HYBRID MATERIALS

ENGINEERED-TO-PURPOSE

SPEAKERS

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ENGINEERING HYBRID PERFORMANCE

FROM BASE TO OUTER LAYER, AND IN ALL TYPES OF TEXTILES, KNITTED, WOVEN OR NON-WOVEN, INNOVATION IN MATERIALS AND A NEW APPROACH TO GARMENT DESIGN ARE USHERING IN A NEW GENERATION OF SEAMLESS MULTI-FUNCTIONAL – HYBRID – PERFORMANCE CLOTHING.

HYBRID SPORTSWEAR

HYBRID CONSTRUCTIONS BASED ON MULTIPLE MATERIALS

On Sportswear Hybrid Top

Eider Pulse Hybrid Jacket

D2G

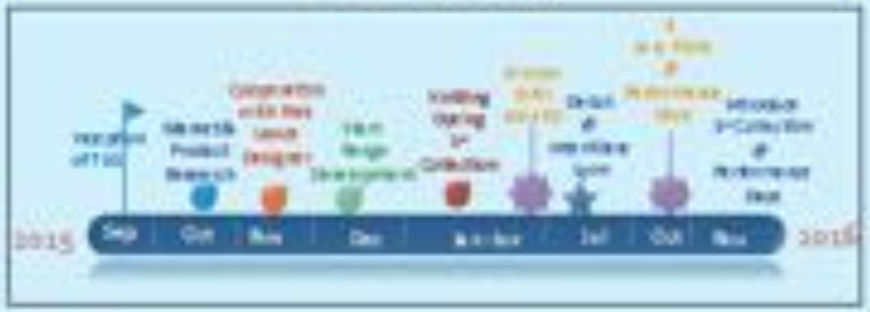
a new approach in
Athleisure Fabric development

Hybrids

Should we call them
Mybrids
Multi Function H**ybrids**

TAS
TIANHAI ATHLEISURE SOLUTIONS

Our History



Our Set up

- Over 200 different types of Warp knit, Lace and Circular knit machines.
- In house state of the art dyeing and finishing.
- In-house laboratory accredited by customers.
- Dedicated R&D team.

TIANHAI ATHLEISURE SOLUTIONS

Input Sheet for Textile Manufacturer

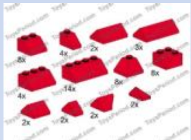
- No compression needed
- Yarn or Finish with cosmetic properties such as moistening or skin care
- Anti See-through and/ or UV protection
- Recycled or Bio based yarns if possible
- For Leggings , add some compression zones
- Garment Pattern sheet attached

TIANHAI ATHLEISURE SOLUTIONS

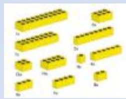
D2G by TAS explained in a simple way

A collection of different engineering blocks for ultimate garment design

Over 30 different types of Circular, Rachel and Lace Knitting machines



Wide selection of standard and value adding performance yarns



Performance and value added Finishing Agents and technology

ISO 14000, Oekotex and Bluesign accredited to ensure highest standard of Sustainability

GOLD
TWINS
The Double Pad

WINNER
FORUM 11/2016
PERFORMANCEDAYS
FUNCTIONAL FABRIC FAIR
PERFORMANCE AWARD
IMBOTEX

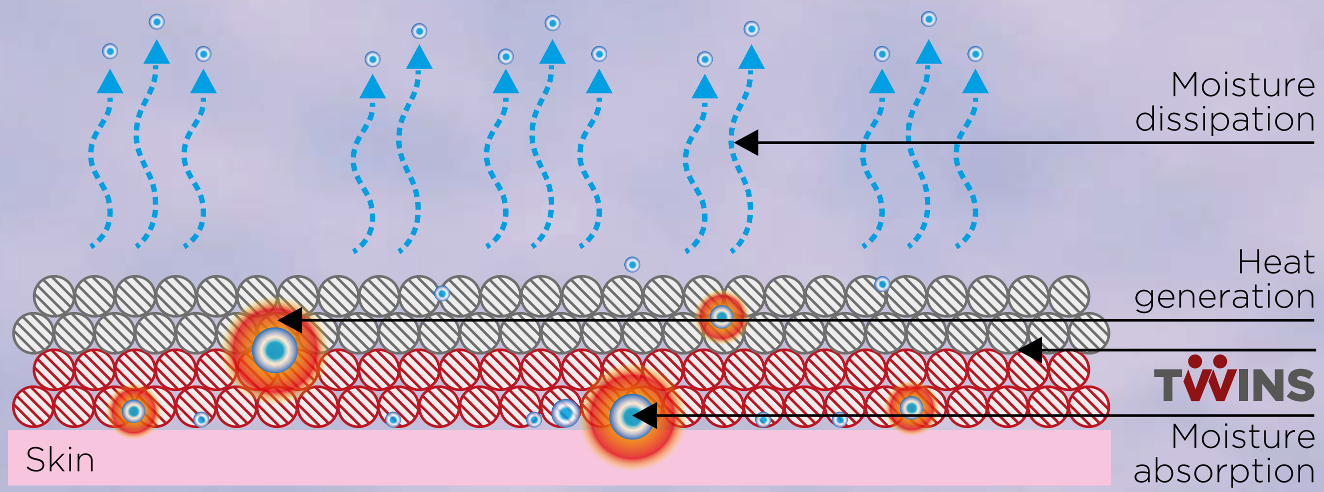
Heat-Generating Insulation

Exclusive and patented sandwich construction, thermobonded double-layer with multiple functionalities and performances. The inner layer, composed by polyacrilate and by high moisture transfer polyester is used next-to-skin, the outer layer is composed by very fine polypropylene fibers with excellent hydrophobic properties, and must be used towards the outside part. Twins delivers a unique and creative performance of repeated moisture absorption/release over a long period of time according to atmospheric conditions.

Ph: Federico Modica

GOLD TWINS
The Double Pad

INNER TWIN

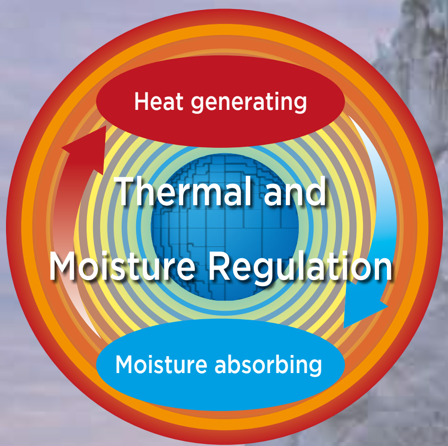


C.L.O. 100 gr/sm 2,2 - C.L.O. 130 gr/sm 3,0

OUTER TWIN

powered by **CELLIANT**™

The **INNER PART** absorbs what is called “insensible perspiration”, which is constantly emanating from the human body (in the form of steam), keeping the air inside garments dry. At the same time, the kinetic energy of the absorbed steam is converted into heat energy and warm temperatures inside garments are maintained comfortably warm also in cold winter environments.

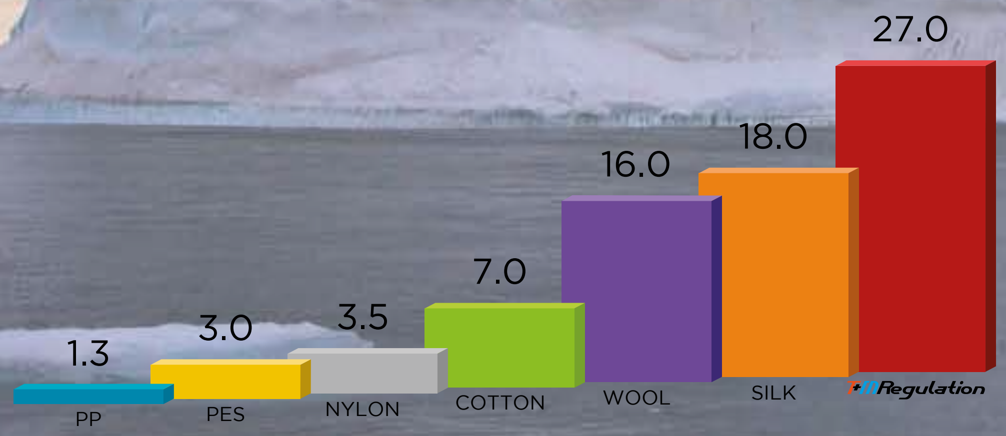


Heat Generating Fibres

T+M Regulation fiber regulates heat and moisture generated by human skin.
Ideal **T+M Regulation** fiber creates a pleasant micro climate continuously repetition in between body and your daily wear.

Benefits:

- Returns the lost body temperature / heat energy back to body.
- Absorbs & release the unpleasant moisture.



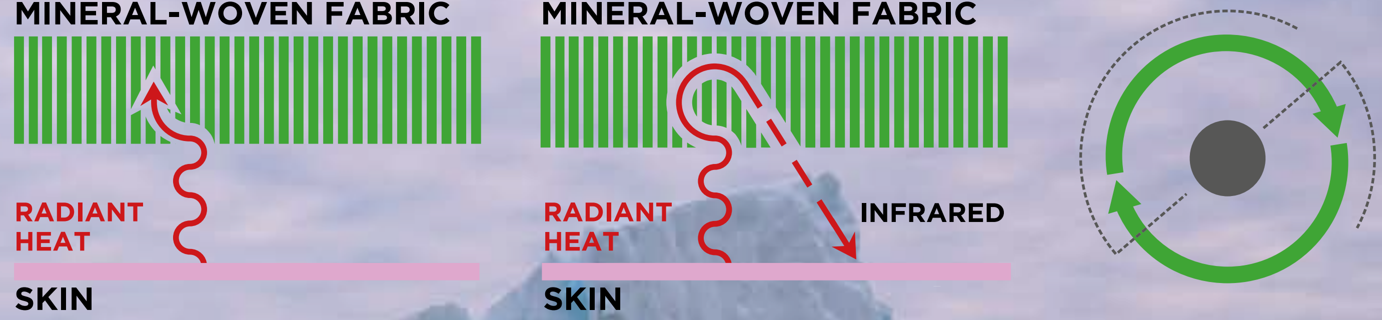
Measuring environment (20°C - 65%RH)

HOW CELLIANT WORKS: CELLIANT RECYCLES HUMAN ENERGY

The heat that our body emits is absorbed by the minerals in the fiber.

The infrared light penetrates into the muscle and tissue to increase circulation oxygen and blood flow.

The minerals convert that heat into infrared light.

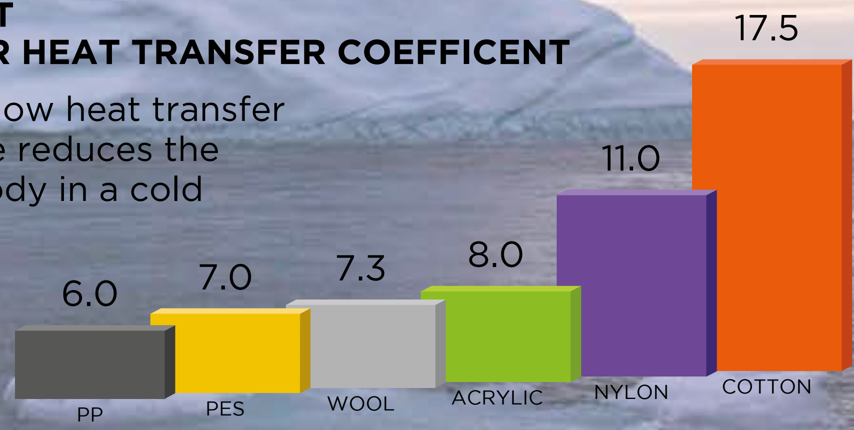


Celliant® is a registered trademark of Hologenix, LLC. www.celliant.com

Compared to other fibers, the fine polypropylene blended with Celliant in the **OUTER PART** has a low heat transfer coefficient which reduces the loss of heat produced by the body in a cold environment: it is furthermore breathable, soft, ultra-light and keeps the body dry.

HEAT TRANSFER COEFFICIENT
REFERS TO THE VALUE OF AIR HEAT TRANSFER COEFFICENT

Compared to others fibers, the low heat transfer coefficient of the polypropylene reduces the loss of heat produced by the body in a cold enviroment.



Measuring environment (20°C - 65%RH)
Multiples of the value of the air heat transfer coefficent

Imbotex
ultimate insulations
www.imbotex.it

3M THINSULATE™ Insulation

Case Study

Project INSPIRE

3M Scotchlite™ Reflective Material

3M THINSULATE™ Insulation

Scotchgard™ Protector 3M

Politecnico Workshop

We teamed up with the Fashion School at Politecnico University in Milan, tapping into the freshest talent to help give us new perspectives on how to visually communicate the uniqueness and power of our technologies.

30 students were engaged to interpret the three technologies into future outdoor trends during a 1 month, workshop, guided by the 3M Global Design Lab.

//01 WARMOR Flexibility / Resistance / Protection

//02 COCOON OUTDOOR Cozy / Relax / Nest / Waterproof

//03 RAMIFICATION Protection+Softness / Interior / Biomimicry

//04 SCUBA DIVING Extreme Sports / Adventure / Protection

Project INSPIRE

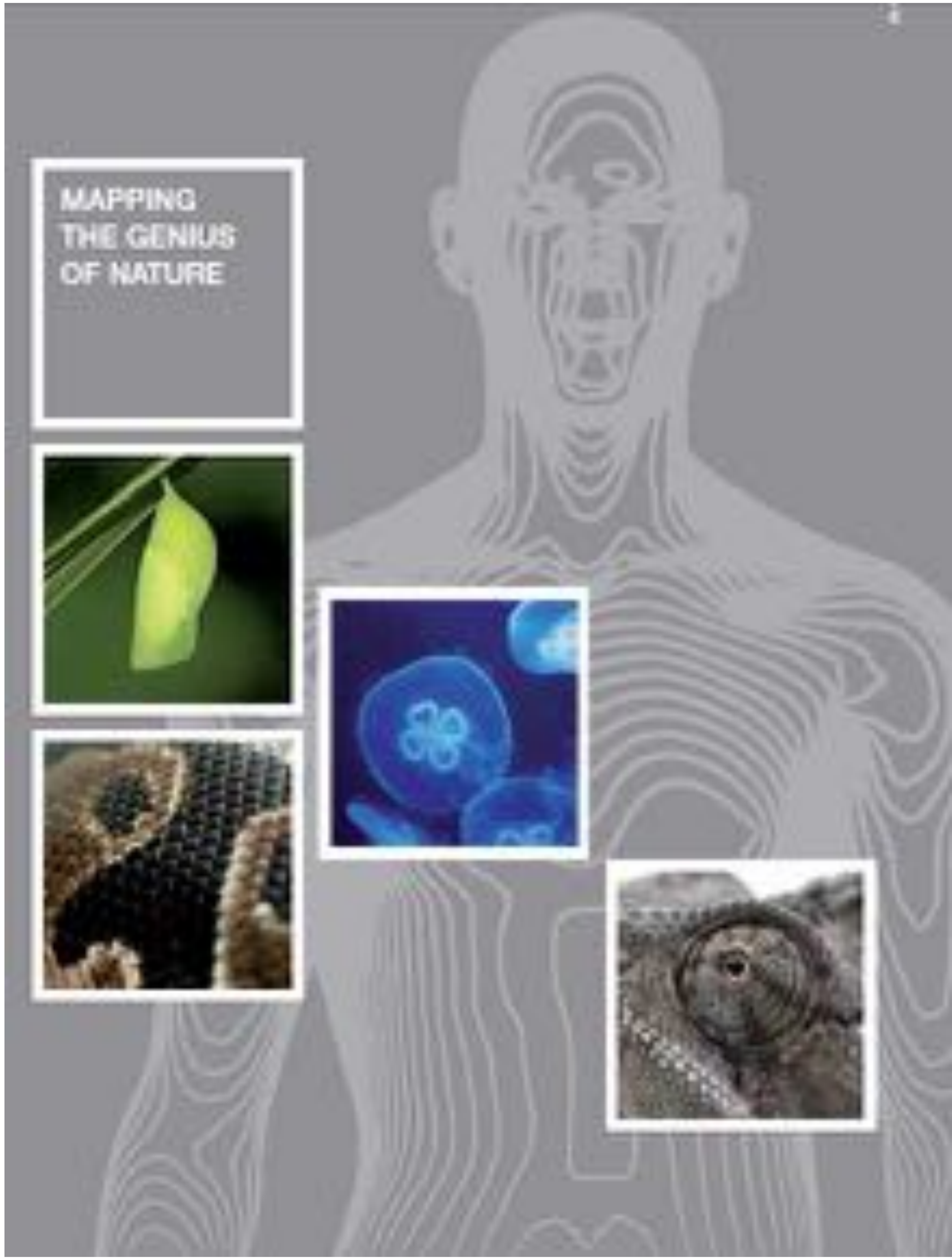
Project INSPIRE was developed to represent the unique characteristics and performance of three 3M technologies in one prototype:

- 3M™ Thinsulate™ Insulation
- 3M™ Scotchlite™ Reflective Material
- Scotchgard™ Protector

It inspired by 2 main trends:

Bodymapping: exploration of solutions for effective thermal insulation, comfort, movement, breathability, visibility and moisture protection via a variety of sports and outdoor activities.

Biomimicry: inspiration via observations and learnings from the science, beauty and truth of nature.



Project INSPIRE

THINSULATE™
Insulation

WARMTH

Five types of 3M™ Thinsulate™ Insulation have been combined to create the thermal lining of this garment. The insulation attributes and variety of gram weights add function to fashion, enhancing certain areas based on where it is positioned on the body.

Scotchlite™
Reflective Material

VISIBILITY

An important factor in design, 3M™ Scotchlite™ Reflective Material, reflective yarn, was incorporated into this garment for ultimate safety on our roads and in our cities.

Scotchgard
PROTECTOR

REPELLENCY & PROTECTION

Another technology which helps with the overall premium quality of this garment is Scotchgard™ Protector which provides water repellency and protection from the elements – PFC-free.

THANK YOU FOR YOUR ATTENTION

PERFORMANCE DAYS HYBRID PANEL DISCUSSION