



TECHNICHE

COMPANY PROFILE

THE COMPANY



Established in 2014, Techniche Trading LLC was founded with the vision of introducing innovative products to the Middle East market. Distinguished as the sole company in the region placing a significant focus on **heat stress management** clothing, TECHNICHE takes pride in having introduced multiple brands and cooling technologies to the UAE market, supporting clients such as ADNOC, DEWA, Dubai Airports, and others in their Beat The Heat initiatives.

TECHNICHE also offers a diverse array of tools designed to enhance safety and efficiency in **Maintenance, Repair, and Operations** (MRO) activities. This includes hydraulic and magnetic manhole cover lifters, industrial vacuum pump station, Vortex tube-based solutions for electronics enclosure cooling and spot cooling, tool tethers, work shelters, umbrellas, and more.

In its commitment to sustainability, TECHNICHE has recently ventured into providing Phase Change Material (PCM) based **thermal management solutions** for cold chain logistics, HVAC, battery cooling, and other applications. As TECHNICHE enters its 10th year in operation, the company continues to strive towards the goal of introducing niche technology to enhance safety, promote sustainability, and improve overall efficiency in demanding work environments.



MAIN MARKETS



Techniche supplies a variety of products to clients based all over the Middle East.

The main industries served are (public and private sectors)

- ✓ Oil & Gas
- ✓ Aviation
- ✓ Energy & Utilities
- ✓ Mining
- ✓ Environment
- ✓ Construction
- ✓ Facilities Management
- ✓ Logistics
- ✓ Hospitality & Recreation
- ✓ Manufacturing
- ✓ Movie & Event Production
- ✓ Sports & Entertainment



OUR PRODUCTS



- ✓ **Cooling apparel** from Techniche Intl (USA), Ergodyne(USA), Occunomix Intl (USA), Inuteq (Netherlands), Radians(USA), Kyoungdo (S. Korea), Vortec(USA), Kamakura (Japan), FlexiFreeze(USA), XYLO (S. Korea), Freedom(UAE)
- ✓ **Hydraulic manhole cover lifters** Proteus Equipment(UK)
- ✓ **Magnetic manhole cover lifters** DOA (Italy)
- ✓ **Industrial Pump out station** Westmoor (USA)
- ✓ **Cooling towels & accessories** CoolFCA(China)
- ✓ **Sweat management liners** (NoSweat Co.(USA), Occunomix(USA), CoolFCA (China)
- ✓ **Objects at height safety** – Tool anchoring systems from Ergodyne(USA)
- ✓ **Hi visibility clothing** Occunomix (USA), Ergodyne(USA), Radians(USA), Freedom(UAE)
- ✓ **Glow in the dark Hi visibility clothing** Viz Reflectives (UK)
- ✓ **FR apparel and accessories** Occunomix (USA), Ergodyne(USA), Buff(Spain)
- ✓ **Tent shelters** Ergodyne(USA),EZUP (USA)
- ✓ **UPF50+Arm sleeves** AquaX. (S. Korea), CoolFCA(China)
- ✓ **Sun protection products** from a range of manufacturers
- ✓ **Vortex A/C, enclosure cooling systems** Vortec(USA)
- ✓ **PCM based sustainable solutions** in cold chain logistics
- ✓ **Winter Jackets** Freedom(UAE)

Techniche is proud to have created a niche market for personal climate control products in the UAE serving reputed clients spanning multiple industries



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BRANDS



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CLIENTS



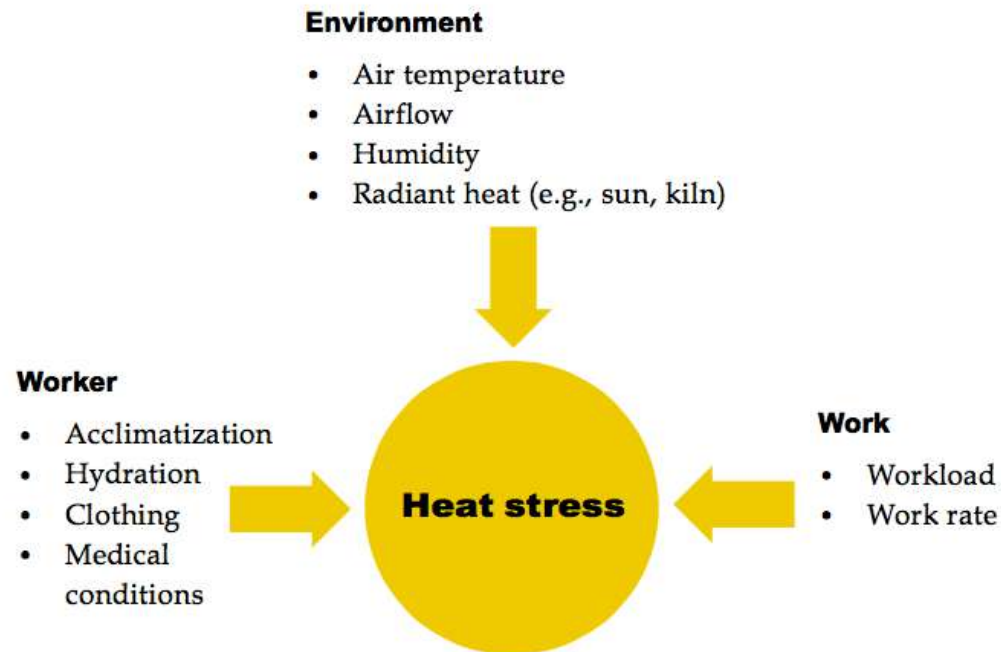
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WHAT IS HEAT STRESS?



Heat stress is a condition where environmental and/or physical factors prevent the transfer of excess body heat.

Heat disorders occur most often when heavy physical work is done in hot, humid environments and the body loses too much fluid and salt as sweat.



Source: worksafebc.com



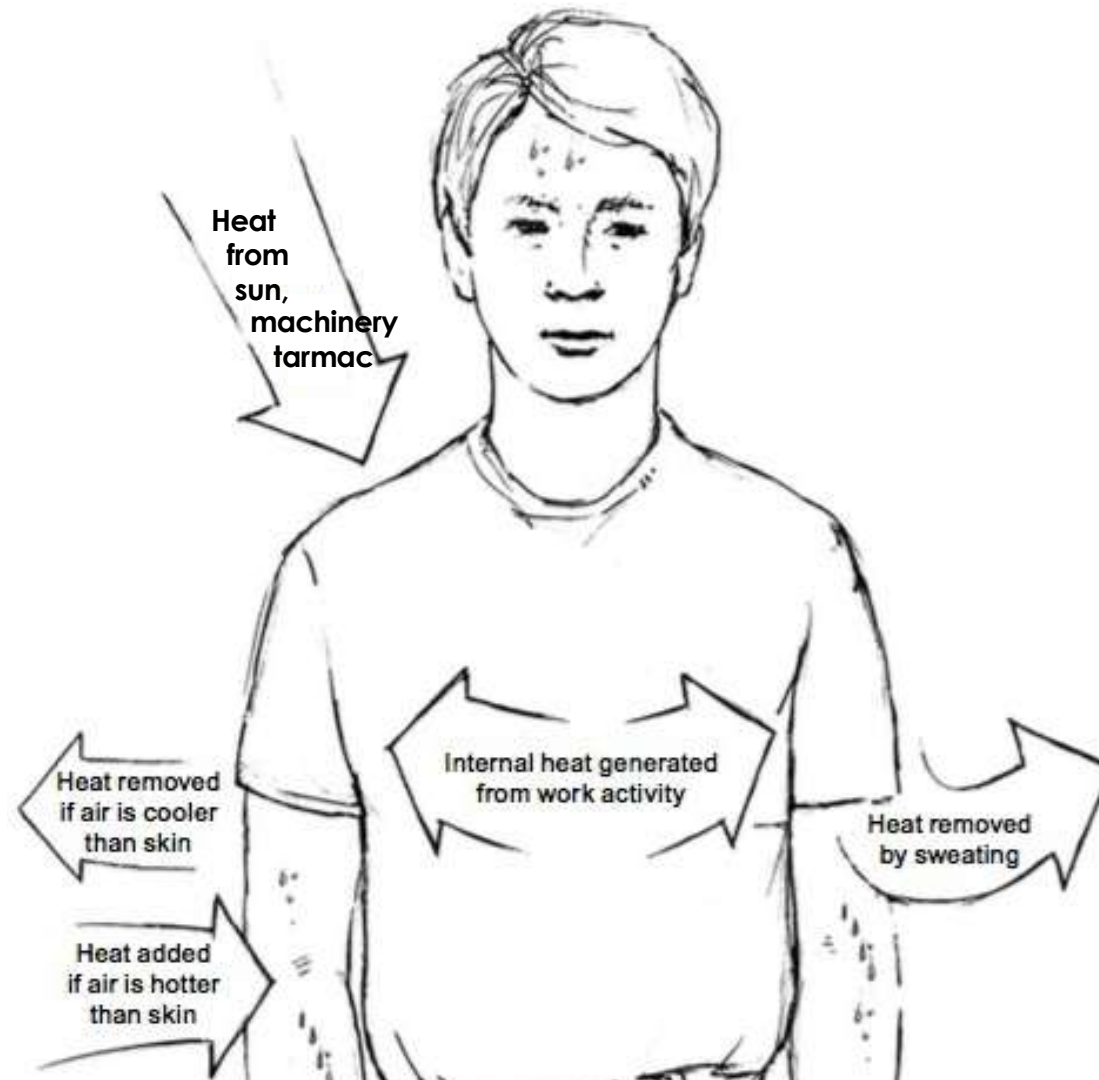
Up to 10 labourers collapse from heat exhaustion every day in the summer.

– Dubai Ambulance (May 2015)



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HEAT GAIN / LOSS



Source: worksafebc.com



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HEAT STRESS IMPACTS PERFORMANCE



Most people are aware of the impact of heat stress on health. But how does it affect cognitive ability and productivity?

- Ambient temperature exceeding normal skin temperature (32-35°C) causes mental fatigue and physical exhaustion.
- As the core temperature rises, the person begins to lose concentration and has difficulty focusing on a task
- A NASA study concluded that when the temperature is 35° C for an extended period, people can make 60 mistakes per hour – without realizing it.
- When the ambient temperature of the surrounding air is 35° C or higher, evaporation of sweat is the only means to cool the body. Protective clothing used by welders, firefighters and HAZMAT workers limit sweat evaporation, aggravating heat stress symptoms.

Source : EHS Today , Safety & Health Magazine, OSHA



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PREVENTIVE MEASURES



- **Conventional measures**

- ✓ Hydration , electrolyte supplements
- ✓ Optimizing work- rest cycles
- ✓ Acclimatization
- ✓ Education
- ✓ Engineering controls (AC, ventilation)

- **Other measures**

- ✓ Personal climate control using cooling vests & accessories
- ✓ Moisture management clothing (wicking)
- ✓ Remote monitoring of core temperature & hydration levels using smart patches, wrist bands etc.



PREVENTIVE MEASURES



DID YOU KNOW?



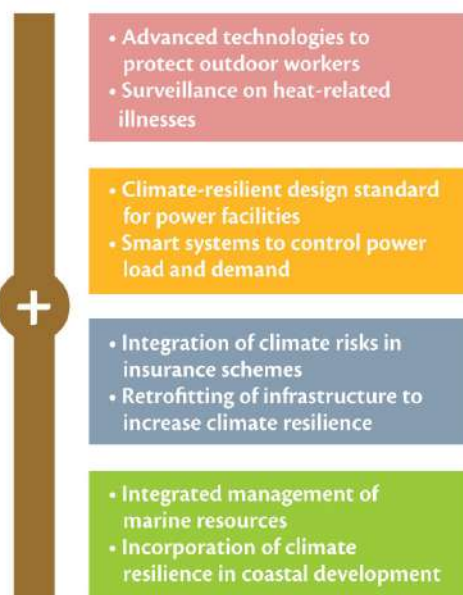
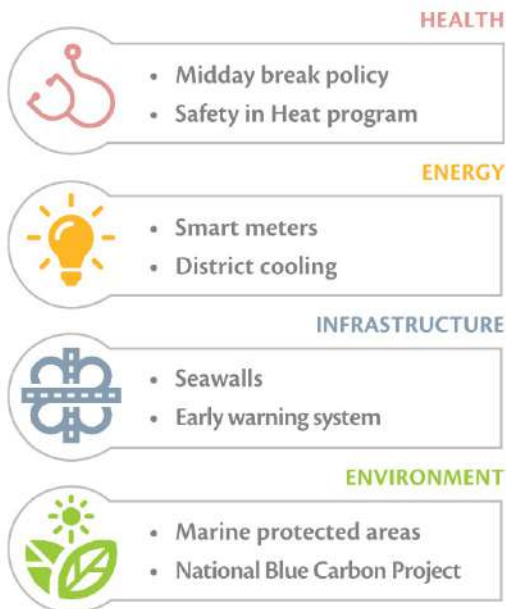
UNITED ARAB EMIRATES
MINISTRY OF CLIMATE CHANGE
& ENVIRONMENT

In **UAE Climate Risk Assessment & Adaptation Measures in Key Sectors report (2019)**

proposed advanced technologies to protect outdoor workers from heat stress and improve their productivity during the warmer months?

EXISTING INITIATIVES

PROPOSED NEW MEASURES



This could take the shape of cooling vests, remote monitors for heat stress indicators etc.



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BENEFITS OF COOLING APPAREL



- ✓ Improved thermal comfort
- ✓ Increased focus and concentration
- ✓ Improved productivity
- ✓ Lower rate of heat stress related incidents
- ✓ Higher morale

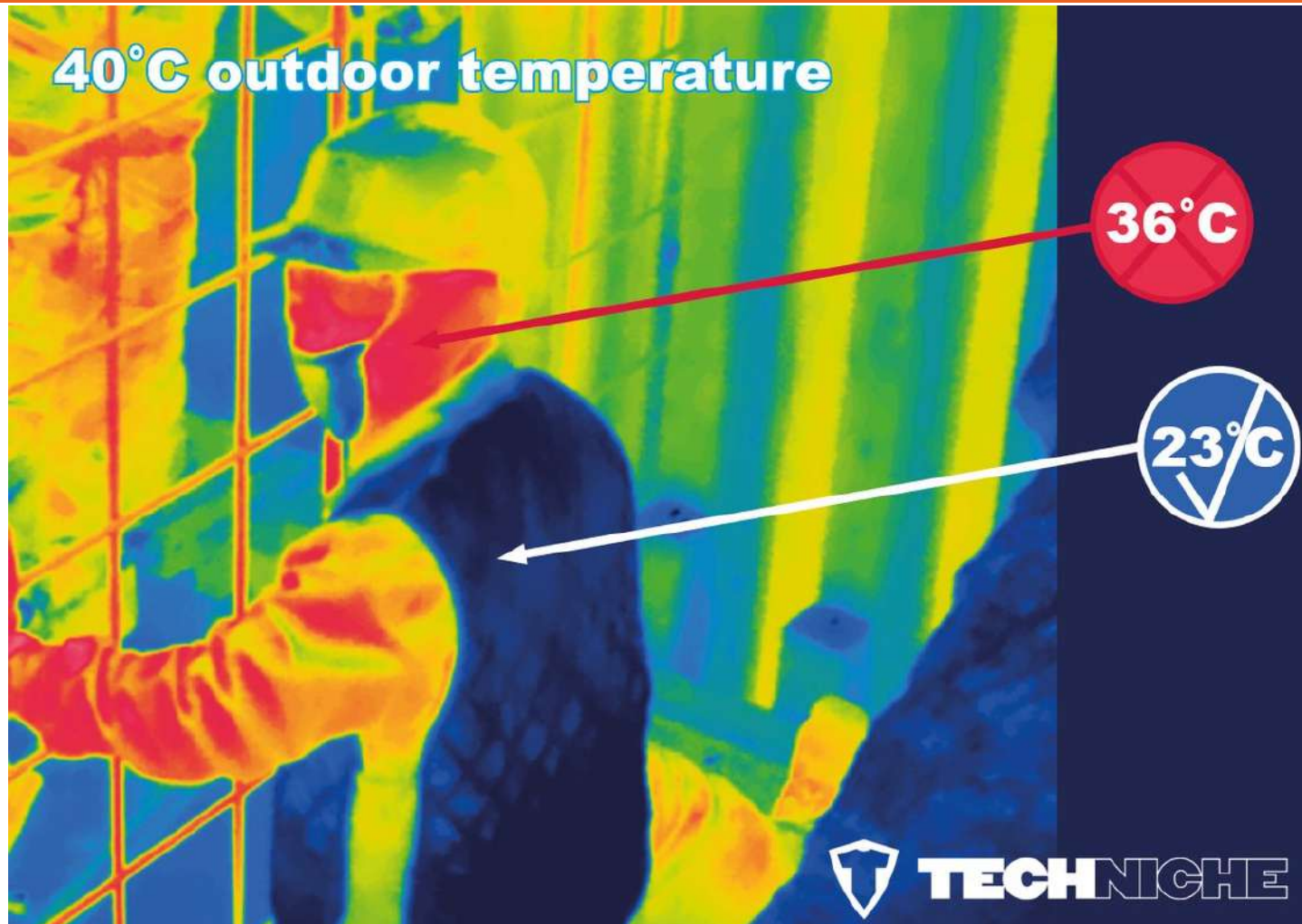
JGC Corporation reported a **50% reduction in heat stress illness frequency** between 2013-2014 and no serious illnesses or injuries from heat stress. Techniche Intl's cooling apparel were a key component of this heat stress management programme

Source : Zawya



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COOLING VEST IN ACTION



Even when it is 40 deg C outside, the cooling vest keeps the wearer cool & comfortable



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TYPES OF COOLING TECHNOLOGIES



	Evaporative	Phase Change Material (PCM)	Vortex / PAC	Circulatory cooling
How it works	Uses a special fabric which absorbs & releases water through controlled evaporation. Evaporating water absorbs heat from the body cooling it down	Frozen PCM inserts placed in vest pockets absorb heat from the body	A vortex tube generates cold air stream from compressed air which is circulated through a perforated vest. Cold air flow helps heat exchange	Chilled water is circulated through a special vest with water channels. Self contained system with power bank, mini pump and ice packs
Suitable for	Low- med humidity with air flow	Dry/humid conditions	Dry/humid conditions	Dry/humid conditions
Cooling	10-15°C cooler than ambient	Different temperature PCM to choose from	Upto 40°C cooler than inlet temperature	Vest maintains 20-28°C
Set up	Submerge in water for 1-2 mins to activate	Place in freezer/ ice water	Connect to air compressor	Fill water in the vest and add a frozen ice pack
How to wear	Worn as the outermost layer of clothing	Can be worn under heavy PPE suits, coveralls etc.	Under an outer layer for maximum cooling	Can be worn inside an outer layer or as outermost layer
Weight	Medium (1-1.5 kg when activated)	High (1-2.7 kg)	Low (< 1 kg)	Medium (1.5kg with water & ice pack)
Life	100+ times	Inserts reusable thousands of times	Thousands of times	Hundreds of times
Brands	Techniche, Occunomix, Inuteq, Freedom	Techniche,XYLO Occunomix, Inuteq	Vortec, Kyoungdo	Freedom



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PRODUCT CATEGORIES



Vests / Jackets



Headgear & Helmet accessories

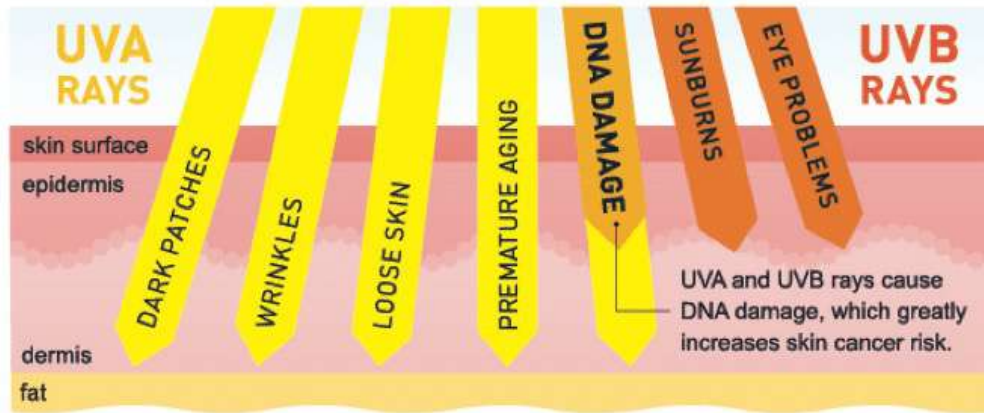


Towels, neck bands & other accessories

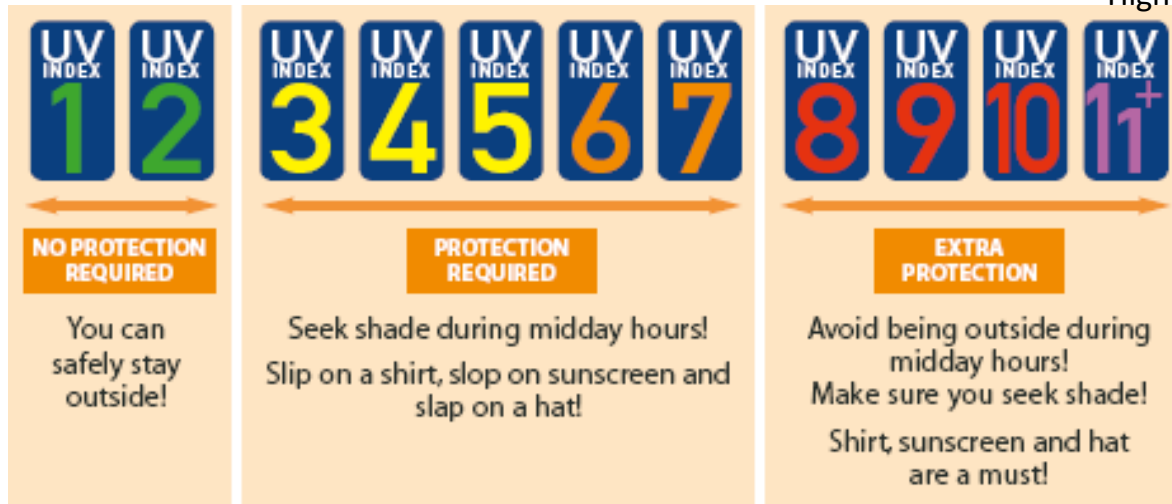
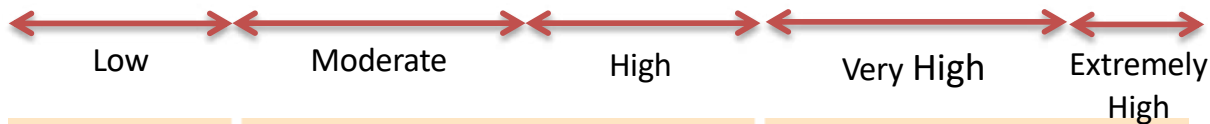


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UV RADIATION



- UV radiation is part of the electromagnetic spectrum released by the sun
- UVC and most of UVB are absorbed by the atmosphere
- UVA rays account for up to 95 percent of the UV radiation reaching the Earth's surface



UV Index is a scale to measure the strength of UV radiation reaching the earth. Higher the index, higher the risk of UV exposure. It includes recommendations to avoid over exposure to UV radiation

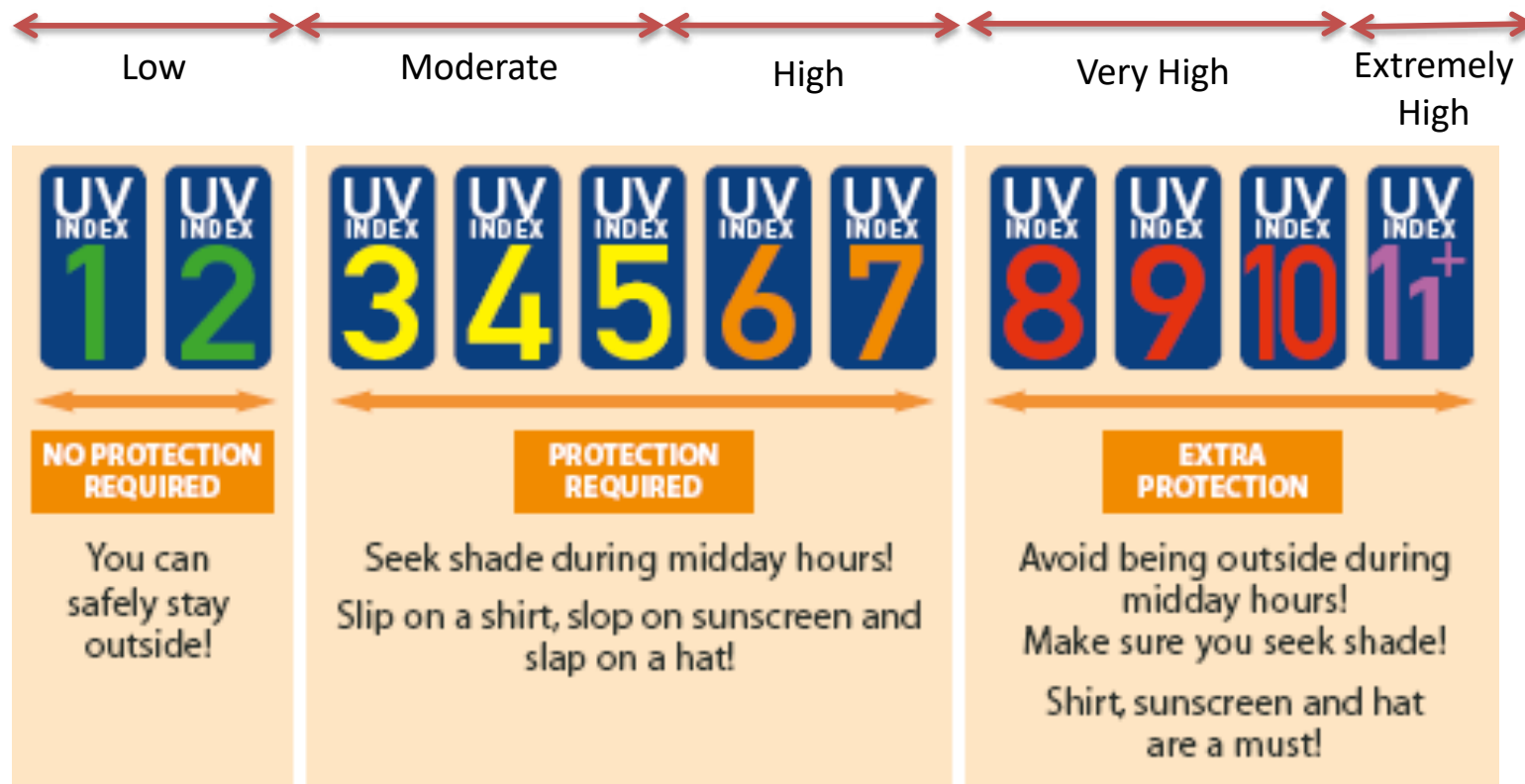
Average UV Index in the UAE falls in the High to Extremely High range



UV INDEX



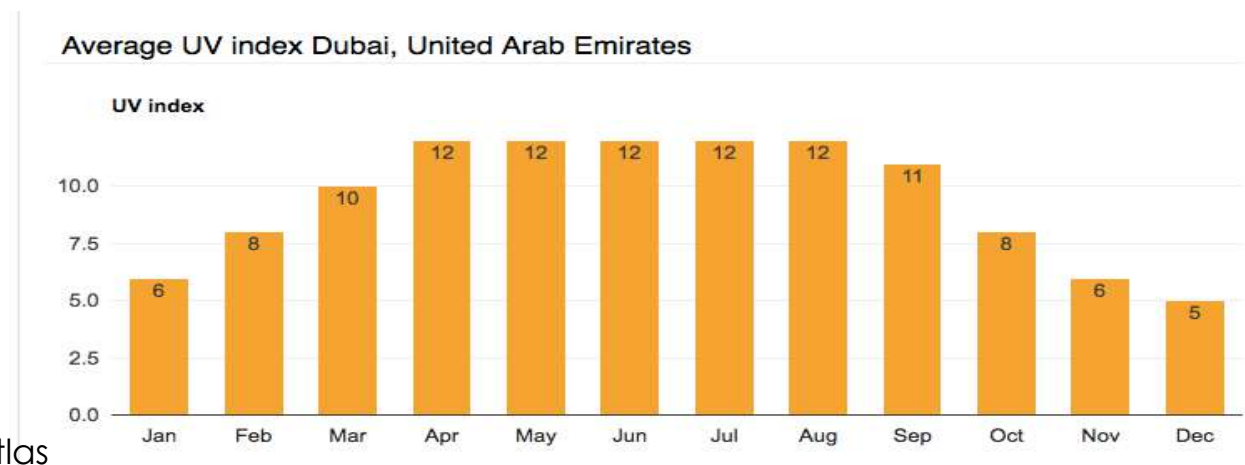
- A scale to measure the strength of UV radiation reaching the earth
- Higher the index, higher the risk of UV exposure
- Also recommends precautions to avoid over exposure to UV



UV INDEX IN THE UAE



- Average UV Index in the UAE falls in the High to Extremely High range
- Recommendations to avoid over exposure to UV include
 - ☑ Reduce time in the sun between 10 a.m. and 4 p.m.
 - ☑ If outdoors, seek shade and wear protective clothing, a wide-brimmed hat, and UV-blocking sunglasses.
 - ☑ Generously apply broad spectrum SPF 30+ sunscreen every 2 hours, even on cloudy days, and after swimming or sweating.
 - ☑ Watch out for bright surfaces, like sand, water and snow, which reflect UV and increase exposure.



Source: Weather Atlas



SUN PROTECTION APPAREL - BENEFITS



- Outdoor workers have a high risk of skin cancer due to repeated and prolonged sun exposure
- You need sun protection even if it is cloudy or cold
- 90% of skin cancers occur on parts of the body not usually covered by clothing - the face, hands, forearms and ears
- Sunscreen lotions may offer limited protection due to excessive sweating and the need for constant re-application
- People with dark skin are also at risk of sun damage & skin cancer

☑ Sun protection clothing form a **physical barrier between the skin and the sun blocking the UV rays**

☑ Unlike sunscreen lotions, once on, they stay on and provide **continuous protection even after sweating**

What is UPF rating?

The UPF (Ultraviolet Protection Factor) is a rating given to clothing to indicate how effectively the fabric blocks the UV radiation. The higher the UPF, better the protection. UPF 50 means that only 1/50th of the UV radiation penetrates the fabric – it blocks 98% of the UV radiation.

A thin white cotton T shirt has a UPF rating of about 5



BENEFITS OF SUN PROTECTION APPAREL



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PRODUCT EXAMPLES



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MANHOLE COVER LIFTERS



- Lifting heavy or stuck manhole covers manually can cause musculoskeletal injuries
- Hydraulic, magnetic and mechanical lifters for manhole covers make the task safe, easy and efficient
- Single operator design
- Portable & easy to use

[Hydraulic lifter video](#)
[Magnetic Lifter video](#)

Proteus Equipment
Innovative products for demanding environments

ITALIFTERS by DOA



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VORTEX A/C & ENCLOSURE COOLERS



Vortec's line of innovative compressed air products include

- Vortex Tubes, Cold Air Guns, and Vortex Enclosure Coolers for spot and enclosure cooling
 - Personal Air Conditioner vests for worker comfort and safety in extreme temperatures
 - Energy Saver Nozzle and Jet to blow off and clean while conserving compressed air and reducing factory air-related noise and operating costs
 - Air Amplifiers and Air Knives for air conveying, surface cooling, static elimination and blowing off of wide areas
- ✓ Improve facility maintenance & productivity
 - ✓ Increase equipment efficiency
 - ✓ Reduce cost for cooling, cleaning and conveying



VORTEX TUBES



**ELECTRIC
VORTEX A/C**



**VORTEC
COOLING VEST**



**ORIGINAL
COLD AIR GUN**



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INDUSTRIAL PUMP-OUT STATION



- Perfect portable solution for grease trap cleaning in high rises or remote, hard to reach areas
- Small enough to fit through a standard doorway. Wheel it in, pump out the trap and evacuate into the truck outside
- Multiple traps may be serviced in one go
Easy in and out with minimal disruption to client operations
- Pumps up to 120 gallons per minute
- Built-in exhaust deodorizer keeps odor at a minimum
- Simple switch design easily changes from vac-up to pump-out
- Easy to maneuver, easy to maintain and built to last.



WESTMOOR, LTD.

- ✓ Grease trap cleaning
- ✓ Machine-coolant pumping
- ✓ Remote portable restroom service
- ✓ Marina vacuum pumping services
- ✓ Any other transfer of liquid waste



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GLOW IN THE DARK HI VIS VEST



Imagine a garment that keeps the wearer visible even in very low light conditions

As the wearer's environment becomes "dim" **VizLite DT** phosphorescent technology begins to slowly release stored energy that the human eyes sees as a "glow" effectively creating a **Glow in the dark** vest.

The patented formula exceeds ANSI standards for visibility and durability. You just need to "**charge**" the vest by placing it in natural sunlight for 5 minutes or fluorescent light for 10 minutes for 8 hours performance.



1 Fluorescence
Day time



2 Retro Reflectivity
Night time with headlights
falling on reflective tapes



3 Photo Luminescence
Night time with no light
(Glow mode)

VizLite DT which offers 3 levels of protection with no batteries or wires.

- 1. Fluorescence** : for day time visibility
- 2. Retro-reflectivity** : for night time visibility provided light shines on the tapes
- 3. Phosphorescence** : for when there is no light (low light or zero light conditions)

[Vizlite video](#)



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TOOL ANCHORING SYSTEMS



Fall protection for the worker is well known. There's another component of Safety at Heights that requires attention — **Objects at Heights**. It focuses on the tools those humans are at risk of dropping. This includes neat housekeeping, safe equipment transport and proper tool tethering. We supply ANSI/ISEA 121-2018 compliant tool attachments, anchor attachments, tool tethers and containers from Ergodyne(USA) that help prevent injuries, damaged equipment and deaths from dropped objects.

[Details here](#)



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WORK SHELTER / UMBRELLA



Workers need a place in the shed to rest or work. Try Ergodyne(USA)'s specially crafted industrial grade work umbrellas and customizable tent shelters – **SHAX**



[Watch the video here](#)



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HEADGEAR WITH BUMP CAP INSERT



Ergodyne(USA) offers a range of headgear including baseball caps, hats, doo rags, balaclavas with bump cap inserts to suit a variety of needs. Skullerz impact-resistant ABS-plastic shell offers flexible forehead and crown protection. Padded foam delivers a custom-like fit and strategic venting allows breathability. There are also designs that feature LEDs on the visor for better visibility ! [Details here](#)



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LIGHT WEIGHT FR HEADGEAR FOR WARM WEATHER CONDITIONS



FR PPE often have a low air permeability rate, which limits evaporation and normal heat dissipation through airflow. This in turn increases body temperature and sweating, leading to heat stress. Hence light weight, breathable and moisture wicking properties become critical in FR PPE. Buff (Spain) offers FR head and neck gear that utilises

- ❑ Light weight Modacrylic blends
- ❑ HEIQ Smart temp technology that dynamically respond to body heat to ensure optimal comfort and performance.



HEIQ[®]
SMART TEMP

[Details here](#)



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GEAR BAGS



ARSENAL range of gear bags from ERGODYNE can carry anything from PPE to tools. Choose from tool belts, organizers, aprons, backpacks or duffel bags. [Details here](#)



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SUSTAINABLE TECHNOLOGIES



Phase change materials (PCMs) are substances which absorb or release large amounts of 'latent' heat when they go through a change in their physical state, i.e. from solid to liquid and vice versa. During the phase change, the temperature of the PCM remains constant. The latent heat absorbed by the PCM can be stored therein. Therefore, PCMs have applications in heating, cooling and Thermal Energy Storage (TES) etc. in applications such as cold chain logistics, HVAC and battery cooling.

This technology helps

- ✓ Reduce carbon & other greenhouse gas emissions
- ✓ Reduce energy
- ✓ Reduce running & maintenance costs
- ✓ Work towards Sustainable Development Goals (SDG)



LINKS TO PRODUCT CATALOGUES



Our product catalogues may be viewed using the links below

- ✓ [Personal cooling solutions - Techniche Intl \(USA\)](#)
- ✓ [Personal cooling, warming, hi vis, FR & sun protection –Ergodyne\(USA\)](#)
- ✓ [Personal cooling solutions - Occunomix Intl \(USA\)](#)
- ✓ [Personal cooling solutions - Inuteq \(Netherlands\)](#)
- ✓ [Compressed air cooling vest - Kyoungdo\(S. Korea\)](#)
- ✓ [Vortex tube applications – Vortec\(USA\)](#)
- ✓ [Tool Anchoring system - Ergodyne\(USA\)](#)
- ✓ [Work Shelters from Ergodyne\(USA\)](#)
- ✓ [Pure Ice vests from FLEXIFREEZE\(USA\)](#)
- ✓ [Hydraulic manhole cover lifters - Proteus \(UK\)](#)
- ✓ [Magnetic manhole cover lifters - Trime \(Italy\)](#)
- ✓ [Glow in the dark hi vis vests – Viz Reflectives \(UK\)](#)
- ✓ [Sun Protection products](#)
- ✓ [Industrial Pump-out station for grease traps – Westmoor \(USA\)](#)





TECHNICHE

Safety that sets you free

THANK YOU

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