HIGHLAND HITEMP COATINGS for PEAK PERFORMANCE







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Highland International



HIGHLAND HITEMP

Highland HiTemp Coatings provide aesthetic and durable protection for surface temperatures ranging from ambient to 1200°F/649°C. HiTemp Dry-Fall Coatings provide the same high performance protection while reducing labor costs by eliminating brush and roll application, reducing plant shut-down time and eliminating expensive overspray removal.

HiTemp Coatings are widely used in many industries including:

- Oil and Gas Industry
- Chemical Processing Plants
- Refineries
- Hot Mix Asphalt
- Recycle Facilities
- Pulp and Paper Plants

- Steel Mills
- Cement Mills
- Soil Reclamation
- Ethanol Plants
- Industrial Kilns
- Boilers & Dryers

Highland's HiTemp Line of Coatings offer unmatched performance against high heat and thermal shock environments while also offering ease of application and superior aesthetics and longevity compared to the competition.

250°F/121°C - 1200°F/649°C Coatings

Highland coatings for steel surfaces reaching these temperatures have been field tested for over 20 years. They are proven winners for heat protection as well as maximum corrosion protection. These coatings require a minimum 250°F/121°C heat cure.

Ambient up to 750°F/399°C Coatings

Highland offers a wide range of coatings in this temperature range to provide not only high temperature protection but also maximum corrosion & atmospheric protection. These coatings do not require a heat cure.



Courtesy of Astec Industries, Inc.

HiTemp Featured Coating: 48 Series 450°F/232°C Insulation Primer for Higher Efficiency Operations

48 Series is a high build surface tolerant 2-K Hybrid Epoxy Novolac specifically formulated to provide exceptional temperature insulation and heat reduction properties as well as exceptional chemical and corrosion protection.

Apply 48 Series at 12 mils DFT on surfaces that reach 450°F/232°C to lower temperature 130°F/54°C, allowing for a wider range of topcoat options while reducing BTU loss.

Many HiTemp Coatings are available in Hot Application formulas. See our Online Quick Specs Chart for a list of these products!

Courtesy of Heatec, Inc.

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HITEMP AND HITEMP DRY-FALL COATINGS AND SPECIFICATIONS

Paint overspray from Highland HiTemp Dry-Fall coatings is powder dry within 10-20 feet from point of application and wipes off without chemicals or buffing. Highland Dry-Fall allows "Spray-Safe" application in congested areas which will reduce labor costs, shorten plant down time and eliminate expensive overspray removal.

HITEMP PRIMERS

CODE	VEHICLE TYPE	DESCRIPTION	TEMP. RANGE	# OF COATS	DFT MILS	VOL. SOLIDS	НОТ АРР
47	Hybrid Epoxy Novolac	Chem-Temp 47 Series is a high-build 2-K primer formulated to provide exceptional chemical and temperature protection up to 450°F/232°C. It may be applied over marginally prepared surfaces and may be used as a primer or DTM coating.	Up to 450°F/ 232°C	1-2	4 - 16	70%	Up to 400°F 204°C
48	Hybrid Epoxy Novolac	HiTemp 48 Series is a high-build surface tolerant 2-K primer formulated to provide exceptional temperature insulation and heat reduction properties as well as exceptional chemical and corrosion protection. It will reduce BTU loss, allow a wider range of topcoats and provide a protective barrier against CUI (corrosion under insulation).	Up to 450°F/ 232°C	1-2	10 - 14	70%	Up to 400°F 204°C
335	Inorganic Zinc	HiTemp 335 Series is a 2-K primer that cathodically protects steel and provides outstanding abrasion resistance and protection against undercutting and corrosion in normal to severe atmospheric conditions.	Up to 750°F 399°C	1	2.5 - 4	65%	No
15-ZN	Silicone Zinc Copolymer	HiTemp 15-ZN Series is a 2-K primer that cathodically protects steel and is designed for heat affected zones up to 1000°F/538°C. NOTE: This product heat cures at 250°F/121°C.	250°F/121°C - 1000°F/538°C	1	2 - 3	41%	No
827-HB	Multi- polymeric Matrix	HiTemp 827-HB is an unparalleled 1200°F/649°C single package DTM that is ideal for CUI or where extreme thermal shock resistance is necessary. It is a high-build and surface-tolerant coating that can be hot applied to surfaces up to 750°F/399°C.	up to 1200°F/649°C	1-2	4 - 16	65%	Up to 750°F 399°C

HITEMP DRY-FALL "SPRAY-SAFE" PRIMERS

CODE	VEHICLE TYPE	DESCRIPTION	TEMP. RANGE	# OF COATS	DFT MILS	VOL. SOLIDS	НОТ АРР
15-ZN- DF	Silicone Zinc Copolymer	HiTemp 15-ZN-DF Series cathodically protects steel providing maximum corrosion protection. It is designed for heat affected zones up to 1000°F/538°C. NOTE: This product heat cures at 250°F/121°C.	250°F/121°C - 1000°F/538°C	1	2 - 3	41%	No
827-HB	Multi- polymeric Matrix	HiTemp 827-HB is an unparalleled 1200°F/649°C single package DTM that is ideal for CUI or where extreme thermal shock resistance is necessary. It is a high-build and surface-tolerant coating. 827-HB Series provides the best characteristics of a premium High Temperature Coating in a Dry-Fall "Spray-Safe" formula that eliminates overspray concerns.	up to 1200°F/649°C	1-2	4 - 16	65%	No

HITEMP DTM (DIRECT TO METAL)

CODE	VEHICLE TYPE	DESCRIPTION	TEMP. RANGE	# OF COATS	DFT MILS	VOL. SOLIDS	НОТ АРР
47	Hybrid Epoxy Novolac	Chem-Temp 47 Series is a high-build 2-K primer formulated to provide exceptional chemical and temperature protection up to 450°F/232°C. It may be applied over marginally prepared surfaces and may be used as a primer or DTM coating. It is an excellent choice for CUI services up to 300°F/149°C and excursions up to 450°F/232°C.	Up to 450°F/ 232°C	1-2	4 - 16	70%	Up to 400°F 204°C
807	Silicone Copolymer	HiTemp 807 Series has excellent adhesion to steel surfaces and provides corrosion protection on surfaces with temperatures up to 1200°F/649°C. Color: Aluminum NOTE: This product heat cures at 250°F/121°C.	250°F/121°C - 1200°F/649°C	1-2	3 - 5	36%	No
827-HB	Multi- polymeric Matrix	HiTemp 827-HB is an unparalleled 1200°F/649°C single package DTM that is ideal for CUI or where extreme thermal shock resistance is necessary. It is a high-build and surface-tolerant coating that can be hot applied to surfaces up to 750°F/399°C.	Up to 1200°F/649°C	1-2	4 -16	65%	Up to 750°F 399°C
899	Modified Silicone Copolymer	HiTemp 899 Series is a single package direct-to-metal coating that may be applied up to 8 mils DFT in one coat, offering higher build protection and surface tolerance compared to other high temperature coatings. 899 Series provides superior thermal shock and corrosion resistance in a full range of colors. In addition, 899 may be hot applied or put back into service with no heat cure schedule.	350°F/176°C - 1000°F/537°C	1	6-8	52%	Up to 300°F 149°C

HITEMP AND HITEMP DRY-FALL COATINGS AND SPECIFICATIONS

Highland HiTemp coatings provide aesthetic and durable protection for surface temperatures ranging from ambient to -300°F/-184°C to 1200°F/649°C.

HITEMP DRY-FALL "SPRAY-SAFE" DTM (DIRECT TO METAL)

CODE	VEHICLE TYPE	DESCRIPTION	TEMP. RANGE	# OF COATS	DFT MILS	VOL. SOLIDS	НОТ АРР
807-DF	Silicone Copolymer	HiTemp 807-DF has excellent adhesion to steel surfaces and provides corrosion protection on surfaces with temperatures up to 1200°F/649°C. Color: Aluminum NOTE: This product heat cures at 250°F/121°C.	250°F/121°C - 1200°F/649°C	2-3	3 - 5	36%	No
827- HB	Multi- polymeric Matrix	HiTemp 827-HB is an unparalleled 1200°F/649°C single package DTM that is ideal for CUI or where extreme thermal shock resistance is necessary. It is a high-build and surface-tolerant coating. 827-HB Series provides the best characteristics of a premium High Temperature Coating in a Dry-Fall "Spray-Safe" formula that eliminates overspray concerns.	up to 1200°F/649°C	1-2	4 - 16	65%	No
899	Modified Silicone Copolymer	HiTemp 899 Series is a single package direct-to-metal coating that may be applied up to 8 mils DFT in one coat, offering higher build protection and surface tolerance compared to other high temperature coatings. 899 Series provides superior thermal shock and corrosion resistance in a full range of colors. In addition, 899 may be hot applied or put back into service with no heat cure schedule. Paint overspray from 899 is powder dry within 10-20 feet from point of application and wipes off surfaces easily.	350°F/176°C - 1000°F/537°C	1	6-8	52%	No

HITEMP TOPCOATS

CODE	VEHICLE TYPE	DESCRIPTION	TEMP. RANGE	# OF COATS	DFT MILS	VOL. SOLIDS	НОТ АРР
815	Acrylic Silicone Copolymer	815 Series is an excellent alternative for components ranging from ambient to 500° F/260 $^{\circ}$ C and is available in a full range of colors. 815 Series may also be modified with the proper reducer to allow hot application up to 400° F/204 $^{\circ}$ C.	Up to 500°F /260°C	1	2 - 3	50%	No
805-LH	Modified Silicone Copolymer	HiTemp 805-LH is a single package coating available in a variety of colors. It is designed to exceed conventional high temperature paint products in temperature cure requirements, heat stability (Thermal Shock), corrosion resistance, color purity, and ease of application. NOTE: This product cures at 250°F /121°C.	Up to 1000°F /538°C	1	2 - 3	45%	No
899	Modified Silicone Copolymer	HiTemp 899 Series is a single package direct-to-metal coating that may be applied up to 8 mils DFT in one coat, offering higher build protection and surface tolerance compared to other high temperature coatings. 899 Series provides superior thermal shock and corrosion resistance in a full range of colors. In addition, 899 may be hot applied or put back into service with no heat cure schedule.	350°F/176°C - 1000°F/537°C	1	6-8	52%	Up to 300°F 149°C

HITEMP DRY-FALL "SPRAY-SAFE" TOPCOATS

CODE	VEHICLE TYPE	DESCRIPTION	TEMP. RANGE	# OF COATS	DFT MILS	VOL. SOLIDS	НОТ АРР
815-DF	Acrylic Silicone Copolymer	HiTemp 815-DF Series is an excellent alternative for surfaces ranging from ambient to 500° F/260 $^{\circ}$ C and is available in a full range of colors. It may be modified with the proper reducer to allow hot application up to 400° F/204 $^{\circ}$ C.	Up to 500°F/260°C	1	2 - 3	50%	No
805-DF	Modified Silicone Copolymer	HiTemp 805-DF is a single package coating available in a variety of colors. It is designed to exceed conventional high temperature paint products in temperature cure requirements, heat stability (Thermal Shock), corrosion resistance, color purity, and ease of application. NOTE: This product cures at 250°F /121°C.	250°F/121°C - 1000°F/538°C	1	2 - 3	50%	No
899	Modified Silicone Copolymer	HiTemp 899 Series is a single package direct-to-metal coating that may be applied up to 8 mils DFT in one coat, offering higher build protection and surface tolerance compared to other high temperature coatings. 899 Series provides superior thermal shock and corrosion resistance in a full range of colors. In addition, 899 may be hot applied or put back into service with no heat cure schedule. Paint overspray from 899 is powder dry within 10-20 feet from point of application and wipes off surfaces easily.	350°F/176°C - 1000°F/537°C	1	6-8	52%	No

HITEMP DRY-FALL COATINGS

Without sacrifice to durability or aesthetics, you can safely use spray application in areas where there is a high risk for paint overspray damage. Highland HiTemp Dry-Fall solvent-borne coatings are powder dry within 10-20 feet from point of application and wipe cleanly off surfaces without buffing or chemicals.



Courtesy of Heatec, Inc.

Highland Dry-Fall vs. Brush and Roll

- Paint droplets from brush and roll application may become airborne and cause more damage than overspray from spray application. Overspray from Highland Dry-Fall coatings is powder dry within 10-20 feet from point of application and is easily wiped clean!
- Spray application is up to 4 times faster to apply than brush and roll methods saving time and money!

HiTemp Dry-Fall Featured Coating

HiTemp 827-HB Series 1200°F/649°C DTM

HiTemp 827-HB is an unparalleled 1200°F/649°C single package, Dry-Fall DTM that is ideal for CUI or where extreme thermal shock resistance is necessary. This high build, surface tolerant coating may be hot applied to surfaces up to 750°F/399°C (but not as a Dry-Fall). HiTemp 827-HB exemplifies extraordinary coating formulation, offering the best characteristics of a premium High Temperature Coating in a Dry-Fall "Spray-Safe" formula that eliminates overspray concerns.

- · Withstands Boiling Water
- High Build & Surface Tolerant
- Heat Resistant to 1200°F/649°C
- Hot Apply up to 750°F/399°C



Please refer to the HiTemp and HiTemp Dry-Fall Coatings Chart for Coating Specifications. Technical Data Sheets for all Highland Coatings may be found on our website:

www.highland-international.com

SYSTEM PERFORMANCE DATA

827-HB Series Hybrid Polymer Matrix DTM

Panels prepared per Highland's recommendations for surface preparation and appropriate DFT.

CUI Cycle Testing

1 Cycle = 1 week: 16 hours @ 500°F/260°C, cold water quench followed by 8 hour immersion in boiling water, 212°F/100°C. Repeat for 5 days, then 2 days @ 500°F/260°C followed by cold water quench.

Results (16 cycles):

No cracking or blistering in the field Adhesion via Cross Hatch/ Tape Test = 5A (no loss of adhesion) (ASTM D 3359-A Test Method for Measuring Adhesion by Tape Test)

Thermal Shock Resistance

A set of panels prepared per Highland specifications (12 mils DFT) were subjected to 1200°F/649°C for 24 hours and immediately submerged into room temperature water. The coated panels were inspected under a microscope and checked for dulling, microcracks and adhesion. The panels were then exposed to 24 hours of salt spray testing (ASTM B117) and examined for rust or any corrosion attack.

Method:	ASTM D2485
Result	(30+ cycles): Pass - no micro-cracks or blistering in the field, no corrosion present

48 Series Insulation Epoxy Primer

Panels prepared per Highland's recommendations for surface preparation and appropriate DFT.

Surface Temperature Reduction

Temperature*	Temperature with 12 mils DFT*	Temperature Reduction
150°F/65°C	95°F/35°C	55°F/30°C
200°F/93°C	145°F/63°C	55°F/30°C
225°F/107°C	165°F/74°C	60°F/33°C
300°F/149°C	220°F/104°C	80°F/45°C
350°F/176°C	250°F/121°C	100°F/55°C
400°F/204°C	290°F/143°C	110°F/61°C
450°F/232°C	320°F/160°C	130°F/72°C

Temperatures measured via digital surface contact thermometer*

CUI Cycle Testing

1 Cycle = 1 week: 16 hours @ 450°F/232°C, cold water quench followed by 8 hour immersion in boiling water, 212°F/100°C. Repeat for 5 days, then 2 days @ 450°F/232°C followed by cold water quench.

Results (10 cycles):

No cracking or blistering in the field Adhesion via Cross Hatch/ Tape Test = 5B (no loss of adhesion) (ASTM D 3359 Test Method for Measuring Adhesion by Tape Test)

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