

ASTM F3502-21/ EN 14683 IIR Type / Health Canada Class1
COMPLIANT / MEET STANDARDS REQUIREMENTS UP TO 100 WASHES

EFFECTIVE & ECO-EFFICIENT

etrëma REUSABLE MEDICAL MASKS



**SCIENTIFICALLY PROVEN
BETTER THAN
CERTIFIED DISPOSABLE MASKS**



WHO WE ARE

Frëtt Solutions is the research and development division of Frëtt Design, a Caplan (Gaspé peninsula) company established for the past 25 years in Quebec, devoted to offer innovative, functional and eco-friendly solutions to industrial textile products for **minimizing environmental impact** under the **etrëma®** brand.



ZERO WASTE

TOGETHER, LET'S STOP THIS ENVIRONMENTAL DISASTER

Since our reusable **etrëma®** masks are standardized and have been tested in laboratories, we are able to scientifically state that a single etrëma mask can replace 200 disposable masks (100 days of 8 hours vs 4 hours of use), **saving 98.4 % of raw materials, management and transport and a minimum 76% of GHG emissions.**

In order to make the population aware of the ecological disaster happening with around 3 000 billion masks discarded since the beginning of the pandemic, we invite our users to take a picture of them with their mask and to share it through **#1mask4change**

**LET'S BECOME ECO-PERFORMERS,
IT'S TIME TO DO THINGS DIFFERENTLY**



THE REVOLUTIONARY ëncore[®] TECHNOLOGY*

The **ëncore[®]** technology consists of an **innovative assembly** of carefully chosen materials for their filtration abilities on particles of all sizes, their **air permeability as well as their durability**.

The absence of toxic treatment or additive allows optimal natural filtration by fibers only. Safe and harmless to your health and the planet's, durable, **tested and proven up to 100 washes**.

ëncore[®] reusable medical-grade filtering technology is evaluated by ISO 17025 accredited laboratories.



Internationally classified meeting 100 % of the highest safety criteria of ASTM F3502-21, AFNOR SPEC S76-001, Medical Devices Standard EN14683:2019 IIR Type, (CNESST/INSPO), Class 1 medical instrument Health Canada



Patented mechanical high level filtration that works in both directions, inward and outward, and features to reduce leakage, protecting the wearer and its environment with every breath



100 % zero waste recyclable product, easily reusable/washable, ultra efficient and comfortable



Optimized air-transfer surface, reduced CO2 build-up and ultra easy breathing, engineered and tested to wick away moisture and for extended wear (8 hours)

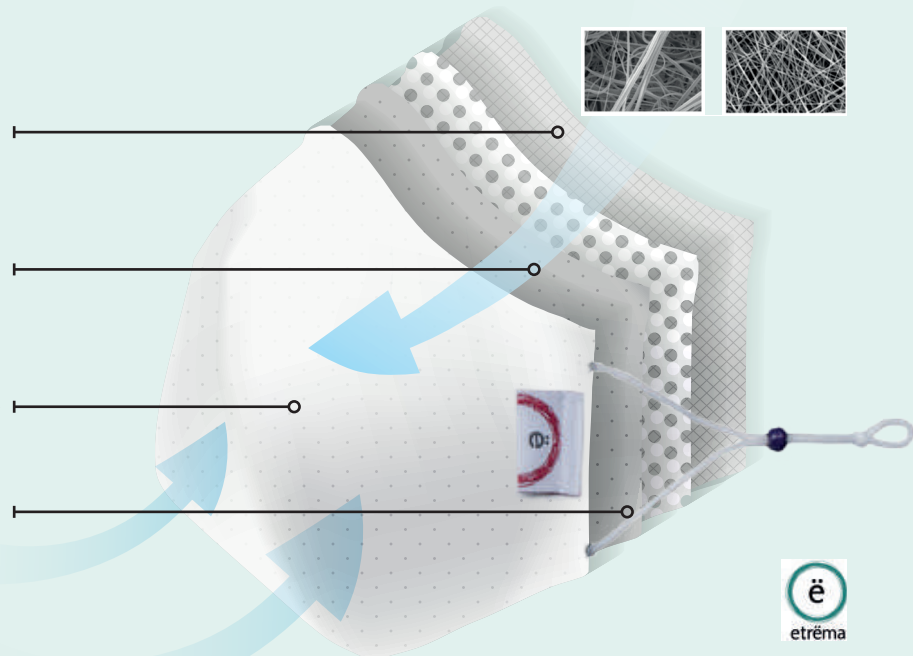
HOW DOES THE ëncore[®] REUSABLE PROTECTION WORK

Mutual protection of layers against mechanical wear => preservation of fibers => durability washing after washing

Structural improvement of the fibrous web => filtration without short-lived and potentially harmful physico-chemical artifices (electrostatic charging, nanomaterials, surfactants, biocide products etc.)

Water-resistant filter => no drop in performance, protection of internal layers without moisture accumulation

Sequestration of fibres => no contamination by microplastics of neither the carrier nor the environment



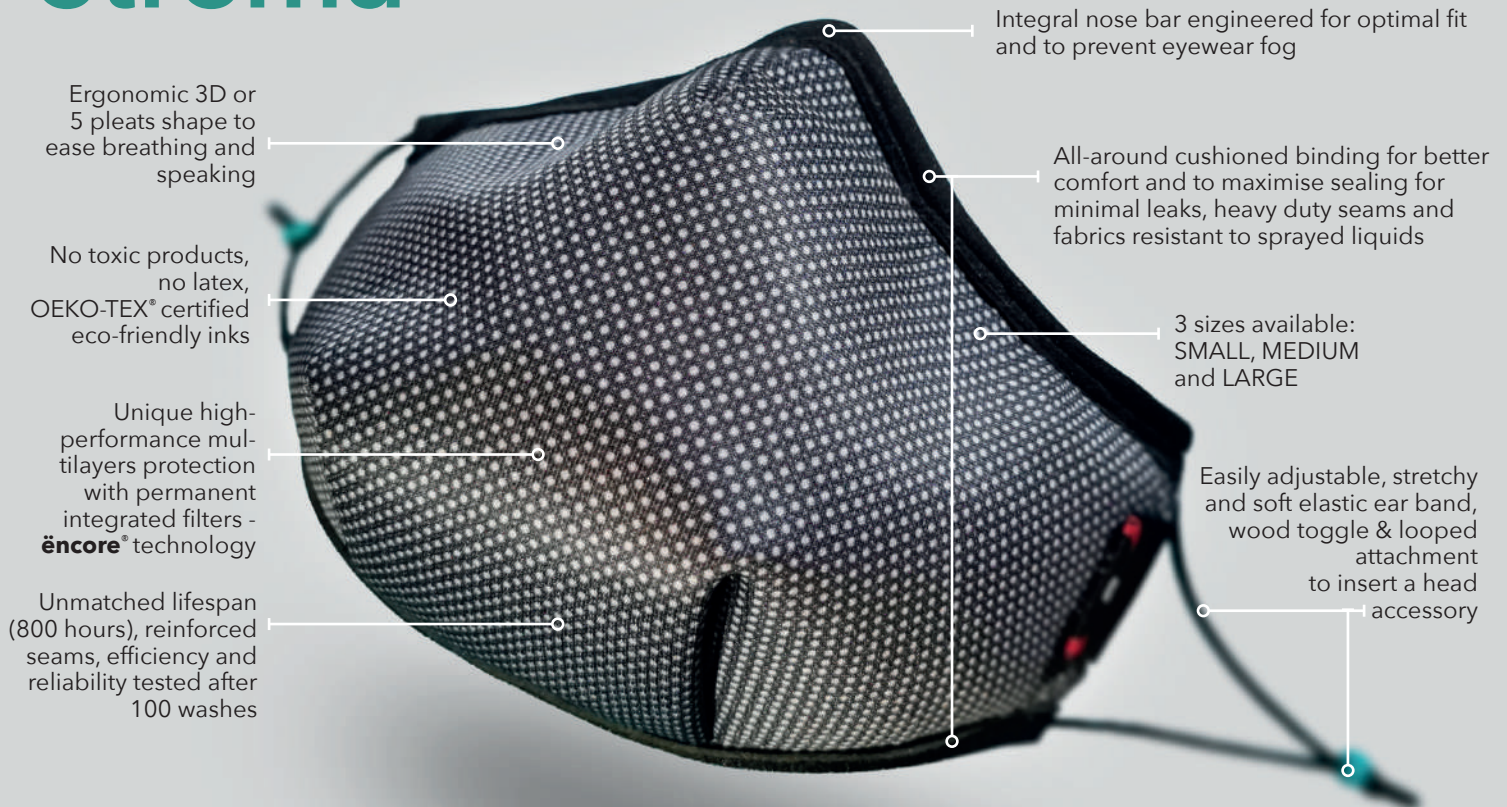
THE ONLY REUSABLE MASK THAT TRULY PROTECTS YOU WHILE PROTECTING THE PLANET

Made with **rigour and fairness** in Quebec, Canada. **70 % of our components are from Canada, 8 % USA, 8 % Austria, 7 % France and 4 % China, 3 % Germany.**

All Frëtt Solutions **etrëma**® masks display an **ë** on the exterior label, a batch number and a manufacturing date as proof of authenticity and quality. In addition, all masks have an interior label allowing you to mark with a permanent pen, scan the barcode label or with a personal phone, enter the QR code for real-time washing monitoring. Thanks to these labels, user identification and washing counting are carried out. The standards, batch and CA numbers, manufacturer's website and maintenance method are also listed.

etrëma

Frëtt Solutions provides medical protection accessible to all



The eco-efficient **ëtrema** face coverings are also very useful for other situations



Hospitals/Clinics



Cold or flu



Travel



Public transportation



Pollution



Seasonal allergies



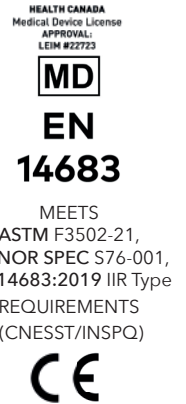
Immune deficiency

SELECTION GUIDE

There are many masks and face coverings on the market and it **may be difficult to understand their specificities**. It is important to be aware that the effectiveness of face coverings differs greatly from one model to another.

Our expertise allows us to offer every user a personalized protection experience. **Your work requires close contact : choose higher filtration. You are physically active, a young child or have low lung capacity : prefer a higher level of breathability.**

ASTM International recently approved its standard (F3502-21) for reusable face coverings like **AFNOR** did with (SPEC S76-001). The **EN 14683: 2019** is the European **standard for medical procedural masks** and type IIR is the highest level and includes a synthetic blood resistance. Since December 2022, **etréma** masks are also approved as Class 1 medical devices by Health Canada. All these standards aim to protect the public and the workers by setting strict rules for design, performances and labelling. **By remaining above these normative requirements up to 100 washes, the products of the **etréma** line offer the guarantees of safety, reliability and durability that are lacking in the usual reusable masks.**



3 MAIN CRITERIA: BREATHABILITY + FILTRATION EFFICIENCY + FIT

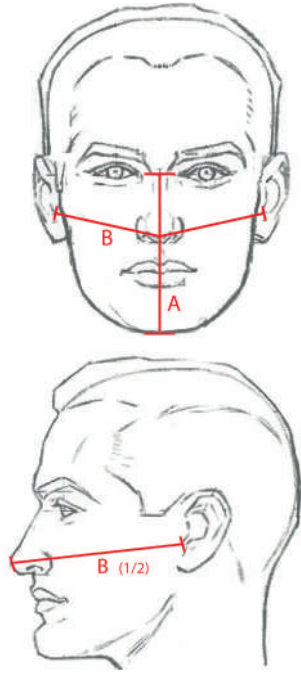
Eco-efficient **etréma face coverings meet the highest safety requirements**

Choose your mask according to your concerns, activities and the level of risk in your environment

ICARE Laboratory, France (Certified ISO 17025)			
Standard conformity: EN 14683: 2019 - Medical devices			
etréma MASKS by Frétt Solutions			
	ë AIR	ë PRO	ë TECH
TESTED AFTER 1x WASH			
BACTERIAL FILTRATION EFFICIENCY	Compliant types I, II & IIR 98.7 % filtration	Compliant types I, II & IIR 99.9 % filtration	Compliant types I, II & IIR 99.8 % filtration
BREATHABILITY (differential pressure)	Compliant types I, II & IIR 24 Pa/cm ² or 2.45 mmH ₂ O/cm ²	Compliant type IIR 47 Pa/cm ² or 4.79 mmH ₂ O/cm ²	Compliant type IIR 46 Pa/cm ² or 4.69 mmH ₂ O/cm ²
MICROBIAL CLEANLINESS (Bioburden)	Compliant with 5.2 UFC/g (requirement: ≤ 30 UFC/g) *UFC : Colony Forming Unit	Compliant with 8.6 UFC/g (requirement: ≤ 30 UFC/g) *UFC : Colony Forming Unit	Compliant with 4.2 UFC/g (requirement: ≤ 30 UFC/g) *UFC : Colony Forming Unit
TESTED AFTER 100x WASHES			
BACTERIAL FILTRATION EFFICIENCY	Compliant types I, II & IIR 98.3 % filtration	Compliant types I, II & IIR 99.9 % filtration	Compliant types I, II & IIR 99.4 % filtration
BREATHABILITY (differential pressure)	Compliant types I, II & IIR 21 Pa/cm ² or 2.14 mmH ₂ O/cm ²	Compliant type IIR 44 Pa/cm ² or 4.49 mmH ₂ O/cm ²	Compliant type IIR 44 Pa/cm ² or 4.49 mmH ₂ O/cm ²
SPLASH (FLUID) RESISTANCE	Compliant type IIR with 31 resistant masks out of 32	Compliant type IIR with 32 resistant masks out of 32	Compliant type IIR with 32 resistant masks out of 32



TOTAL BARRIER EFFECT: Filtration + tightness



SIZING CHART

Sizes ð AIR & ð PRO	Typical Clients	Height	Width
Small/ Medium	For children and most women (Standard size) or men with small faces	3 to 5 3/4 in - 7.5 to 13.5 cm	8 3/4 to 12 1/2 in - 22 to 32 cm
Large/ Extra-Large	For most men or women with long and/or wide faces	5 to 6 3/4 in - 12.5 to 17 cm	11 to 14 in - 27.5 to 35 cm

Sizes ð TECH	Typical Clients	Height	Width
Small	For most men or women with long and/or wide faces	3 to 4 1/2 in - 7.5 to 11.5 cm	8 3/4 to 11 1/2 in - 22 to 29 cm
Medium	For most women (Standard size) or for men with small faces	4 1/2 to 5 3/4 in - 11.5 to 13.5 cm	10 1/2 to 12 1/2 in - 27 to 32 cm
Large	For most men or women with long and/or wide faces	5 3/4 to 6 1/2 in - 13.5 to 16.5 cm	11 3/4 to 13 3/4 in - 30 to 35 cm
Extra-Large	For men with long and/or wide faces	6 1/2 to 7 1/4 in - 16.5 to 18 cm	13 3/4 to 16 in - 35 to 40.5 cm

When hesitating between 2 sizes, for a good breathability and a good fit:
 ðPRO & ðAIR => Choose the smaller of the 2 sizes given their vertical amplitude (accordion folds)
 ðTECH => Choose the larger of the 2 sizes given its 3D no-horizontal-fold design, so shorter
A = Height The bottom measurement should stop after the curve of the chin, at the edge of the bone. To help, put your chin on a book, follow the chin curve, and stop measuring on the book.

B = Width From the lowest part of the opening of the ear canal through the tip of the nose without flattening the nose.

ACCESSORIES*

To maximize fit and sealing while enhancing comfort, we also offer a variety of face mask accessories:

- Adjustable extensions made from 100 % recycled polypropylene to secure the mask behind the head and provide optimal mask fit and seal while relieving discomfort behind the ears
- Adjustable drawcords to keep your mask hanging on your chest and secure when not worn and have an optimal and proper fit when tight behind the head with the adjuster included
- Organic cotton mesh laundry bags to protect the mask components during washes
- Bags and pouches made of 100 % organic cotton canvas dedicated to storage and transport



CARE*

- Wash and dry, in a washing bag, in the machine and/or dry heat treat before each use. (1 day = 1 use)
 A combination of these two types of disinfection is also possible (e.g. 1 machine wash every 5 dry heats).
- **Machine wash:** (in a wash bag)
 Gentle cycle, water temperature ≥50-70°C (hot). Minimum 30 minute cycle. Regular detergent. NO fabric softener, bleach or additives. Place in a mesh washing bag to increase durability. To dry: tumble dry on high heat.
- **Dry heat treatment:**
 Preheat the oven to 93°C (200°F); When the temperature is reached and checked, place the mask(s) on a rack or parchment paper and wait 30 minutes. Let cool for 5 minutes. Pay attention to the proximity to the heating elements.
 Store in a dry, clean place, not exposed to heat or sunlight above 100° C (212° F). Do not use fabric softener or bleach

ë TECH



FEATURES & BENEFITS

Very light, 3D shape that never touches the mouth or nostrils, designed with 2 pleats on the chin and one on the nose forming a dome to increase the interface and to ensure optimal airflow rate and comfort. Level 2 medical grade filtration equivalency and maximum leak tightness. Firm integral cheekbones-nose bar and cushioned edges against fog on eyewear. Adjustable elastic ear bands with possible additional accessories for optimizing protection while enhancing comfort.

SCIENTIFIC RESULTS (ALWAYS TESTED AFTER 100 WASHES)

Particles Filtration (from 0.8 µm): 99.4 %

Aerosols (0.075 µm / 75 nm NaCl aerosols): 82-88 % PFE (level 2 ASTM F3502). ASTM F3502-21 test is performed on whole devices (masks) using NaCl particles at a flow rate of 85 LPM. This is the same test done for PFE Filtration in ASTM F2100-23 standard.

Breathability (differential pressure): 9.55 mmH₂O (level 1 ASTM F3502) / 4.4 mmH₂O/cm² (EN 14683)

Flammability: Class 1 according to 16 CFR PART 1610

Fluid resistance: 160 mmHg according to ASTM F1862 & EN 14683: 2019 IIR Type

Dermal irritation: Negligible (between 0 and 0,4) ISO 10993-23, no erythema, no oedema

Microbial Cleanliness (bioburden) : Compliant with 4.2 CFU/g (requirement ≤ 30 CFU/g)

Cytotoxicity: Non Cytotoxic according to CYTOTOX-PH-22/0241 XTT method

TESTED by ISO 17025 CERTIFIED laboratories, results available on request or simply visit our website.

CONTEXTS

Crowds, shows, group activities, airports, travel, public transport, work environments (offices, meetings, etc.), temperate climates, extended wear, close interactions, hospital visits, pollution, allergies, immune deficiencies or illnesses such as cold or flu

3 LIFE CYCLES

Professional => Personal => Recycling

When worn out after personal use, mail the mask to us or put it in a dedicated collection box for 100 % recycling. Our plastic accessories are made with recycled polypropylene from fabric scraps. The nasal strips are returned to us for reuse in production.

CUSTOMIZATION

○ 250 units and more: labels with your logo on the side of the mask

○ 2 000 units and more: personalized colors and prints

*Prices and deadlines according to the project

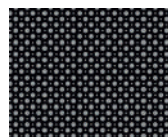
Meets the requirements of: ASTM F3502-21*, ASTM F1862, AFNOR Spec S76-001-IIR, EN 14683: 2019 IIR, 16 CFR PART 1610

ZERO WASTE

4 SIZES

SMALL or children (3 to 12 years old),
MEDIUM, LARGE, EXTRA LARGE
(see size chart page 6)

COLORS :



Black-Gray Dots

Multicolor Fishes



Black

Navy Blue

And WHITE as per the images

Validate the colors available online
Colors on request possible (minimums)

POSSIBLE APPLICATIONS FOR WASHING AND TRACEABILITY

1. Scan the laundry tracking barcode using a barcode reader
2. Scan the QR code using a mobile or smart device to track washes in real time
3. Manually mark the tracking label using a permanent waterproof marker or pen
4. Scan the RFID chip (special orders)
5. Batch management with color codes (special orders)



EN 14683

MEETS STANDARDS REQUIREMENTS:
ASTM F3502-21,
AFNOR SPEC S76-001,
EN 14683: 2019 IIR Type
(CNESST/ INSPO)



For healthcare professionals, non-contact 3D design

After 100 washes: HEALTH CANADA CLASS 1 / AFNOR / ASTM F3502-21 Level 1 & 2 / EN 14683 :2019-IIR Type

ë TECH



OUTSIDE

Ergonomic 3D shape to ease breathing and speaking

Integrated cheekbones-nose bar designed to adapt to all faces and to prevent eyewear fog

Cushion binding edges for better comfort, minimized leaks tightness, reinforced seams

Sprayed liquids-resistant fabrics, no toxic products, no latex, OEKO-TEX® certified eco-friendly inks

INSIDE

Unique high-performance multi-layers protection with permanent integrated filters - èncore® technology

Engineered and tested to wick away moisture and for extended wear (8 hours/day)

Easily adjustable, stretchy and soft elastic ear band, wood toggle & looped attachment to insert a head accessory



etréma



ë AIR



FEATURES & BENEFITS

Very large air interface for unparalleled breathability and efficient filtration. The mask fabric will not obstruct your mouth during speaking or exertion. Lightweight and effective metal nose bar. Adjustable elastic ear bands with possible additional accessories for optimizing protection while enhancing comfort. Ultralight, compact design similar to disposable masks but with 5 side pleats for enhanced leak tightness and ergonomometry. Large amplitude from top to bottom for long faces.

SCIENTIFIC RESULTS (ALWAYS TESTED AFTER 100 WASHES)

- Particles Filtration (from 0.8 µm):** 98.3 %
 - Breathability (differential pressure):** 5 mmH₂O (level 2 ASTM F3502) / 2.1 mmH₂O/cm² (EN 14683)
 - Flammability:** Class 1 according to 16 CFR PART 1610
 - Fluid resistance:** 160 mmHg according to ASTM F1862 & EN 14683: 2019 IIR Type
 - Dermal irritation:** Negligible (between 0 and 0,4) ISO 10993-23, no erythema, no oedema
 - Microbial Cleanliness (bioburden) :** Compliant with 5.2 CFU/g (requirement ≤ 30 CFU/g)
 - Cytotoxicity:** Non Cytotoxic according to CYTOTOX-PH-22/0241 XTT method
- TESTED by ISO 17025 CERTIFIED laboratories, results available on request or simply visit our website.

CONTEXTS

Children (travels, school, etc.), sustained sports activities, physical efforts and for handling work, delicate respiratory health, phone calls or conferences, public transport, hot climates, working environments with social distancing, extended wear, pollution, allergies

3 LIFE CYCLES

Professional => Personal => Recycling

When worn out after personal use, mail the mask to us or put it in a dedicated collection box for 100 % recycling. Our plastic accessories are made with recycled polypropylene from our fabric scraps. The nasal strips are returned to us for reuse in production.

ZERO WASTE

CUSTOMIZATION

- 250 units and more: labels with your logo on the side of the mask
- 2 000 units and more: personalized colors and prints

*Prices and deadlines according to the project

Meets the requirements of: ASTM F3502-21*, ASTM F1862, AFNOR Spec S76-001-IIR, EN 14683: 2019 IIR, 16 CFR PART 1610

2 SIZES (combined sizes)

**SMALL/MEDIUM
LARGE/EXTRA LARGE**
(see size chart page 6)

COLORS :



Lime Stars



Multicolor Fishes



Black



Navy Blue

Validate the colors available online
Colors on request possible (minimums)

POSSIBLE APPLICATIONS FOR WASHING AND TRACEABILITY

1. Scan the laundry tracking barcode using a barcode reader
2. Scan the QR code using a mobile or smart device to track washes in real time
3. Manually mark the tracking label using a permanent waterproof marker or pen
4. Scan the RFID chip (special orders)
5. Batch management with color codes (special orders)



INTERNATIONAL
Standards Worldwide



HEALTH CANADA
Ministère de la Santé
et des Bien-être
(SMA)



EN

14683



MEETS STANDARDS REQUIREMENTS:
ASTM F3502-21,
AFNOR SPEC S76-001,
EN 14683: 2019 IIR Type
(CNESST/INSPO)

For active people, maximum breathability

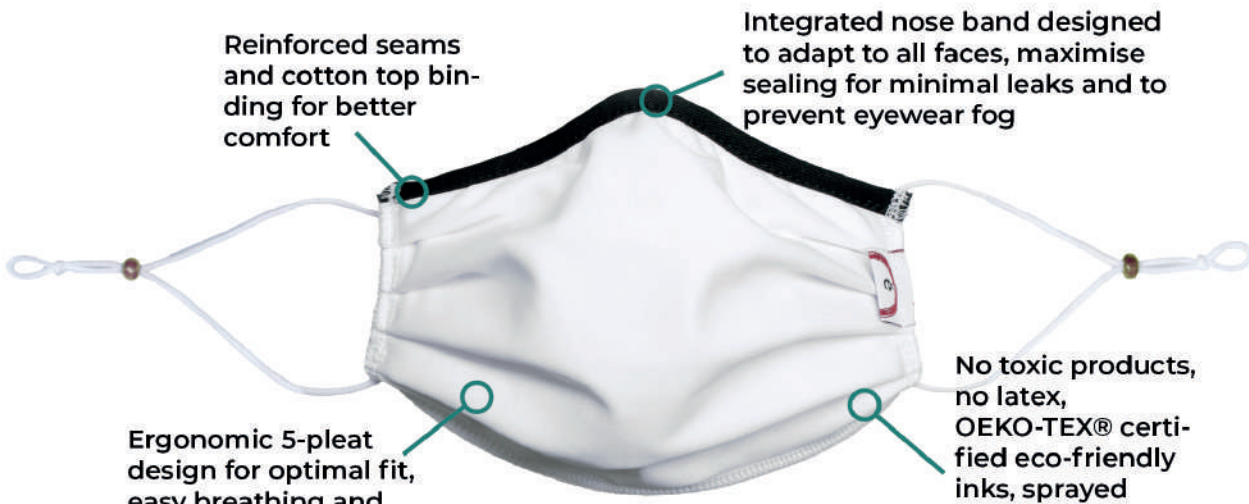
ë AIR



After 100 washes: HEALTH CANADA CLASS 1 / AFNOR / ASTM F3502-21 Level 2 / EN 14683 :2019-IIR Type



OUTSIDE



INSIDE



etrëma

ë PRO



FEATURES & BENEFITS

Very large interface for excellent breathability and filtration (superior to ëAIR and medical grade level 1). The mask fabric will not obstruct your mouth during speech or exercise. Lightweight but effective metal nose bar. Adjustable elastic ear bands with possible additional accessories for optimizing protection while enhancing comfort. Ultralight, compact design similar to disposable masks but with 5 side pleats for enhanced leak tightness and ergonomoy. Large amplitude from top to bottom for long faces.

SCIENTIFIC RESULTS (ALWAYS TESTED AFTER 100 WASHES)

- Particles Filtration (from 0.8 µm):** 99.9 %
 - Breathability (differential pressure):** 6 mmH₂O (level 1 ASTM F3502) / 4.4 mmH₂O/cm² (EN 14683)
 - Flammability:** Class 1 according to 16 CFR PART 1610
 - Fluid resistance:** 160 mmHg according to ASTM F1862 & EN 14683: 2019 IIR Type
 - Dermal irritation:** Negligible (between 0 and 0,4) ISO 10993-23, no erythema, no oedema
 - Microbial Cleanliness (bioburden) :** Compliant with 8.6 CFU/g (requirement ≤ 30 CFU/g)
 - Cytotoxicity:** Non Cytotoxic according to CYTOTOX-PH-22/0241 XTT method
- TESTED by ISO 17025 CERTIFIED laboratories, results available on request or simply visit our website.

CONTEXTS

Crowds, shows, group activities, light sports, phone calls or conferences, airports, travel, public transportation, hot & temperate climates, work environments (offices, meetings, etc.), extended wear, close interactions, hospital visits, illnesses such as colds or flu, pollution, allergies

3 LIFE CYCLES

Professional => Personal => Recycling

When worn out after personal use, mail the mask to us or put it in a dedicated collection box for 100 % recycling. Our plastic accessories are made with recycled polypropylene from fabric scraps. The nasal strips are returned to us for reuse in

ZERO WASTE

CUSTOMIZATION

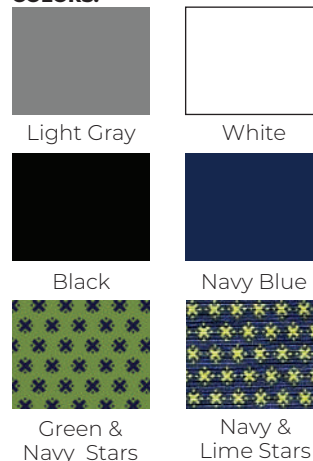
- 250 units and more: labels with your logo on the side of the mask
- 2 000 units and more: personalized colors and prints

*Prices and deadlines according to the project

Meets the requirements of: ASTM F3502-21*, ASTM F1862, AFNOR Spec S76-001-IIR, EN 14683: 2019 IIR, 16 CFR PART

2 SIZES (combined sizes)
SMALL/MEDIUM,
LARGE/EXTRA-LARGE
 (see size chart page 6)

COLORS:



Validate the colors available online
 Colors on request possible (minimums)

POSSIBLE APPLICATIONS FOR WASHING AND TRACEABILITY

1. Scan the laundry tracking barcode using a barcode reader
2. Scan the QR code using a mobile or smart device to track washes in real time
3. Manually mark the tracking label using a permanent waterproof marker or pen
4. Scan the RFID chip (special orders)
5. Batch management with color codes (special orders)



EN

14683

MEETS STANDARDS REQUIREMENTS:
 ASTM F3502-21,
 AFNOR SPEC S76-001,
 EN 14683: 2019 IIR Type
 (CNESST/ INSPQ)



For workers in contact with the public, high performance

ë PRO



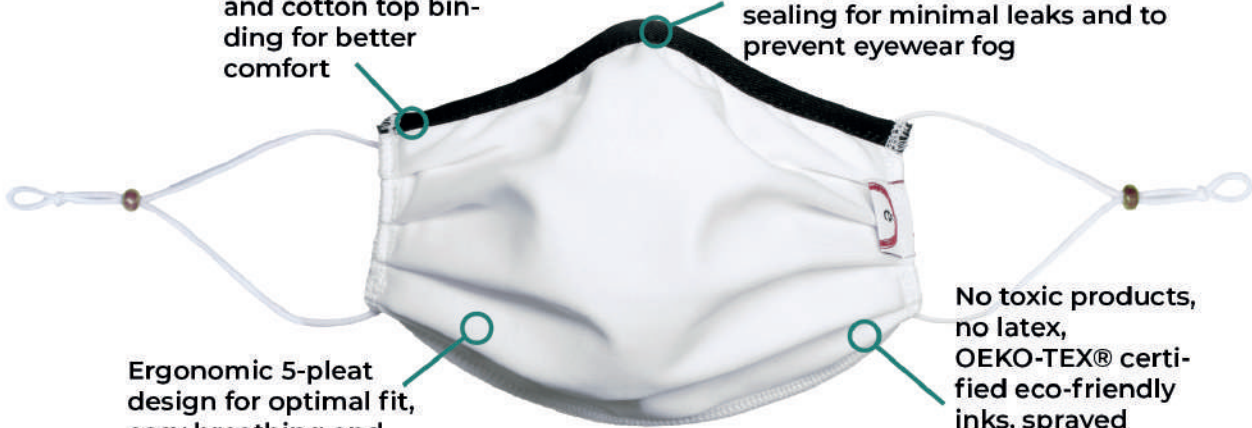
After 100 washes: HEALTH CANADA CLASS 1 / AFNOR / ASTM F3502-21 Level 1 & 2 / EN 14683 :2019-IR Type



OUTSIDE

Reinforced seams and cotton top binding for better comfort

Integrated nose band designed to adapt to all faces, maximise sealing for minimal leaks and to prevent eyewear fog

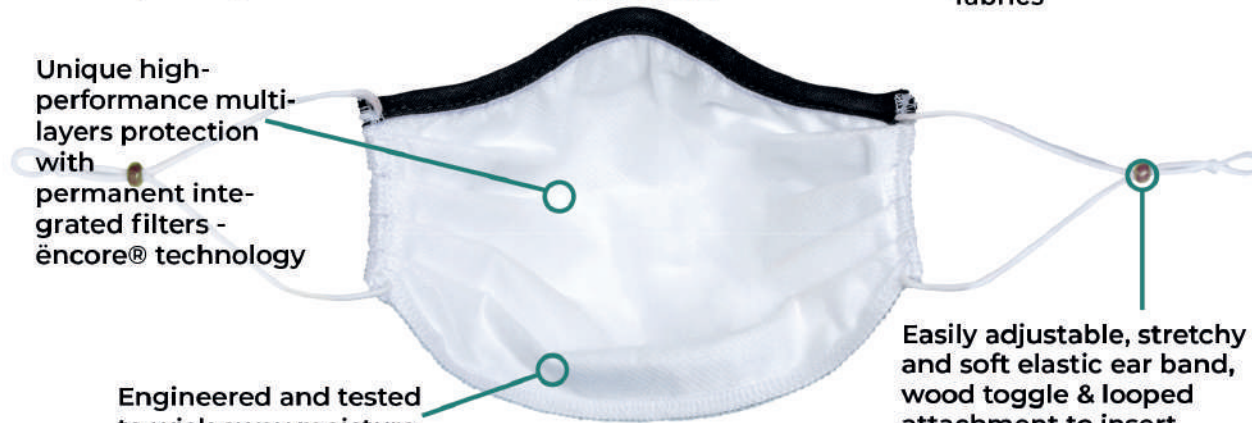


Ergonomic 5-pleat design for optimal fit, easy breathing and speaking

No toxic products, no latex, OEKO-TEX® certified eco-friendly inks, sprayed liquids-resistant fabrics

INSIDE

Unique high-performance multi-layers protection with permanent integrated filters - ëncore® technology



Engineered and tested to wick away moisture and for extended wear (8 hours/day)

Easily adjustable, stretchy and soft elastic ear band, wood toggle & looped attachment to insert a head accessory



ACCESSORIES



MAKE WEARING FACE MASKS MORE COMFORTABLE AND SANITARY

Face masks now being a daily essential, it is important to consider accessories to make wearing them easier for long periods of time. These items help to make wearing a mask more comfortable but also SAFER.

HEAD ACCESSORIES AND BAGS

The adjustable cord and the back head extender are convenient accessories to remove the pressure on ears caused by the face cover elastics; they improve the fit and seal of the mask, and ensure you never lose your face covering by letting it hang around your neck. Reusable and washable.

The bags will serve as dedicated wraps for storage, transport and washing for either your used or clean face mask. Made with 100 % unbleached cotton GOTS certified, the canvas and mesh bags carry 1 to 5 masks. The zippered transport pouches carry 1 to 2 masks and are offered in two colors dyed with certified OEKO-TEX inks.



ADJUSTABLE DRAWCORD
(WHITE or BLACK)



BACK HEAD EXTENDER



TRANSPORT POUCHES
Dimensions: 11 cm x 14 cm (4.3 in x 5.5 in)



CANVAS BAG
Dimensions: 30.5 cm x 38 cm (12 in x 15 in)



MESH BAG (for washings)
Dimensions: 30.5 cm x 38 cm (12 in x 15 in)

« AT FRÉTT SOLUTIONS, WE ARE VERY PROUD TO BE THE FIRST ENTREPRENEUSES** TO OFFER AN ECO-EFFICIENT* FACE COVER THAT MEETS THE HIGHEST SAFETY STANDARDS WHILE RESPECTING THE ENVIRONMENT AND ENSURING AUTONOMY IN TERMS OF PERSONAL PROTECTION.

LET'S ALL BE PIONEERS IN A WORLD WHERE INDIVIDUALS AND BUSINESSES THRIVE WHILE PLAYING AN ACTIVE ROLE IN THE PROTECTION AND PRESERVATION OF OUR PLANET.

LET'S BECOME ECO-PERFORMERS, IT'S TIME TO DO THINGS DIFFERENTLY. »



etrëma
par/by
frétt solutions

**etrëma | breathablë | ëthic | cërtified | washablë | rëusable | ëco-efficient
locally madë | zëro waste | comfortablë | safë | durablë**

* Eco-efficiency consists in offering goods and services at competitive prices that meet the needs of humans and provide them with quality of life, while maintaining the environmental impacts and the quantity of natural resources required throughout the product life cycle to a level in harmony with what the planet can sustainably withstand.

** Our business project and industry being majoritarily driven by women, we use this brand-new feminine form of "entrepreneur" about ourselves.

CONTACT US:

37 des Plaines Street, Caplan, Quebec, Canada G0C 1H0 | +1 418 388-1337 |
solutions@frettdesign.ca
www.etrëma.ca