PROJECT "VIGOR"
CASE STORY MADE IN COLLABORATION WITH LOGISTIC PLUS INC.
CASE STUDY - PROJECT “VIGOR”

During the shipping process of four giant NH3 tanks, our EPOCAST products proved themselves in complex and challenging circumstances once again.

Project
In 2016, Logistics Plus Inc. led the process of shipping four giant NH3 tanks from South Korea to USA. The tanks measured 30 x 24 x 17 meters and weighed around 1038 metric ton each.

After one year of planning, the tanks were successfully transported from Sejn in Ulsan, South Korea to Portland, USA and all parties can now look back at a well-executed operation.

Messrs. Deutsche Holzveredelungsindustrie, manufacturer of compressed laminated wooden blocks, supplied all relevant tank support materials and carried out the application on all four NH3 tanks by using EPOCAST 36-P and Phillymastic TG-7B liquid.

PROJECT “VIGOR” INSTALLATION - KEY FACTS

<table>
<thead>
<tr>
<th>Project</th>
<th>30mx24mx17m NH3 tank shipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Logistic Plus</td>
</tr>
<tr>
<td>Location</td>
<td>Ulsan, South Korea</td>
</tr>
<tr>
<td>Date</td>
<td>Start: 04/12/2016, End: 07/31/2016</td>
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<tr>
<td>Solution</td>
<td>EPOCAST 36-P &amp; Chockfast TG-7B Liquid</td>
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<td>Product Benefits</td>
<td>The EPOCAST 36-P and TG-7B main product benefit for this installation is the combination of high compressive strength and high impact resistance in low service temperatures</td>
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Challenge
Tank supports are always critical for a safe transportation of LPG and LNG, as temperature in the tanks must be carefully managed. To ensure this, Dehonit instated high quality compressed laminated wood blocks to isolate the NH3 tanks from the hull of the ship and to avoid issues with temperature differences.

Installation
As an intermediate layer between compressed laminated wood blocks and tanks, EPOCAST 36-P was used on all vertical- and anti-floating blocks and TG-7B liquid for all horizontal blocks between tank- and ship supports during the installation of tank into the ship. Both products were used to fill existing gaps in order to transfer the tank load through the compressed laminated wooden blocks into the ship construction.

Product Details
EPOCAST 36-P is a trowelable two-component epoxy paste which was specifically developed for installation of LNG/LPG tanks, chemical tanks and containment systems. In addition to this, it employs high compressive strength and impact resistance in low service temperatures approved by several Major Classification Societies.

Phillymastic TG-7B is a two-component, load-bearing, epoxy mastic specifically developed for LNG/LPG tank or container system installations where shimming or void-filling of supporting components is required.

TG-7B provides excellent load-bearing and adhesive properties at cryogenic temperatures assuring evenly distributed loads across all tank supports. This mastic is available as either a pourable liquid or a trowelable paste. Both can be mixed either by hand or with automatic dispensing equipment.

ITW Engineered Polymers would like to thank Logistic Plus for the good cooperation and successful installation process.

To learn more about our LPG/LNG solutions, please visit our website www.itwperformancepolymers.com