



*CV lines for MV, HV and EHV cables
EPL 30, 50, 51*

Defining extrusion

Crosslinking is known for increasing the long-term reliability and service life expectancy of power cables. CV line concepts using the CDCC method has been proven worldwide. Cable manufacturers benefit from a long history of successful projects.

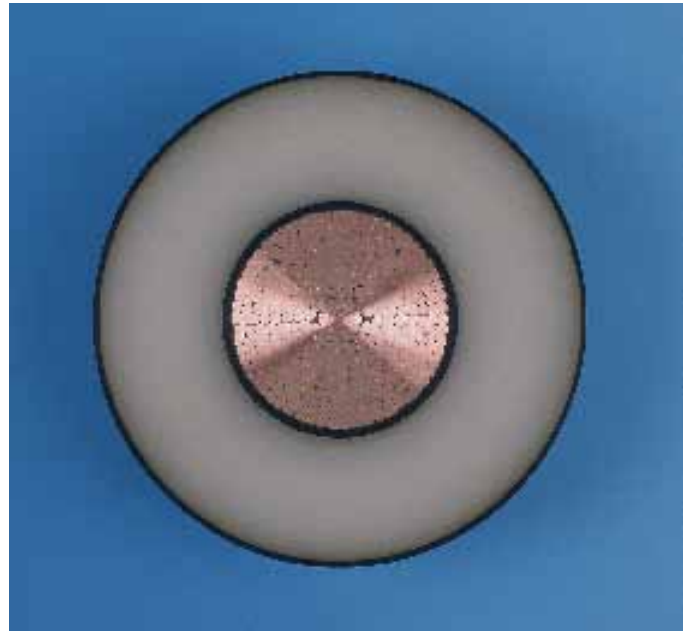
Long experience with XLPE

Crosslinking polyethylene (XLPE) power cables with the Completely Dry Curing and Cooling (CDCC) method goes back to 1975 when Nokia Cable Machinery invented the process (patent no. 777 8888). Maillefer continues to bring innovation to this technology. Much progress is being realized in the area of optimal heat transfer for accelerated curing. The best mix of techniques such as conductor pre- and post-heating as well as tube heating are used for high curing performance.

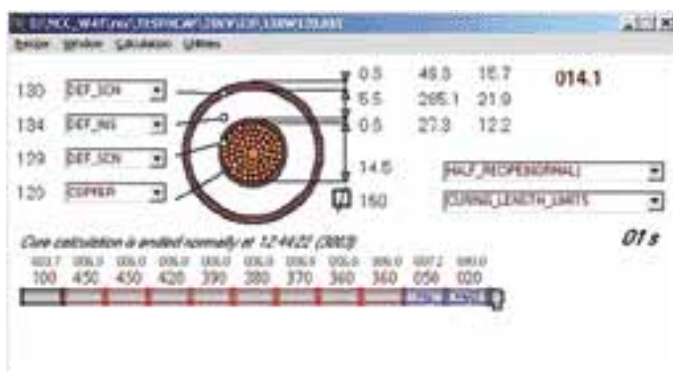
The Autocure control system plays a key role in simulation, monitoring and controlling of the curing process. Programs like the NCC curing calculation take the guesswork out of determining the process parameters for a particular cable construction. With Autocure the operator gets it right the first time so he can focus on producing quality cable.

High output and homogeneous melt characterize the Maillefer extrusion group. Specially designed XLPE and EPR extruders and triple layer crossheads easily meet the requirements for MV, HV and EHV power cables. Various techniques are used to ensure the right layer thicknesses.

With Maillefer CV lines, the best extrusion conditions for curing with excellent concentricity and roundness are easily achieved.



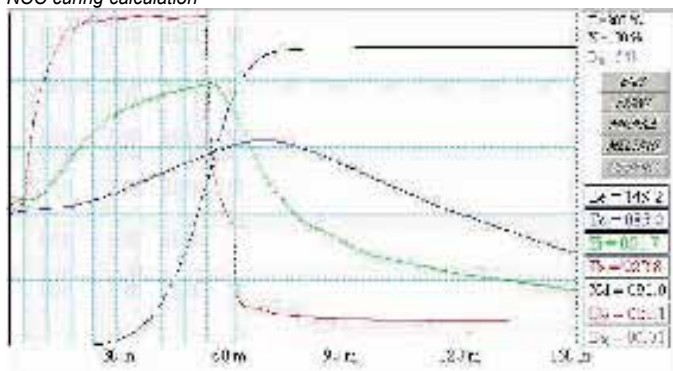
EHV cable with Milliken conductor



NCC curing calculation



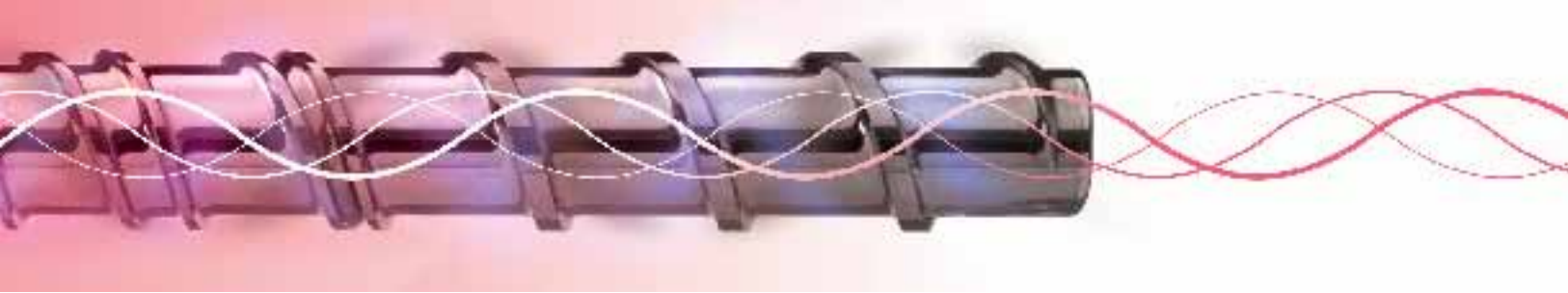
Triple layer crosshead



NCC curing calculation



CVV tube



EPL 30 CCV line for MV cables 10 – 66 kV, 25 – 1000 mm²

Tight control on material consumption

Typical features for reduced material consumption are highly linear extruders, triple head, gravimetric dosing, X-ray measurement and Autocure process control.

High capacity

The medium voltage CCV line is built for high performance. Increased productivity is reached with high line speeds and reduced downtimes. With quick setup solutions even short runs become economical.

EPL 30 Processing features

- High production speed, reliability and quality
- Control of layer thicknesses and concentricity
- Quality product even during ramp-up and ramp-down
- High volume, linear and homogeneous extruder output
- Optimum heat transfer techniques
- Minimum downtime due to a quick tool change
- Change of cable type without stopping the line

EPL 50 CCV line for HV and EHV cables 20 – 400 kV, 50 – 2500 mm²

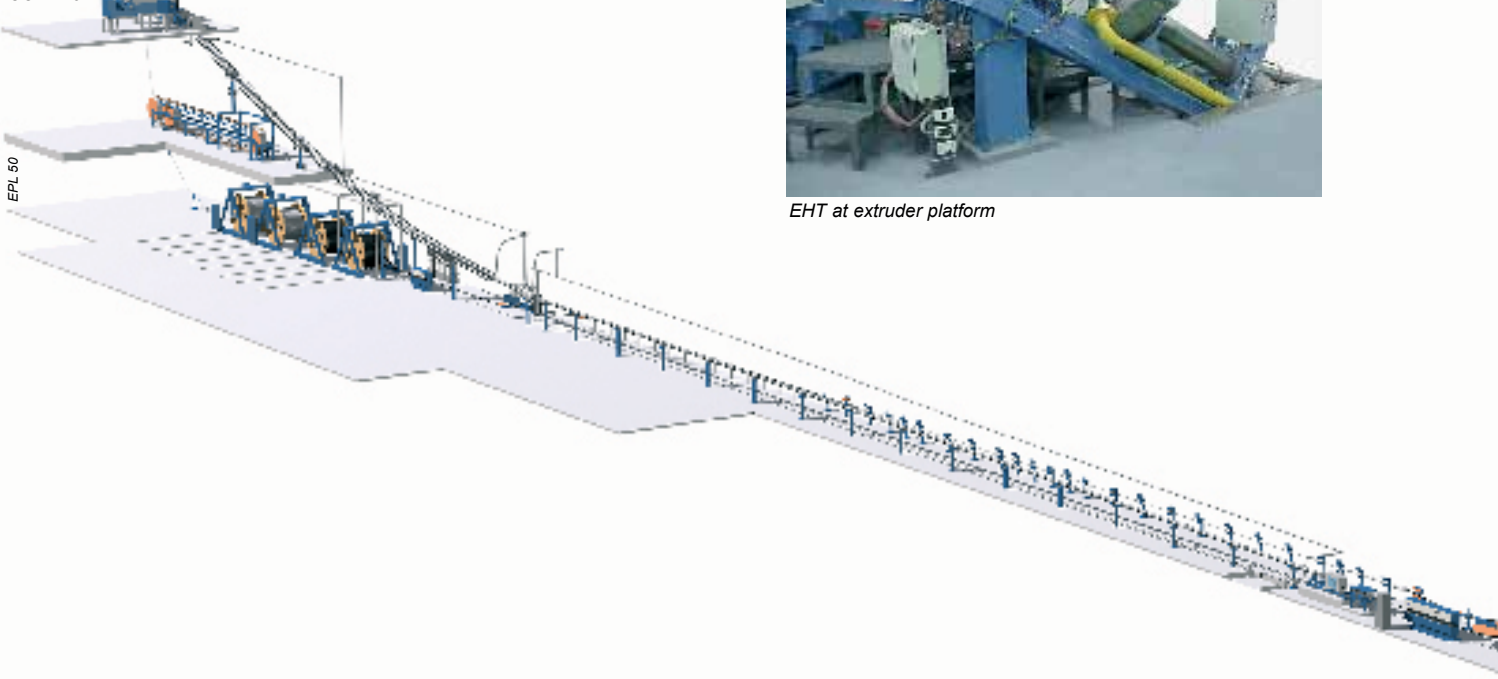
High voltage and extra high voltage cables are an integral part of infrastructure in energy transmission and distribution systems. Very high reliability is expected. The cable standards specify the geometry for ensuring easy terminations and joints. Controlling roundness and concentricity is important. High requirements for cleanliness of the material flow from the box to the extruder hopper have been taken into consideration.

EHT Entry Heat Treatment roundness and concentricity concept

The EHT roundness concept expands the possibilities of producing high voltage cables in a CCV line. With the EHT the natural properties of XLPE are used to achieve the roundness and concentricity of heavy wall cable cores. The EHT enables running heavy wall insulation with excellent roundness and high repeatability.

With the EHT it is easy to run HV and EHV cables with Milliken conductors in a CCV line without causing deformation to the conductor or danger of damaging sensitive conductor taping.

CCV line



EHT at extruder platform

EPL 51 VCV line for EHV cables 20 – 500 kV, 50 – 3000 mm²

The VCV line offers the best possibility for cable manufacturers to serve their customers in high voltage and extra high voltage cables. The vertical configuration meets the extremely tough technical and quality cable specifications very well.

Heating

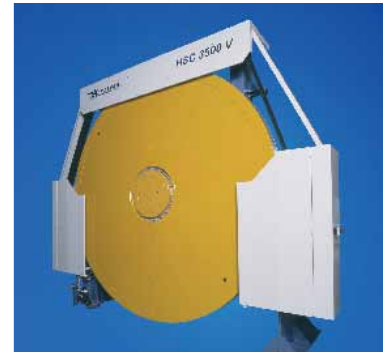
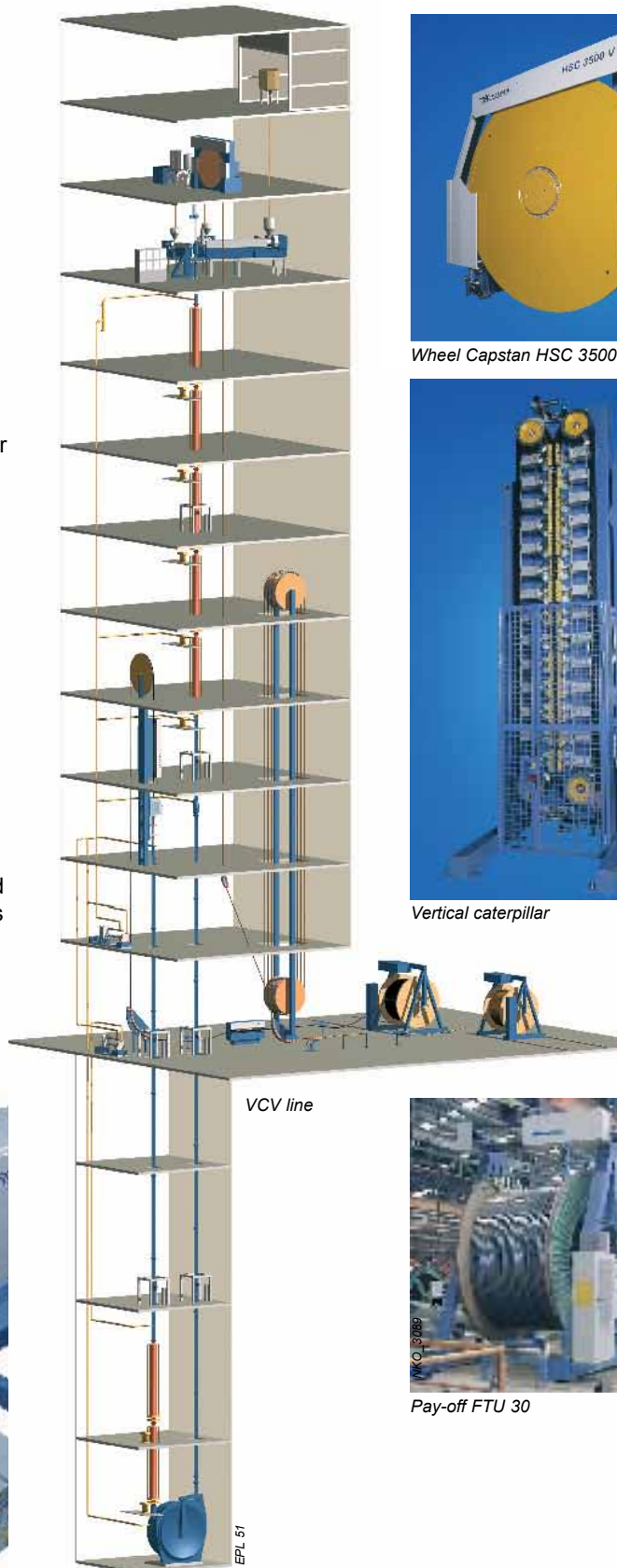
An optimal mix of conductor pre- and post-heating as well as tube heating is used for high curing performance. Use of post-heater offers up to 50% higher line speeds or a remarkable reduction of tower height.

CSS2 Cleanliness Scanning System

In high and extra high voltage cables, the monitoring of insulation cleanliness is increasingly required by cable end users. Maillefer's CSS2 system fulfills this requirement.

ROL Relaxation On Line

Internal stress in the insulation leading to shrinkback can be reduced by using on-line-relaxation. Making joints and terminations becomes easier, plus faster and the result is more reliable.



Wheel Capstan HSC 3500 V



Vertical caterpillar

VCV Extrusion group



VCV line



Pay-off FTU 30

EPL 51



Project excellence

Customers benefit from the long experience of Mailefer in CV line technology. Short project time from order date to delivery, rapid installation, fast start-up and acceptance of the line are essential to the total project economy. A CV line is always tailored together with the customer to meet both technical and economical requirements.

Mailefer has delivered more than 350 CV lines worldwide, much more than any other supplier.

Project qualities

- Dedicated engineering and project management
- High caliber commissioning engineers backed by a highly experienced staff
- Short start-up times
- Close business relationships with the customers

Typical CV line components

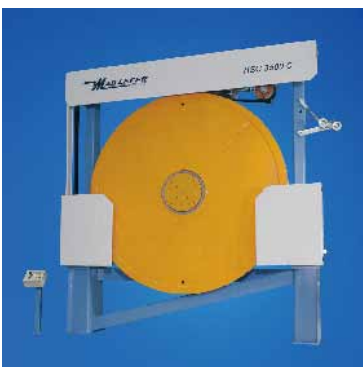
- Pay-off
- Accumulator
- High stability capstan
- Preheater
- NXW extruders
- Material handling system
- Gravimetric control
- THX triple crosshead
- CV equipment
 - Splice box
 - X-ray diameter and concentricity control
 - EHT entry heat treatment
 - Curing tube
 - Tube heating system
 - Siccon non-contact catenary control
 - Cooling tube
 - Nitrogen cooling system
 - Water cooling system
 - End seal
 - Cable twister
 - On-line relaxation
 - By-product collection
- Caterpillar
- Length counter
- Take-up
- Autocure line control with NCC calculation



End seal ES 150 DS



Crosshead handling table



Wheel capstan HSC 3500 C



Autocure control panel



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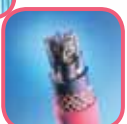


Automotive insulation lines

CV lines for energy cable



MV, HV and EHV cable production



Rubber cable production

