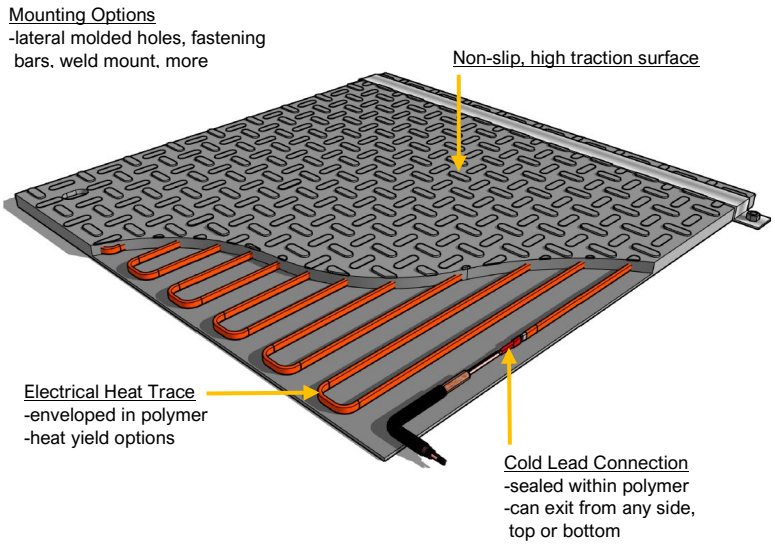
ARCTIC PAD® - OFFSHORE

SNOWMELT, DE-ICING, AND ANTI-ICING SYSTEM



DESCRIPTION

Arctic Pad® is a modular system for snowmelt, anti-icing, de-icing of walkways, treads and deck surfaces of offshore platforms, helicopter decks and vessels. For over a decade, it has been the preferred choice for use in hazardous and non-hazardous area installations in wind, oil & gas, and marine industries around the world.

This patented system is a resilient heated polyurethane mat with:

- self-regulating heating cable encapsulated within
- high thermal mass-minimizes heat loss and energy consumption
- flex allowing for synchronicity in marine atmospheres
- remote activation and cycling capabilities

All the while ensuring longevity in harsh corrosive environments.

The customizable high traction molded surface provides the highest COF available rendering it an ideal year-round solution for STF's. Lightweight construction allows for fast and easy installation and/or for portable or permanent use. Arctic Pad® can also be customized for any shape, allow for penetrations and a choice of mounting methods.

Options include beveled edges, integrated cable channels which protect from mechanical damage, colors, embossing of text, symbols, photoluminescent markings, watt densities and much more.

SPECIFICATIONS

Application	For use in explosive atmospheres and ordinary areas
Surface Type	Offshore and onshore structures, steel decks, helicopter decks, grating, painted or unpainted, wood, concrete, etc.
Resistance	Withstand chemical and corrosive atmospheres, salt, sea water, cleaning solvents, oil, fungus and ultraviolet stable.
Supply Voltage	208-277 Vac (*110-120 also available)
Approvals	Arctic Pad® is designed, tested, and approved according to latest DNVGL Standards: DNVGL-OS-A201 for use in Winterized Basic, Cold and Polar conditions. Arctic Pad® utilizes self-regulating heat cables approved for use in hazardous areas.

Canadian Standards Association
Ordinary Locations
Hazardous (Classified Locations)
Class I, Divisions 1 & 2, Groups A, B, C, D
Class II, Divisions 1 & 2, Groups E, F, G
Ex eb IIC
Ex tb IIIC

FM Approvals
Ordinary Locations
Hazardous (Classified Locations)
Class I, Division 2, Groups A, B, C, D
Class II, Division 2, Groups E, F, G
Class III, Divisions 1 & 2
Class I, Zone 1 & 2, AEx eb IIC Gb;
Zn 21 AEx bt IIIC Db
Class I, Zone 2 Group IIC, Zn 22 Group IIIC

International Electrochemical Commission
IEC Certification Scheme for Explosive
UL 06.004 / FMG 12.0004X

Certified CAP 437 Helideck Friction Test

Certified ANSI/NFSI B101.1-2009
Certified ANSI/NFSI B101.3-2012

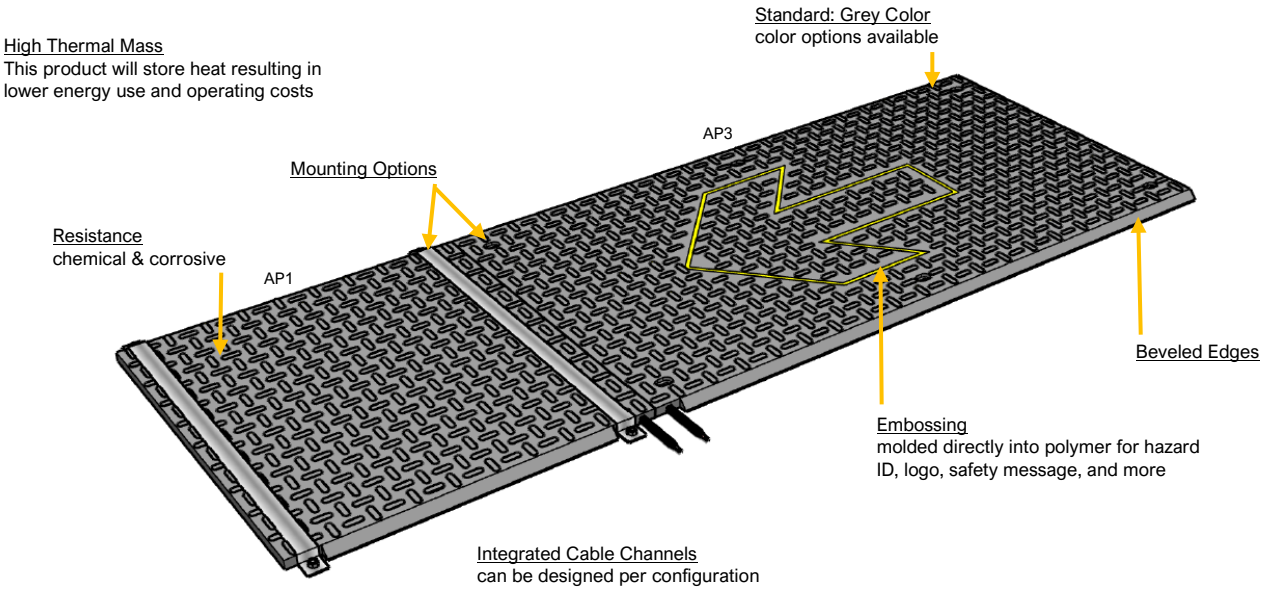
Underwriters Laboratories Inc
Hazardous (Classified Locations)

Certificate FM12 ATEX 0014X in
accordance with the EU ATEX Directive 94/9/EC

Additional Hazardous Approvals:
DNV ‖ JIS ‖ CCE/CMRS ‖ GGTN ‖ TIIS ‖ CCE/CSIR ‖ TRCU ‖

Temperature class	T3 to T6
Impact load resistance	65,600 kgf/m^2 (5% compression @ 93 psi)
Construction materials	Polyurethane, 75-85 Shore A
Cold lead	Standard length: 5m. Connection encapsulated in polymer. Approved for electrical installation in offshore and marine. Meets NEK 606 mud oil resistance and UL 2225 crush and impact requirements of Type MC-HL cables. Temperature rated @125°C. Meets cold bend test at -55°C and cold impact test at -40°C. Exit point from any side.
Configuration Capabilities	Standard sizes are listed below. Custom manufacture to all shapes and allow for deck penetrations within an Arctic Pad®.
Thickness	23mm is the standard. Other thickness can be accommodated from 23mm and up.
Weight	Average of 23-28kg/m2 (at 23mm thickness)
Options-Embossed	Embossed text, symbols, logos, safety message, area, and hazard identification.
Options-Color	Standard color is grey. Colors options, RAL color matching and photoluminescent markings.

SPECIFICATIONS



DIMENSIONS

	AP1	AP2	AP3	Custom
Size: L x W (m)	1.0 x 1.0	2.0 x 1.0	3.0 x1.0	Available
Height (mm)	23	23	23	23mm and up
Weight (kg)	23-28	46-56	69-84	TBD

INSTALLATION INSTRUCTION

Complete panel wiring information and schematics are provided with the product. All electrical installations must be carried out by an approved electrician in compliance the local electrical requirements and norms. The national electrical code requires ground-fault protection of equipment for each branch circuit supplying electric heating equipment. Arctic Pad® mechanical install time with two persons averages at 12-15 m2/hour.

MAXIMUM INSTALLED ARCTIC PAD® PER CIRCIUT BASED ON TYPE 'C' CIRCIUT BREAKERS

		AP1, 1.0m x 1.0m						AP2, 2.0m x 1.0m						AP3, 3.0m x 1.0m					
		Arctic Pad® / Circuit						Arctic Pad® / Circuit						Arctic Pad® / Circuit					
EHT		Start-up @ 0°F			Start-up @ +50°F			Start-up @ 0°F			Start-up @ +50°F			Start-up @ 0°F			Start-up @ +50°F		
W/ft (m)	Spacing (mm)	20A	30A	40A	20A	30A	40A	20A	30A	40A	20A	30A	40A	20A	30A	40A	20A	30A	40A
9 (30)	51	4	6	6	5	6	6	2	3	3	2	3	3	1	2	2	1	2	2
	76	6	8	8	7	8	8	3	4	4	3	4	4	2	2	2	2	2	2
	102	8	11	11	9	11	11	4	5	5	4	5	5	2	3	3	3	3	3
12 (39)	51	3	5	5	4	5	5	1	2	2	2	2	2	1	1	1	1	1	1
	76	5	7	7	5	7	7	2	3	3	2	3	3	1	2	2	1	2	2
	102	6	9	9	7	9	9	3	4	4	3	4	4	2	3	3	2	3	3
15 (49)	51	2	4	4	3	4	4	1	2	2	1	2	2	0	1	1	1	1	1
	76	3	5	6	4	6	6	1	2	3	2	3	3	1	1	2	1	2	2
	102	4	7	8	5	8	8	2	3	4	2	4	4	1	2	2	1	2	2
20 (66)	51	2	3	4	2	3	4	1	1	2	1	1	2	0	1	1	0	1	1
	76	3	4	5	3	5	5	1	2	2	1	2	2	1	1	1	1	1	1
	102	3	5	7	4	6	7	1	2	3	2	3	3	1	1	2	1	2	2

The above numbers are for estimation only. For more information contact your local Advanced Mat Systems® sales representative. The use of a 30 mA residual current device is required to provide maximum safety and protection from fire. Where design results in higher leakage current, the preferred trip level for adjustable devices is 30 mA above any inherent capacitive leakage characteristic of the heater as specified by the trace heater supplier or alternatively, the next common available trip level for non-adjustable devices, with a maximum of 300 mA. All safety aspects need to be proven.

OPTIONS

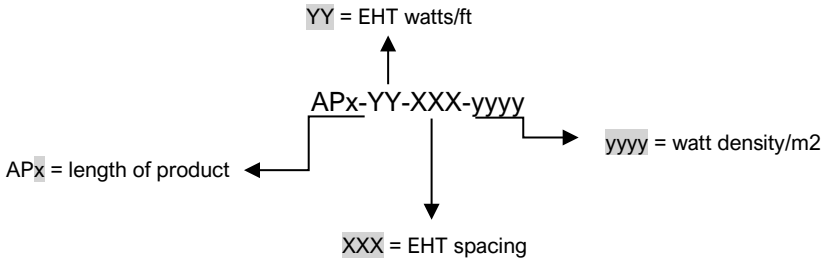
Name	PN CODE
AP-TRACTION PROFILE-SLAO	AP-TP-SLAO
AP-COLOR-XXX	AP-CLR-XXX
AP-EMBOSS-XXX	AP-E-XXX
AP-BEVELED EDGES	AP-BE
AP-120 VOLT	AP-120V

ACCESSORIES

Name	PN Code
AP-FASTENING BAR	AP-ACC-FB
AP-INTEGRATED CABLE CHANNELS	AP-ACC-ICC
AP-COLD LEAD	AP-ADD-CL
AP-JUNCTION BOXES	AP-ACC-JB
AP-CONTROL & MONITORING	AP-ACC-CM

ORDERING DETAILS

Name	Description	PN Code
AP1-09-051-580	Arctic Pad 1m x 1m, 9 W/ft, 51mm spacing, 580 w/m2	AP1-09-51
AP1-12-051-770	Arctic Pad 1m x 1m, 12 W/ft, 51mm spacing, 770 w/m2	AP1-12-51
AP1-15-051-965	Arctic Pad 1m x 1m, 15 W/ft, 51mm spacing, 965 w/m2	AP1-15-51
AP1-20-051-1290	Arctic Pad 1m x 1m, 20 W/ft, 51mm spacing, 1290 w/m2	AP1-20-51
AP1-09-076-415	Arctic Pad 1m x 1m, 9 W/ft, 76mm spacing, 415 w/m2	AP1-09-76
AP1-12-076-550	Arctic Pad 1m x 1m, 12 W/ft, 76mm spacing, 550 w/m2	AP1-12-76
AP1-15-076-690	Arctic Pad 1m x 1m, 15 W/ft, 76mm spacing, 690 w/m2	AP1-15-76
AP1-20-076-925	Arctic Pad 1m x 1m, 20 W/ft, 76mm spacing, 925 w/m2	AP1-20-76
AP1-09-102-335	Arctic Pad 1m x 1m, 9 W/ft, 102mm spacing, 335 w/m2	AP1-09-102
AP1-12-102-440	Arctic Pad 1m x 1m, 12 W/ft, 102mm spacing, 440 w/m2	AP1-12-102
AP1-15-102-555	Arctic Pad 1m x 1m, 15 W/ft, 102mm spacing, 555 w/m2	AP1-15-102
AP1-20-102-740	Arctic Pad 1m x 1m, 20 W/ft, 102mm spacing, 740 w/m2	AP1-20-102
AP2-09-051-1170	Arctic Pad 2m x 1m, 9 W/ft, 51mm spacing, 585 w/m2	AP2-09-51
AP2-12-051-1545	Arctic Pad 2m x 1m, 12 W/ft, 51mm spacing, 770 w/m2	AP2-12-51
AP2-15-051-1945	Arctic Pad 2m x 1m, 15 W/ft, 51mm spacing, 970 w/m2	AP2-15-51
AP2-20-051-2605	Arctic Pad 2m x 1m, 20 W/ft, 51mm spacing, 1300 w/m2	AP2-20-51
AP2-09-076-830	Arctic Pad 2m x 1m, 9 W/ft, 76mm spacing, 415 w/m2	AP2-09-76
AP2-12-076-1095	Arctic Pad 2m x 1m, 12 W/ft, 76mm spacing, 545 w/m2	AP2-12-76
AP2-15-076-1375	Arctic Pad 2m x 1m, 15 W/ft, 76mm spacing, 685 w/m2	AP2-15-76
AP2-20-076-1845	Arctic Pad 2m x 1m, 20 W/ft, 76mm spacing, 920 w/m2	AP2-20-76
AP2-09-102-660	Arctic Pad 2m x 1m, 9 W/ft, 102mm spacing, 330 w/m2	AP2-09-102
AP2-12-102-870	Arctic Pad 2m x 1m, 12 W/ft, 102mm spacing, 435 w/m2	AP2-12-102
AP2-15-102-1090	Arctic Pad 2m x 1m, 15 W/ft, 102mm spacing, 545 w/m2	AP2-15-102
AP2-20-102-1465	Arctic Pad 2m x 1m, 20 W/ft, 102mm spacing, 730 w/m2	AP2-20-102
AP3-09-051-1760	Arctic Pad 3m x 1m, 9 W/ft, 51mm spacing, 585 w/m2	AP3-09-51
AP3-12-051-2325	Arctic Pad 3m x 1m, 12 W/ft, 51mm spacing, 775 w/m2	AP3-12-51
AP3-15-051-2925	Arctic Pad 3m x 1m, 15 W/ft, 51mm spacing, 975 w/m2	AP3-15-51
AP3-20-051-3915	Arctic Pad 3m x 1m, 20 W/ft, 51mm spacing, 1305 w/m2	AP3-20-51
AP3-09-076-1245	Arctic Pad 3m x 1m, 9 W/ft, 76mm spacing, 415 w/m2	AP3-09-76
AP3-12-076-1640	Arctic Pad 3m x 1m, 12 W/ft, 76mm spacing, 545 w/m2	AP3-12-76
AP3-15-076-2060	Arctic Pad 3m x 1m, 15 W/ft, 76mm spacing, 685 w/m2	AP3-15-76
AP3-20-076-2760	Arctic Pad 3m x 1m, 20 W/ft, 76mm spacing, 920 w/m2	AP3-20-76
AP3-09-102-985	Arctic Pad 3m x 1m, 9 W/ft, 102mm spacing, 330 w/m2	AP3-09-102
AP3-12-102-1300	Arctic Pad 3m x 1m, 12 W/ft, 102mm spacing, 435 w/m2	AP3-12-102
AP3-15-102-1630	Arctic Pad 3m x 1m, 15 W/ft, 102mm spacing, 545 w/m2	AP3-15-102
AP3-20-102-2185	Arctic Pad 3m x 1m, 20 W/ft, 102mm spacing, 730 w/m2	AP3-20-102



SERVICES

AMS has a wide range of services available to assist in the completion of your successful project. Our experienced personal is ready to assist you.

Design Assistance	From concept to production we provide comprehensive design services.
Electrical Engineering	We coordinate with your engineering team, recommend and/or provide electrical engineering services.
Onsite Survey	Available on land or at sea. AMS® trained personnel will determine precise location(s), access, orientation, electrical placements, location of obstacles, and more.
Onsite Installation Support & Supervision	Experienced personnel will lend support by directing the installation process. This will certify the installation is in accordance with customer and AMS® requirements.
Onsite Commissioning	The involves the procedures to check, inspect, adjust, test, document and verify a fully functioning system. Commissioning includes verifying electrical connections and full training to your key personnel.

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