# สายไฟ
# ELECTRIC WIRES AND CABLES

CHAROONG THAI

THAI YAZAKI

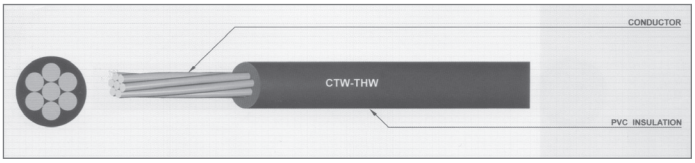
PHELPS DODGE

BANGKOK CABLE

CTW

# WIRE CABLE

## CABLE TYPE : CTW-THW




**CONSTRUCTION**

Conductor : Annealed copper, solid or stranded Size 0.5 $mm^2$ up to 500 $mm^2$
Insulation : Polyvinyl chloride (Any colour as requested)

**APPLICATION**

Building wiring for installation on insulator or in raceway, dry and wet location.

**CLASSIFICATION**

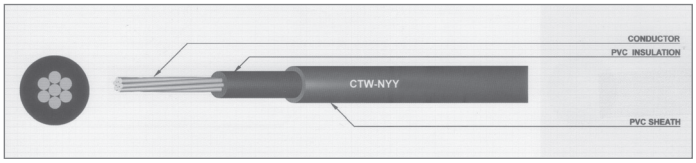
Maxinum conductor temperature 70°C
Circuit Voltage does not exceed 750 volts.

**REFERENCE**

TIS 11-2531 TABLE 4

*Testing Voltage : 2,500 volts.

## CABLE TYPE : CTW-NYY




**CONSTRUCTION**

Conductor : Annealed copper, solid or stranded Size 1 $mm^2$ up to 500 $mm^2$
Insulation : Polyvinyl chloride (Black colour)
Sheath : Polyvinyl chloride (Black colour)

**APPLICATION**

For fixed installation exposed, or in raceway, wet or dry location,
or direct burial in ground.

**CLASSIFICATION**

Maxinum conductor temperature 70°C
Circuit Voltage does not exceed 750 volts.

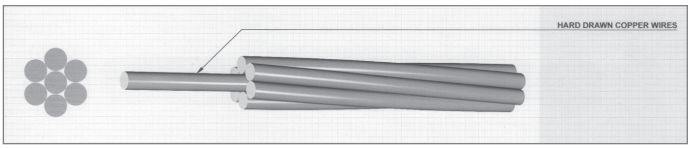
**REFERENCE**

TIS 11-2531 TABLE 6

*Testing Voltage : 2,500 volts.

| CROSS SECTIONAL AREA (SQ.MM.) ขนาดพื้นที่หน้าตัด (ตร.มม.) | PRICE (BAHT/METER) | | | | |
|---|---|---|---|---|---|
| | THW | NYY | | | |
| | | 1 CORE | 2 CORE | 3 CORE | 4 CORE |
| 1 | 5.80 | 22.5 | 43.40 | 48.95 | 55.70 |
| 1.5 | 8.20 | 25.00 | 48.10 | 54.90 | 63.30 |
| 2.5 | 12.10 | 29.20 | 57.60 | 67.40 | 78.80 |
| 4 | 18.70 | 39.40 | 81.50 | 96.95 | 116.60 |
| 6 | 30.00 | 58.80 | 112.90 | 140.00 | 170.50 |
| 10 | 49.30 | 70.50 | 159.80 | 205.00 | 260.20 |
| 16 | 76.50 | 98.80 | 226.20 | 301.00 | 392.30 |
| 25 | 120.00 | 144.60 | 332.60 | 460.10 | 590.40 |
| 35 | 170.50 | 196.00 | 441.10 | 622.30 | 859.00 |
| 50 | 229.20 | 259.70 | 630.30 | 874.70 | 1,115.00 |
| 70 | 327.70 | 352.80 | 891.00 | 1,183.70 | 1,550.00 |
| 95 | 451.50 | 474.00 | 1,200.00 | 1,656.90 | 2,155.00 |
| 120 | 572.00 | 608.00 | 1,490.00 | 2,092.00 | 2,726.00 |
| 150 | 700.00 | 746.00 | 1,830.00 | 2,546.00 | 3,338.00 |
| 185 | 879.00 | 928.00 | 2,288.00 | 3,170.00 | 4,189.00 |
| 240 | 1,153.00 | 1,209.00 | 2,992.00 | 4,145.00 | 5,519.00 |
| 300 | 1,445.00 | 1,507.00 | 3,724.00 | 5,136.00 | 6,850.00 |
| 400 | 1,850.00 | 1,928.00 | - | - | - |
| 500 | 2,395.00 | 2,527.00 | - | - | - |

## CABLE TYPE : CTW-CSC (HD)




**CONSTRUCTION**

Conductor : Hard drawn copper wire, Concentric stranded conductor.
Size 10 $mm^2$ up to 500 $mm^2$
Direction of outermost layer Z (Right-Handed)

**APPLICATION**

Aerial power transmission and overhead distribution line.

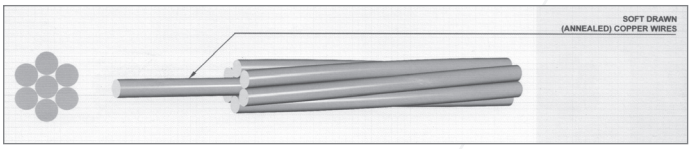
**CLASSIFICATION**

Based on 97% Conductivity. Max. Volume Resistivity at 20˚C 0.01777 Ω-$mm^2$/m

**REFERENCE**

TIS 64-2517

## CABLE TYPE : CTW-CSC (SD)




**CONSTRUCTION**

Conductor : Soft drawn copper wire, Concentric stranded conductor.
Size 10 $mm^2$ up to 500 $mm^2$
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 electrical system.

**CLASSIFICATION**

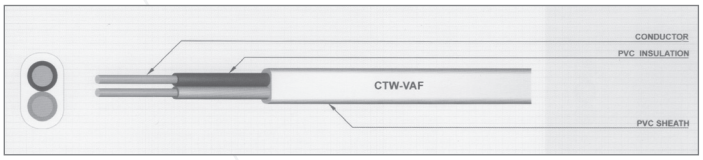
Based on 100% Conductivity. Max. Volume Resistivity at 20˚C 0.017241 Ω-$mm^2$/m

**REFERENCE**

TIS 11-2531, ASTM B3 & B8

| CROSS SECTIONAL AREA (SQ.MM.) ขนาดพื้นที่หน้าตัด (ตร.มม.) | PRICE (BAHT/METER) | |
|---|---|---|
| | Hard Drawn | Soft Drawn |
| 1 | 5.80 | 5.80 |
| 1.5 | 8.20 | 8.20 |
| 2.5 | 12.10 | 12.10 |
| 4 | 18.70 | 18.70 |
| 6 | 30.00 | 30.00 |
| 10 | 49.30 | 49.30 |
| 16 | 76.50 | 76.50 |
| 25 | 120.00 | 120.00 |
| 35 | 170.50 | 170.50 |
| 50 | 229.20 | 229.20 |
| 70 | 327.70 | 327.70 |
| 95 | 451.50 | 451.50 |
| 120 | 572.00 | 572.00 |
| 150 | 700.00 | 700.00 |
| 185 | 879.00 | 879.00 |
| 240 | 1,153.00 | 1,153.00 |
| 300 | 1,445.00 | 1,445.00 |
| 400 | 1,850.00 | 1,850.00 |
| 500 | 2,395.00 | 2,395.00 |

## CABLE TYPE : CTW-VAF




**CONSTRUCTION**

Conductor : Annealed copper, solid or stranded Size 0.5 $mm^2$ up to 35 $mm^2$ for two cores Polyvinyl chloride
Insulation : (Light gray and Black colour)
Sheath : Polyvinyl chloride (White colour)

**APPLICATION**

Building wiring for surface or above ceiling wiring or direct embed in plaster.

**CLASSIFICATION**

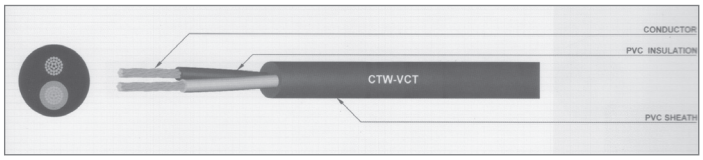
Maximum conductor temperature 70˚C
Circuit Voltage does not exceed 300 volts.

**REFERENCE**

TIS 11-2531 TABLE 2

*Testing Voltage : 2,000 volts.

## CABLE TYPE : CTW-VCT




**CONSTRUCTION**

Conductor : Annealed copper, bunch stranded Size 0.5 $mm^2$ up to 35 $mm^2$
Insulation : Polyvinyl chloride (Light gray and Black colour)
Sheath : Polyvinyl chloride (Black colour)

**APPLICATION**

For mobile-electrical equipment used in mines, factories, farm or household appliances. This cable is particularly suitable for use in chemical factories or in places where cables come in contact with oils.

**CLASSIFICATION**

Maxinum conductor temperature 70˚C
Circuit Voltage does not exceed 750 volts.

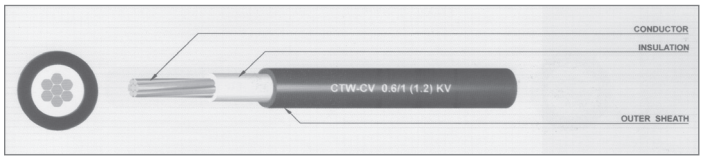
**REFERENCE**

TIS 11-2531 TABLE 9

*Testing Voltage : 2,500 volts.

| CROSS SECTIONAL AREA (SQ.MM.) ขนาดพื้นที่หน้าตัด (ตร.มม.) | PRICE (BAHT/METER) | | | | |
|---|---|---|---|---|---|
| | VAF | VAF-G | VCT | | |
| | | | 2 CORE | 3 CORE | 4 CORE |
| 0.5 | 9.26 | - | 19.70 | 22.90 | 29.00 |
| 0.75 | - | - | 22.30 | 27.90 | 37.10 |
| 1 | 13.18 | 23.40 | 26.10 | 35.40 | 44.10 |
| 1.5 | 18.24 | 30.50 | 34.60 | 43.90 | 56.80 |
| 2.5 | 28.04 | 42.00 | 55.70 | 79.40 | 88.70 |
| 4 | 40.20 | 62.30 | 79.50 | 100.40 | 127.50 |
| 6 | 61.49 | 100.90 | 112.90 | 146.90 | 191.20 |
| 10 | 98.31 | 139.00 | 195.30 | 256.30 | 335.50 |
| 16 | - | 209.00 | 280.00 | 379.00 | 485.40 |
| 25 | - | 312.00 | 441.50 | 571.00 | 731.40 |
| 35 | - | 447.00 | 585.10 | 798.00 | 1,018.00 |

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




## CONSTRUCTION

Conductor : Compact or Round concentric lay stranded copper
- CR : Concentric lay stranded of conductor :< 10 $mm^2$
- CR : Compact round concentric lay stranded of conductor : > 10 $mm^2$

Insulation : Cross-linked polyethylene (XLPE) : Colour Natural (Translucent)

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

## CLASSIFICATION

Maximum conductor temperature 90°C

Circuit voltage does not exceed 1000 volts

## REFERENCE

IEC 60228, IEC 60502-1

AC Test Voltage : 3.5 kV

## APPLICATION

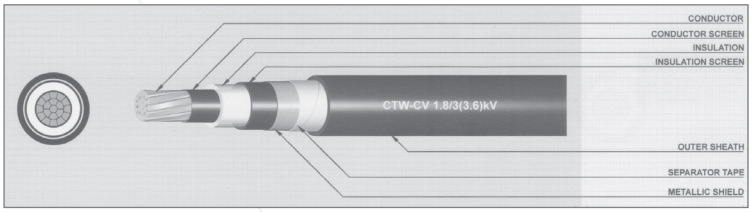
Preferably used for installation exposed, or in raceway, wet or dry location, or direct burial in ground.

## 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 only : IEC 60754, IEC 61034

| CROSS SECTIONAL AREA (SQ.MM.) ขนาดพื้นที่หน้าตัด (ตร.มม.) | PRICE (BAHT/METER) | | | |
|---|---|---|---|---|
| | 1 CORE | 2 CORE | 3 CORE | 4 CORE |
| 2.5 | 24.95 | 56.50 | 70.65 | 87.20 |
| 4 | 31.45 | 71.50 | 92.00 | 114.70 |
| 6 | 41.30 | 93.80 | 122.00 | 153.00 |
| 10 | 54.50 | 120.00 | 165.00 | 224.00 |
| 16 | 81.00 | 185.00 | 252.00 | 330.00 |
| 25 | 123.50 | 295.00 | 400.00 | 523.00 |
| 35 | 170.00 | 397.00 | 540.00 | 707.00 |
| 50 | 234.50 | 530.00 | 728.00 | 965.00 |
| 70 | 329.00 | 736.00 | 1,029.00 | 1,360.00 |
| 95 | 453.00 | 1,012.00 | 1,405.00 | 1,870.00 |
| 120 | 575.00 | 1,277.00 | 1,790.00 | 2,380.00 |
| 150 | 704.00 | 1,566.00 | 2,200.00 | 2,930.00 |
| 185 | 882.00 | 1,952.00 | 2,770.00 | 3,700.00 |
| 240 | 1,156.00 | 2,555.00 | 3,620.00 | 4,850.00 |
| 300 | 1,460.00 | 3,193.00 | 4,520.00 | 6,310.00 |
| 400 | 1,870.00 | 4,068.00 | 5,900.00 | 7,970.00 |
| 500 | 2,500.00 | - | - | - |
| 630 | 3,200.00 | - | - | - |
| 800 | 4,005.00 | - | - | - |
| 1000 | 5,285.00 | - | - | - |

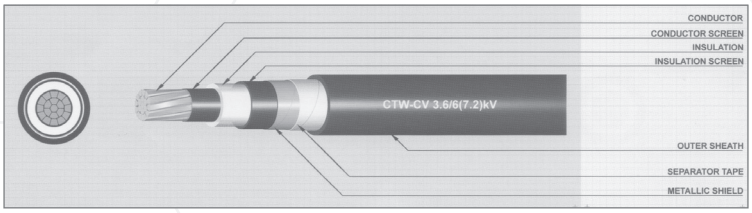
## CABLE TYPE : CTW-CV CU/XLPE/PVC 1.8/3 (3.6) kV




| CONSTRUCTION | |
|---|---|
| Conductor | Compact round stranded annealed copper. |
| Conductor Screen | Semi-conducting cross-linked polyethylene. |
| Insulation | Cross-linked polyethylene.(XLPE) |
| Insulation Screen | Semi-conducting cross-linked polyethylene. |
| Metallic Shield | Annealed copper tape |
| Separator Tape | Polyester and/or Spunbond tape. |
| Outer Sheath | Black Polyvinyl chloride (ST2) ; Optional : Polyethylene (ST7) |

| APPLICATION | CLASSIFICATION | REFERENCE | NOTE |
|---|---|---|---|
| Preferably used for urban networks. Exposted in aerail, direct burial, conduit, open tray and underground duct installation. | Maximum Conductor Temperature 90˚C (Normal Operation)<br>Maximum Conductor Temperature 250˚C (Short-circuit at 5s maximum duration) | IEC 60228 & IEC 60502-1<br>**AC Test Voltage : 6.5 kV | A special FR-PVC or Low Smoke Halogen Free (LSHF) Flame retardant sheath can be supplied in accordance with IEC 60332-3. |

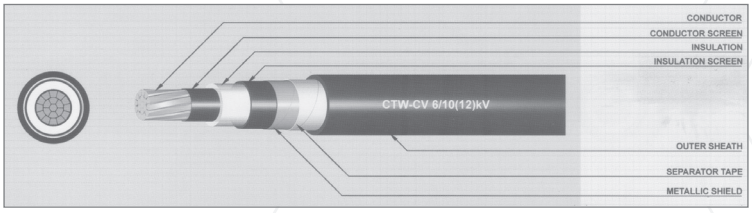
## CABLE TYPE : CTW-CV CU/XLPE/PVC 3.6/6 (7.2) kV




| CONSTRUCTION | |
|---|---|
| Conductor | Compact round stranded annealed copper. |
| Conductor Screen | Semi-conducting cross-linked polyethylene. |
| Insulation | Cross-linked polyethylene.(XLPE) |
| Insulation Screen | Semi-conducting cross-linked polyethylene. |
| Metallic Shield | Annealed copper tape |
| Separator Tape | Polyester and/or Spunbond tape. |
| Outer Sheath | Black Polyvinyl chloride (ST2) ; Optional : Polyethylene (ST7) |

| APPLICATION | CLASSIFICATION | REFERENCE | NOTE |
|---|---|---|---|
| Preferably used for urban networks. Exposted in aerail, direct burial, conduit, open tray and underground duct installation. | Maximum Conductor Temperature 90˚C (Normal Operation)<br>Maximum Conductor Temperature 250˚C (Short-circuit at 5s maximum duration) | IEC 60228 & IEC 60502-2<br>**AC Test Voltage : 12.5 kV | A special FR-PVC or Low Smoke Halogen Free (LSHF) Flame retardant sheath can be supplied in accordance with IEC 60332-3. |

## CABLE TYPE : CTW-CV CU/XLPE/PVC 6/10 (12) kV

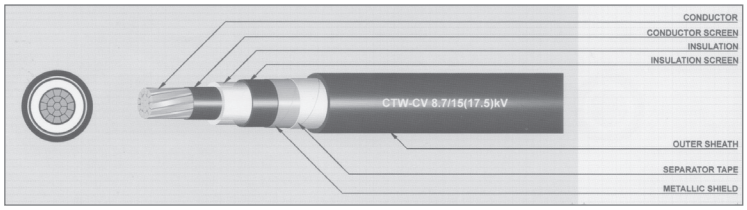



| CONSTRUCTION | |
|---|---|
| Conductor | Compact round stranded annealed copper. |
| Conductor Screen | Semi-conducting cross-linked polyethylene. |
| Insulation | Cross-linked polyethylene.(XLPE) |
| Insulation Screen | Semi-conducting cross-linked polyethylene. |
| Metallic Shield | Annealed copper tape |
| Separator Tape | Polyester and/or Spunbond tape. |
| Outer Sheath | Black Polyvinyl chloride (ST2) ; Optional : Polyethylene (ST7) |

| APPLICATION | CLASSIFICATION | REFERENCE | NOTE |
|---|---|---|---|
| Preferably used for urban networks. Exposted in aerail, direct burial, conduit, open tray and underground duct installation. | Maximum Conductor Temperature 90˚C (Normal Operation)<br>Maximum Conductor Temperature 250˚C (Short-circuit at 5s maximum duration) | IEC 60228 & IEC 60502-2<br>**AC Test Voltage : 21 kV | A special FR-PVC or Low Smoke Halogen Free (LSHF) Flame retardant sheath can be supplied in accordance with IEC 60332-3. |

| CROSS SECTIONAL AREA (SQ.MM.) ขนาดพื้นที่หน้าตัด (ตร.มม.) | PRICE (BAHT/METER) | | | | | |
|---|---|---|---|---|---|---|
| | 1.8/3 (3.6 KV) | | 3.6/6 (7.2 KV) | | 6/10 (12 KV) | |
| | 1 CORE | 3 CORE | 1 CORE | 3 CORE | 1 CORE | 3 CORE |
| 10 | 126.70 | 336.60 | 159.00 | 498.00 | - | - |
| 16 | 161.00 | 443.50 | 198.00 | 608.00 | 246.00 | 762.00 |
| 25 | 210.00 | 592.70 | 245.00 | 766.00 | 296.00 | 929.00 |
| 35 | 257.40 | 740.50 | 299.00 | 927.00 | 351.00 | 1,102.00 |
| 50 | 320.80 | 955.70 | 365.00 | 1,156.00 | 423.00 | 1,334.00 |
| 70 | 425.00 | 1,268.00 | 465.00 | 1,468.00 | 528.00 | 1,676.00 |
| 95 | 553.00 | 1,669.00 | 591.00 | 1,873.00 | 659.00 | 2,102.00 |
| 120 | 686.00 | 2,075.00 | 718.00 | 2,276.00 | 789.00 | 2,501.00 |
| 150 | 826.00 | 2,514.00 | 846.00 | 2,685.00 | 927.00 | 2,915.00 |
| 185 | 1,012.00 | 3,094.00 | 1,017,00 | 3,218.00 | 1,119.00 | 3,545.00 |
| 240 | 1,298.00 | 3,970.00 | 1,289.00 | 4,118.00 | 1,428.00 | 4,503.00 |
| 300 | 1,598.00 | 4,904.00 | 1,594.00 | 5,060.00 | 1,747.00 | 5,490.00 |
| 400 | 2,004.00 | 6,152.00 | 2,014.00 | 6,466.00 | 2,187.00 | 6,847.00 |
| 500 | 2,535.00 | - | 2,574.00 | - | - | - |

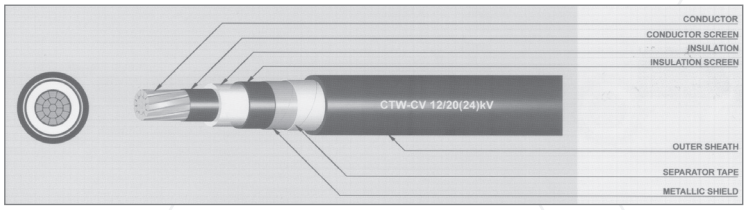
## CABLE TYPE : CTW-CV CU/XLPE/PVC 8.7/15 (17.5) kV




| CONSTRUCTION | |
|---|---|
| Conductor | Compact round stranded annealed copper. |
| Conductor Screen | Semi-conducting cross-linked polyethylene. |
| Insulation | Cross-linked polyethylene.(XLPE) |
| Insulation Screen | Semi-conducting cross-linked polyethylene. |
| Metallic Shield | Annealed copper tape |
| Separator Tape | Polyester and/or Spunbond tape. |
| Outer Sheath | Black Polyvinyl chloride (ST2) ; Optional : Polyethylene (ST7) |

| APPLICATION | CLASSIFICATION | REFERENCE | NOTE |
|---|---|---|---|
| Preferably used for urban networks. Exposted in aerail, direct burial, conduit, open tray and underground duct installation. | Maximum Conductor Temperature 90˚C (Normal Operation)<br>Maximum Conductor Temperature 250˚C (Short-circuit at 5s maximum duration) | IEC 60228 & IEC 60502-2<br>**AC Test Voltage : 30.5 kV | A special FR-PVC or Low Smoke Halogen Free (LSHF) Flame retardant sheath can be supplied in accordance with IEC 60332-3. |

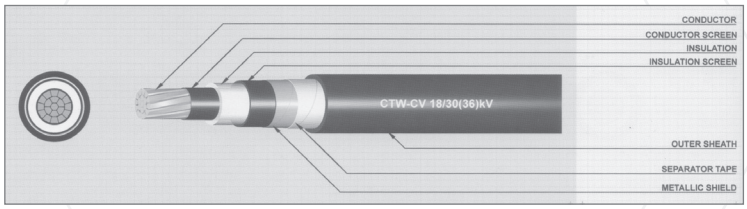
## CABLE TYPE : CTW-CV CU/XLPE/PVC 12/20 (24) kV




| CONSTRUCTION | |
|---|---|
| Conductor | Compact round stranded annealed copper. |
| Conductor Screen | Semi-conducting cross-linked polyethylene. |
| Insulation | Cross-linked polyethylene.(XLPE) |
| Insulation Screen | Semi-conducting cross-linked polyethylene. |
| Metallic Shield | Annealed copper tape |
| Separator Tape | Polyester and/or Spunbond tape. |
| Outer Sheath | Black Polyvinyl chloride (ST2) ; Optional : Polyethylene (ST7) |

| APPLICATION | CLASSIFICATION | REFERENCE | NOTE |
|---|---|---|---|
| Preferably used for urban networks. Exposted in aerail, direct burial, conduit, open tray and underground duct installation. | Maximum Conductor Temperature 90˚C (Normal Operation)<br>Maximum Conductor Temperature 250˚C (Short-circuit at 5s maximum duration) | IEC 60228 & IEC 60502-2<br>**AC Test Voltage : 42 kV | A special FR-PVC or Low Smoke Halogen Free (LSHF) Flame retardant sheath can be supplied in accordance with IEC 60332-3. |

## CABLE TYPE : CTW-CV CU/XLPE/PVC 18/30 (36) kV

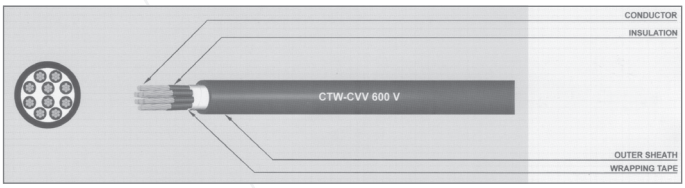



| CONSTRUCTION | |
|---|---|
| Conductor | Compact round stranded annealed copper. |
| Conductor Screen | Semi-conducting cross-linked polyethylene. |
| Insulation | Cross-linked polyethylene.(XLPE) |
| Insulation Screen | Semi-conducting cross-linked polyethylene. |
| Metallic Shield | Annealed copper tape |
| Separator Tape | Polyester and/or Spunbond tape. |
| Outer Sheath | Black Polyvinyl chloride (ST2) ; Optional : Polyethylene (ST7) |

| APPLICATION | CLASSIFICATION | REFERENCE | NOTE |
|---|---|---|---|
| Preferably used for urban networks. Exposted in aerail, direct burial, conduit, open tray and underground duct installation. | Maximum Conductor Temperature 90˚C (Normal Operation)<br>Maximum Conductor Temperature 250˚C (Short-circuit at 5s maximum duration) | IEC 60228 & IEC 60502-2<br>**AC Test Voltage : 63 kV | A special FR-PVC or Low Smoke Halogen Free (LSHF) Flame retardant sheath can be supplied in accordance with IEC 60332-3. |

| CROSS SECTIONAL AREA (SQ.MM.) ขนาดพื้นที่หน้าตัด (ตร.มม.) | PRICE (BAHT/METER) | | | | | |
|---|---|---|---|---|---|---|
| | 8.7/15 (17.5 KV) | | 12/20 (24 KV) | | 18/30 (36 KV) | |
| | 1 CORE | 3 CORE | 1 CORE | 3 CORE | 1 CORE | 3 CORE |
| 25 | 338.00 | 1,079.00 | - | - | - | - |
| 35 | 397.00 | 1,258.00 | 438.00 | 1,408.00 | 602.00 | 1,981.00 |
| 50 | 467.00 | 1,512.00 | 515.00 | 1,652.00 | 633.00 | 2,097.00 |
| 70 | 577.00 | 1,847.00 | 620.00 | 1,996.00 | 746.00 | 2,504.00 |
| 95 | 711.00 | 2,271.00 | 757.00 | 2,474.00 | 889.00 | 2,952.00 |
| 120 | 844.00 | 2,795.00 | 896.00 | 2,898.00 | 1,026.00 | 3,410.00 |
| 150 | 977.00 | 3,166.00 | 1,028.00 | 3,331.00 | 1,174.00 | 3,856.00 |
| 185 | 1,164.00 | 3,715.00 | 1,209.00 | 3,938.00 | 1,362.00 | 4,438.00 |
| 240 | 1,478.00 | 4,649.00 | 1,515.00 | 5,051.00 | 1,656.00 | 5,573.00 |
| 300 | 1,797.00 | 5,747.00 | 1,843.00 | 5,957.00 | 1,953.00 | 6,648.00 |
| 400 | 2,241.00 | 7,000.00 | 2,287.00 | 7,224.00 | 2,410.00 | 7,961.00 |

## CABLE TYPE : CTW-FCVV 600 V




**APPLICATION**

Supervisory electrical equipment, station control circuits. Out door, suitable installation in the wet or dry cable trenches.

**CONSTRUCTION**

Conductor : Concentric lay strand annealed copper conductor.
Insulation : Polyvinyl chloride (PVC) : Black colour with marking number.
Filler : PVC Rod and/or Polypropylene (Nonhygroscopic material).
Wrapping Tape : Polyester (Mylar) tape.
Outer Sheath : Black polyvinyl chloride (PVC).
*** Colours sequence for circuit identification & other colours for outer sheath to special order.

**REFERENCE STANDARD**

ICEA S-61-402 (NEMA WC 5), IEC 60502-1
*Testing Voltage : 1.5, 3.0, 3.5 kV (By Conductor Size)

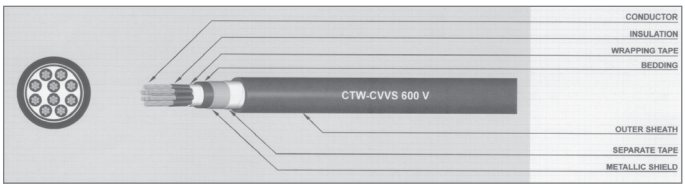
**CLASSIFICATION**

Maximum conductor temperature 75 °C,
Circuit voltage does not exceed 600 volts.

**OPTIONAL**

A Special FR-PVC flame retardant sheath can be supplied.

## CABLE TYPE : CTW-FCVVS 600 V




**APPLICATION**

Supervisory electrical equipment, station control circuits. Out door, suitable installation in the wet or dry cable trenches.

**CONSTRUCTION**

Conductor : Concentric lay strand annealed copper conductor.
Insulation : Polyvinyl chloride (PVC) : Black colour with marking number.
Wrapping Tape : Polyester (Mylar) tape.
Filler : PVC Rod and/or Polypropylene (Nonhygroscopic material).
Wrapping Tape : Polyester (Mylar) tape.
Bedding : Black polyvinyl chloride (PVC).
Metallic shield : Annealed copper tape.
Separator Tape : Polyester (Mylar) tape.
Outer Sheath : Black polyvinyl chloride (PVC)
*** Colours sequence for circuit identification & other colours for outer sheath to special order.

**REFERENCE STANDARD**

ICEA S-61-402 (NEMA WC 5), IEC 60502-1
*Testing Voltage : 1.5, 3.0, 3.5 kV (By Conductor Size)

**CLASSIFICATION**

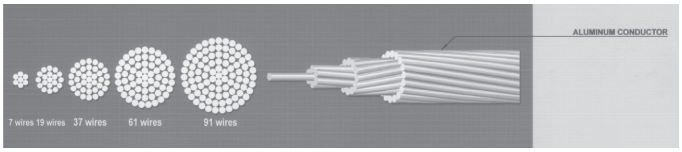
Maximum conductor temperature 75 °C,
Circuit voltage does not exceed 600 volts.

**OPTIONAL**

A Special FR-PVC flame retardant sheath can be supplied.

| CORE | PRICE (BATH/METER) ขนาดพื้นที่หน้าตัด (ตร.มม.) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | CVV | | | | | CVVS | | | | |
| | 0.75 | 1 | 1.5 | 2.5 | 4 | 0.75 | 1 | 1.5 | 2.5 | 4 |
| 2 | 34.30 | 36.50 | 40.30 | 54.50 | 74.80 | 62.80 | 65.65 | 73.20 | 91.30 | 121.20 |
| 3 | 38.10 | 41.90 | 49.30 | 68.80 | 94.30 | 68.80 | 74.80 | 83.70 | 109.00 | 145.60 |
| 4 | 47.80 | 49.40 | 59.80 | 85.30 | 125.60 | 80.60 | 85.30 | 98.80 | 130.00 | 176.40 |
| 5 | 58.30 | 65.00 | 76.20 | 109.20 | 152.50 | 94.30 | 101.70 | 116.60 | 158.60 | 209.30 |
| 7 | 68.80 | 78.50 | 94.30 | 137.80 | 198.90 | 109.20 | 119.60 | 141.70 | 191.10 | 262.60 |
| 9 | 91.30 | 106.20 | 129.40 | 183.80 | 263.20 | 133.90 | 147.90 | 171.60 | 239.20 | 326.30 |
| 10 | 98.70 | 114.40 | 140.40 | 201.80 | 290.00 | 146.90 | 159.90 | 187.20 | 261.30 | 366.60 |
| 12 | 109.90 | 128.60 | 158.50 | 233.20 | 342.20 | 158.60 | 174.20 | 209.30 | 291.20 | 406.90 |
| 14 | 121.80 | 140.50 | 176.40 | 261.60 | 386.10 | 174.20 | 195.00 | 230.10 | 322.40 | 475.80 |
| 16 | 130.80 | 153.90 | 195.00 | 292.50 | 445.90 | 187.20 | 211.90 | 254.80 | 361.40 | 533.00 |
| 19 | 148.70 | 175.80 | 224.50 | 314.90 | 517.40 | 209.30 | 239.20 | 283.40 | 416.00 | 598.00 |
| 21 | 167.70 | 198.90 | 250.90 | 379.60 | 572.00 | 228.80 | 258.70 | 309.40 | 470.60 | 676.00 |
| 24 | 185.90 | 219.70 | 280.80 | 439.40 | 647.40 | 254.80 | 289.90 | 349.70 | 530.40 | 773.00 |
| 27 | 206.70 | 239.20 | 312.40 | 484.40 | 722.20 | 278.20 | 313.30 | 383.50 | 581.10 | 847.60 |
| 30 | 221.00 | 261.30 | 341.90 | 531.70 | 795.60 | 295.10 | 339.30 | 425.10 | 633.10 | 926.90 |

## CABLE TYPE : CTW-AAC

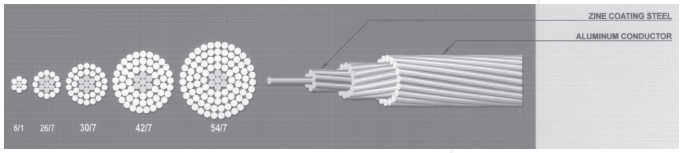



**CONSTRUCTION**
The standard bare All-Aluminum Conductor (AAC) are concentric-lay-stranded of aluminum wire only.

**APPLICATION**
AAC are used primarily for overhead transmission and primary and secondary distribution.

**REFERENCE STANDARD**
* TIS 85-2525
* IEC 207
* DIN. 48201

## CABLE TYPE : CTW-ACSR




**CONSTRUCTION**
ACSR is composite, concentrically stranded conductor is which the light weight and a good conductivity of aluminum are combined with the high tensile strength of steel.

**APPLICATION**
Used as bare overhead transmission cable and primary and secondary distribution.

**REFERENCE STANDARD**
* TIS 85-2525
* IEC 207
* DIN. 48201

## CABLE TYPE : CTW-THW-A


**CONSTRUCTION**
Conductor : Soild and stranded hard draw alumminum wire
Insulation : Heat resistance polyvinyl chloride (Black colour)

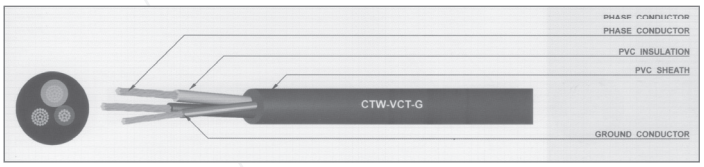
**APPLICATION**
For arial cable (Service & main)

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

**REFERENCE STANDARD**
* TIS 293-2541 TABLE 1
* Testing Voltage 2,500 volts

| CROSS SECTIONAL AREA (SQ.MM.) ขนาดพื้นที่หน้าตัด (ตร.มม.) | PRICE (BATH/METER) | | |
|---|---|---|---|
| | AAC | ACSR | THW-A |
| 10 | - | - | 8.75 |
| 16 | - | - | 12.35 |
| 25 | 15.00 | - | 18.13 |
| 35 | 20.63 | - | 23.91 |
| 50 | 29.06 | - | 33.60 |
| 70 | 41.25 | - | 44.69 |
| 95 | 56.25 | - | 60.48 |
| 120 | 72.19 | - | 72.66 |
| 150 | 88.13 | - | 92.19 |
| 185 | 119.06 | - | 112.50 |
| 240 | - | - | 150.00 |
| 300 | - | - | 195.31 |
| 400 | - | - | 246.88 |
| 500 | - | - | 328.13 |

## CABLE TYPE : CTW-VCT-G




**CONSTRUCTION**

Conductor : Annealed copper, bunch stranded
Sizes 1 $mm^2$ up to 35 $mm^2$ (Phase)
Sizes 1 $mm^2$ up to 10 $mm^2$ (Ground)
Insulation : Polyvinyl chloride
(Light gray and Black colour) Phase,
(Green with Yellow Stripe colour) Ground
Sheath : Polyvinyl chloride (Black colour)

**APPLICATION**

For mobile-electrical equipment used in mines, factories, farm or household appliances. Also for heavy tools, and battery chargers.

**CLASSIFICATION**

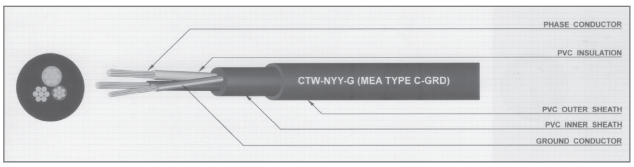
Maxinum conductor temperature 70 ˚C
Circuit Voltage does not exceed 750 volts.

**REFERENCE**

TIS 11-2531 TABLE 15

*Testing Voltage : 2,500 volts.

## CABLE TYPE : CTW-NYY-G




**CONSTRUCTION**

Conductor : Annealed copper, solid or stranded
Sizes 1 $mm^2$ up to 300 $mm^2$ (Phase)
Sizes 1 $mm^2$ up to 35 $mm^2$ (Ground)
Insulation : Polyvinyl chloride
(Light gray and Black colour) Phase,
(Green with Yellow Stripe colour) Ground
Inner Sheath : Polyvinyl chloride (Black colour)
Outer sheath : Polyvinyl chloride (Black colour)

**APPLICATION**

Exposed wiring in air or use in raceway wet or dry location, direct burial in ground.

**CLASSIFICATION**

Maxinum conductor temperature 70 ˚C
Circuit Voltage does not exceed 750 volts.

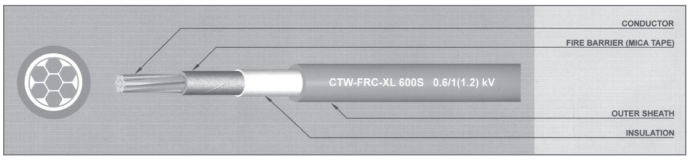
**REFERENCE**

TIS 11-2531 TABLE 14

*Testing Voltage : 2,500 volts.

| CROSS SECTIONAL AREA (SQ.MM.) ขนาดพื้นที่หน้าตัด (ตร.มม.) | PRICE (BAHT/METER) | | | | | |
|---|---|---|---|---|---|---|
| | VCT-G | | | NYY-G | | |
| | 2 CORE | 3 CORE | 4 CORE | 2 CORE | 3 CORE | 4 CORE |
| 1/1 | 37.20 | 46.50 | 75.70 | - | - | - |
| 1.5/1 | 50.20 | 64.60 | 85.70 | 70.80 | 85.30 | 109.30 |
| 2.5/1.5 | 69.90 | 91,10 | 116.40 | 83.00 | 106.10 | 136.70 |
| 4/2.5 | 104.50 | 137.40 | 176.60 | 114.50 | 144.70 | 178.50 |
| 6/4 | 153.00 | 204.90 | 272.40 | 156.10 | 200.50 | 255.20 |
| 10/4 | 249.70 | 327.00 | 425.20 | 217.70 | 282.70 | 363.20 |
| 16/6 | 355.80 | 483.00 | 606.30 | 309.40 | 438.40 | 525.50 |
| 25/6 | 507.00 | 724.50 | 927.40 | 461.00 | 605.40 | 764.75 |
| 35/10 | 721.30 | 991.80 | 1,249.40 | 630.20 | 830.20 | 1,085.10 |
| 50/10 | - | - | - | - | 1,089.40 | 1,394.30 |
| 70/10 | - | - | - | - | 1,476.40 | 1,911.00 |
| 95/16 | - | - | - | - | 2,017.40 | 2,635.60 |
| 120/16 | - | - | - | - | - | 3,640.00 |

## CABLE TYPE : CTW-FRC-XL 600S




**CONSTRUCTION**

Conductor : Compactor Round concentric lay stranded copper
- CR : Concentric lay stranded of conductor : < 10 $mm^2$
- CP : Compact round concentric lay stranded of conductor : > 10 $mm^2$

Fire Barrier : Mineral cermic (Mica) fire resistant tape.
Insulation : Cross-linked polyethylene (XLPE) : Natural (Translucent) Colour.
Outer Sheath : Low smoke & halogen free compound (LSHF : ST8) : Orange Colour. Other colours to special order.

**APPLICATION**

Preferably used for installation into conduit and surface wiring whereby a prevention of fire major hazard and continue supply electricity in case of fire.

**STANDARDS ACHIEVED**

Construction : IEC 60228, IEC 60502-1
Circuit integrity : BS 6387 Categories C, W, Z, IEC 60331 at 750°C 3 hours
Flame propagation : IEC 60332-1, IEC 60332-3 Categories A, B, C
Acid gas emission : IEC 60754-2
Smoke emission : IEC 61034

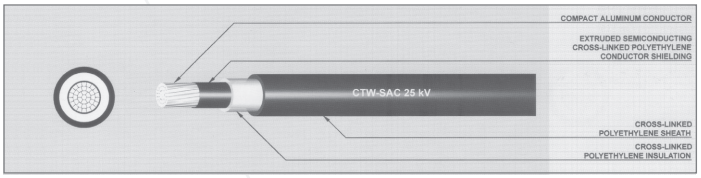
**CLASSIFICATION**

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

AC Test Voltage : 3.5 kV

| CROSS SECTIONAL AREA (SQ.MM.) ขนาดพื้นที่หน้าตัด (ตร.มม.) | THICKNESS OF INSULATION MM. | OVERALL DIAMETER(APPROX.) MM. | CABLE WEIGHT(APPROX.) KG./KM. | BAHT/M. |
|---|---|---|---|---|
| 1.5 | 0.7 | 7.0 | 60 | 41.00 |
| 2.5 | 0.7 | 7.5 | 75 | 48.00 |
| 4 | 0.7 | 8.0 | 95 | 62.00 |
| 6 | 0.7 | 8.5 | 120 | 81.00 |
| 10 | 0.7 | 9.5 | 160 | 112.00 |
| 16 | 0.7 | 10.0 | 220 | 152.00 |
| 25 | 0.9 | 12.0 | 320 | 218.00 |
| 35 | 0.9 | 13.0 | 430 | 286.00 |
| 50 | 1.0 | 14.5 | 580 | 389.00 |
| 70 | 1.1 | 16.5 | 790 | 521.00 |
| 95 | 1.1 | 18.5 | 1,040 | 716.00 |
| 120 | 1.2 | 20.0 | 1,300 | 862.00 |
| 150 | 1.4 | 22.0 | 1,610 | 1,055.00 |
| 185 | 1.6 | 24.5 | 1,970 | 1,296.00 |
| 240 | 1.7 | 27.5 | 2,520 | 1,665.00 |
| 300 | 1.8 | 30.5 | 3,120 | 2,059.00 |
| 400 | 2.0 | 33.0 | 4,110 | - |
| 500 | 2.2 | 37.5 | 5,120 | - |
| 630 | 2.4 | 42.0 | 6,420 | - |
| 800 | 2.6 | 46.5 | 8,090 | - |
| 1000 | 2.8 | 53.0 | 10,090 | - |

## CABLE TYPE : CTW-SAC 25 kV




**CONSTRUCTION**

Conductor : Compact stranded hard drawn Aluminum wire
Conductor Shield : Semi-conducting cross-linked polyethylene.
Insulation : Cross-linked polyethylene (Natural)
Sheath : Track resistant cross-linked polyethylene (Black)

**APPLICATION**

For use in primary aerial cable on pole. (installed with spacer)

**CLASSIFICATION**

Temperature :
- Normal operation 90˚C
- Emergency overload conditions 130˚C
- Short circuit conditions 250˚C
- Voltage rating : 25 kV phase to phase.

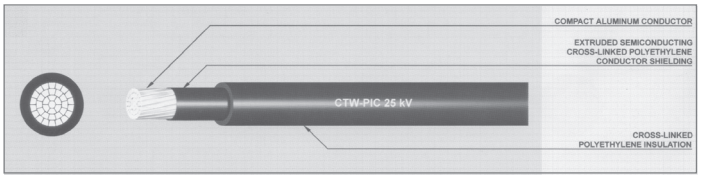
**REFERENCE**

ICEA S-66-524 / MEA / PEA

**AC TEST VOLTAGE**

38 kV for 5 minutes

## CABLE TYPE : CTW-PIC 25 kV




**CONSTRUCTION**

Conductor : Compact stranded hard drawn Aluminum wire
Conductor Shield : Semi-conducting cross-linked polyethylene.
Insulation : Track resistant cross-linked polyethylene (Black)

**APPLICATION**

For use in primary aerial cable on pole. (installed with pin insulator)

**CLASSIFICATION**

Temperature :
- Normal operation 90˚C
- Emergency overload conditions 130˚C
- Short circuit conditions 250˚C
- Voltage rating : 25 kV phase to phase.

**REFERENCE**

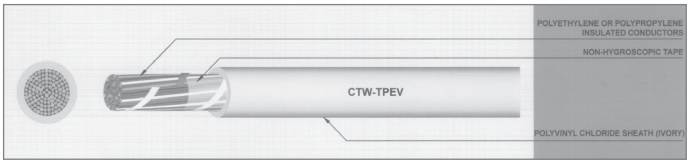
ICEA S-66-524 / MEA / PEA

**AC TEST VOLTAGE**

11 kV for 5 minutes

| CROSS SECTIONAL AREA (SQ.MM.) ขนาดพื้นที่หน้าตัด (ตร.มม.) | PRICE (BAHT/METER) | | | |
|---|---|---|---|---|
| | SAC | | PIC | |
| | 25 KV | 35 KV | 25 KV | 35 KV |
| 35 | 130.00 | 140.50 | 42.00 | 54.50 |
| 50 | 136.25 | 163.25 | 53.88 | 68.13 |
| 70 | 179.75 | 185.63 | 67.88 | 90.13 |
| 95 | 201.63 | 205.75 | 85.38 | 107.50 |
| 120 | 237.75 | 241.00 | 102.13 | 126.25 |
| 185 | 274.75 | 302.63 | 135.00 | 161.63 |
| 240 | 333.88 | 366.00 | - | - |

## CABLE TYPE : CTW-TPEV



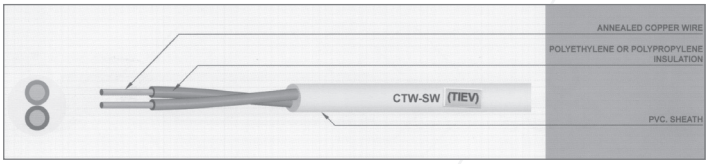

**APPLICATION**

For connecting subscriber in side the building.

**CONSTRUCTION**

Conductor : Size : 0.5 and 0.65 mm., solid wire annealed copper.
Insulation : Solid high density polyethylene or polyproplylene. and colour code in accordance with telephone strandard.
Twisted pair : Individual conductor twisted into and specified colour combinations to provide pair identification.
Core assembly : Assembly in unit, each individually identified by colour code units binders.
(Unit construction for cables more than 25 pairs. Concentric for cables up to 25 pairs)
Core Wrap : Non-hygroscopic dielectric tape applied longitudinally with an overlap.
Sheath : Ivory colour, Polyvinyl chloride (PVC)
Identification : Manufacture's name, year of manufacture, Type of cable, Size and number of pair.
Marking Length : Option

## CABLE TYPE : CTW-SW (TIEV)




**APPLICATION**

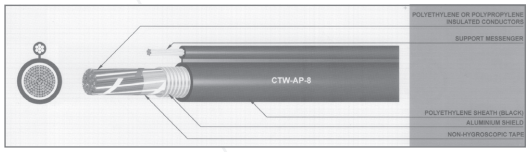
For general use inside telephone subscriber station.

**CONSTRUCTION**

Conductor : Size : 0.5 and 0.65 mm., solid wire annealed copper.
Insulation : Solid high density polyethylene or polyproplylene.
Identification : 2 - core : Red and Green,
3 - core : Red, Green and Yellow,
4 - core : Red, Green, Yellow and Black,
5 - core : Red, Green, Yellow, Black and White,
6 - core : Red, Green, Yellow, Black, White and Brown.
Sheath : Ivory, Polyvinyl chloride (PVC)
Identification : Manufacture's name, year of manufacture, Type of cable, Size and number of pair.
Marking Length : Option

| NUMBER OF PAIR | PRICE (BAHT/METER) | | | |
|---|---|---|---|---|
| | TIEV | | TPEV | |
| | 0.5 MM. | 0.65 MM. | 0.5 MM. | 0.65 MM. |
| 2 | 4.70 | 6.15 | - | - |
| 3 | 5.40 | 7.35 | - | - |
| 4 | 6.40 | 8.80 | 22.95 | 33.95 |
| 5 | 7.90 | 10.40 | 29.10 | 38.63 |
| 6 | 8.50 | 12.20 | 30.70 | 41.45 |
| 8 | - | - | 34.05 | 47.12 |
| 10 | - | - | 39.24 | 55.20 |
| 12 | - | - | 44.93 | 61.68 |
| 15 | - | - | 50.76 | 69.82 |
| 20 | - | - | 60.10 | 85.73 |
| 25 | - | - | 71.17 | 100.00 |
| 30 | - | - | 84.52 | 116.40 |
| 40 | - | - | 103.00 | 145.00 |
| 50 | - | - | 120.00 | 175.00 |

## CABLE TYPE : CTW-FIG 8 AP



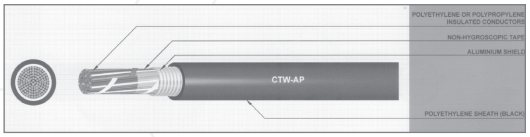

**APPLICATION**

Self-supportingALPETH Cable, also referred to as "figure eight" cable, is specifically designed for pole-to-building application. Self-Supporting Cable can be used in locations which normally corrode a bare steel strand, such as industrial or coastal area.

**CONSTRUCTION**

| | |
|---|---|
| Conductor | : Size : 0.4, 0.5, 0.65, and 0.9 mm., solid wire annealed copper. |
| Insulation | : Solid high density polyethylene or polyproplylene. and colour code in accordance with telephone strandard. |
| Twisted pair | : Individual conductor twisted into pair with varying twist to minimize crosstalk, and specified colour combinations to provide pair identification. |
| Core assembly | : Assembly in unit, each individually identified by colour code units binders. (Unit construction for cables more than 25 pairs. Concentric for cables up to 25 pairs) |
| Core Wrap | : Non-hygroscopic dielectric tape applied longitudinally with an overlap. |
| Shielding system | : Plastic coated aluminum tape. covered by corrugated bare thickness 0.2 mm. Laid on with overlap., applied longitudinally over the core wrap. |
| Steel strand | : The steel messenger seven wires extra high strength galvanized steel wire flooded with elastomer combined with asphalts, plasticizers and fillers. The minimum breaking strength is 29.58 kN. |
| Sheath | : Black, low density polyethylene. with web which hold the cable and strand together forming "figure eight" cross section area. |
| Identification | : Manufacture's name, year of manufacture, Type of cable, Size and number of pair. |
| Marking Length | : Option |

## CABLE TYPE : CTW-AP



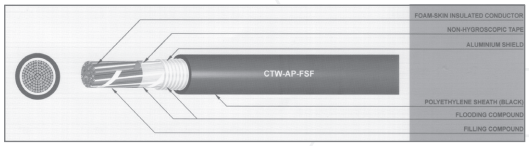

**APPLICATION**

Intended primary for aerial use. Also, suitable for short, non-pressurized runs in industrial duct and conduct.

**CONSTRUCTION**

| | |
|---|---|
| Conductor | : Size : 0.4, 0.5, 0.65, and 0.9 mm., solid annealed copper. |
| Insulation | : Solid high density polyethylene or polyproplylene. and colour code in accordance with telephone strandard. |
| Twisted pair | : Individual conductor twisted into pair with varying twist to minimize crosstalk, and specified colour combinations to provide pair identification. |
| Core assembly | : Assembly in unit, each individually identified by colour code units binders. (Unit construction for cables more than 25 pairs. Concentric for cables up to 25 pairs) |
| Core Wrap | : Non-hygroscopic dielectric tape applied longitudinally with an overlap. |
| Shielding system | : Plastic coated aluminum tape. covered by corrugated bare thickness 0.2 mm. Laid on with overlap., applied longitudinally over the core wrap. |
| Sheath | : Black, low density polyethylene. |
| Identification | : Manufacture's name, year of manufacture, Type of cable, Size and number of pair. |
| Marking Length | : Option |

## CABLE TYPE : CTW-AP-FSF




**APPLICATION**

General use in buried distribution and exchange feeder plant environments. Also, suitable for short runs in industrial duct and conduit. Filled Alpeth Cable maintains the integrity o the burided plant through improved water resistance.

**CONSTRUCTION**

| | |
|---|---|
| Conduction | : Size : 0.4, 0.5, 0.65, and 0.9 mm., solid annealed copper. |
| Insulation | : Dual expanded foam/skin polyethylene or polypropylene insulated |
| Twisted pair | : Individual conductor twised into pairs with varying twist to minimize crosstalk, and specified colour combinations to provide pair identification. |
| Core assembly | : Assembly in unit, each individually identified by colour code units binders. (Unit construction for cables more than 25 pairs. Concentric for cables up to 25 pairs) |
| Core Wrap | : Non-hygroscopic dielectric tape applied longitudinally with an overlap. |
| Filling compound | : The core assembly is filled compound, completely filling the interstices between the pairs and under core wrap |
| Shielding system | : Plastic coated aluminum tape. thickness 0.2 mm. Laid on with overlap., applied longitudinally over the core wrap. |
| Flooding compound | : The interstices between core wrap and shielding and sheath are filled with flooding compound. Sheath : Black, low density polyethylene. |
| Identification | : Manufacture's name, year of manufacture, Type of cable, Size and number of pair. |
| Marking Length | : Option |

| NUMBER OF PAIR | PRICE (BAHT/METER) | | | | | |
|---|---|---|---|---|---|---|
| | FIG 8 AP | | AP | | AP-FSF | |
| | 0.5 MM. | 0.65 MM. | 0.5 MM. | 0.65 MM. | 0.5 MM. | 0.65 MM. |
| 4 | 82.00 | 87.90 | 51.20 | 59.36 | 104.82 | 112.60 |
| 5 | 84.30 | 92.10 | 55.33 | 64.00 | 108.70 | 117.50 |
| 6 | 86.10 | 95.40 | 57.20 | 66.82 | 110.15 | 120.70 |
| 8 | - | - | - | - | - | - |
| 10 | 95.30 | 109.60 | 68.58 | 82.90 | 122.60 | 138.20 |
| 12 | 100.70 | 119.00 | 75.00 | 92.30 | 129.70 | 148.50 |
| 15 | 107.80 | 130.00 | 81.83 | 101.43 | 137.37 | 158.60 |
| 20 | 122.10 | 146.70 | 93.60 | 118.15 | 150.00 | 179.80 |
| 25 | 126.00 | 156.00 | 104.81 | 135.67 | 162.45 | 210.60 |
| 30 | 139.00 | 180.00 | 116.85 | 153.63 | 178.44 | 231.50 |
| 40 | - | - | - | - | - | 280.00 |
| 50 | 186.00 | 254.00 | 157.40 | 212.53 | 235.61 | 300.00 |
| 75 | 246.00 | 330.00 | 205.40 | 280.86 | 292.30 | 385.50 |
| 100 | 293.00 | 405.00 | 259.28 | 370.00 | 343.00 | 479.14 |
| 150 | 420.00 | 590.00 | 371.30 | 541.70 | 477.30 | 649.20 |
| 200 | 530.00 | 790.00 | 482.50 | 684.70 | 587.60 | 869.80 |

TRP