HPC® PRODUCT LINE

Maximize energy efficiency with a coating designed to insulate every surface.

HPC® PRODUCT LINE

- REPLACES WRAP AND JACKETING
- ELIMINATES CUI
- EASY TO REPAIR
- PROTECTS PERSONNEL
- NO SHUTDOWN REQUIRED

HPC® COATING

APPLIED WHILE OPERATING UP TO 500°F (260°C)

HPC® - HT COATING

APPLIED WHILE OPERATING UP TO 1,112°F (600°C)

HPC® COATING provides a "true insulation benefit" by holding the heat inside of the coated vessel and increasing the internal temperature/pressure if the energy source is not changed. As a result, energy costs can be saved by reducing the energy requirement to maintain the original temperature or the manufacturing process can be improved by increasing the internal temperature of the vessel to achieve a more efficient and effective process.

HPC® COATING Does not degrade when exposed to environmental factors and maintains a constant level of performance throughout the lifespan of the coating/project - no decrease in effectiveness or efficiency.

SPI COATINGS
PROVEN PERFORMANCE • REAL WORLD SOLUTIONS
EMPLOYEE OWNED

HPC® PRODUCT LINE

Maintain Optimum Temperatures / Insulation and CUI Performance

For industries that depend on optimum heating systems, HPC® / HPC® -HT Coating presents an innovative and efficient solution. HPC® / HPC® -HT Coating are formulated to prevent the loss of conductive and convective heat from pipe and vessel surfaces.

This capability maintains the overall heat of any fluid or gas within a pipe or vessel and allows the process to operate more efficiently. HPC® / HPC®-HT Coating will hold heat in a "transmission pipe" for longer distances than traditional insulation systems and will effectively maintain interior temperatures and reduce emissions for personnel protection.

HPC® / HPC® -HT Coating can be applied to a variety of surfaces with interior temperatures up to 600˚C, such as steam pipes, hot gas pipes, hot storage tanks and oil or gas transmission pipes. HPC® / HPC®- HT Coating replaces fibrous wraps and blankets and stops CUI from ever developing.

In today's age of increasing energy efficiencies, industries need innovative, high-heat solutions that will stand the test of time. Implement the performance capabilities of HPC® / HPC® - HT Coating in your systems today and see why so many industries are choosing to switch to HPC® / HPC® - HT Coating to reduce energy and maintenance costs for the foreseeable future.

HPC® Product Line retains heat over longer distances than traditional insulation systems, effectively reducing emissions and promoting energy efficiency.

HPC® PRODUCT LINE VS. TRADITIONAL PIPE INSULATION

HPC® / HPC® -HT Coating were designed with lightweight, low-density ceramics developed in cooperation with NASA in the early '90s. These unique materials give HPC® / HPC® -HT Coating the ability to reduce heat loss in a variety of industries that depend on high-heat efficiency. Traditional pipe insulation presents numerous inefficiencies and only slows the conductive heat transfer process because it contains small pockets of air. With HPC® / HPC® -HT Coating, heat loss is controlled by the light weight, low-density ceramics which results in more heat being held on the surface and increased temperature/pressure inside the pipe or vessel.

Traditional Pipe Insulation

Traditional pipe insulation continually suffers from costly maintenance in large industrial piping systems. By absorbing air and moisture, traditional pipe insulation systems deteriorate rapidly, lose insulation performance, and cause CUI (reason for name CUI.). In addition, the inability of traditional pipe insulation to cover and seal the valves, joints and elbows of various systems also creates gaps in protection for industries that depend on high heat efficiency.

HPC® Product Line is a cost-effective solution for industries because of its ability to conform to and insulate valves and elbow joints without shut down up to 600°C.

REPLACE WRAP AND JACKETING WITH HPC® PRODUCT LINE AND ELIMINATE CUI

	Rockwool/Fiberglass	HPC® / HPC® -HT Coating
Installation	Shutdown during install and repair	Applied while operating; no shutdown required.
Insulation Effect	Deteriorates when wet. Valves and elbows not wrapped effectively	Does not deteriorate in normal usage. Insulates valves and elbows.
Crack Detection	Entire jacket must be removed.	Inspected directly on spot; easily repaired.
Condensation	High absorption and trapping of moisture	No condensation with HPC® / HPC® -HT Coating.
Corrosion	Allows air and moisture penetration; CUI develops rapidly.	Applies directly over hot surfaces creating a "fully adhered" casting which eliminates CUI.
Repair and Maintenance	High maintenance, must shutdown; high cost of repair and loss of production time.	Low maintenance; inspections performed without shutdowns; easy to maintain and repair.

HPC® COATING CASE STORY

Italian Petrochemical Plant

Exposed traditional wrap and cladding insulation

Pipe system before HPC® Coating application, showing extensive CUI

Temperature on the pipe before HPC® Coating was 213°C (415.4°F)

Phase of HPC® Coating application

Finished HPC® Coating application

Temperature after HPC® Coating application was53.4°C (128.12°F)

Business Development / Technical Support
Email: Help@Spcinfo.com

HPC® COATING IN ACTION

HPC® Coating is being used all over the world across a wide variety of industries. The results are immediate with HPC® Coating because the application process is quick and easy. With HPC® Coating, you can refurbish and renew systems in need of serious repair.

See how the companies represented here have made simple improvements with HPC® Coating that continue to produce long-term benefits.

LG Chemical

Incinerator before HPC® Coating application was 356˚F (180˚C).

Incinerator after HPC® Coating application was 122˚F (50˚C).

Gazprom Oil

Before HPC® Coating application 865.4˚F (463˚C)

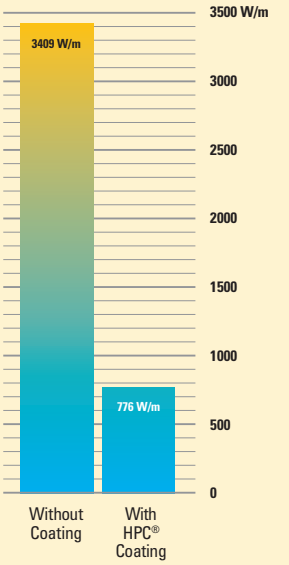
After HPC® Coating application 96.8˚F (36˚C)

This pipe surface was 865.4˚F (463˚C) before coating. These men were able to touch the pipe after only 25mm (1") of HPC® Coating was applied. Additional coating thickness was added to complete the project for long-term performance and durability.

Siberian Winter Experiments

- Without coating, heat loss reached 3409 W/m.
- With HPC® Coating applied, heat loss diminished to 776 W/m, a decrease of 77.3%.

Heat loss from un-insulated v. HPC® Coating insulated surface



Cold Testing

- HPC® Coating was tested under rigorous exterior cold temperatures for 12 hours with holding the main heat source.

Steel Factory Testing

- Original interior temperatures before HPC® Coating, was estimated at 1200˚F (649˚C).
- After HPC® Coating was applied, pipe surface temperatures under the coating increased to approximately the interior temp of 1200˚F (649˚C). This shows how well HPC® Coating held the temperature on the surface of the pipe and increased the pipe surface and interior temperature. This is the amount of heat loss that traditional insulation would have allowed to quickly absorb, transfer from the surface and flow through the air pockets to escape. Losing 335˚F is significant when the operation is based on certain heat levels being maintained. This is the point about using HPC® - HT Coating to replace traditional air pocket systems that lose heat at these high temperatures.

Top Companies using HPC® Coating

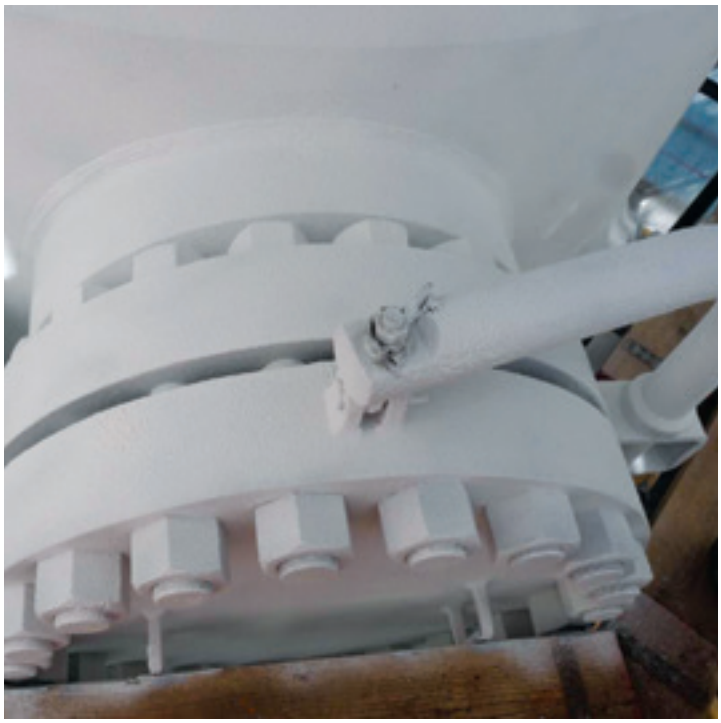
- LG Chemicals
- Drydocks World
- Vancouver Shipyards
- Gazprom Oil
- Ecopetrol
- Saipem, S.P.A.
- Pemex Oil
- Saudi Aramco Oil
- Formosa Plastics Corporation
- Georgia Pacific

HPC® Product Line has been designed with low-density ceramics developed in cooperation with NASA.

HPC® Product Line prevents the absorption of air and moisture, effectively blocking corrosion in ways that traditional insulation cannot.

HPC® / HPC®-HT Coating

The solution for preventing Corrosion Under Insulation (CUI)



When we designed the HPC® Product Line, our goal was to address the concerns of Insulation, CUI and Personnel Protection, without shutting down equipment (and costing millions of dollars in the process). With HPC®, and now HPC®-HT, we have done just that. "This stuff works!" No shutdown is required.

Insulation

Our aim was to produce measurable insulation performance in the field. HPC® and HPC® - HT are insulators that cover every inch, every surface (elbows, valves, etc.) to give 100% coverage for optimum insulative effect. Many coatings insulate under 160°C, but with the HPC® Product Line, we take insulation from 100° to 600°C, and can apply while operating, with measurable, immediate results.

CUI

The current talk of using "super hydrophobic" resins to impregnate existing materials only reduces the air space, which is the main insulation medium used. Reducing moisture is a plus. Any dry material is a better insulator than any wet material (example: if a screen is replacing jacketing, the screen conducts heat).
Adding structure can reduce the insulation effect. At the end of the day, it's simple - and proven: HPC® and HPC® - HT effectively eliminate CUI without adding structure, while blocking humidity and air.

Personnel Protection

Our HPC® Product Line addresses personnel safety issues by using two formulas for differing levels of temperature exposure, both of which are water-based and loaded with specific ceramic compounds (chosen from thousands of compounds that were evaluated over a 30-year period) that block "heat load" and transfer (HPC®-HT part A has some solvent, but when mixed with part B, it is fully water based). These compounds are then blended into unique resin systems to carry the ceramics onto surfaces and hold them together in a mesh-like structure, without becoming a conduit for heat. HPC® was designed for surfaces up to 260°C. We use an overcoat to block moisture, air or weathering to prevent CUI. The HPC® - HT is an all-in-one coating for insulation, CUI elimination, and personnel protection up to 600°C (and beyond).

You need to cover all three points of concern: Insulation/ CUI/Personnel Protection. Why would you only settle for one point at a time, with 3 different products? Instead, address the issues with specific products designed for what you need. Major customers have already used the HPC® product technologies in the field for years. They work. They're proven. They are the HPC® Product Line.

Business Development / Technical Support Email: Help@Spcinfo.com

SPI Products Safe-to-Touch Temperatures, DFT's and Time of Contact with coated surface

Time of Contact by OSHA - 5 seconds with no burn.

Maximum Temperature		DFT of Super Therm®		Super Therm® Safe-to-Touch temperature		Time of hand contact on the Super Therm® surface
°F	°C	µ	mils	°F	°C	
140	60.0	250	10	129	53.9	up to 8.5 seconds

Maximum Temperature		DFT of HSC®		HSC® Safe-to-Touch temperature		Time of hand contact on the HSC® surface
°F	°C	mm	mils	°F	°C	
140	60.0	1.25	50.0	122	50.0	60 seconds ++
200	93.3	1.5	60.0	158	70.0	up to 30 seconds
250	121.1	1.5	60.0	185	85.0	up to 20 seconds
300	148.9	2.0	80.0	205	96.1	5 seconds
350	176.7	4.0	160.0	196	91.1	up to 15 seconds

Maximum Temperature		DFT of HPC®		HPC® Safe-to-Touch temperature		Time of hand contact on the HPC® surface
°F	°C	mm	mils	°F	°C	
400	204.4	2.5	100.0	209	98.3	30 seconds +
450	232.2	2.5	100.0	231	110.6	15 seconds +
450	232.2	5.0	200.0	210	98.9	30 seconds +
482	250.0	5.0	200.0	220	104.4	20 seconds +
482	250.0	10.0	400.0	171	77.2	60 seconds +
482	250.0	17.0	680.0	139	59.4	60 seconds ++

Maximum Temperature		DFT of HPC® HT		HPC® HT Safe-to-Touch temperature		Time of hand contact on the HPC® HT surface
°F	°C	mm	mils	°F	°C	
500	260	32	1280.0	126	52.2	60 seconds ++
550	288	32	1280.0	145	62.8	60 seconds ++
600	316	32	1280.0	162	72.2	up to 60 seconds
650	343	32	1280.0	174	78.9	up to 45 seconds
700	371	32	1280.0	185	85.0	up to 30 seconds
750	399	32	1280.0	194	90.0	up to 30 seconds
800	427	45	1800.0	152	66.7	60 seconds +
800	427	50	2000.0	126	52.2	60 seconds ++
900	482	57	2280.0	146	63.3	60 seconds ++
1000	538	57	2280.0	165	73.9	up to 60 seconds
1100	593	57	2280.0	185	85.0	up to 30 seconds
1200	649	57	2280.0	196	91.1	up to 30 seconds
1220	660	60	2400.0	192	88.9	up to 30seconds

*Summary of the tests conducted in the SPI laboratory from 8-1-18 to 9-30-18 HPC can achieve a 140F (60c) cod side temperature when applied to hot surfaces up to 1,112F

*Ambient temperature during the tests from 65F(18C) to 82F(27C), moderate air movement.

SUPERIOR PRODUCTS INTERNATIONAL PRESENCE

Asia
China
India
Indonesia
Japan
Korea
Malaysia
Singapore
Taiwan

Europe
Azerbaijan
Belgium
France
Germany
Greece
Italy
Netherlands
Poland
Russia
Spain
Turkey
Ukraine

Middle East
Oman
Saudi Arabia
UAE

South America
Argentina
Brazil
Chile
Colombia
Venezuela

Central America
Panama
Puerto Rico

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