

CASE HISTORY ETHYLENE FURNACE

LOCATION	Midwest USA
UNIT	Lummus SRT ethylene furnace
CHALLENGE	Upgrade radiant section and burner blocks to improve performance and efficiency
RESULTS	Energy savings estimated at \$300K/year



THORPE 3 KEYS TO RELIABILITY

1. Proper Material Selection
2. Engineered Lining Design
3. Experienced Installation Crews

PROBLEM

A Midwest Petrochemical plant needed to solve major problems with radiant wall burner blocks and burner installations in an older Lummus SRT ethylene furnace. Upgrading the burner tiles would require removal and replacement of 70% to 80% of the brick on the radiant walls. Unscheduled repairs were occurring because sections of the brick radiant walls were failing due to anchor failures.

OPPORTUNITY

Upgrade refractory lining to the current industry best practice design and materials. Improve operating efficiency by sealing tube and hanger penetrations. Resolve maintenance problems by replacing brick radiant wall sections where possible with ceramic fiber module lining.

ACTIONS

Thorpe replaced the refractory lining in the radiant section with an engineered, integrated system. Insulating firebrick was used for the lower 7 feet of the radiant walls, Thorpe Z-BLOK™II for the upper radiant walls. Z-BLOK™ FIBERLITE® Peephole Blocks were integrated into the lining system. Burner blocks were replaced with Thorpe composite DURALITE® Tiles. The radiant arch was replaced with an engineered Thorpe Z-BLOK™II Lining. HOTSEAL® Penetration Seals were installed on the tube hangers, radiant tube penetrations and convection tube penetrations.

RESULTS

Equipment has been in operation since December, 2007. Customer reported an initial cost savings based on reduction in energy consumed of over \$300K/year. Unplanned maintenance due to refractory failures has been eliminated.



CORPORATE HEADQUARTERS

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OPERATING SUBSIDIARIES

- Thorpe Plant Services, Inc.
- J T Thorpe Company
- Thorpe International Services, Inc.
- Thorpe Engineered Products Company
- Industrial Flooring Services, Inc.
- Clayburn Services Ltd.

INTERNATIONAL

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USA OPERATIONS

Manufacturing Locations

Corrosion Resistant Equipment

Arkansas Plant 228 West Industrial Park Rd. Harrison, AR 72601 Phone: (870) 391-4792	Louisiana Plant 3605 Delta Dr. St. Gabriel, LA 70776 Phone: (225) 642-8060	Texas Plant 95 Southbelt Industrial Dr. Houston, TX 77047 Phone: (713) 433-7200
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High Temperature Products

Houston-Kirbyville Plant 6833 Kirbyville St. Houston, TX 77033 Phone: (713) 644-1247	Houston-Ranger Plant 4718 Ranger St. Houston, TX 77028 Phone: (713) 671-2458
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Field Service Offices

<p>Alabama</p> <p>Birmingham Office 1273 24th Avenue Hueytown, AL 35023 Phone: (205) 426-4000</p> <p>Arkansas</p> <p>Harrison Office 228 West Industrial Park Road Harrison, AR 72601 Phone: (870) 391-4792</p> <p>Iowa</p> <p>Camanche Office Camanche, IA 52730 Phone: (563) 508-2622</p>	<p>Kentucky</p> <p>Madisonville Office Madisonville, KY 42431 Phone: (270) 635-5421</p> <p>Louisiana</p> <p>St. Gabriel Office 3605 Delta Drive St. Gabriel, LA 70776 Phone: (225) 642-8060</p> <p>Oklahoma</p> <p>Broken Arrow Office 7838 S. Elm Place Broken Arrow, OK 74011 Phone: (918) 455-8928</p>	<p>Texas</p> <p>Beaumont Office 6001 Highland Avenue Beaumont, TX 77705 Phone: (409) 838-9121</p> <p>Corpus Christi Office 4602 Southview Drive Corpus Christi, TX 78408 Phone: (361) 500-2001</p> <p>Dallas Office – Industrial Flooring Services, Inc. 2736 Market Street Garland, TX 75041 Phone: (214) 349-7891</p>	<p>Houston-Kirbyville Office 6833 Kirbyville Street Houston, TX 77033 Phone: (713) 644-1247</p> <p>Houston-Ranger St. Office 4718 Ranger Street Houston, TX 77028 Phone: (713) 671-2458</p> <p>Houston-Southbelt Office 95 Southbelt Industrial Drive Houston, TX 77047 Phone: (713) 433-7200</p>
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CANADA OPERATIONS

Clayburn Services Ltd.

<p>Alberta</p> <p>Edmonton Office (Headquarters) 16010-118th Avenue Edmonton, AB T5V 1C6 Phone: (780) 468-4100</p> <p>Calgary Office #108 4140 – 6th Street NE Calgary, AB T2E 8C8 Phone: (403) 276-4421</p>	<p>Fort McMurray Office 306-8535 Gordon Avenue Fort McMurray, AB T9H 0B7 Phone: (780) 468-4100</p>	<p>British Columbia</p> <p>Abbotsford Office 31543 King Road Abbotsford, BC V2T 5Z2 Phone: 1 (800) 859-4885</p> <p>Prince George Office 8603 North Kelly Road Prince George, BC V2K 2W7 Phone: (250) 962-2322</p>	<p>Vancouver Island Office 1099 Popham Road Parksville, BC V9P 2T3 Phone: (250) 248-5353</p>
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