

POLYLINK®
(Crosslinkable Polyethylene)

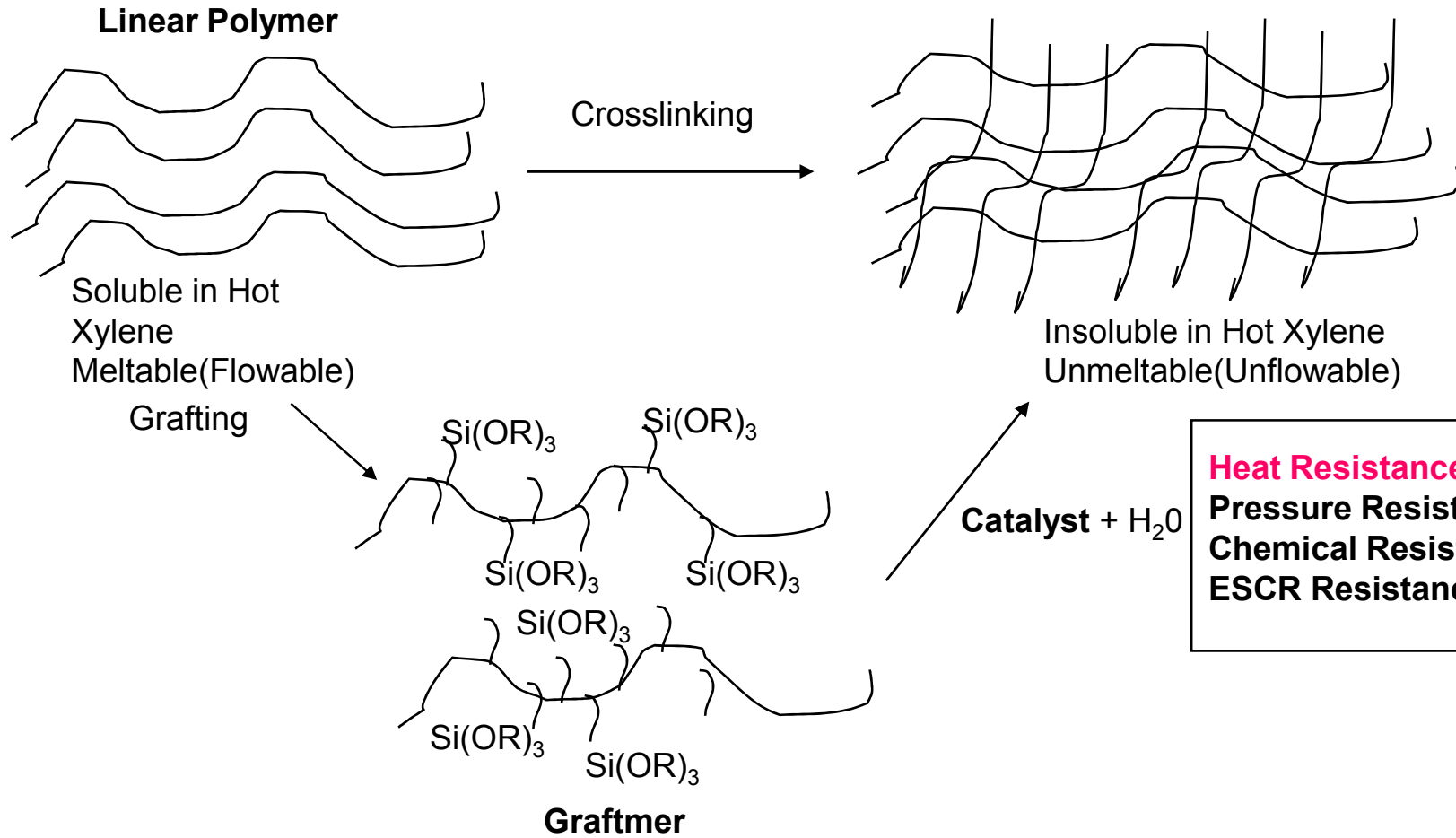


Hyundai Engineering Plastics Co., Ltd.

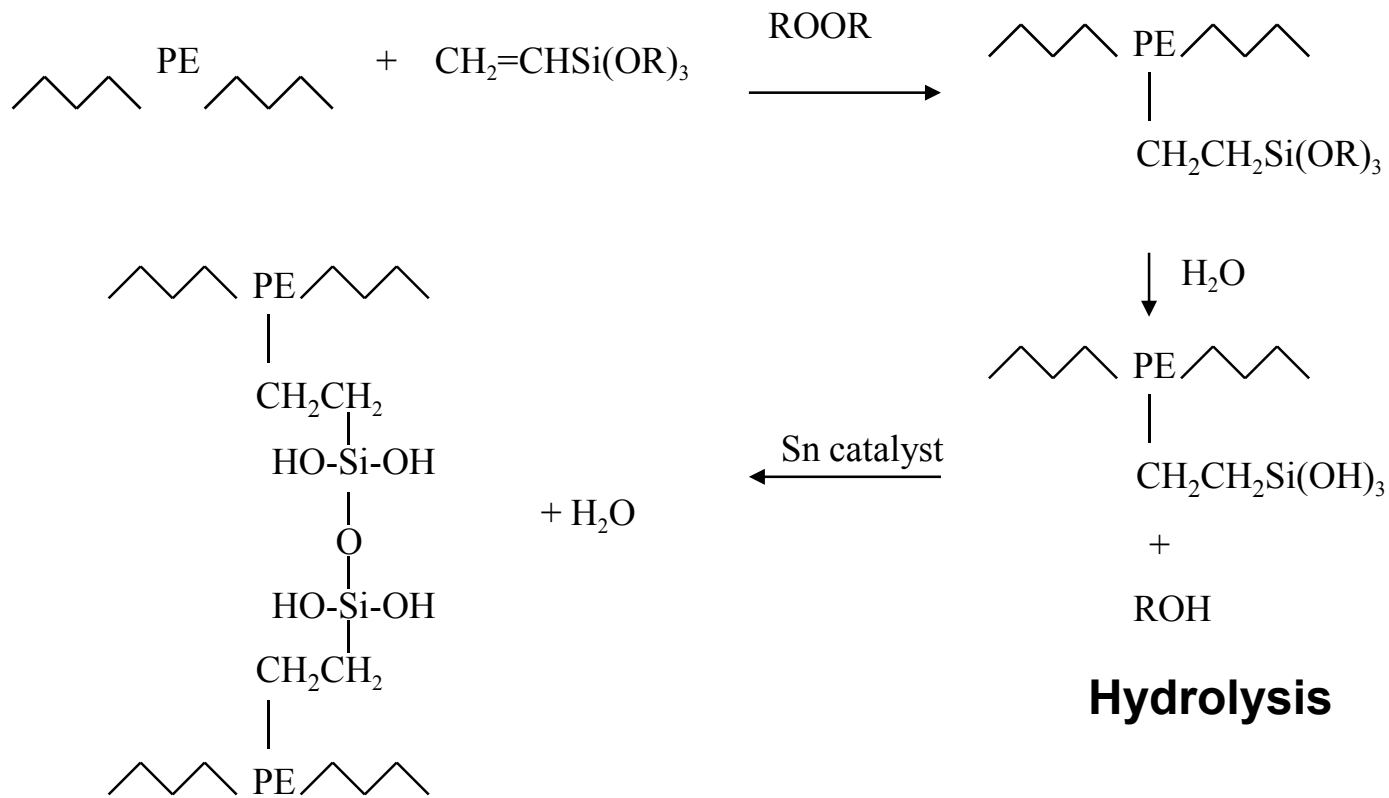
R&D CENTER



Crosslinkable Polyethylene for Silane



SILANE GRAFTING

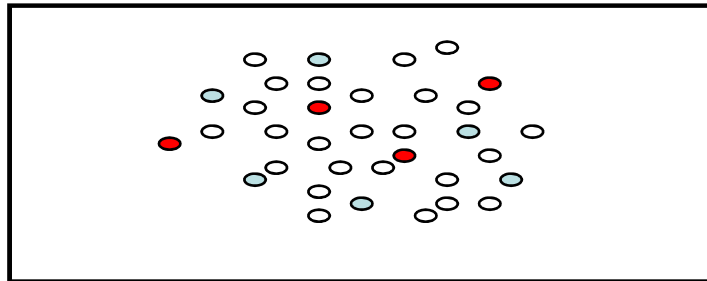


Condensation

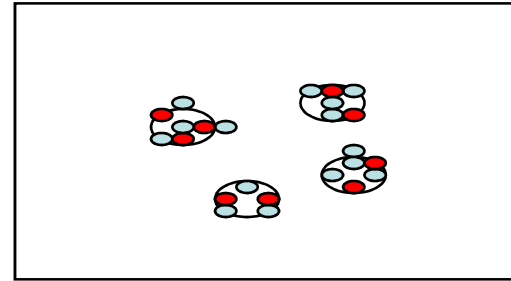
Hydrolysis

Comparison of Crosslinking Method

Crosslinking Method	Peroxide Crosslinking	Silane Crosslinking	Radiation Crosslinking
Crosslinking Source	Heat	Moisture	Electron beam
Strong Point	High D.of Crosslink Uniform Quality > 80%	Low Hardware Price High productivity > 65%	High productivity Easy Processing 50~90 %
Weak Point	High Hardware price Low productivity	Low Self -Life (6 Month)	High Hardware price Low productivity
Application	High Voltage Cable (500Kv) Pipe	Pipe Medium,Low Voltage Cable(3.3Kv)	Sheet Low Voltage(1Kv) Pipe

POLYLINK® Process (1) - Dry Silane**Dry Silane**

- LLDPE Pellet
- Silane Masterbatch
- Catalyst and Antioxidant Masterbatch

Conventional Coating Method

- LLDPE Pellet
- Silane
- Catalyst and Antioxidant

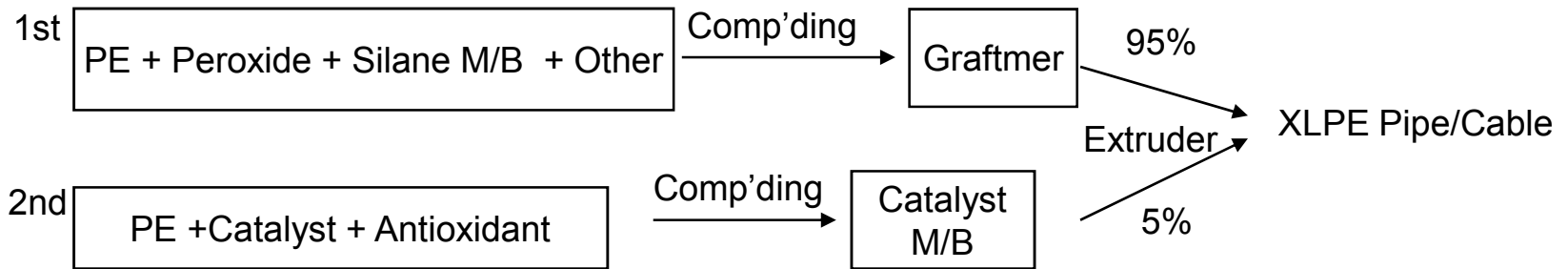
Advantage of Dry Silane over Conventional Coating Method

- As silane masterbatches and catalyst masterbatches are separated while in LLDPE there is no chemical reaction between silane and catalyst during storage.
- Dry silane has a longer shelf life time than in its conventional coating method.
- Due to the fact that silane is soaked into a specific resin, there is no loss of silane while in process
- Because all kinds of masterbatches are well distributed in the extruder, an even cross-linking density and superb physical properties are displayed.

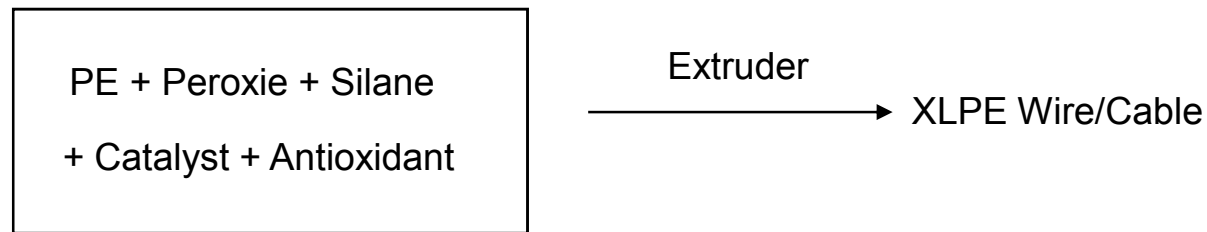


POLYLINK® Process (2) - Sioplas

Sioplas(Two-Step)



Siloxane(One-Step)

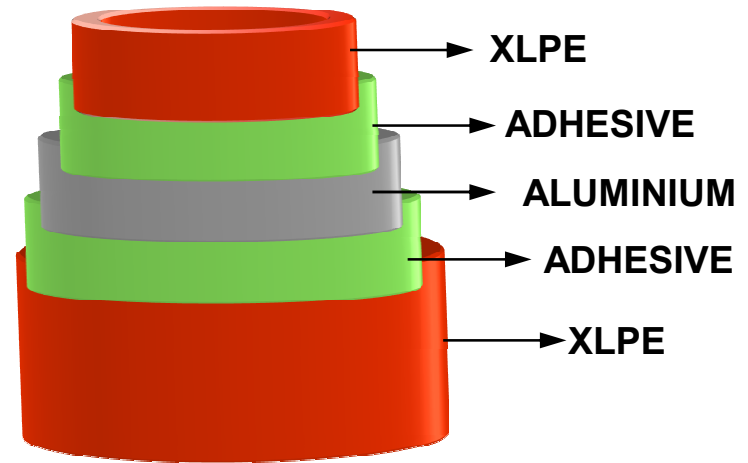


Coating in the Super Mixer

Application – Pipe/AL Composite Pipe

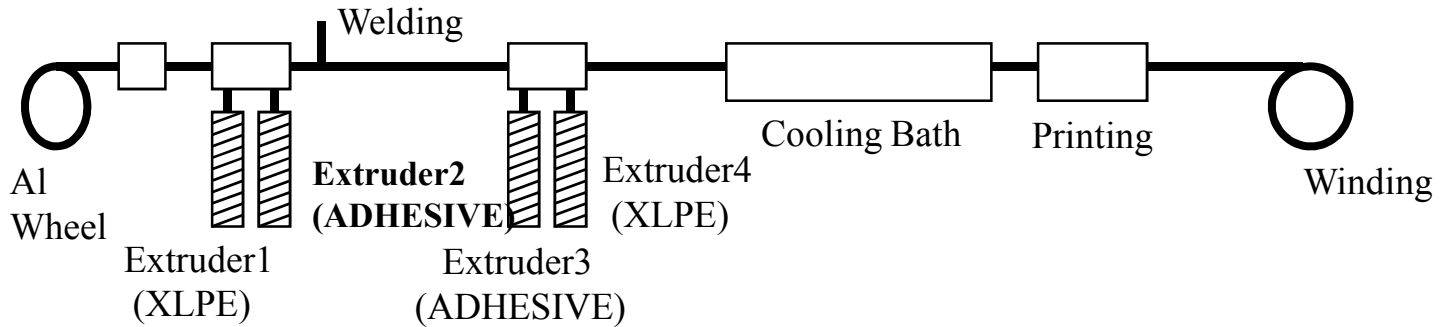
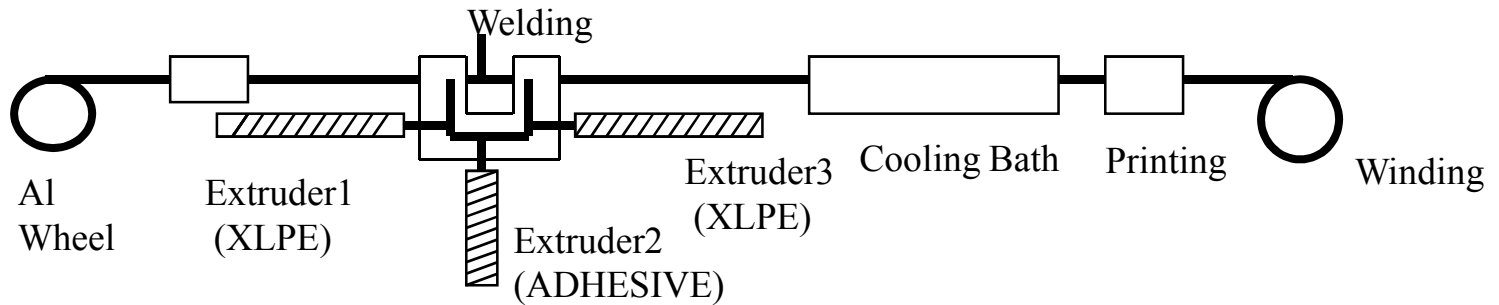


XLPE PIPE

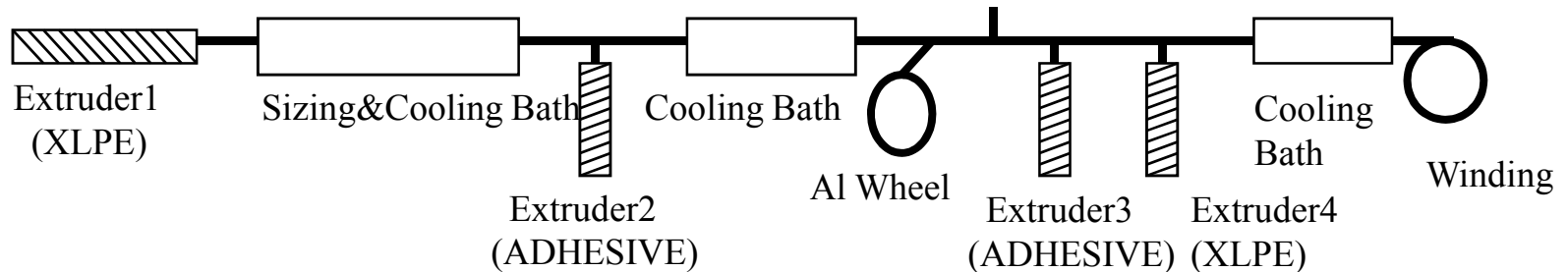


Application - AL Composite Pipe Process

One Step

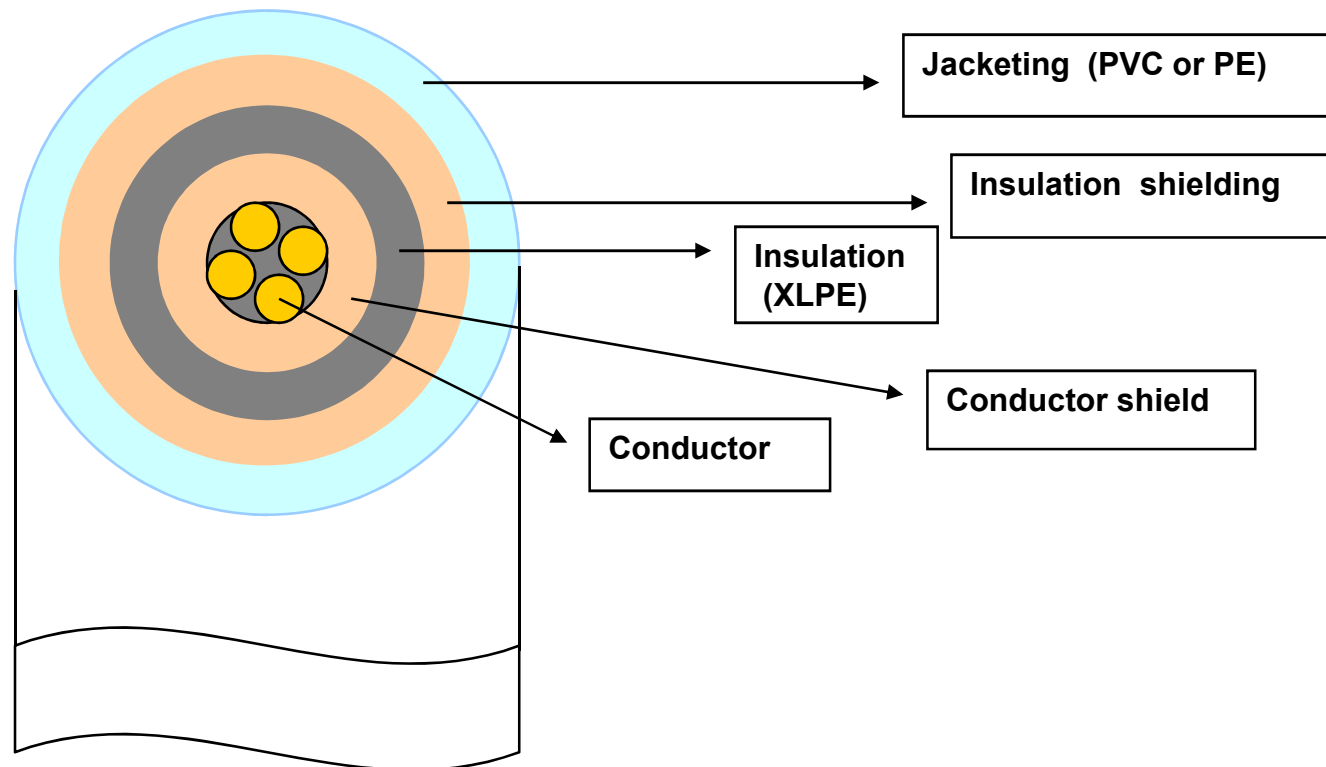


Multi Step



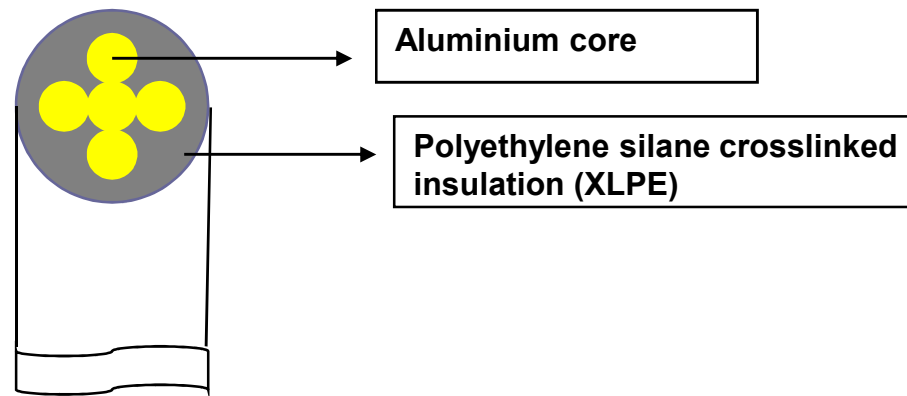
Application - Cable Elements (1)

For 20 KV (Medium Voltage)

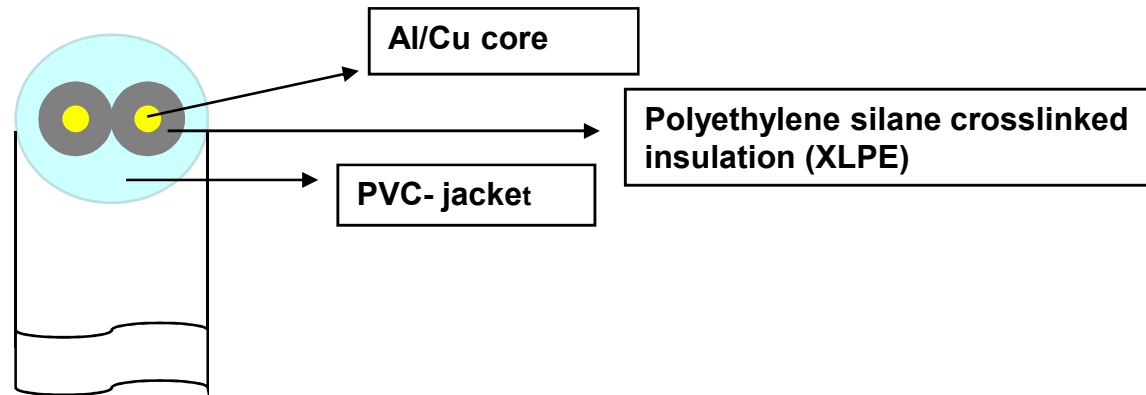


Application - Cable Elements (2)

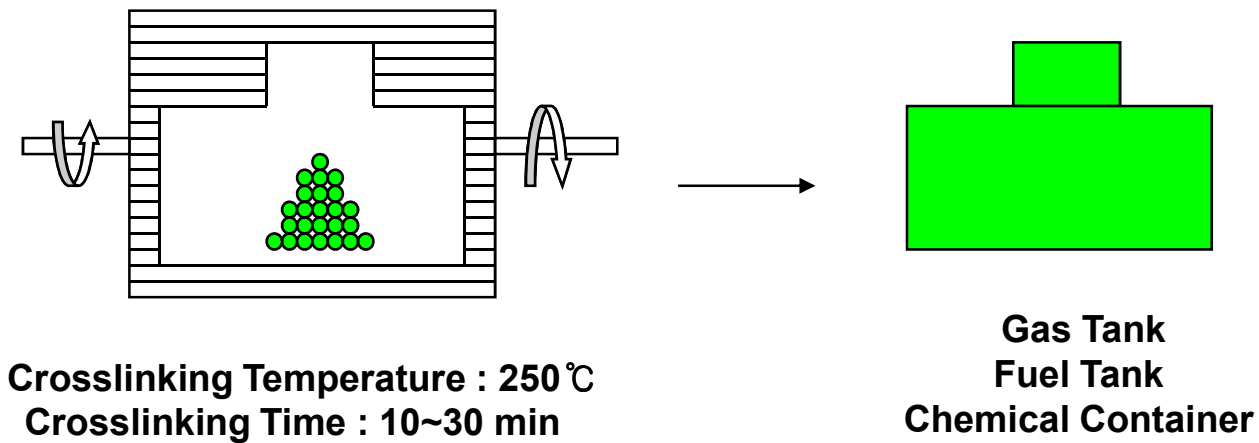
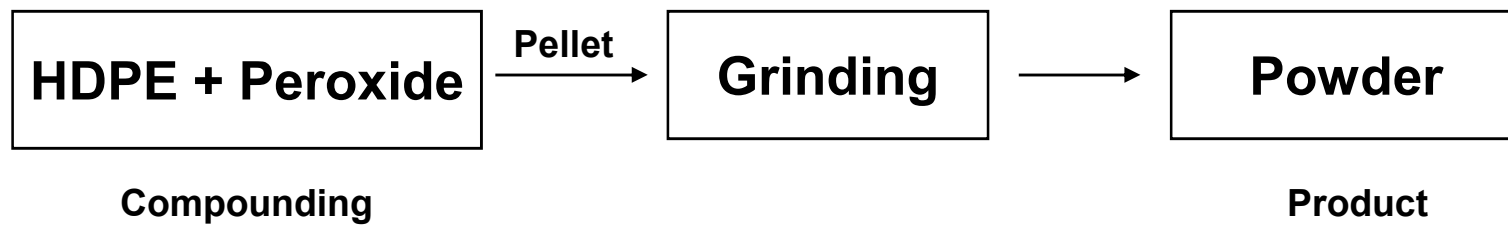
For below 1 KV (Low Voltage Cable)



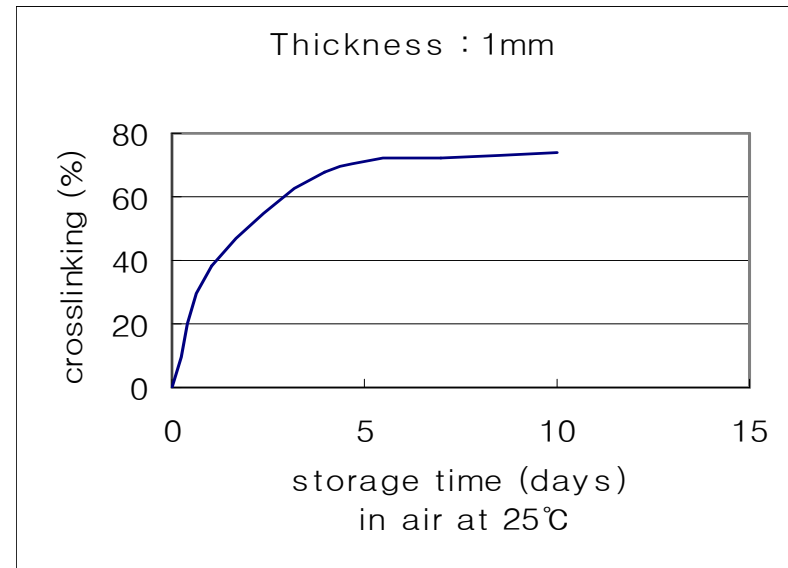
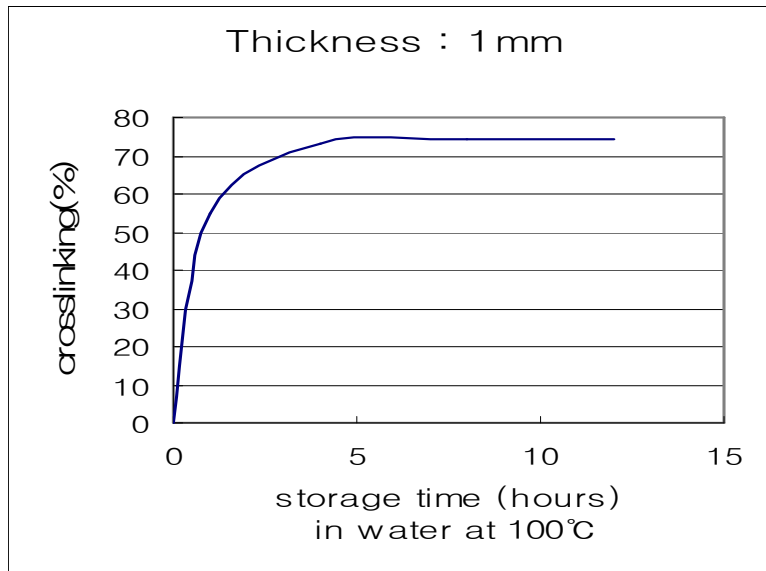
For insulated Overhead Cable



Application - Rotational Molding



Rate of Cure for XLPE Pipe/Cable



Test Method - Degree of Crosslinking

→ Crosslinked Polyethylene is insoluble in hot Xylene

