

ISPO Top of Innovation Award

Cruelty-free, Perfect Down Feather Replacement Technology

Revolutionary Bag Technology (Patent-pending)

Date issued: 2021-01-09

Applications (Typical)

Apparel, Bedding products, (Comforters, Pillows, etc.), Sleeping bags, etc.

Composition

Component 1 - nDown™ non-woven fabric

100% Polypropylene

Component 2 - HEAT-MX™ Filling Material

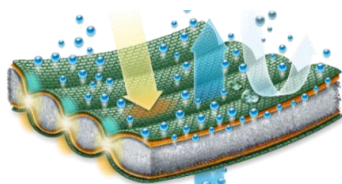
HMX-VN, HMX-VNRD3 or HMX-VNRD7

Flammability

Class 1, Normal according to US Federal Flammable Fabrics Act Procedure in 16 CFR Part 1610.

Technology Composition

Patent-pending iDown™ Technology



Proprietary structural example of nDown™

in comparison with

Regular synthetic fill



Performance Features

Perfect replacement technology of down feather

Large volume effect (puffiness)

Improved warmth

Odour free

No leak of filling material

Easy home wash

Warm even when damp

Eco-friendly Technologies

Windproof & Water resistance

Sweat removal & Dry comfort

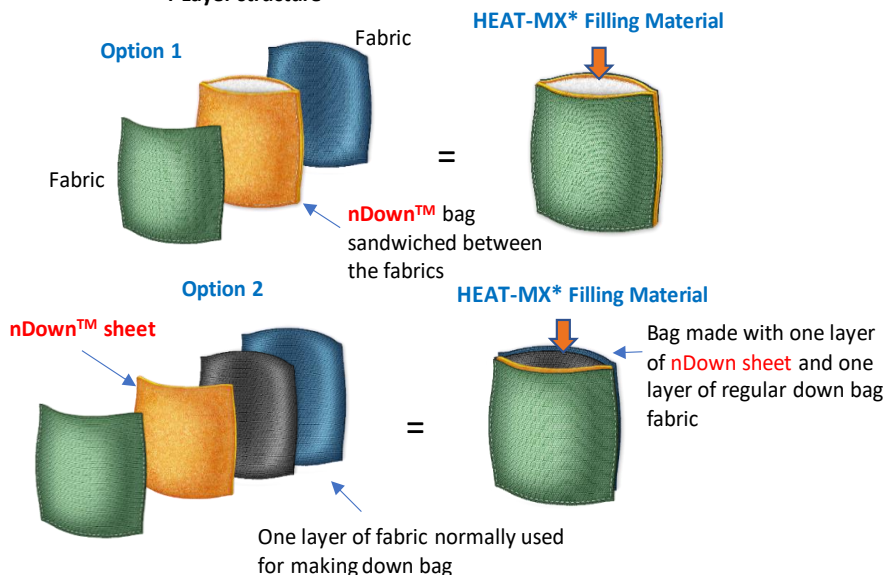
High level of breathability

High rate of water-vapor transmission



nDown™ Technology Construction Method -1

4-Layer structure



* HMX-VN, HMX-VNRD3 or HMX-VNRD7 used as filling material

Construction Guidelines

nDown(TM) Technology consists of HEAT-MX(TM) products designed and engineered with HEAT-MX(TM) proprietary technologies. Air pressure from down/feather blowing machine must not create the reconstruction of the fiber structures of the iDown(TM) products. Product grades of nDown(TM) may differ based on the construction methods of the types of finished goods. Please consult with your sales representative for specific instructions of nDown(TM) product grades as well as DOs and DON'Ts of applying nDown(TM) into your products. Manufacturing methods as well as product grades of nDown proposed by HEAT-MX are to be strictly adhered to and incorporated in the cut-and-sew manufacturing processes. Licensing agreement may be required to use the nDown(TM) Technology. Manufacturing with the Technology without licensing agreement may result in lawsuits. Please contact your sales representative for more details. **Avoid high temperature or high pressure to attain optimum performance.**

Care Instructions

Consumer products made with the iDown™ Technology are to be washed at home with commercially available home laundry detergents. Avoid dry cleaning. Ensure sufficient drying time in low-temp tumble dry setting for fully drying moisture inside the goods.

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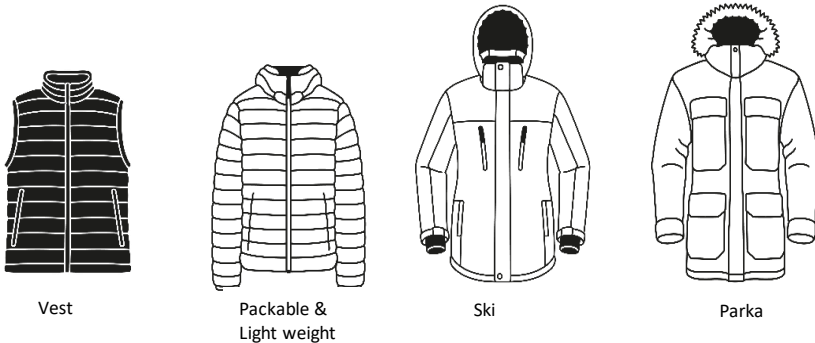
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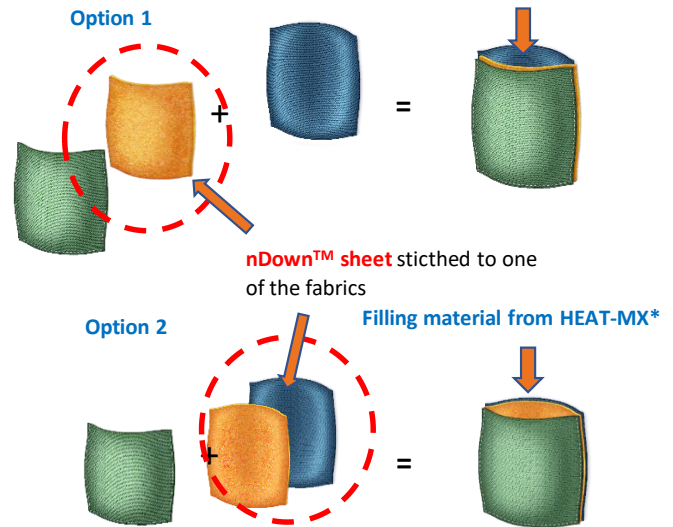
Technology Application Guidelines*

Garment examples



nDown™ Technology Construction Method -2

3-Layer structure



* HMX-VN, HMX-VNBD3 or HMX-VNRD7 used as filling material

Bedding products & Sleeping bags



Blankets & Pillows

Sleeping bags

nDown™ Social & Environmental Benefits



* Product Usage Guidelines are based on entire area applications of HEAT-MX™ products unless otherwise expressed explicitly, but may vary depending on specific applications. Contact your sales representative for the approval in case of exceptions from the application methods indicated in this document.

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