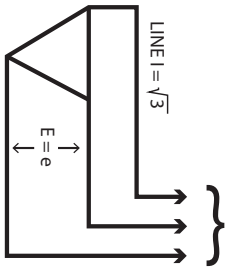

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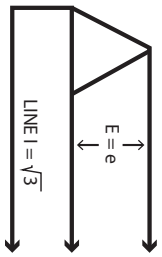

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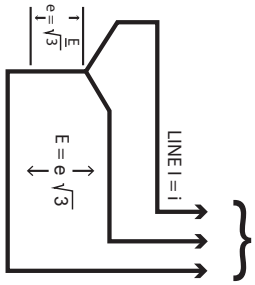


SECONDARY

Electrical Formulas for Power Transformer

Current Calculation per phase of 3Ø transformer

Where :

I = Line Current

kW = Kilowatts (1 kW = 1000 watts)

kVA = Kilovolt-amperes = kW ÷ Power factor

$$I = \frac{kW \times 1000}{\text{Power factor} \times \text{Voltage} \times \sqrt{3}}$$

$$I = \frac{kVA \times 1000}{\text{Voltage} \times \sqrt{3}}$$

Current Calculation of 1Ø Transformation

$$I = \frac{kW \times 1000}{\text{Power factor} \times \text{Voltage}}$$

$$I = \frac{kVA \times 1000}{\text{Voltage}}$$

E = Line current

e = Voltage of T.w (Transformer windings)

I = Line current

i = Current of T.w.

W = Total power in watts of three phase lines.

w = Power in watts of one phase or one leg of transformer.

P.F. = Power factor

Delta Connection

$E = e$, $I = i\sqrt{3}$, $i = \frac{I}{\sqrt{3}}$

$W = 3w$, $w = ei \times P.F.$, $W = 3ei \times P.F.$

Star Connection

$I = i$, $E = e\sqrt{3}$, $e = \frac{E}{\sqrt{3}}$

$W = 3w$, $w = ei \times P.F.$, $W = 3ei \times P.F.$

Total Power in watt of three phase line (W) Calculation by I , V (Star or Delta Connection)

$$W = \frac{3EI \times P.F.}{\sqrt{3}}$$

$$= \sqrt{3}\, EI \times P.F.$$

COPPER CONDUCTOR RESISTANCE FOR CABLE

Wire Size (mm^2)	Maximum Resistance per Kilometer (at 20 ºC) in Ohms	
	Solid or Stranded Conductor	Flexible Conductor
	Singer core & Multi cores	Singer core & Multi cores
0.5 (Solid)	36.0	-
0.5 (28W)	-	39.0
0.5 (16W)	-	39.0
0.75 (42W)	-	26.0
0.75 (24W)	-	26.0
1	18.1	19.5
1.5	12.1	13.3
2.5	7.41	7.98
4	4.61	4.95
6	3.08	3.30
10	1.83	1.91
16	1.15	1.21
25	0.727	0.780
35	0.524	0.554
50	0.387	0.386
70	0.268	0.272
95	0.193	0.206
120	0.153	-
150	0.124	-
185	0.0991	-
240	0.0754	-
300	0.0601	-
400	0.0470	-
500	0.0366	-

TEMPERATURE CORRECTION FACTOR FOR RESISTANCE

Temperature (ºC)	Reciprocal Factor
25	1.0197
30	1.0393
35	1.0590
40	1.0786
45	1.0983
50	1.1179
55	1.1376
60	1.1572
65	1.1769
70	1.1965
75	1.2162

TEMPERATURE CORRECTION FACTORS FOR CONDUCTOR RESISTANCE

Factor for correcting resistances at various temperatures of the standard reference temperature of 20ºC and reciprocals of the factors for calculating resistances at other temperatures from the value at 20ºC.

Temperature ºC	Correction Factor		Reciprocal of Factor	
	Copper	Aluminum	Copper	Aluminum
0	1.085	1.088	0.921	0.919
5	1.063	1.064	0.941	0.940
10	1.041	1.042	0.961	0.960
15	1.020	1.021	0.980	0.980
20	1.000	1.000	1.000	1.000
25	0.981	0.980	1.020	1.020
30	0.962	0.961	1.039	1.040
35	0.944	0.943	1.059	1.060
40	0.927	0.925	1.079	1.081
45	0.911	0.908	1.098	1.101
50	0.895	0.892	1.118	1.121
55	0.879	0.876	1.138	1.141
60	0.864	0.861	1.157	1.161
65	0.850	0.846	1.177	1.181
70	0.836	0.832	1.197	1.202
75	0.822	0.819	1.216	1.222
80	0.809	0.805	1.236	1.242
85	0.797	0.792	1.255	1.262
90	0.784	0.780	1.275	1.282

The correction factor is given by :

$$k = \frac{1}{k_1} = \frac{1}{1 + \alpha\,(\theta\text{-}20)}$$

Where :

k = temperature correction factor of conductor

k_1 = reciprocal of k

α = constant mass temperature coefficient at 20ºC per deg C

0.00393 for copper (based on 100% conductivity)

0.00403 for aluminium (base on 61% conductivity)

θ = referred temperature. ºC

THE AC / DC RESISTANCE RATIO OF THE CONDUCTOR IS GIVEN BY THE FOLLOW FORMULA

$$k2 = I + \lambda_s + \lambda_p$$

Where :

k_2 = AC / DC resistance ratio of conductor

λ_8 = skin effect factor

λ_P = proximity effect factor

The skin effect factor is given by :

$$\lambda_S = \frac{X^4}{192 + 0.8X^4}$$

Where :

$$X = \sqrt{\frac{8\pi f}{R_0 k_1 \times 10^4}}$$

f = supply frequency, Hz

R_0 = DC resistance of conductor at 20°C Ω/km

k_1 = reciprocal factor of temperature correction factor

The proximity effect factor is given by :

$$\lambda_P = \frac{X'}{192 + 0.8X'^4}\left(\frac{d_1}{S}\right)^2 \left\{ 0.312\left(\frac{d_1}{S}\right)^2 + \frac{1.18}{\frac{X'^4}{192 + 0.8X'^4} + 0.27} \right\}$$

Where :

$$X' = \sqrt{0.8X}$$

d_1 = diameter of conductor, mm

S = distance between conductor axes, mm

CONDUCTIVITY AND DENSITY OF METALS

Kind	Symbol	Conductivity (% iacs)	Density (g/cm^3)
Silver	Ag	108.6	10.50
Standard Copper (Annealed)	Cu	100.0	8.89
Gold	Au	72.5	19.30
Aluminium	Al	61.0	2.70
Iron	Fe	13.0	7.78
Tin	Sn	12.2	7.29
Steel	-	11.6	7.78

CONDUCTOR MATERIALS

Material	Specific Resistance, 20 °C			Temperture coefficient 20 °C	Mass g per cu.cm.
	Micro Ohms per cm. cube	Micro Ohms per in. cube	Ohms - per cir. mil - ft.		
Annealed copper	1.724	0.6788	10.37	0.00393	8.89
Hard-drawn copper	1.79	0.695	10.77	0.00378	8.89
Annealed aluminium	2.82	1.113	17.0	0.0039	2.7
Hard-drawn aluminium	2.92	1.15	17.5	0.0038	2.7
Pure iron	10.0	3.93	60	0.006	7.86
Steel wire	10.7 - 17.5	4.2 - 6.9	64 - 106	0.006-0.00036	7.78
Cast iron	75 - 100	29.5 - 39.4	450 - 600	0.001-0.00074	7.32

AC/DC RESISTANCE RATIOS

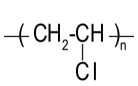
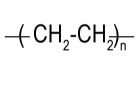
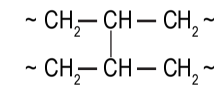
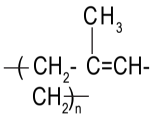
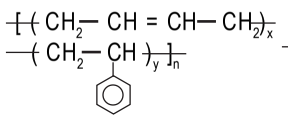
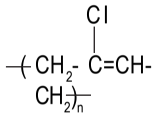
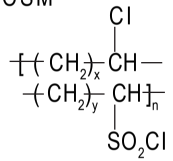
Reagent	Relative Rating							Reagent	Relative Rating						
	BR	CR	EPR	PVC	PE	XLPE	NYLON		BR	CR	EPR	PVC	PE	XLPE	NYLON
Acetone	◎	○	◎	×	◎	◎	○	Chlorine Gas	△	△	×	×	×	×	◎
Aniline	○	×	○	○	○	○		Ozone	○	○	○	○	◎	◎	×
Ethanol	◎	◎	◎	△	○	○	○	Bromine	×	×	×	×	×	×	
Ethyleneglycol	○	◎	○	△			○	Nitric Acid, conc.	×	×	×	×	△	△	×
Xylene	×	×	×	×	○	○	○	Nitric Acid, 10%	×	×	△	○	○	○	△
Glycerin	◎	◎	◎	○	◎	◎	○	Fuming Nitric Acid	×	×		×	×	×	
Cresol	○	△	○	△	○	○	×	Tap Water	◎	◎	◎	◎	◎	◎	◎
Chloroform	×	×	×	×	△	△	×	Sea Water	○	◎	◎	◎	◎	◎	
Acetic Acid, conc.	○	△	○	×	○	○	△	Sulfuric Acid, conc.	×	×	×	△	△	△	×
Acetic Acid, 10%	○	×	○	△	◎	◎	○	Sulfuric Acid, 10%	○	○	○	◎	○	○	○
Ethyl Acetate	○	×	△	×	○	○	○	Phosphoric Acid	○	△	○	×	◎	◎	○
Carbon Tetrachloride	×	×	×	×	×	×	△	Sodium Hydroxide, 10%	○	○	○	○	○	○	◎
Cyclohexane	△	×	×		△	△		Freon	×	×		○	○	○	
Dioctyl Phthalate	◎	×		×				Formic Acid	△	×		○	○	○	◎
Trichloroethylene	×	×	×	△	△	△	△	JIS No.1 Oil (OF Oil)	×	△	×	△	○	○	
Trichlorobenzene	×	×	×		△	△		ASTM No.1 Oil	○	○	△	△	○	○	
Toluene	×	×	×	×	△	△	○	ASTM No.2 Oil	△	○	△	△	○	○	
Carbon Disulfide	×	×	×	△	○	○		ASTM No.3 Oil	×	△	×	△	△	△	
Phenol	○	△	○	×	○	○	×	Gasoline	×	△	×	×	○	○	○
Furfural	◎	○	◎	△	◎	◎		Creosote Oil	△	×	×	×	△	△	
Hexane	×	△	×	△	○	○		JIS No.2 Oil	×	×	×	△	○	○	
Benzene	×	×	×	×	△	△	○	Heavy Oil	×	×	×	△	△	△	○
Methanol	◎	◎	◎	×	○	○	△	Lube Oil	×	△	△	△	△	△	
Methyl Ethyl Ketone	△	×	△	×	○	○		Silicone Oil	◎	◎	◎	○	◎	◎	
Dioxane				×	○	○		Vegetable Oil	◎	◎	○		◎	◎	
Nitrobenzene	○	×	○	×	○	○		Petroleum Ether	△	△		×	◎	◎	
Formaline	○	○		○	○	○	△	Trans Oil	×	△	×	○	○	○	
Ammonia, conc.	○		○	△	○	○	○	Naphtha	×	×	×	○	○	○	○
Ammonia, 10%	○	△	○	○	○	○	◎	Coal Tar					○	○	
Sodium Chloride	○	○	○	○	◎	◎	◎								
Hydrochloric Acid, Conc.	○	○	○		○	○	×								
Hydrochloric Acid, 10%	◎	○	○	○	◎	◎	○								

Where : ◎ : High Resistance ○ : Fair Resistance
× : Not Applicable △ : Poor Resistance, care on use

CHAROONG THAI WIRE & CABLE PUBLIC COMPANY LIMITED

PROPERTIES OF INSULATION AND SHEATH MATERIALS

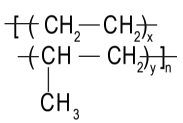
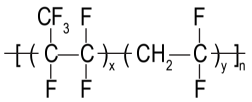
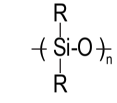
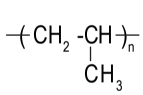
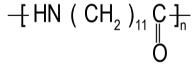
GENERAL COMPARISON DATA

Material		Polyvinyl Chloride	Low Density Polyethylene	Cross-linked Polyethylene	Polyisoprene	Styrene Butadiene Copolymer	Polychloroprene	Chlorosulphonated Polyethylene
Designation		PVC	PE	XLPE	NR	SBR	CR	CSM
Chemical structure								
Density		1.3-1.5	0.91-0.93	0.91-0.93	0.93-0.94	0.93-0.94	1.15-1.23	1.10
Hardness (Shore)		D30-90	D45-60		30-90	10-95	20-90	50-90
Max. Operating Temp.	°C	60	75	90	60	75	80	90
Emergency Temp. Rating	°C	85	90	130	85			
Short Circuit Temp. Rating	°C	120	150	250	150			
Brittleness Temp.	°C	~-40	<-70	<-70	-55-58	-30-65	-30-50	-20-50
Softening Temp.	°C	120-140	100-115					
Thermal Expansion	/°C	$0.7\text{-}2.5\times10^{-4}$	$1.6\text{-}1.8\times10^{-4}$	$1.6\text{-}1.8\times10^{-4}$	1.8×10^{-4}	1.8×10^{-4}	1.9×10^{-4}	1.8×10^{-4}
Thermal Conductivity Cal/ cm•sec•	°C	$3.0\text{-}4.0\times10^{-4}$	8.0×10^{-4}	8.0×10^{-4}	5.1×10^{-4}	5.8×10^{-4}	5.6×10^{-4}	6.3×10^{-4}
Specific Heat	Cal/°C•g	0.3-0.5	0.55	0.55	0.52	-	0.52	
Tensile Strength	kg/mm^2	1.5-2.5	1.5-2.0	1.8-3.0	0.8-3.0	0.4-3.0	0.7-3.0	0.5-2.0
Elongation	%	200-400	300-700	300-700	300-700	100-700	400-900	100-500
Abrasion Resistance		Excellent	Good	Excellent	Good	Good	Good	Good
Voltage Breakdown	Ω kV/mm	20-30	30-50	30-50	16-32	16-30	15-25	16-32
Volume Resistivity	•cm	$10^{12}\text{-}10^{15}$	$>10^{16}$	$>10^{16}$	10^{15}	$10^{14}\text{-}10^{15}$	$10^{10}\text{-}10^{12}$	$10^{13}\text{-}10^{14}$
Dielectric Constant		5-7	2.2-2.4	2.2-2.4	3-5	3-5	7-10	
Dissipation Factor (tan δ)		0.1-0.03	<0.0005	<0.0005	0.3-0.5	2-5	1.7-4	
Weathering		Good	Inferior*	Inferior*	Poor	Poor	Excellent	Good
Ozone Resistance		Excellent	Excellent	Excellent	Poor	Inferior	Good	Good
Flame Resistance		Self-Extinguish	Burns	Burns	Burn	Burn	Self-Extinguish	Self-Extinguish
Track Resistance		Inferior	Excellent	Excellent	Fair	Fair	Inferior	Good
Water Resistance		Fair	Excellent	Excellent	Fair	Fair	Fair	Fair
Acid Resistance		Excellent	Good	Good	Good	Fair	Excellent	Good
Alcari Resistance		Excellent	Excellent	Excellent	Good	Good	Excellent	Excellent
Oil Resistance		Good	Excellent	Excellent	Poor	Inferior	Good	Fair
Solvent Resistance		Fair	Excellent	Excellent	Inferior	Inferior	Fair	Fair

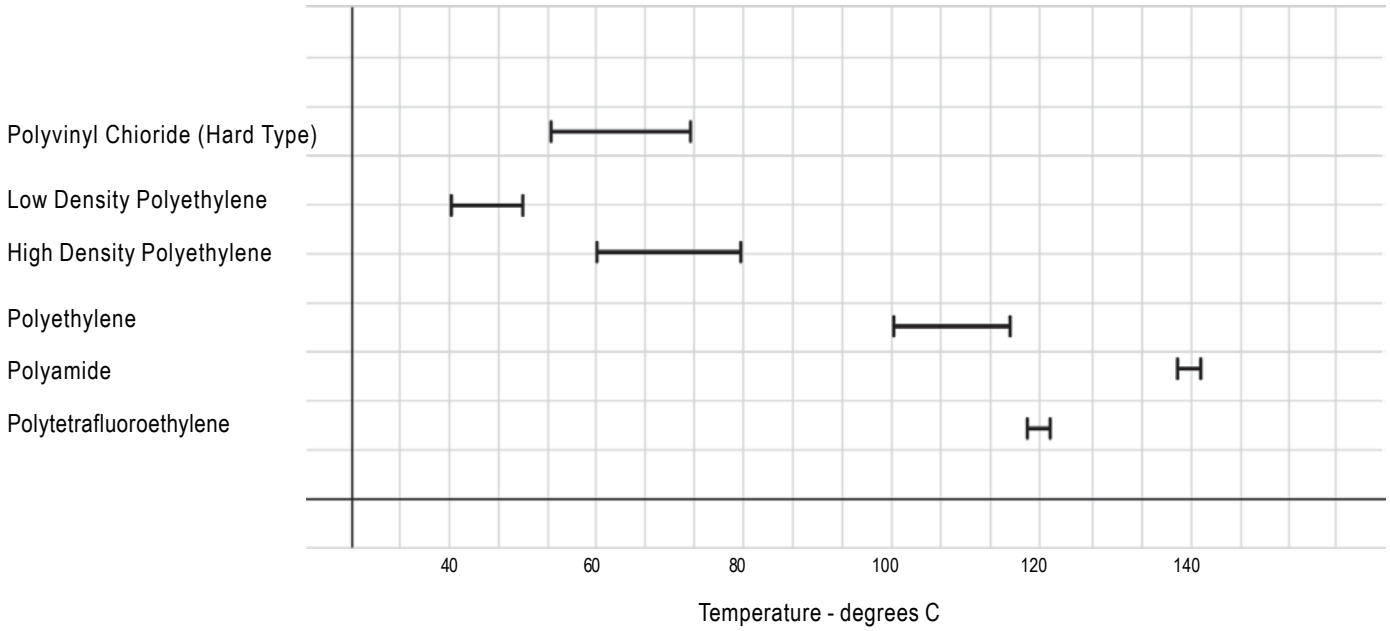
*Improved to “good” with mixture of carbon black.

PROPERTIES OF INSULATION AND SHEATH MATERIALS

GENERAL COMPARISON DATA (Continued)

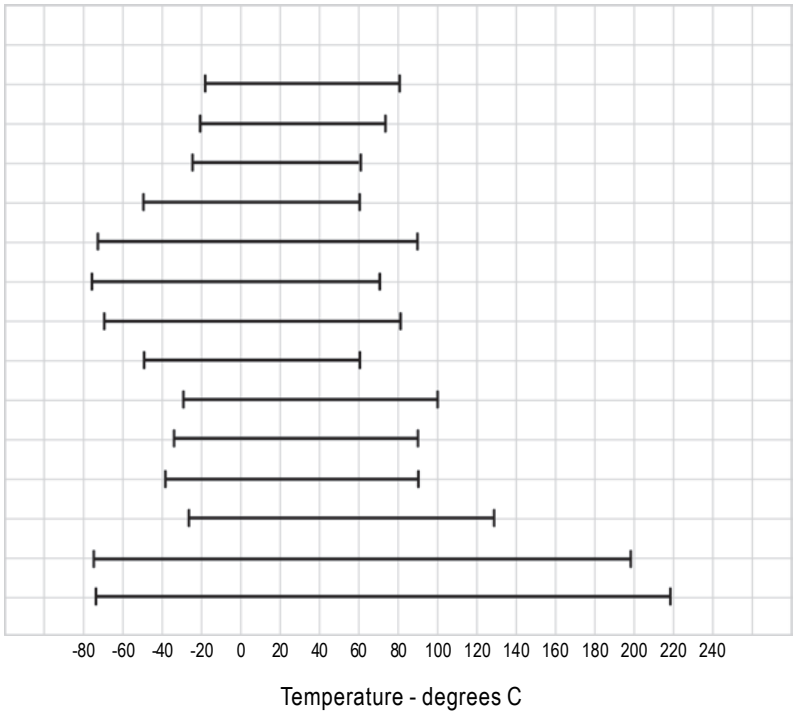
Material		Ethylene Propylene Copolymer	Hexafluoropropylene Vinylidenefluoride Copolymer	Polyorganosiloxane	Polypropylene	Polytetra Fluoroethylene	Polychloro Trifluoroethylene	Polyamide
Designation		EPM, EPDM	FPM	Q	PP	PTFE	PCTFE	Nylon(12)
Chemical Structure								
Density		0.86-0.87	1.82-1.85	0.97-1.40	0.9-0.915	2.13-2.2	2.1	-1.01-1.02
Hardness (Shore)		40-85	60-90	50-85	R85-110	D50-65	R110-115	R100-110
Max. Operating Temp.	°C	90	200	180	80	260	180	90
Emergency Temp. Rating	°C							
Short Circuit Temp. Rating	°C				150	310		120
Brittleness Temp.	°C	-40-60	-44-60	-70--100		<-70	<-70	-70
Softening Temp.	°C						210	170-180
Thermal Expansion	/°C		$1.6x10^{-4}$	$2.6x10^{-4}$	$6.0-8.5x10^{-5}$	$10x10^{-5}$	$4.5-7.0x10^{-5}$	$12x10^{-5}$
Thermal Conductivity Cal/ cm•sec•	°C		$5.5x10^{-4}$	$5.7x10^{-4}$	$2.8x10^{-4}$	$6x10^{-4}$	$6x10^{-4}$	$5.9-8.3x10^{-4}$
Specific Heat	Cal/°C•g				0.46	0.25	0.22	0.62
Tensile Strength	kg/mm^2	0.5-1.5	1.5-2.5	0.3-1.0	2.0-4.0	1.4-2.1	2.8-3.5	5.0-6.0
Elongation	%	300-700	200-600	50-300	200-700	200	10-100	180-285
Abrasion Resistance		Good	Good	Fair	Excellent	Excellent	Excellent	Excellent
Voltage Breakdown	kV/mm	20-35	24	20-40	20-32	15-30	10-20	20-30
Volume Resistivity	Ω•cm	$10^{14}-10^{15}$	$10^{12}-10^{14}$	$10^{14}-10^{15}$	$>10^{16}$	$>10^{18}$	$1.2x10^{18}$	$10^{14}-10^{15}$
Dielectric Constant		3-5	6-7	3-4	2.0-2.2	2.0	2.24-2.8	3.5-4.5
Dissipation Factor (tanδ)		0.2-0.8		0.1-1.0	0.0002-0.0006	<0.0002	0.0012-0.0036	0.03-0.06
Weathering		Excellent	Good	Good	Inferior*	Excellent	Excellent	Inferior*
Ozone Resistance		Excellent	Good	Excellent	Excellent	Excellent	Excellent	Good
Flame Resistance		Burn	Self-Extinguish	Burn	Burn	No Burn	No Burn	Burn
Track Resistance		Excellent	Fair	Excellent	Excellent	Excellent	Excellent	Good
Water Resistance		Good	Excellent	Fair	Excellent	Excellent	Excellent	Excellent
Acid Resistance		Excellent	Excellent	Poor	Excellent	Excellent	Excellent	Good
Alcari Resistance		Excellent	Excellent	Good	Excellent	Excellent	Excellent	Excellent
Oil Resistance		Inferior*	Excellent	Fair	Excellent	Excellent	Excellent	Excellent
Solvent Resistance		Poor	Excellent	Fair	Excellent	Excellent	Excellent	Good

*Improved to “good” with mixture of carbon black.

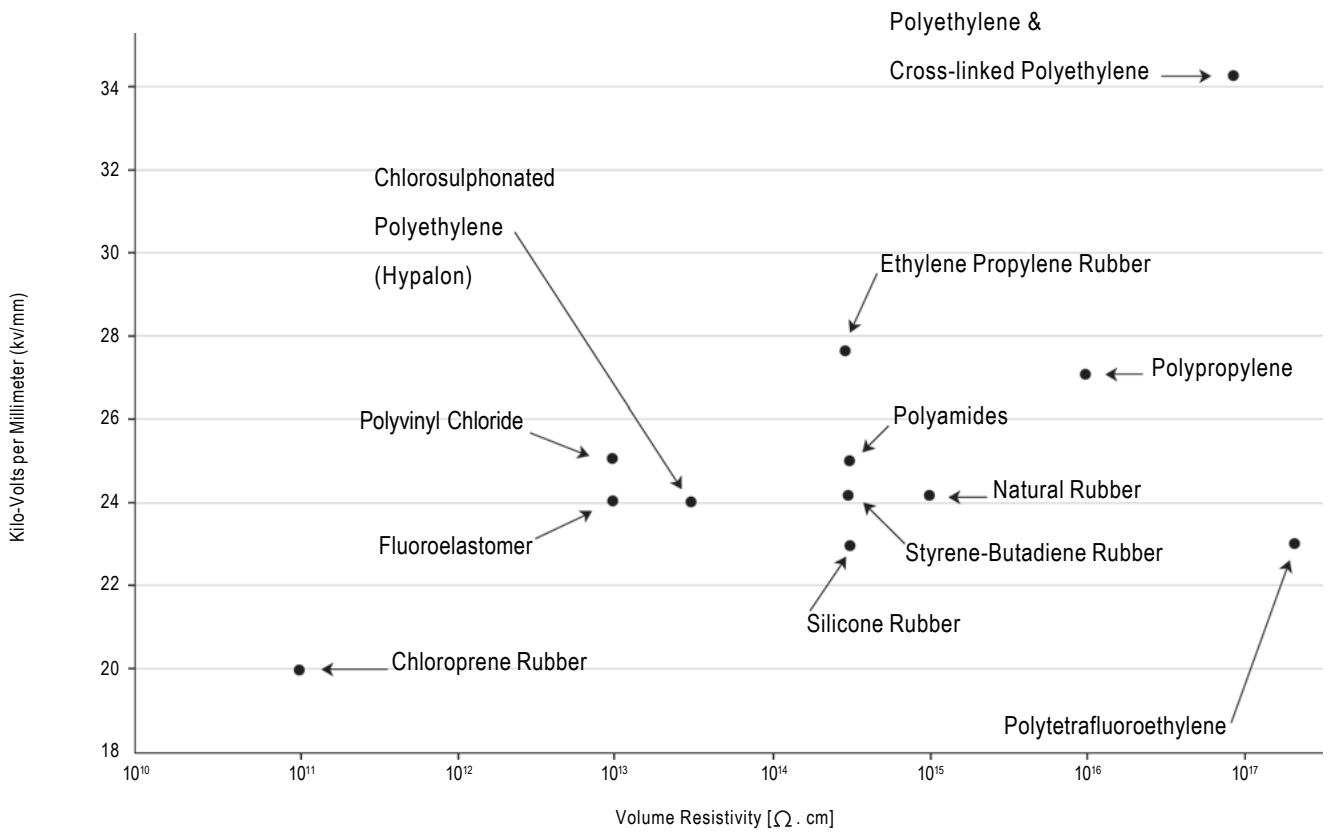


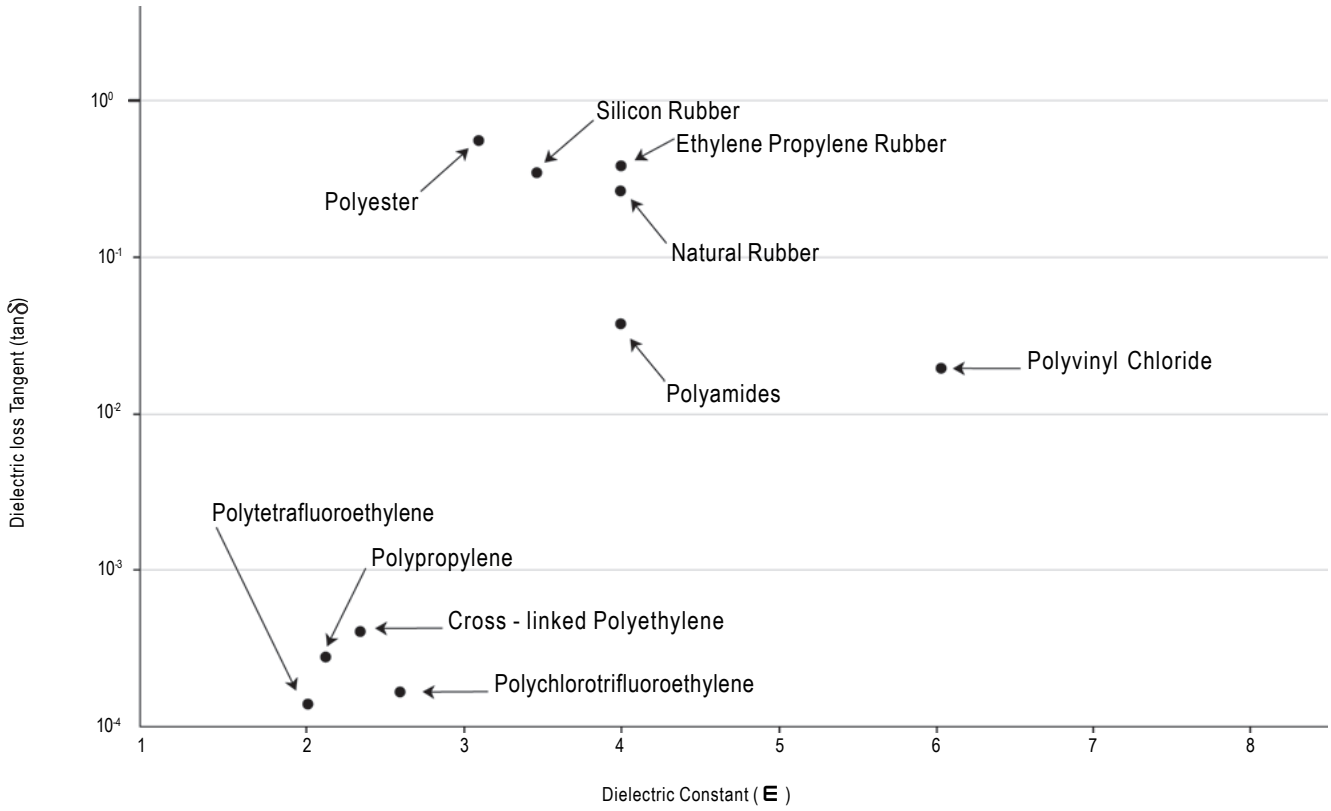
Operating Temperature

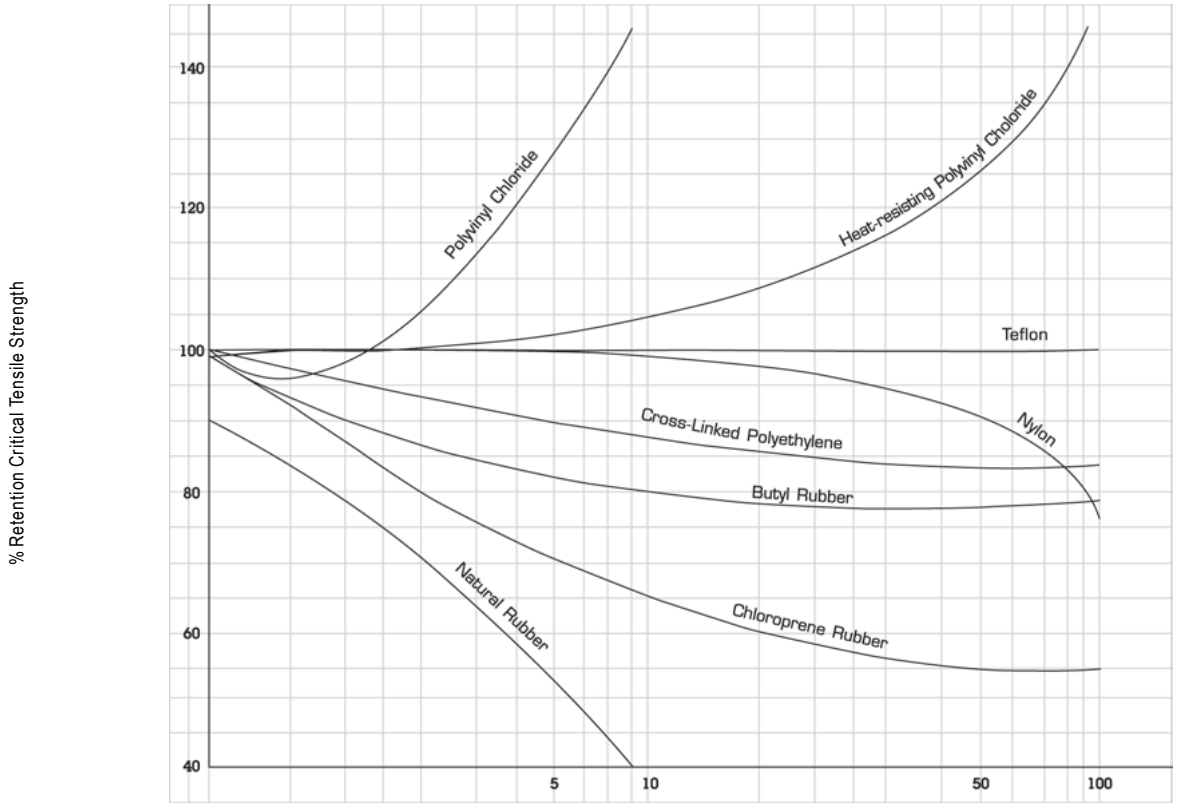
[Max. point : Max. Continuous Operating Temperature
Min. point : Brittleness Temperature]

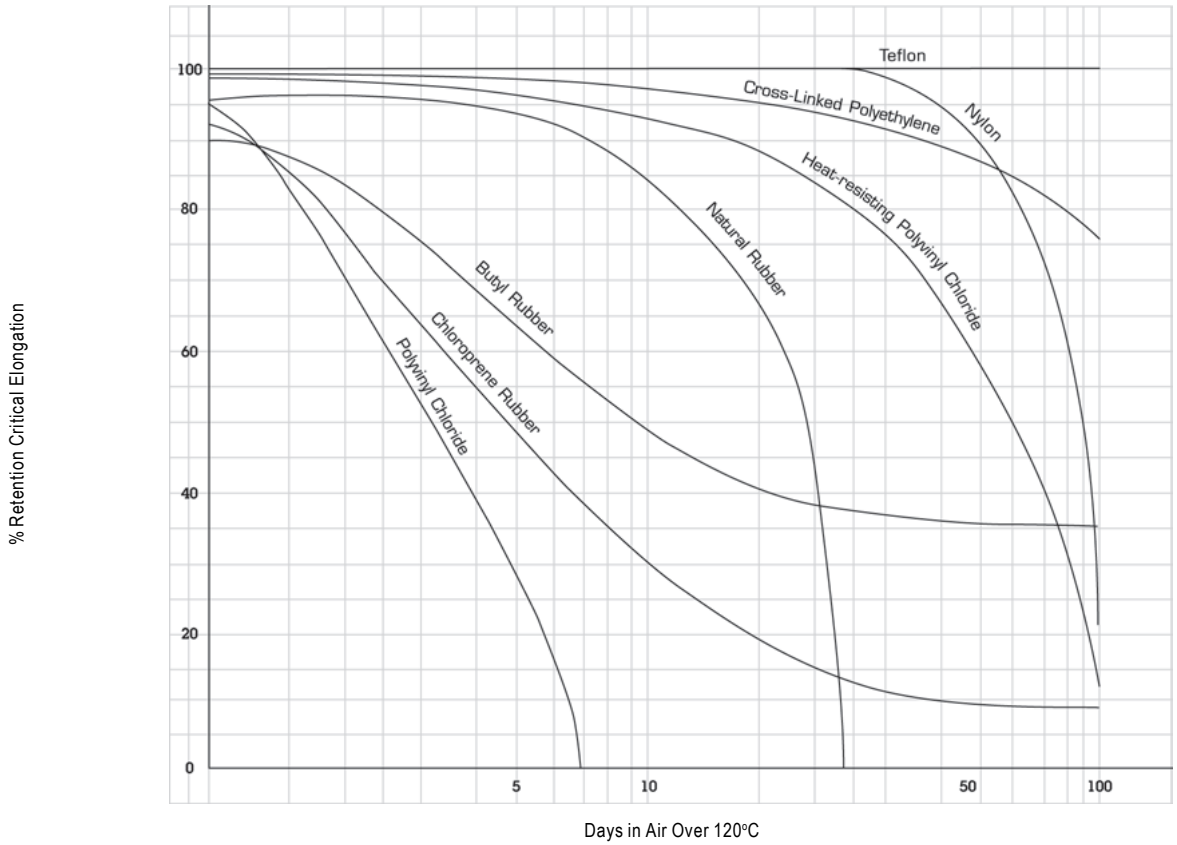


Polyvinyl Chioride, 80°C Grade
Polyvinyl Chioride, 75°C Grade
Polyvinyl Chioride, 60°C Grade
Cold Resisting Polyvinyle Chloride
Cross-Linked Polyethylene
Polyethylene
Nylon
Synthetic Natural Rubber
Chloroprene
Styrene-Butadiene Rubber
Ethylene-Propylene Rubber
Chlorosulphonated Polyethylene (Hypalon)
Silicone
Teflon


Polyethylene &
Cross-linked Polyethylene
Chlorosulphonated
Polyethylene
(Hypalon)
Ethylene Propylene Rubber
Polypropylene
Polyvinyl Chloride
Polyamides
Natural Rubber
Fluoroelastomer
Styrene-Butadiene Rubber
Silicone Rubber
Chloroprene Rubber
Polytetrafluoroethylene
Kilo-Volts per Millimeter (kv/mm)
34
32
30
28
26
24
22
20
18
10^{10}
10^{11}
10^{12}
10^{13}
10^{14}
10^{15}
10^{16}
10^{17}
Volume Resistivity [Ω . cm]

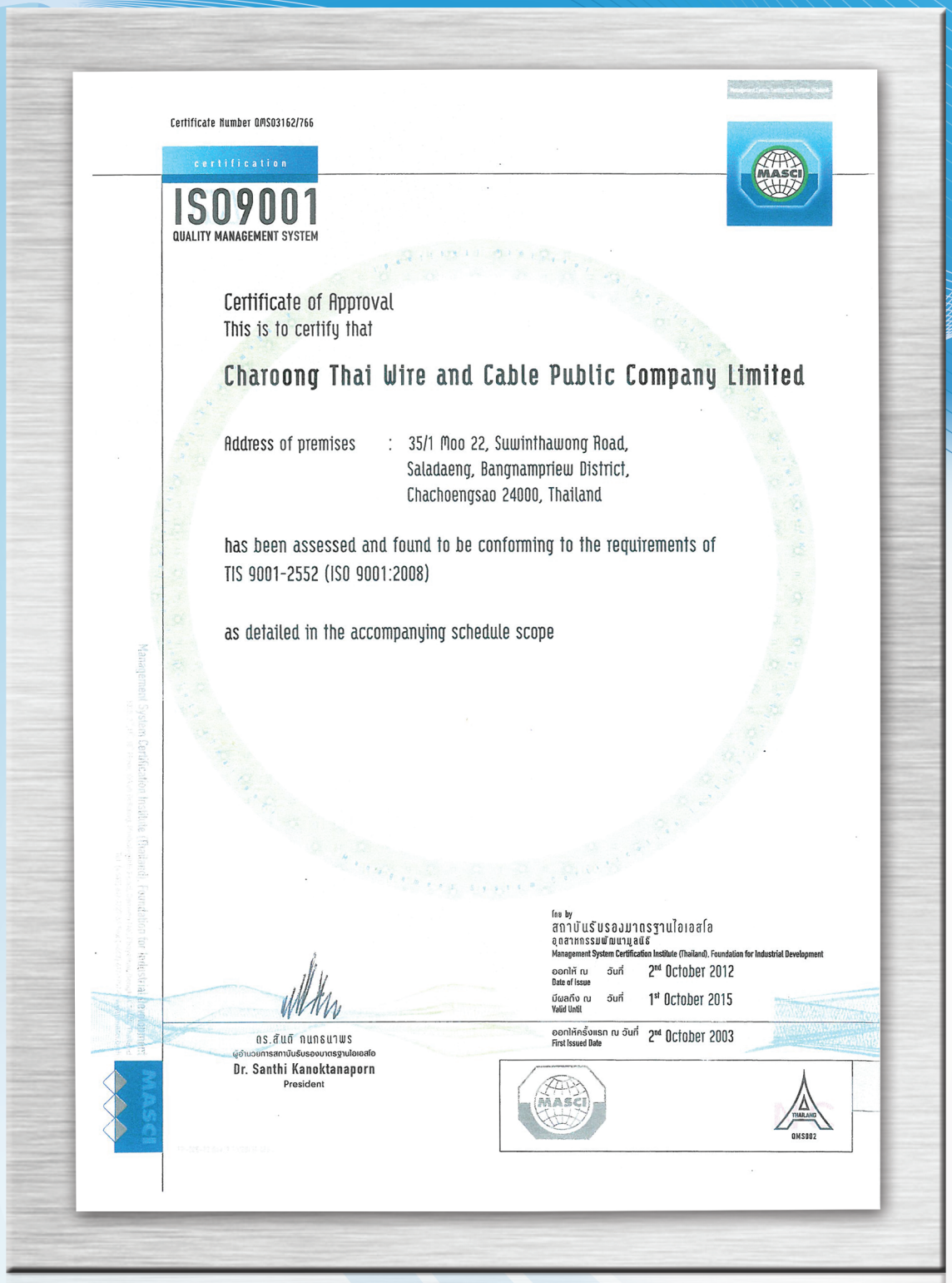

Silicon Rubber
Ethylene Propylene Rubber
Polyester
Natural Rubber
Polyvinyl Chloride
Polyamides
Polytetrafluoroethylene
Polypropylene
Cross - linked Polyethylene
Polychlorotrifluoroethylene
Dielectric loss Tangent (tanδ)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
1
2
3
4
5
6
7
8
Dielectric Constant (ε)


% Retention Critical Tensile Strength
140
120
100
80
60
40
Polyvinyl Chloride
Heat-resisting Polyvinyl Cholonide
Teflon
Nylon
Cross-Linked Polyethylene
Butyl Rubber
Natural Rubber
Chloroprene Rubber
5
10
50
100
Days in Air Oven 120°C


% Retention Critical Elongation
100
80
60
40
20
0
Teflon
Cross-Linked Polyethylene
Nylon
Heat-resisting Polyvinyl Chloride
Natural Rubber
Butyl Rubber
Chloroprene Rubber
Polyvinyl Chloride
5
10
50
100
Days in Air Over 120°C

CTW ISO 9001

To be confident in our international standard



Certificate Number QMS03162/766

certification

ISO9001
QUALITY MANAGEMENT SYSTEM

Certificate of Approval
This is to certify that

Charoong Thai Wire and Cable Public Company Limited

Address of premises : 35/1 Moo 22, Suwinthawong Road,
Saladaeng, Bangnampriew District,
Chachoengsao 24000, Thailand

has been assessed and found to be conforming to the requirements of
TIS 9001-2552 (ISO 9001:2008)

as detailed in the accompanying schedule scope

Issued by
สถาบันรับรองมาตรฐานไอเอสโอ
อุตสาหกรรมพัฒนามูลนิธิ
Management System Certification Institute (Thailand), Foundation for Industrial Development

ออกให้ ณ วันที่ 2nd October 2012
Date of Issue

มีผลถึง ณ วันที่ 1st October 2015
Valid Until

ออกให้ครั้งแรก ณ วันที่ 2nd October 2003
First Issued Date

ดร.สันติ กนกธนาพร
ผู้อำนวยการสถาบันรับรองมาตรฐานไอเอสโอ
Dr. Santhi Kanoktanaporn
President

QMS002

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