



CARICOM Regional Standard

NON-MEDICAL FACE MASKS - SPECIFICATION

DCRS 75:202X

CARICOM Regional Organisation for Standards and Quality, CROSQ

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Committee representation

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Foreword

This CARICOM Regional Standard *CRS :202X, Non-medical face masks – Specification* has been developed under the authority of the CARICOM Regional Organisation for Standards and Quality (CROSQ). It was approved as a CARICOM Regional Standard by the CARICOM Council for Trade and Economic Development (COTED).

This standard was developed to establish minimum requirements for non-medical face masks which are intended to act as physical barriers to small droplets secreted during talking, sneezing or coughing to reduce the transmission of infectious agents like the COVID-19 virus. Non-medical face masks are particularly useful in slowing the spread of disease in asymptomatic or pre-symptomatic patients. These non-medical face masks do not exonerate the user from practising social distancing, effective hand hygiene and other infection prevention control measures.

This regional standard is intended for use by:

- a. Manufacturers, importers and distributors of non-medical face masks to assist in manufacturing or procuring non-medical face masks which satisfy minimum quality and performance requirements; and
- b. Conformity assessment agencies as a basis for assessing imported or locally manufactured non-medical face masks.

The following documents were used in the formulation of this regional standard:

- TTPAS 1:2021, *Non-medical face masks - Specification*
- AFNOR SPEC S76-001:2020, *Barrier masks – Guide to minimum requirements, methods of testing, making and use*
- Product Specification COVID 19 PPE Project (CPP): *Facemasks – 2020-04-06 (University of the West Indies – St Augustine Campus)*.
- CEN CWA 17553: 2020, *Community face coverings – Guide to minimum requirements, methods of testing and use*
- AATCC M14-2020, *Guidance and Considerations for General Purpose Textile Face Coverings – Adult*
- ASTM F3502-21, *Standard Specification for Barrier Face Coverings*

1 Scope

This standard outlines minimum requirements for performance, labelling, construction and testing of non-medical face masks. These non-medical face masks are intended to reduce the risk of general transmission of infectious agents but do not fall under the ambit of personal protective equipment (PPE).

It covers non-medical face masks made out of paper, plastic, fabric or any other materials (synthetic or natural) that are disposable or reusable. It also applies to non-medical face masks that are stitched or bonded by any other methods.

This standard does not apply to the following types of face masks:

- a) folded without stitching;
- b) medical; and
- c) elastomeric particulate respirators.

This standard does not address flame resistance, high-heat, electrical arc or related hazards.

2 Normative references

The following referenced documents are indispensable for the application of this document. For undated references, the latest edition of the referenced document (including any amendments) applies.

Association Française de Normalisation

AFNOR SPEC S76-001:2020, *Barrier masks – Guide to minimum requirements, methods of testing, making and use*

American Association of Textile Chemists and Colorists

AATCC M14-2020, *Guidance and Considerations for General Purpose Textile Face Coverings – Adult*

ASTM International

ASTM D737, *Standard Test Method for Air Permeability of Textile Fabrics*

ASTM F3502-21, *Standard Specification for Barrier Face Coverings*

Comité Européen de Normalisation

CEN CWA 17553: 2020, *Community face coverings – Guide to minimum requirements, methods of testing and use*

International Organization for Standardization

ISO 16900-2, *Respiratory protective devices — Methods of test and test equipment — Part 2: Determination of breathing resistance*

ISO 16900-3, *Respiratory protective devices — Methods of test and test equipment — Part 3: Determination of particle filter penetration*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply:

3.1

breathing resistance

resistance of a non-medical face mask to the flow of inhaled air (inhalation resistance) or exhaled air (exhalation resistance)

3.2

COVID-19

infectious disease caused by the coronavirus SARS-CoV-2 discovered in 2019

3.3

date of minimum durability

any date after which, the manufacturer or packager does not guarantee any property of the non-medical face masks by reason of the foreseeable deterioration due to age or normal handling and storage.

3.4

elastomeric particulate respirators

covering which may comprise straps, inhalation and exhalation valves, valve covers, filters, cartridges or canisters which serve as protection against airborne hazards in healthcare facilities

3.5

head harness

means of holding a non-medical face mask in place on the head

3.6

medical masks

surgical or procedural masks used by health care personnel that are flat or pleated that are affixed to the head with straps that go around the ears or head or both

3.7

non-medical face masks

covering that protects the mouth and nose from ambient atmosphere or reduces the emission of droplets from the wearer to the atmosphere and not intended for use by health care personnel

3.8

personal protective equipment

variety of barriers including clothing and respirators used alone or in combination to protect mucous membranes, airways, skin, and clothing from contacts with infectious or hazardous agents

3.9

service life

the maximum number of cleaning and sanitizing cycles that can be performed before the mask can no longer fulfil its intended end use

3.10

total inward leakage

measure of the leakage of contaminants through a non-medical face mask

4 Requirements for non-medical face masks

4.1 Performance requirements

4.1.1 Particle filtration and breathing resistance

All non-medical face masks shall conform to the requirements for either solid or liquid particle filtration outlined in Table 1 when tested in accordance with ISO 16900-3.

4.1.2 Breathing resistance

All non-medical face masks shall conform to the requirements for either maximum inhalation/exhalation resistance or minimum air permeability outlined in Table 1 when tested in accordance with the relevant standards listed in Table 1.

Table 1 — Acceptable limits for specific performance parameters of non-medical face masks

Parameter	Requirement	Test method
Particle filtration		
Solid particle	70 % (≤ 0.3 microns)	ISO 16900-3 (Sodium chloride test method)
Liquid particle (droplet)	70%	ISO 16900-3 (Paraffin oil test method)
Breathing resistance		
Inhalation resistance (max)	2.4 mbar/cm ²	ISO 16900-2
Exhalation resistance (max)	3.0 mbar/cm ²	
Air permeability (min)	1.14 L/min/cm ²	ASTM D737

4.1.3 Face seal leakage

The non-medical face mask shall form a secure seal against the skin. The material from which the non-medical face mask is made shall not be stretched across the nose and mouth so as not to compromise the integrity of the material.

NOTE It is recommended that the total inward leakage not be >22% when tested in accordance with NIOSH RCT-APR-STP-0068, *Total Inward Leakage Test for Half-Mask Air-Purifying Particulate Respirators*.

4.2 Construction

4.2.1 The design and shape of the non-medical face masks shall be left up to the manufacturer and the mask shall fit closely over the nose, cheeks and chin for any given size. See Annex A for recommended construction designs.

NOTE It is not recommended that prints and patterns, inclusive of embroidery, be used on the non-medical face mask which could pose a health hazard with the inhalation of dyes and inks. If a logo is used, it should be included to the side of the mask away from the nose and mouth area. Where specific dyes and inks are used, they should be non-hazardous and the manufacturer or importer should possess the relevant documentation to demonstrate this.

4.2.2 Clear markings or design options shall be used to distinguish between the outside and inside of the non-medical face mask.

4.2.3 Parts of the non-medical face masks likely to come into contact with the wearer shall have no sharp edges.

NOTE Parts include nose bars which should not project through the non-medical face mask to cause injury.

4.2.4 The non-medical face masks shall be able to withstand handling and wear without any deterioration of the functionality or material of the mask during its expected service life.

NOTE The non-medical face masks should be manufactured so that there is no disintegration during wear and subsequent to cleaning or sanitizing.

4.2.5 Materials that may come into contact with the wearer's skin shall not be known to cause irritation or any other adverse effect to health.

4.2.6 Non-medical face masks shall not be manufactured to encompass inhalation and exhalation valves.

NOTE Inhalation and exhalation valves can defeat the purpose of wearing a mask as the exhaled air is expelled directly into the environment of the wearer without any capture of solid or liquid particles.

4.2.7 There shall be no perforations in the mask along the nose, mouth and chin unless there are supplemental features on the non-medical face mask to protect the integrity of the mask.

NOTE If stitching is used on the non-medical face mask, it is recommended that it be done along the perimeter of the mask and not along the vertical section in alignment with the nose and chin as pin holes facilitate unfiltered air flow. However, if a vertical seam is included in the non-medical face mask, an additional layer of material can be incorporated to the back of the seam to ensure that the non-medical face mask meets the minimum performance requirements outlined in this standard.

4.3 Head harness

The head harnesses of non-medical face masks shall conform to the following requirements:

- a) be made from materials that are adjustable or self-adjusting;

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- b) remain intact and not show any degradation during the service life of the non-medical face mask;
- c) not cause mechanical injury to the user; and
- d) ties without adjustment devices shall not be used in the manufacture of children's non-medical face masks.

NOTE Loose ties may be long and can lead to strangulation in children.

4.4 Cleaning and sanitizing

Reusable non-medical face masks shall be able to be cleaned and sanitized in a manner that would not adversely impact the functionality or structural integrity of the masks.

NOTE All non-medical face masks should be changed if wet or visibly soiled. A wet mask should not be worn for an extended period of time. It is recommended that the duration of wear of face masks be guided by the National Competent Authority in each jurisdiction within CARICOM.

5 Labelling

5.1 Non-medical face masks shall be pre-packaged as a single item or in bulk and each single or bulk package shall contain a label (on the package or within the package) with the following information in the English Language using the English alphabet:

- a) any trade name or brand name;
- b) the name and identifiable address, the principal place of business or registered office of the manufacturer, distributor, retailer, wholesaler or importer responsible for the non-medical face mask. This information shall be preceded by the words "manufactured by", "distributed by", or "imported by", as applicable;
- c) name of the product using the words 'non-medical face mask', or words of similar intent;
- d) country of origin which shall be preceded by any of following phrases:
 - 1) "made in";
 - 2) "produced in;" or
 - 3) "manufactured in".
- e) instructions for use including how to put on and remove the non-medical face mask which can be expressed using pictograms;
- f) precautionary statement 'not for medical use' or words of similar intent;
- g) size of the non-medical mask to indicate "small", "medium", "large" and "extra-large" for adults and "small", "medium" and "large" for children;

NOTE Letters may be used to indicate size including: S, M, L, XL etc.

- h) date of manufacture;

- i) date of minimum durability as “best before”, “use by” or “expiry date” (if applicable);
- j) material from which the non-medical face mask is made and the fibre content of each layer (where applicable);
- k) care instructions including washing and or sanitizing instructions for washable and non-washable masks;
- l) the word “disposable” where applicable;
- m) conditions for storage if applicable;
- n) warning statement for suitability of age group;

EXAMPLE “Not suitable for children under three years of age”.

- o) service life prior to disposal including number of laundering cycles where applicable; and

NOTE This requirement is not applicable to disposable non-medical face masks.

- p) statement that indicates whether or not the non-medical face mask shall be cleaned or sanitized prior to use.

NOTE Non-medical face masks should be labelled with the filtration efficiency and breathing resistance so consumers can make an informed purchase.

- 5.2** The words “antimicrobial” or “anti-viral properties” or words of similar intent shall not be included on the label.

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Annex A (Informative)

Recommended designs of non-medical face masks

A.1 The following two images illustrate recommended designs for non-medical face masks made out of fabric. These images have been reproduced with permission from the University of the West Indies (St. Augustine Campus) from the document Product Specification COVID 19 PPE Project (CPP): Facemasks – 2020-04-06.



Figure A.1 – Accordion design

NOTE The source reference for Figure A.1 is <https://pancap.org/pancap-releases/recommendation-regarding-the-use-of-cloth-face-coverings-especially-in-areas-of-significant-community-based-transmission/>

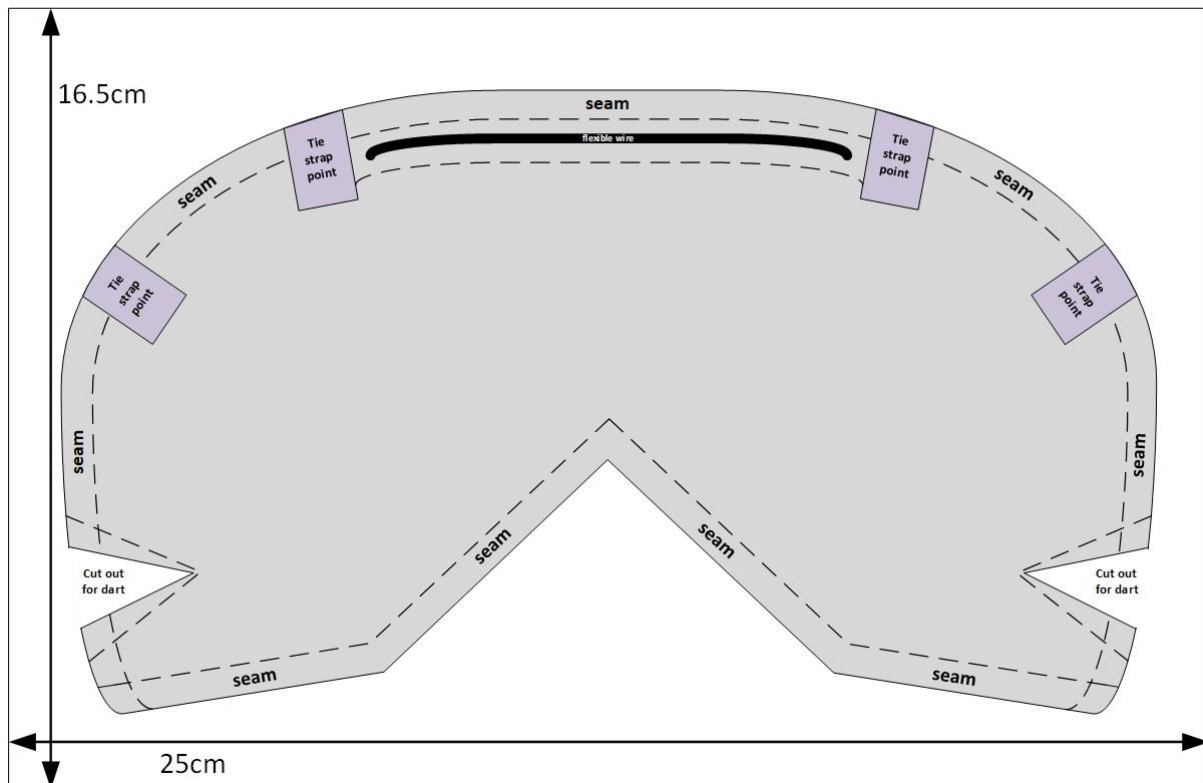


Figure A.2 – Pattern for multi-layered non-medical face mask

NOTE Figure A.2 was adapted from the design of a non-medical face mask contained in the link <https://anest.ufl.edu/clinical-divisions/mask-alternative/>

A.2 The following documents contain designs and relevant links to designs for non-medical fabric face masks:

- a) AFNOR SPEC S76-001:2020, *Barrier masks – Guide to minimum requirements, methods of testing, making and use*
- b) AATCC M14-2020, *Guidance and Considerations for General Purpose Textile Face Coverings – Adult*
- c) CEN CWA 17553: 2020, *Community face coverings – Guide to minimum requirements, methods of testing and use*

Annex B (Informative)

Recommended materials to be used in the construction of non-medical face masks

B.1 The following are recommendations on materials to be used in the construction of non-medical face masks :

1. Fabrics should be plain and light coloured to allow for easy identification of any soiling on the mask surface.
2. Materials such as felt are abrasive and are not recommended for wearing directly against the skin. A combination of a fabric layer against the skin and a felt overlay is recommended.
3. The comfort of the wearer is important and synthetic fabrics such as nylon result in extreme sweating and discomfort and so they are not recommended.
4. Fibre content, fabric weight and thread count are good screening tools but do not individually guarantee compliance to performance requirements outlined in clause 4.1.

B.2 The following documents contain recommended materials for non-medical fabric face masks:

- a) AFNOR SPEC S76-001:2020, *Barrier masks – Guide to minimum requirements, methods of testing, making and use*
- b) AATCC M14-2020, *Guidance and Considerations for General Purpose Textile Face Coverings – Adult*

B.3 Nano electrostatic non-woven polypropylene fibre is a high efficiency filtering fibre that can be used to make non-medical face masks.

B.4 The following documents contain guidance on facial measurements to consider for sizing of face masks (particularly useful in exporting face masks to the United States):

- ASTM F3502-21, *Standard Specification for Barrier Face Coverings*
- AATCC M14-2020, *Guidance and Considerations for General Purpose Textile Face Coverings – Adult*