INNOVATION PROVIDERS

CORAFOAM®
FOR INDUSTRIAL INSULATION

DUNA-Corradini
FOAMS & CHEMICALS
Duna Group has been active in the field of industrial insulation for more than fifty years. With two plants in Italy, one in TX, USA and the two mobile production facilities presently manufacturing in Qatar and China to supply the local LNG markets, DUNA-Group has become the leading company in the market of polyurethane (PUF) and polyisocyanurate (PIR) for industrial insulation.

PUF and PIR represent the most technological, advanced and convenient solution for insulation of the complex plants dealing with liquefaction energy regasification of natural gas and petrochemicals, being able to successfully work in a wide range of temperatures, down to -265° F (-165° C).

Thanks to the know how of the whole Group, Duna Corradini has developed the following range of products:

**Low density foams:**
- CORAFOAM® PB M1 HC
- CORAFOAM® GP

**High Density Foams:**
- CORAFOAM® RTS
- CORAFOAM® MD

**Special Foams**
- CORAFOAM® RV

Examples of applications:

- **Straight Pipe diam = 4”, thk = 2.5”**
  One layer with longitudinal and circumferential shiplaps + Factory applied Mylar foil

- **Single layer Mitred Elbow with groove and tongue with factory applied Mylar Foil**

- **Milled Reduced Tee (diam 1 ≠ diam 2)**

- **Pipe segments with factory applied Mylar foil for big Diameters**

- **Mitred elbow with longitudinal + circumferential shiplap, internal diameter 24”**

- **Finished mitred elbow with factory applied Mylar Foil**
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Pipe segments with factory applied Mylar foil for big Diameters
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Examples of applications:
- Suitable for the insulation of cryogenic pipe supports, where strong mechanical characteristics are necessary as well as high insulation properties.
- Continuous Fibre Glass filament reinforced foam, where particularly strong mechanical characteristics and light weight are required.
- Suitable for pipelines and equipments insulation. Main applications are in insulation of plants of soft cryogenic (ammonia/fertilizer LPG, etc) as well as more critical plants like ethylene units and NGL, GTL and LNG liquefaction/regasification.
- Finished mitred elbow with factory applied Mylar Foil
- Milled Reduced Tee (diam 1≠diam 2)

The winning option for LNG projects: each Mobile Foaming Unit (MFU) “Pegasus” is packed into 4 containers that can be rapidly moved worldwide for the production of insulating PUF/PIR foams directly on site.

**THIS SOLUTION GRANTS:**
- Duna-Corradini full control on chemistry as well as hardware technology to grant first class quality for local productions
- High productivity; 500-550 m³/day, about 3500 m³ for each production campaign of 15 days
- Very short time-to-production: 6-8 weeks to be fully operative including freight and tests.

**ADVANTAGES OF “PEGASUS”:**
- Savings on transport costs
- Minimization of delivery delays (bypass of ports congestion)
- Simplification of the supply-chain (easy logistic)
- Allows tailor made operations by manufacturing foam blocks according to customer’s needs (better optimization)

**MOST RECENT INDUSTRIAL INSULATION SUPPLY RECORDS**

<table>
<thead>
<tr>
<th>Engineering</th>
<th>Project Name</th>
<th>Type</th>
<th>Country</th>
<th>Year</th>
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<tbody>
<tr>
<td>Dominion</td>
<td>Cove Point</td>
<td>LNG Rec. Terminal</td>
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<td>Technip-Cofflexip</td>
<td>Bandar Assaluyeh</td>
<td>Ethylene Nr. 10</td>
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<td>Ras Laffan</td>
<td>AKJ1</td>
<td>NGL</td>
<td>Qatar</td>
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<td>Entrepose</td>
<td>REGANOSA</td>
<td>LNG - Tanks</td>
<td>Spain</td>
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<tr>
<td>KBR-JGC</td>
<td>In Amenas</td>
<td>NGL</td>
<td>Algeria</td>
<td>2005</td>
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<tr>
<td>S.T.T.S.</td>
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<td>LNG Rec. Terminal</td>
<td>China</td>
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<tr>
<td>Ras Laffan Onshore</td>
<td>RasGas</td>
<td>LNG T5</td>
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<td>Sakhalin II</td>
<td>LNG</td>
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<td>Foster Wheeler</td>
<td>WoodSide T5</td>
<td>LNG T5</td>
<td>Australia</td>
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<tr>
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<td>QATARGAS II</td>
<td>LNG</td>
<td>Qatar</td>
<td>2007/08</td>
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<td>Fluxys LNG</td>
<td>LNG Rec. Terminal</td>
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<td>CBI</td>
<td>Fujian (Off-Shore)</td>
<td>LNG Rec. Terminal</td>
<td>China</td>
<td>2007</td>
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<tr>
<td>KBR-JGC</td>
<td>Tangguh I + II</td>
<td>LNG</td>
<td>Indonesia</td>
<td>2007/08</td>
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<td>CBI</td>
<td>South Hook</td>
<td>LNG Rec. Terminal</td>
<td>U.K.</td>
<td>2008</td>
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<tr>
<td>JGC/KBR</td>
<td>Shell GTL</td>
<td>GTL</td>
<td>Qatar</td>
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<tr>
<td>Chiyoda/Technip</td>
<td>Ras Gas III T6&amp;7</td>
<td>LNG</td>
<td>Qatar</td>
<td>2008 ongoing</td>
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