



# Introduction of **Environment conscious electric cables**

'LAPA' - Laminated Aluminium Polyamide



**PT. SUMI INDO KABEL Tbk. (INDONESIA)**  
**SUMITOMO ELECTRIC GROUP - JAPAN**

# CONCEPT OF OUR CABLES

Lead sheath cable is usually used in oil & gas plant and under-gland distribution line.

Nowadays, environmental impact shall be considered to everything what the human has a relation with, and electrical cables are also no exception of this trend.

We understand that the development of the environment conscious electric cables is our mission, and we have to contribute toward our earth.

Therefore, we developed our electrical cables without lead sheath. but with same characteristic of lead sheath.



# Environmental Regulations

## 1. RoHS : since 2006

Restriction of Hazardous Substances

Not more than 1000ppm of Pb, Hg, Cr, PBB, PBDE

Not more than 100ppm of Cd

## 2. REACH : since 2007

Registration, Evaluation, Authorization of Chemicals

Referring these environmental regulations on our developing electrical cables



# Difference of lead sheath and our cable

## Lead sheath

Protect from

>Water

>Oil

>Aliphatic  
hydrocarbons



Lead sheath cable

## (1) Aluminum tape

Protect from

>Water

>Oil

## (2) Polyethylene bedding

Protect from

>Oil



## (3) Polyamide sheath

Protect from

>Aliphatic  
hydrocarbons

>Anti-termite



## Our developed "LAPA" sheath cable

**1kV XLPE / LAPA 4C x 4 mm<sup>2</sup>**



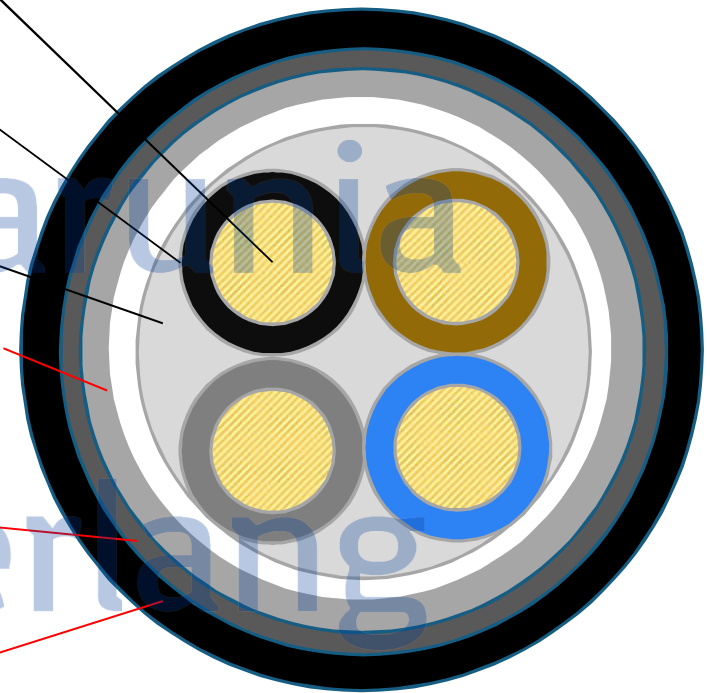
# Insulation

## Filler

## Aluminum tape

## Bedding (Polyethylene)

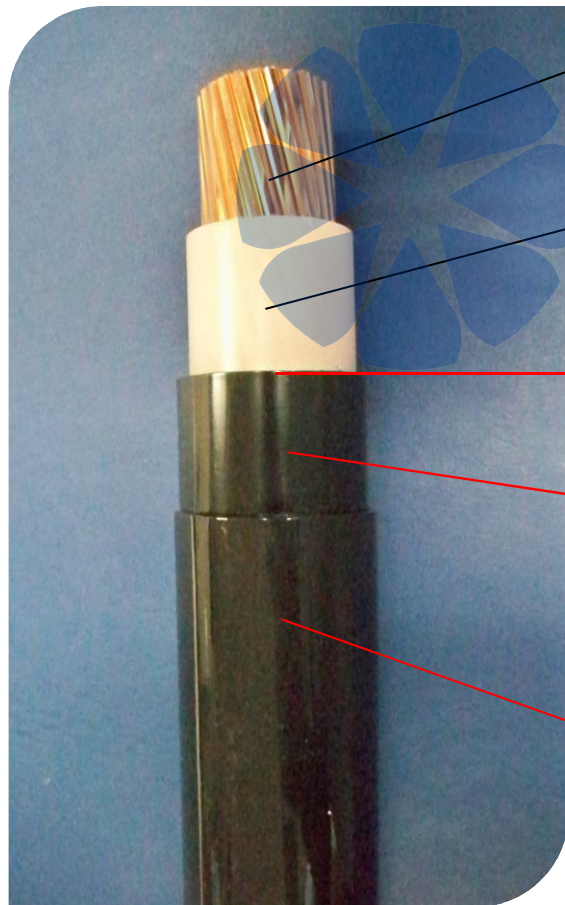
## Sheath (Polyamide)





# Construction example(2)

1kV XLPE / LAPA 1C x 250 mm<sup>2</sup>



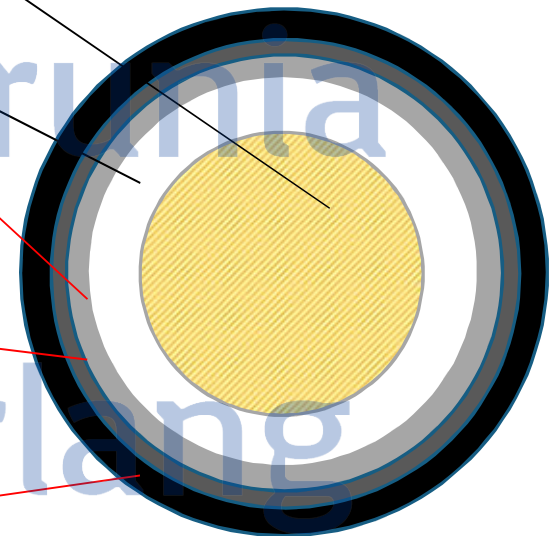
**Conductor**

**Insulation**

**Aluminum tape**

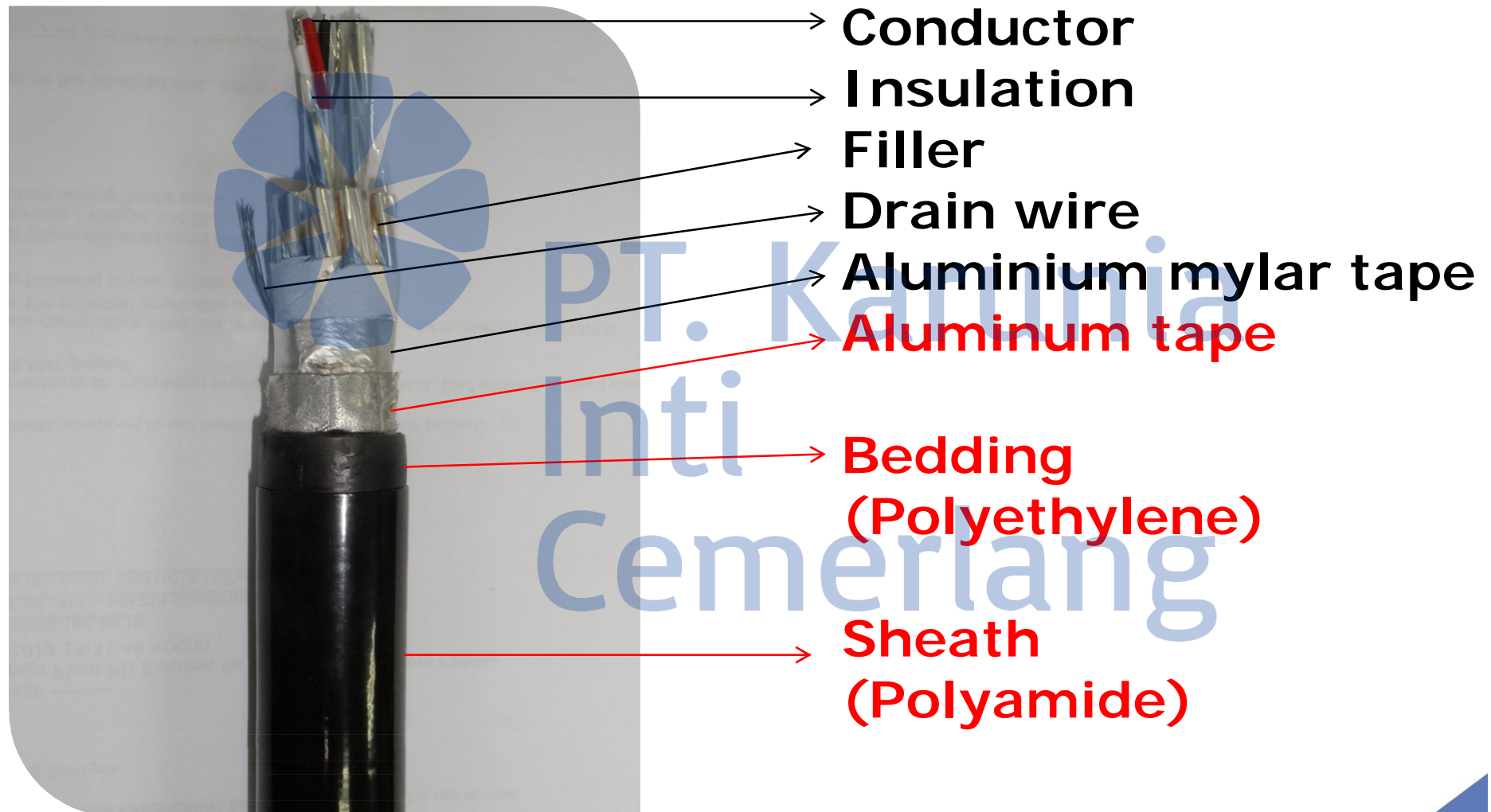
**Bedding  
(Polyethylene)**

**Sheath  
(Polyamide)**



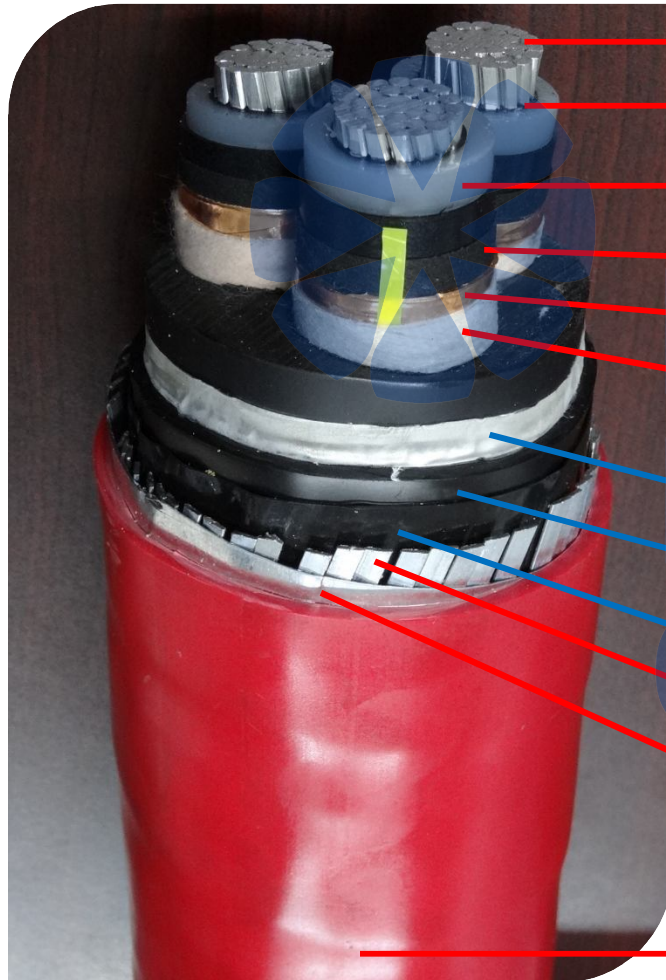
# Construction example(3)

500 V XLPE / LAPA IS/OS 10T x 0.75 mm<sup>2</sup>



# Construction example(3)

6/10 kV NA2XSE-LAPA-FGbY 3 x 240 mm<sup>2</sup>



**Conductor**

**Inner Semicond**

**XLPE Insulation**

**Outer Semicond**

**Copper tape**

**Water Blocking Tape**

**PVC Filler**

**Aluminum Tape**

**Polyethylene**

**Polyamide**

**Flat steel wire Armour**

**Steel Tape**

**PVC Sheath**