

# ENVIRONMENTAL PROTECTION DEDICATED TO ELECTRICAL OIL TRANSFORMERS

For more than 20 years, GMT GROUP and AKHELEC design, provide and install containment bunds, fire protection solutions and rainwater filtration systems to secure the environment around your electrical equipment



**AKHELEC**

**They trust us:** ABB, ADIF, ADISSEO, AIR LIQUIDE, ALCAN, ALSTOM, APERAM, ARCELOR MITAL, AREVA, ARKEMA, ARQUES INTERNATIONAL, BIOFELY, BIOSAV, CEA, CENTRAL TERMICA DE BARRANCO TI, CENTRALE DI VALPELINE, CERN, CG, CIE SALINS DU MIDI ET SALINES DE L'EST, CEMENTS CALCIA, CLARKE ENERGY, CNR (ENGIE), CNRS, CONTIREP, CRISTAL UNION, DALKIA, DGA, EDF, EDWARDS, ELECNR, ELENGY - FOS TONKIN, ENDESA, ENEDIS (ERDF), ENERIA, ETANDEX, EURO MOTOR SERVICE, EUROCOPTER, GEI INDUSTRIE, GENERAL ELECTRIC, HEXCEL, IBERDROLA, INABENSA ABENGOA, ITER, KATEK ALGERIE, KEM ONE, KOGEBAN, KRONENBOURG, LANXESS EMULSION RUBBER, MICHELIN, NATIONAL GRID, PETROINEOS, PEUGEOT CITROEN, PROVALONNE, RATP, RIO TINTO, SAINT GOBAIN, SAIPOL, SALINS DU MIDI, SANOFI AVENTIS, SCHNEIDER ELECTRIC, SHEM (ENGIE), SIAAP, SIEMENS, SNCF, SNT DURIEZ, SOBEGI, TIGF, TOTAL, TURBOMECA, UKPN, VALE, WINDER...



# FIRE SUPPRESSION SYSTEMS

## Environmental regulation compliance: EN 61936-1 section 8.7.2 and Clean Water Act

**TESTS AND OFFICIAL VALIDATIONS:** Fire suppression: CNPP (Test report PE 09 7973), TÜV (test report 28409080\_002); Water quality downstream of the FILTRELEC® cartridge: TÜV (test report 73068874 TPI 001), SGS (RES 142458.Rev1), Bureau Veritas (C-151215 -12187\_Rev02).

### Containment bunds with fire suppressing system - BAFv2 / BAFX product line

*All-in-one solution: transformer oil total retention, fire suppression cover, continuous rainwater filtration. Cost efficient alternative solution to traditional heavy on-site civil work.*



#### STRENGTHS

##### Minimize cost and on-site work:

- Replace concrete transformer pit, concrete water/oil separator and piping.
- Modular metallic bunds fit into conventional trucks or containers to avoid transportation extra costs.
- Ensure on-budget and on-time commissioning.

##### Minimize loss of production risk:

- Fast on-site installation to minimize heavy civil work associated risks.
- Shorter transformer consignment.
- Install quickly directly on stabilised soil in less than ½ day.

**PATENTS:** EP 11 168 515.2 « Modular safety device for the recovery and extinction of flammable products that can leak out of an electric transformer ».

**More than 100 BAFX solutions implemented.**



### Fire suppressing cover for existing transformer pits – MX® product line

*Extinguishing cover to equip existing concrete pit.  
Alternative solution to traditional pebbles.*



#### STRENGTHS

- **Gain important oil volume in the existing pit:** avoid destroying existing pit and building of a larger new one in the event of transformer replacement with increased power.
- **Minimise maintenance** and access easily the concrete pit.
- **Facilitate personnel access** and minimize risk of injuries thanks to grating cover.

**PATENTS:** WO2009016203 « Safety cover and retention assembly for chemical products ».

**More than 800 MX® solutions implemented.**





# TOTAL OIL RETENTION BUNDS

## Environmental regulation compliance: EN 61936-1 section 8.7.2 and Clean Water Act

**TESTS AND OFFICIAL VALIDATIONS:** Water quality downstream of the FILTRELEC® cartridge: TÜV (test report 73068874 TPI 001), SGS (RES 142458.Rev1), Bureau Veritas (C-151215-12187\_Rev02).

### Heavy duty temporary storage bunds – BST product line

**Make sure the environment is safe while you store your oil transformer.**



#### STRENGTHS

- **Continuously remove rainwater** thanks to FILTRELEC® cartridge to keep full containment volume available
- **Install quickly:**
  - Directly on stabilised soil.
  - Installation in less than ½ day.
- **Pack, store and re use on another site.**

**PATENTS:** FR2963155 « Removable and flexible retention device for recuperation of flammable oils from electric transformer in power distribution network, has trough stretched over removable structure supported on ground, where structure is formed of uprights ».

**More than 100 BST solutions implemented.**

### Metallic total retention bunds – BR, BWR... product lines

**Transformer oil total retention.**

#### STRENGTHS

- **Minimize cost and on-site work:**
  - Replace concrete transformer pit, concrete water/oil separator and piping
  - Fast on-site installation and heavy civil work associated risks minimization
  - Shorter transformer consignment
- **Install quickly** directly on stabilised soil in less than ½ day.
- **Continuously remove rainwater** thanks to FILTRELEC® cartridge to keep full containment volume available.
- **Also available for ADR transformer transportation.**



**More than 10 000 retention bunds installed.**

# RAINWATER TREATMENT AND PURIFICATION

## Environmental regulation compliance: Clean Water Act

**TESTS AND OFFICIAL VALIDATIONS:** Water quality downstream of the FILTRELEC cartridge: TÜV (test report 73068874 TPI 001), SGS (RES 142458.Rev1), Bureau Veritas (C-151215 -12187\_Rev02).

### Water / Hydrocarbon filtration systems - FILTRELEC® product line

*Continuously evacuate hydrocarbon free rain water.*

#### STRENGTHS

- **Continuously remove rainwater with guaranteed quality** (< 5ppm of hydrocarbon in agreement with the Clean Water Act).
- **Seals instantly in case of sudden and massive hydrocarbon leak.**
- Water flow rate from **3 to 1500 L/min.**
- **Minimize maintenance costs** thanks to specific pre-filtration system and optimized choice of absorbing materials.
- Filter water polluted with transformer oil, diesel, gasoline, aviation fuels, veg oils, ester oil...

#### INNOVATION ! Eco-designed, rechargeable filtration system, with materials that withstand UV and extreme temperatures.

- The FILTRELEC® F5 system allows to replace the filter cartridge only and not the entire filter, when it is saturated.
- It thus reduces the mass of waste produced.

**3 French and European patents protect the whole range of FILTRELEC ECODESIGN®.**



*FILTRELEC® technology developed with refining and research center experts.*



## ENGINEERING AND SITE SERVICE

*Design, development and turn-key solutions.*

- Internal design office with advanced background in mechanical design, fluids mechanics, sensors...
- Internal chemical laboratory: development and serial production testing.
- Taking of measures.
- On-site environmental consulting and recommendations
- Understanding of the constraints and definition of the best technical and economical solutions.
- On site material installation and supervision.
- Personnel security clearance certificates (electrical, nuclear plant, chemical and petrochemical environments).



**GMT INTERNATIONAL**  
ZI Courtine - 405, rue du Grand Gigognan  
84000 Avignon - FRANCE  
Tel: +33 4 90 85 57 50  
E-mail: gmt@gmtinternational.fr - Web: www.gmtinternational.fr

**AKHELEC**  
Paseo de Ferrocarril N° 337 1º 4a  
08860 Castelldefels - ESPAÑA  
Tel: +33 4 90 85 57 50 +34 630 918 052  
E-mail: akhelec@akhelec.com - Web: www.akhelec.com



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