Nekton Bot. A.Ş. specialises in building boats made of PE-HD. With various models of boats in its portfolio (Seadog, Dolphin, Shark and Whale), the company is able to design and manufacture vessels used in the field of transport, rescue and security - whether for port operations or on the high seas. The new pilot boats deployed at the port of Gemport A.Ş. were built using various SIMONA® products.
SIMONA®PE-HWU – Perfect for innovative boatbuilding

Initial situation
The port of Gemport A.Ş. commenced operations in 1987. It was designed to meet the needs of local industry for logistics services in the Bursa region. The ever-increasing volume of cargo being handled prompted a surge in demand for pilot boats deployed with the express purpose of ensuring maximum efficiency in shipping traffic. In the past, the boats chiefly used were made of steel and aluminium. However, these vessels had material-specific disadvantages, e.g. heavy weight, corrosion, fouling and, as a result, higher maintenance and service costs.

Task
For port operations, Gemport A.Ş. was looking for boats made of a material with the following properties: light weight, high corrosion resistance, low maintenance, non-toxic and easy to clean, non-sinkable and safe, low fuel consumption, environment friendly, fast and stable material combining performance and cost effectiveness.

Solution
For Gemport A.Ş. the ideal design for pilot boats turned out to be the SHARK-PSO-013. In the first stage of construction with this model a carcass made of PE pipes was joined together by heated-tool butt welding to make it watertight; the cavities filled by polystyrene. Then the carcass was reinforced with PE sheets by means of hot-gas welding and extrusion welding and joined together to make a hull with a deck and superstructure. With technical support from SIMONA AG, the vessel became the world’s first PE-HD boat to be certified by RINA (Registro Italiano Navale), thus underlining the quality of the material used, the production process and the boat design. The boat is entirely made of SIMONA®PE-HWU and coloured SIMONA®PE-UV, without any metal reinforcement whatsoever.

SIMONA®PE-HWU

<table>
<thead>
<tr>
<th>Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service temperature range from -50 to +80 °C</td>
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<tr>
<td>Weather resistant</td>
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<tr>
<td>Physically safe</td>
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<tr>
<td>Excellent processing parameters</td>
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<tr>
<td>High toughness and rigidity</td>
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<tr>
<td>High corrosion resistance</td>
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</tbody>
</table>

Range of products
- Extruded and pressed sheets
- Solid rods
- Welding rods

Example of a boat
- Model: SHARK-PSO-013
- Length: 13.4 m
- Width: 3.85 m
- Draft: 0.65 m
- Weight: 10.3 tonnes
- Capacity: 7 people + 2 tonnes of load
- Engine power: 2 x 300 HP, 2600 rpm
- Max. speed: 26 knots = 48 kph
- Range: 350 nautical miles = 647.5 km

Further information

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