



SPX

PLASTIC TANK HEATER PAD



**WATERPROOF, ADHESIVE-BACKED HEATER PADS
FOR PLASTIC AND OTHER HEAT-SENSITIVE TANKS**

SPX SALES 9/11/14



SPX

**For freeze protection
and process heating
applications
on Plastic Tanks**

PLASTIC TANK HEATER PAD

SPX

- ♦ **Specifically designed for safe operation on polyethylene, polypropylene and other types of heat-sensitive tanks**
- ♦ **Two sizes and power outputs fit horizontal, vertical and conical tanks**
- ♦ **Proven epoxy-glass laminate platform performance, with thousands of major installations worldwide**
- ♦ **Will not overheat or burn out**
- ♦ **Adhesive backing makes installation quick, simple and effective**
- ♦ **FM Approved for use in unclassified, hazardous and corrosive environments for the United States and Canada**

SPX heater pads are specifically designed to provide the unique product and system features essential for the safe and reliable application of heat to the surface of plastic tanks and other types of heat-sensitive, non-metallic tanks. SPX heater pads are most commonly used on polyethylene and polypropylene tanks for freeze protection and temperature maintenance applications up to 120° F (48.9°C). When used on metal or FRP tanks, SPX heating systems can be designed for temperature maintenance applications up to 150° F (65.6°C).

The total construction of the SPX heater pad is completely waterproof. Each SPX heater is supplied with a rugged, encapsulated, factory made power termination complete with over-braided cold leads in standard lengths of 10 or 16 Ft and custom lengths to suit your application from 2 to 50 feet.

The SPX heater pad uses a proprietary multi-path, parallel circuit heating element with continuously spot welded connections. This proprietary heating element is laminated into multiple layers of NEMA grade G-10 / FR-4 flame retardant, epoxy-glass composite to form a flexible, lightweight heater pad that is easily and quickly installed.

The gentle heat output of 0.39 w/sq.in will not harm a plastic tank or its contents. Additional security is also incorporated into every SPX heater by the inclusion of a preset, automatic over-temperature safety switch that is built directly into the pad. This factory installed device completely eliminates all potential for overheating the tank, even if the heating system should remain energized while the tank is empty.

The SPX heater construction also includes an internal aluminum ground shield for full compliance with the latest requirements of the National Electric Code. Factory applied adhesive backing is used to bond the heater pad directly to the tank surface, allowing one person to complete a simple and effective installation in a matter of just a few minutes.



SPX tank heaters are extremely safe, reliable and cannot overheat or burnout.



SPX HEATER PAD

ADVANCED HEATING ELEMENT DESIGN

The SPX Tank Heater pad incorporates a proprietary, multi-path heating element that provides an evenly distributed flow of current across many **parallel connected paths**. See Figure 1 opposite.

If one or more element paths are broken or damaged, *the current flow is instantaneously, automatically and evenly re-routed around the damaged area into the remaining undamaged element paths*. See Figure 2 opposite.

This uniform redistribution of current prevents the development of hot spots and burn outs that would normally result in the total failure of a heater pad. Hot spots and localized overheating are also potentially disastrous failure modes that can significantly damage the structure and integrity of any heat-sensitive tank, or scald any heat-sensitive products contained within a tank.

The parallel connected, multi-path circuit design unique to the SPX heater pad offers a durable, robust, safe and *reliable heat source* that is clearly superior to all types of series circuit designs.

Thermal aging, electrical stress, mechanical stress and destruction testing of the epoxy/glass laminate platform have shown that *over 70% of the circuit paths within the element must be completely destroyed and broken before total heater failure can occur*.

SPX

PLASTIC TANK HEATER PAD

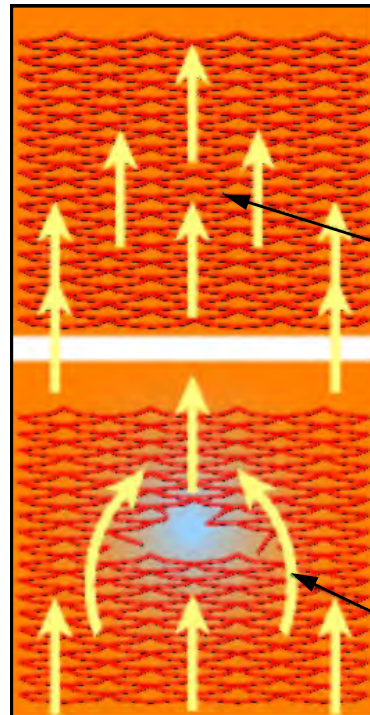


Figure 1

Multi-path heating element construction provides a uniform flow of current across many parallel connected circuit paths.

Figure 2

Current is automatically and evenly re-routed around damaged area. Integrity of the heating circuit remains intact and the heater pad continues to function normally.

SPX heater pads are the safest and most reliable form of tank heater available.



PRODUCT SPECIFICATIONS

PHYSICAL, ELECTRICAL & THERMAL

SPX PLASTIC TANK HEATER PAD

PRODUCT FAMILY	SPX	
PRODUCT REFERENCES	SPX210 & SPX420	
SIZES	SPX210	18 x 30 in (457 x 762 mm)
	SPX420	18 x 60 in (457 x 1524mm)
PAD THICKNESS	0.05 inches (1.27 mm)	
WEIGHTS	SPX210	2.2 lbs. (1 kg)
	SPX420	4 lbs. (1.81 kg)
POWER RATINGS	SPX210	210 watts
	SPX420	420 watts
POWER DENSITY	0.39 watts/inch ² (605 watts/m ²)	
OPERATING VOLTAGE	120 VAC 240 VAC options available, contact HTD	
NOMINAL CURRENT	SPX 210	1.75 A
	SPX 420	3.50 A
LEAKAGE CURRENT ON 120VAC	SPX 210	0.9 mA
	SPX 420	1.8 mA
TYPICAL MAXIMUM APPLICATION TEMPERATURES	Polyethylene	120° F (49°C)
	Polypropylene	120° F
	PVC	140° F(60°C)
	CPVC	150° F(65.5°C)
	FRP	150° F
	Steel	150° F

The above maximum application temperatures are only typical for the materials listed. Service temperature ratings for each tank material depend upon operating pressure and may be lower. Maximum permissible operating temperatures for each specific type of tank must be determined by the Tank Manufacturer and/or End User.

T-RATING:	T4A
MAXIMUM EXPOSURE TEMPERATURE	220° F (105°C)
MINIMUM TEMPERATURE DURING INSTALLATION	40°F (4.4°C)
MINIMUM BENDING RADIUS	15 in (381 mm)
MINIMUM TANK DIAMETER	30 in (762 mm)

ACCESSORIES

SEALING TAPE	Use type IAAT 3 adhesive backed aluminum tape to seal the four edges of each SPX heater pad to the tank surface. This simple procedure prevents infiltration of thermal insulation between the tank surface and the heater pad.
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CONSTRUCTIONAL

HEATING ELEMENT	Proprietary multi-path, heating element with continuously spot-welded connections
HEATING ELEMENT DESIGN	Parallel circuit
DIELECTRIC MATERIALS	Multi-ply epoxy/glass composite
DIELECTRIC STRENGTH TEST	1.48KV for one minute
INTEGRAL GROUND PLANE	Expanded aluminum sheet
TERMINATION BOX	4.5 x 2.5 inch (114 x 65 mm) polycarbonate enclosure
COLD LEAD CABLE	3 conductor # 16 AWG tinned copper with TPE insulation and tinned copper over-braid
STANDARD COLD LEAD LENGTHS	SPX210 10 Ft (3m) SPX210 -16 16 Ft (4.88m) SPX420 10 Ft (3m) SPX420-16 16 Ft (4.88m)
INSTALLATION METHOD	Factory applied adhesive backing with release liner

APPROVALS

Factory Mutual approved to IEEE standard 515 and CSA standard C22.2 no.130-03 for use in the following areas:
Unclassified
Class I Div.2 Groups B,C,D
Class II Div.2 Group F,G
Class III Div.2



CONTROLS

The recommended controller for unclassified, non-hazardous area installations is type 2SPCP with dual electronic thermostats for process control and high temperature cut out.

Use type 2HSPCP controller to provide the same features on all hazardous area installations.



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