Description
TURBYLEC patented separator has been initially developed by YLEC Consultants in the frame of the HOVERSPILL FP7 European project (MultiEnvironment Air Cushion Oil Spill Fast Response & Post Emergency Remediation System).

TURBYLEC is a very compact and light centrifugal oil/water separator which can operate in wide ranges of:
- inlet flow rate
- inlet oil concentration
- oil density

Main innovative characteristics
• Compact / Low weight
• Easy to install, transport and operate
• High separation efficiency
• Self adjusting functioning: can accommodate to any changes in density, inlet flow rate or oil concentration
•Separated liquids can be delivered under pressure thanks to integrated oil and water pumps
• Autonomous pumping of inlet emulsion (vacuum pumping)
• Easily dismountable for rapid cleaning

Schematic functions
Variable inlet conditions
- oil content,
oil/water density contrast,
flow rate,…

Autonomous pumping
Self adjusting Oil/Water separation

Oil outlet
High pressure
Water outlet
Customized and autonomous solutions

**TURBYLEC** can be implemented within a customized separation skid including electrical motor and mechanical transmission, control panel, specific instrumentation and control-command. It can be manufactured with various metallic and plastic materials to comply with chemical compatibility requirements.

<table>
<thead>
<tr>
<th>Main characteristics</th>
<th>Operational conditions</th>
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<tbody>
<tr>
<td>Separator height</td>
<td>Inlet flow rate 0 – 10 m³/h (1500 BPD)</td>
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<tr>
<td>Separator outer diameter</td>
<td>Density contrast 10 – 250 kg/m³</td>
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<tr>
<td>Weight with liquid</td>
<td>Oil concentration 0 – 100 %</td>
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<tr>
<td>Liquid retention volume</td>
<td>Rotational speed 1000 – 1500 RPM</td>
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<tr>
<td>Motor power</td>
<td></td>
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<tr>
<td>1 m</td>
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<tr>
<td>0.380 m</td>
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<tr>
<td>80 kg</td>
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<td>30 l</td>
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<td>2 kW</td>
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**Current status**

- 2012: Innovative concept patented (international patent application WO 2013/113903)
- 2013: Experimental prototype tested and approved for Oil Spill remediation
- 2014: Innovation presented at international conference **IOSC 2014**
- 2014 – 2015: Additional improvements patented for passive and active control of the position of oil-water interface within the separation chamber (**GRAVYLEC** and **STABYLEC** concepts)
- 2015: New industrial prototype, including additional improvements, manufactured and being qualified for groundwater remediation
- Looking for other international industrial application (chemical industry, port activities, Oil & Gas production)