



NO DOWN HAPPY DUCKS

Technology Descriptions & Environmental Benefits

SOCIAL & ENVIRONMENTAL BENEFITS



CHEMICAL-FREE PERFORMANCE FEATURES

HEAT-MX's proprietary technology platforms provide many breakthrough performance features as well as environmental benefits without use of any chemical, which also allows the performance features to last until the end of the life-cycle of finished goods.



CLEAN RECYCLING INITIATIVE™

Based on the HEAT-MX's strong drive for the environment, the CLEAN RECYCLING INITIATIVE™ is proposed in the entire textile industry to help reclaim various types of textile material without using significant amount of chemicals in the process of recycling. All HEAT-MX™ products are designed and engineered to comply with the CLEAN RECYCLING INITIATIVE™. Please contact your HEAT-MX™ sales representative for more details.



CLEANLY RECYCLABLE TECHNOLOGY

All HEAT-MX™ products are engineered to be recycled without any harmful chemical additives under its CLEAN RECYCLING INITIATIVE™ program. Its innovative cleanly-recyclable-product-features help reduce waste created from various types of textile products at the end of their lifecycles. In addition, it eliminates harmful chemicals used in conventional recycling processes. Please ask your HEAT-MX™ sales representative for more details.



CLEANLY RECYCLED TECHNOLOGY

HEAT-MX offers selected products which are cleanly recycled during its manufacturing processes, thanks to the breakthrough innovations. This technology eliminates a large quantity of industrial wastes which are otherwise created in every manufacturing process. Please refer to the CLEAN RECYCLING INITIATIVE section of the HEAT-MX website for more details.



CRUELTY-FREE

HEAT-MX offers a wide range of technology options matching or even exceeding the performance of natural down feather material without using any animal-based-ingredient. This technical feature is incorporated in the award-winning nDown™, COMPACT MX, GLV-MX, LOFT MX, STRETCH MX and VEGAN DOWN MX product categories of HEAT-MX™.

Note-1: Information presented in this document are product-code dependant and may change without notice. Some of the technical features may not be applicable on some specific HEAT-MX products. Please contact your HEAT-MX™ sales representative for complete and updated information.





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ENERGY-SAVING



HEAT-MX™ offers the largest energy saving technology in the global textile industry based on its proprietary patent-pending technology platform. It reduces the drying time of apparel, home textiles, sleeping bags, etc., in home laundry as much as 75%. Thanks to the benefits of this technology, it allows people to wash at home the items which are traditionally dry-cleaned. It not only benefits the hygiene of the goods people use on daily basis in the means of more frequently washing them, but also helps reduce the cost of maintenance and increase longevity of the products. This breakthrough technical feature is created without any chemical additive.

HOME WASH / NO DRY CLEAN



HEAT-MX™ technologies are engineered to allow all items containing HEAT-MX products to be washed at home without having to have them dry-cleaned, including the items filled with natural down feather. Such items as winter apparel, home textiles, sleeping bags, etc., with down-feather material as its thermal insulation material can benefit from this cutting-edge HEAT-MX™ Technology. The technical feature provides significant benefits such as improved hygiene by the means of more frequently washing them, cost reduction of maintenance, improved longevity, etc. While it is important to follow the wash instructions of the items consumers use, provided by the manufacturers and brands, this technology helps build a wide range of goods with significant environmental benefits as well. This technical feature uses no chemical treatment and is incorporated in all products HEAT-MX™ offers in the market.

NMF™ TECHNOLOGY



HEAT-MX™ created a cutting-edge NMF™ technology to minimise microplastic contamination in our water system. Microplastic contaminations from synthetic fibers have become a large challenge in protecting our water systems not only in the perspective of the health and safety of people and animals, but also the entire eco system of the planet. This important technical feature is incorporated in selected products of HEAT-MX™ and has been recognized by the prestigious ISPO TOP OF INNOVATION AWARD. Please ask your HEAT-MX™ sales representative for more details.

SUSTAINABLE TECHNOLOGIES



HEAT-MX™ offers many important technical features in its products to benefit the environment, including HOME-WASH/NO-DRY-CLEANING, LARGEST ENERGY SAVING TECHNOLOGY IN THE GLOBAL TEXTILE INDUSTRY, CLEAN RECYCLING INITIATIVE™, CLEANLY-RECYCLED and CLEANLY-RECYCLABLE technologies. HEAT-MX's commitment for the environment has been recognized by ISPO TOP OF INNOVATION AWARDS. Please ask your HEAT-MX™ sales representative for more details.

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PERFORMANCE FEATURES

ABRASION RESISTANCE



HEAT-MX's unique product structure provides strong abrasion resistance which help withstand tough manufacturing processes and environments. Thanks to the innovative product structure, applied in iDown™, nDown™, GLV MX and COMPACT MX of the HEAT-MX product categories, the technical features engineered and incorporated in the products remain intact after even toughest manufacturing and handling processes in the textile industry.

CHANNEL SIZE INCREASE



Selected HEAT-MX's product categories, based on a patent-pending technology platform, allow to significantly increase the channel sizes when using loose filling material such as natural down-feather, synthetic loose fiber, etc., for significant performance benefits without having issues of filling material settling down to the seam-lines. Such benefits include improved warmth, lower manufacturing cost, etc. Benefiting from this important technology, the channel size can be easily expanded by 50 ~ 75% in comparison with products made without the HEAT-MX™ technologies. This technical feature uses no chemical treatment. Award-winning nDown™ and iDown™ fully benefits from this technical feature. Please ask your HEAT-MX™ sales representative for more details.

CLUSTER-RELIEF



HEAT-MX's proprietary, patent-pending technology prevents filling material from clustering even after repeated washes. This special technology feature allows finished products such as apparel, home textiles, sleeping bag, etc., to provide optimum warmth as it prevents development of COLD SPOTS in use.

COLD SPOT RELIEF



HEAT-MX™ provides its proprietary technology platform to enable significant COLD-SPOT-RELIEF feature in its patent-pending nDown™ & iDown™ Technologies. The goods such as apparel, sleeping bags, etc., adopting this special technology feature are exceptionally performant against even the toughest winter weather regardless of weather variations and/or activity levels.

DOWN-PROOF



Based on the patent-pending non-woven down bag technology, this technical feature offers the highest level of down-proof performance never before seen in the industry. Attested by IDFL, the garments made with the HEAT-MX™ technology showed the LEVEL 5 (highest rating) in the down-proof test even after 50 washes, which is the first in the industry. This technical feature uses no chemical treatment and is incorporated in the award-winning technology platform of iDown™. This technology can be adopted for any item containing natural down-feather material as the filler. Please ask HEAT-MX™ sales representative for more details.

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DRI-CAVE™



Based on HEAT-MX's patent-pending technology, it removes moisture created by our own sweat efficiently to provide ultimate dry-comfort and is a very important technical feature for apparel, footwear, glove, etc., designed for a medium or high level of activities. Other items such as home textiles, sleeping bags, etc., can also benefit from this exceptional performance feature. This technical feature uses no chemical treatment and is incorporated in the award-winning nDown™, iDown™, COMPACT MX and GLV MX product categories of HEAT-MX™.

HIGH-VOLUME



HEAT-MX offers the breakthrough technology feature of VOLUME INCREASE for the items filled with natural down-feather or synthetic loose fibers for a given weight of material used. This cutting-edge technology helps manufacturers and brands to use lower quantity of filling material for same or higher level of warmth for the benefits of reduced cost, environmental contributions, etc. This technical feature uses no chemical treatment and the award-winning iDown™ and nDown™ product categories benefit from this technology. Please ask your HEAT-MX™ sales representative for more details.

LRTD™ TECHNOLOGY



As the technology basis of all HEAT-MX™ products, this proprietary Long Range Thermal Dynamics (LRTD™) Technology offers most efficient ways of trapping and conserving body heat. Thanks to this innovative technology feature, goods made with HEAT-MX™ products offer superior and long-lasting warmth. Please ask your HEAT-MX™ sales representative for more details.

MOISTURE MANAGEMENT



HEAT-MX™ offers a moisture management performance feature which provides DRY comfort for people enjoying winter outdoors even in high level of activities. This technology feature is created with innovative use of fibers and construction methods. Please ask your HEAT-MX™ sales representative for more details.

ODOR-RESISTANT



Based on HEAT-MX's proprietary and award-winning DRI-CAVE™ Technology platform, it provides a natural and effective way to remove moisture, which in turn creates a dry environment to resist growth of microorganisms. This important HEAT-MX™ technology feature does not use any chemical and is incorporated into several selected product categories of HEAT-MX™. Please ask your HEAT-MX™ sales representative for more details.

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SWEAT-RESISTANT



It is very important to keep our body dry especially in high mobility applications such as sportswear, workwear, military / police uniforms, etc. HEAT-MX's innovative and award-winning DRI-CAVE™ Technology provides an effective way to remove sweat from our body. This important HEAT-MX™ technology feature does not use any chemical and is incorporated into several selected product categories of HEAT-MX™. Please ask your HEAT-MX™ sales representative for more details.

WARM EVEN IN WET WEATHER



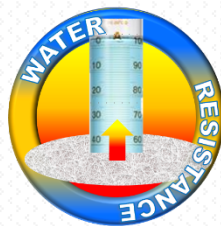
Combined with various breakthrough innovations of HEAT-MX™, e.g., DRI-CAVE™, LRTD™, MOISTURE MANAGEMENT, etc., items made with HEAT-MX™ products are warm even in wet weather and this includes the items filled with natural down-feather material. In cold weather, people may feel particularly uncomfortable when there is too much moisture close to body. Various technologies of HEAT-MX™ incorporated in all of the product categories the company offers are designed and engineered to provide ultimate comfort regardless of the activity level or type of filling material used, e.g., natural down-feather. Please ask your HEAT-MX™ sales representative for more details.

WATER REPELLENT



HEAT-MX provides the highest level of water repellency of its kind to help protect water penetration from outside towards body. This technical feature also contributes to the moisture management within its structure and help people feel comfortable even in wet environment. All HEAT-MX™ products benefit from this technology.

WATER RESISTANCE



Despite of being the type of material with the lowest level of density in the textile industry, HEAT-MX's breakthrough innovations create a high level of water resistance selected products, namely nDown™, iDown™, GLV MX, COMPACT MX, etc. This technical feature is engineered with the proprietary non-woven fiber structure of the HEAT-MX™ products with no chemical treatment. This important technical feature allows brand and manufacturers construct the items designed to withstand light to moderate level of precipitations without heavy waterproof chemicals and it helps create significant improvements in various performance aspects while significantly benefiting the environment

WINDPROOF



HEAT-MX's offers a high level of windproof performance feature on selected products such as nDown™, iDown™, GLV MX, COMPACT MX, etc. This breakthrough technical feature is created without any chemical additive.

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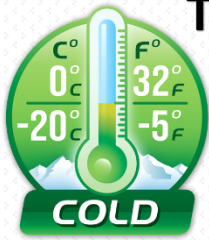




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TEMPERATURE RATINGS



TEMPERATURE RATING – COLD

Under HEAT-MX's proprietary temperature rating program, goods made with various types of HEAT-MX™ products can offer the COLD rating covering 0°C ~ -20°C or 32°F ~ -5°F. HEAT-MX™ works with brands and manufacturers to help build finished goods for this particular temperature rating with appropriate product weight as well as other necessary performance features. Temperature ratings for lower temperature ranges are also available. Please ask your HEAT-MX™ sales representative for more details.



TEMPERATURE RATING – VERY COLD

Under HEAT-MX's proprietary temperature rating program, goods made with various types of HEAT-MX™ products can offer the COLD rating covering -20°C ~ -40°C or -5°F ~ -40°F. HEAT-MX™ works with brands and manufacturers to help build finished goods for this particular temperature rating with appropriate product weight as well as other necessary performance features. Temperature ratings for lower temperature ranges are also available. Please ask your HEAT-MX™ sales representative for more details.



TEMPERATURE RATING – EXTREME COLD

Under HEAT-MX's proprietary temperature rating program, goods made with various types of HEAT-MX™ products can offer the COLD rating covering -40°C ~ -60°C or -40°F ~ -75°F. HEAT-MX™ works with brands and manufacturers to help build finished goods for this particular temperature rating with appropriate product weight as well as other necessary performance features. Temperature ratings for lower temperature ranges are also available. Please ask your HEAT-MX™ sales representative for more details.



TEMPERATURE RATING – EXPEDITION

Under HEAT-MX's proprietary temperature rating program, goods made with various types of HEAT-MX™ products can offer the COLD rating covering -60°C ~ -100°C or -75°F ~ -150°F. HEAT-MX™ works with brands and manufacturers to help build finished goods for this particular temperature rating with appropriate product weight as well as other necessary performance features. Temperature ratings for lower temperature ranges are also available. Please ask your HEAT-MX™ sales representative for more details.

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Note-2: Some of the technical features presented in this document may be applicable for a particular type of applications. For example, a specific temperature rating may be dependent on application types, application methods, etc. Information presented in this document may change without notice. Please contact your HEAT-MX™ sales representative or info@heat-mx.com for more details.

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