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GUIDE TO REQUIREMENTS (MANDATORY AND VOLUNTARY)

*THAT MUST BE MET BY PERSONAL PROTECTIVE
EQUIPMENT IN COLOMBIA*

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INTRODUCTION

This guide describes the legal (mandatory), technical (voluntary), and commercial requirements that a supplier of personal protective equipment should take into account when marketing their products in Colombia.

This guide has been developed in order to facilitate the trade of personal protective equipment between the United States and Colombia.

In Colombia, the type, supply, and use of personal protective equipment are dictated by an identification of dangers; evaluation and assessment of risks to job analysis; area inspections; hygienic measurements; or to the results of occupational medical evaluations. Additionally, for their selection, the manufacturer's recommendations on the maintenance and care of personal protective equipment, as well as their final disposal, are taken into account. Currently there is no specific regulatory framework for personal protective equipment; however, several administrative acts (decrees, resolutions) include specific requirements, which have been compiled in this guide.

Due to the dynamic nature of the regulation (both mandatory and voluntary), suppliers of personal protective equipment are recommended to verify that the information collected is still current.

PURPOSE AND FIELD OF APPLICATION

This guide provides information on the technical (legal and voluntary) and commercial requirements that must be met by personal protective equipment used in workplaces in Colombia.

Note: This guide provides information on:

- The legal requirements that are mandatory and that have been established through laws, decrees, resolutions, or technical regulations.
- Technical standards that provide technical requirements and are voluntary. The standards referenced in the technical regulations are considered mandatory.

SCOPE

This guide includes information on the following personal protection items:

- Head protection (helmets)
- Hearing protection
- Visual and facial protection
- Body protection
- Protection for hands and arms (including gloves and sleeves)
- Foot and leg protection
- Respiratory protection (including breathing apparatus when they are considered PPE)

- Fall protection (including harnesses, safety belts, and fall-arrest lanyards)
- Protective clothing for firefighters
- Personal flotation devices (lifejackets)

This guide does not include information on the protective equipment for medical and hospital use.

COLOMBIAN LEGAL FRAMEWORK: MANDATORY NORMS

In Colombia, the mandatory requirements are established through laws (where the general framework is provided) and decrees and resolutions (which seek to implement what is specifically established by law). Next, each one is described:

Law: Policy issued by the Congress of the Republic, in exercise of the constitutional powers which it holds.

Administrative Decree: Issued by the President or the government in compliance with their administrative functions, whose purpose is the concrete application of constitutional, legal, or regulatory provisions.

Regulatory Decree: Issued by the President of the Republic based on their permanent regulatory power, provided for in numeral 11 of article 189 of the Constitution, which are necessary for the full execution of the law.

Information related to the Colombian legal framework can be found at <https://www.suin-juriscol.gov.co/legislacion/normatividad.html>

AUTHORITIES THAT ISSUE LEGAL NORMS

In Colombia, the following authorities have issued laws and administrative acts (decrees, resolutions, technical regulations) related to personal protective equipment:

ENTITY	SCOPE
Presidency of the Republic of Colombia	Establishes laws related to economic development, consumer protection, etc.
Congress of the Republic of Colombia	Establishes laws related to economic development, consumer protection, etc.
Ministry of Labor	Establishes provisions related to safety and health at work, including the supply of personal protective equipment

Ministry of Commerce, Industry and Tourism	Supports business activities, production of goods, and services and technology in order to improve their competitiveness and sustainability and encourage the generation of greater added value
Ministry of Mines and Energy of Colombia	Personal protective equipment associated with activities in the electricity and mining sectors
DIAN	Establishes tariff provisions related to personal protective equipment
Superintendent of Industry and Commerce (Consumer Protection)	Performs surveillance and product control
National Directorate of Firefighters of Colombia	Establishes the requirements for protective clothing for firefighters
General Maritime Directorate of Colombia - DIMAR	Establishes personal flotation device requirements
Colombia Efficient Purchase	Establishes purchase requirements for products purchased by the public sector

COLOMBIAN LEGAL NORMS: LAWS OF THE CONGRESS OF THE REPUBLIC OF COLOMBIA

LAW 2010 OF 2019: ECONOMIC GROWTH AND PROMOTION

The Economic Growth Law includes in article 14, the exemption from VAT, fees, contributions, tariffs, or nationalization of elements or equipment when the final recipient is the Colombian Firefighters. It does not apply when the equipment or elements are acquired for industrial or business brigades for emergency management.

LAW 1609 OF 2013: CUSTOMS REGULATIONS

This law establishes the general rules to which the government must abide by to modify tariffs, fees, and other provisions concerning the customs regulations.

Law 1609 of 2013 establishes the following objectives:

- Facilitate the development and application of international agreements and treaties signed and in force for Colombia, and participation in economic integration processes.
- Adapt the provisions that regulate the Customs Regulations to the commercial policy of the country, to the promotion and protection of national production, to the agreements to conventions and treaties signed and in force for Colombia, to the principles and norms of international law. In exercising this function, it will also take into account the recommendations issued by international trade organizations.

- Facilitate and expedite foreign trade operations to guarantee the dynamics of commercial exchange, access of products and services to internal and external markets, and the competitiveness of Colombian products and services in the international market.
- Promote the use of modern and environmentally sustainable technologies and means of communication that meet the needs and good practices recognized by international law.
- Promote the adoption of simplified procedures that contribute to the facilitation and streamlining of foreign trade operations.

LAW 1575 OF 2012: GENERAL FIREFIGHTERS LAW OF COLOMBIA

The General Firefighters Law of Colombia indicates that among the exclusive distinctive features that firefighters will have are the uniforms, which cannot be used by another person.

LAW 1480 OF 2011: CONSUMER STATUTE

The consumer statute in Colombia aims to protect, promote, and guarantee the effectiveness and free exercise of consumer rights, as well as protect respect for their dignity and their economic interests—especially regarding, among other aspects: the protection of consumers against risks to their health and safety; the access of consumers to adequate information (in accordance with the terms of this law, which allows them to make well-founded choices); and consumer education.

The provisions of this law regulate the rights and obligations arising between producers, suppliers, and consumers and the legal responsibility of producers and suppliers regarding the necessary information about the product and its advertising.

The rules contained in this law are generally applicable to consumer relations and the responsibility of producers and suppliers to the consumer in all sectors of the economy for which there is no special regulation, in which event the special regulation will apply and the supplemental norms established in this law. Likewise, this law is applicable to national and imported products.

Likewise, this law determines that every producer must ensure the suitability and safety of the goods and services offered or put on the market, as well as the quality offered—aspects that are contemplated in this law through Legal Guarantee, which, in terms of this law, is the obligation of every producer and/or supplier to be responsible for the quality, suitability, safety, and good condition and operation of the product.

LAW 1242 OF 2008: NATIONAL CODE OF NAVIGATION AND RIVER PORT ACTIVITIES

This law establishes the obligation to use lifejackets for passengers and crew during river trips in any type of vessel. The law does not establish requirements or specifications for lifejackets.

LAW 9 OF 1979: SANITARY MEASURES

The Sanitary Measures Law entered into force on July 16, 1979; it is promulgated among other aspects, to establish the general norms as a starting point of dispositions and regulatory norms to preserve, restore, or improve the aspects and conditions related to the health of people.

In Title III, this law addresses occupational health, a concept that is modified with Law 1562 of 2012 by that of Safety and Health at Work, where it indicates between articles 122 to 124 the obligation of

employers to deliver free of charge for the worker personal protective equipment according to the risks identified in the work environment and adjusted to the legal and technical standards approved by the Colombian government. Specifically, article 122 establishes the obligation for employers to provide each worker with personal protective equipment in quantity and quality in accordance with the risks to which they are exposed in the workplace. Likewise, Article 123 requires that personal protective equipment must comply with official standards and technical and safety regulations approved by the government.

COLOMBIAN LEGAL NORMS: DECREES FOR PROTECTIVE EQUIPMENT

DECREE 539 OF 2022: MINISTRY OF MINES AND ENERGY

Decree 539 of 2022 of the Ministry of Mines and Energy establishes the hygiene and safety regulations for open-pit mining, although it does not establish specific requirements for personal protective equipment in Chapter III, Personal Protective Equipment and Elements.

Article 12, Supply and Maintenance of Personal Protective Equipment and Elements establishes the following: "The person responsible for the application and compliance with this regulation is obliged to provide, replace, and carry out the maintenance of personal protective equipment and elements, at no cost to the worker, in accordance with the risks identified in the Occupational Health and Safety Management System, SG -SST, as well as supervising its workers in their use and maintenance, which must comply with the requirements established by the competent authority.

Paragraph "Personal Protective Equipment and Elements" must be certified in accordance with current standards within the national or international accreditation system. The decree does not mention what these standards are.

DECREE 1886 OF 2015 AND DECREE 944 OF 2022: MINISTRY OF MINES AND ENERGY

Decree 1886 of 2015 and decree 944 of 2022 are intended to establish the minimum standards for the prevention of risks in underground mining work, as well as adopt the procedures to carry out the inspection, surveillance, and control of all underground and surface mining work related to these.

Regarding Decree 1886 of 2015, it is established that the elements and personal protection equipment that are delivered to workers must be certified by recognized bodies within the National Accreditation System—or when these do not exist, they must be certified by recognized bodies within the International Accreditation System. The decree does not specify any particular rule.

Decree 944 of 2022, which modifies Decree 1886 of 2015, does not make any changes to personal protective equipment.

COLOMBIAN LEGAL NORMS: RESOLUTIONS FOR PROTECTIVE EQUIPMENT

RESOLUTION 2400 OF 1979: MINISTRY OF LABOR

Resolution 2400 of 1979 of the Ministry of Labor establishes the conditions and characteristics for personal protective equipment in Colombia and must comply with:

Eye and Face Protection

In article 177, resolution 2400 of 1979 establishes that the equipment for visual and facial protection must protect against projections of all kinds of cold or hot solid; liquid and gaseous particles; and light or heat radiation with filters for that purpose.

Likewise, resolution 2400 of 1979 indicates that glass and plastic lenses, windows, and other means of protecting the eyes must be free of striations, air bubbles, undulations, or spherical or chromatic aberrations. The front and rear surfaces of the lenses and windows shall not cause lateral distortion, except in the case where they provide optical corrections. Likewise, protective eyewear for workers who handle corrosive liquids, such as acids and caustic substances, must have goggle cups made of soft, non-flammable material, flexible enough to easily conform to the shape of the face and constructed in such a way so that liquid splashes cannot enter the eye through the ventilation openings.

Head Protection

Resolution 2400 of 1979 establishes that protective helmets must be resistant and light, made of non-combustible or slow-burning material, and must not be conductors of electricity (dielectric), nor permeable to moisture. Likewise, the resolution establishes that safety helmets manufactured in the country must comply with international standards, tests, and technical specifications. The resolution does not mention the international technical tests and specifications that must be met.

Foot and Leg Protection

Resolution 2400 of 1979 establishes that in Colombia, protective footwear must have a toecap that will support a weight of 1,200 kilos that is placed on it, or will resist the impact of a weight of 5 kilos that is dropped from a height of 30 centimeters. The inner part of the socket (toe), in either of these two tests, must not come less than 1.25 centimeters from the upper surface of the sole.

Likewise, it is established that according to the risk to which the user is exposed, safety footwear must have a steel sole interposed in the sole, be made of insulating or dielectric material for electrical work, does not give off sparks in explosive environments, and does not have metal nails in their design. Likewise, for leg protection resolution 2400 of 1979 establishes the use of leather leggings for quarries or heat-resistant materials that cover up to the knee or shin protectors with sufficient hardness, when required. The standard does not specify reference values, mandatory technical standards or technical specifications that this type of protection element must meet.

Hand and Arm Protection

Resolution 2400 of 1979 establishes general aspects for hand and arm protective equipment. Currently, there are no standards that establish technical specifications for this type of personal protective equipment. The current requirement is:

- Thick leather gloves, in some cases with metal protectors (or mitts reinforced with steel staples or steel mesh), when working with sharp materials, such as sheet steel or glass; in steel foundries; when chiseling, cutting, nailing, taping, or digging; when handling rails, rail ties, or material containing splinters will be required. Elbow-length gauntlets will be worn if necessary.
- Rubber gloves.

- Asbestos fabric gloves for workers in furnaces, foundries, etc., resistant to heat.
- Leather gloves for work with electric and autogenous welding.
- Gloves made of stainless-steel mesh for workers employed in cutting and boning meat, fish, etc.
- Gloves, mittens and protective sleeves made of asbestos or other appropriate heat-resistant material for workers who handle hot metals.
- Gauntlets which cover the forearm to protect workers against the action of toxic, irritant, or infectious substances.
- Maneuvering gloves for workers who operate drills, presses, punching machines, lathes, milling machines, etc., to prevent hands from being trapped by moving parts of the machines.

Respiratory Protection, Including Breathing Apparatus

Resolution 2400 of 1979 also establishes that the manufacture, quality, resistance, and duration of the respiratory protection equipment supplied to workers will be subject to the standards approved by the competent authority. To date, a competent authority has not been established to comply with this parameter. However, when one is established then personal protective equipment must meet the following requirements:

- Offer adequate protection against the particular risk for which it was designed.
- Be adequately comfortable when used by the worker.
- Fit comfortably without interfering with the user's natural movements.
- Offer a durability guarantee.
- Can be easily disinfected and cleaned.
- Have the factory mark affixed to identify the manufacturer.

RESOLUTION 5018 OF 2019: MINISTRY OF LABOR

Electrical-Protective Gloves and Sleeves

In accordance with resolution 5018 of 2019 issued by the Ministry of Labor, the personal protective equipment used for protection of electrical contact in the processes of generation, transmission, distribution, and commercialization of electrical energy, as well as for companies that make use of the Colombian electrical system or for any economic activity that involves electrical hazards, must be certified by the manufacturer in accordance with national or international standards and techniques, including electrical rigidity tests established in the Technical Regulation of Electrical Installations of Colombia, (RETIE), carried out by a laboratory accredited by the corresponding national body. The RETIE establishes that the dielectric strength tests must be done at least twice a year by the company that owns the protective equipment.

RESOLUTION 2844 OF 2007: MINISTRY OF SOCIAL PROTECTION

Hearing Protection

It is not found in Colombian legislation specifications or requirements for hearing protective equipment. However, the Evidence-Based Comprehensive Care Guide for Noise-Induced Sensorineural Hearing Loss in the Workplace (GATI-HNIR) was adopted as a mandatory reference for employers, with Resolution 2844 of 2007 of the Ministry of Social Protection used as the basis for recommendations on the use of hearing protective equipment for noise control in work areas, ANSI, NIOSH and OSHA publications.

Respiratory Protection, Including Breathing Apparatus

Resolution 2400 of 1979 does not establish specific conditions for respiratory protective equipment. It establishes general indications for use, according to the type of contaminant in the work environment. However, the Evidence-Based Comprehensive Care Guide for Pneumoconiosis (Silicosis, Coal Miner's Pneumoconiosis and Asbestosis) (GATINEUMO), adopted as a mandatory reference for employers with Resolution 2844 of 2007 of the Ministry of Protection Social, uses NIOSH and OSHA requirements as a basis for recommendations on the use of hearing protective equipment for noise control in work areas, recommending only the use of respiratory protective equipment that have the NIOSH/MSHA or NIOSH/DHHS verified label on the item, or demonstrated by written certification from these agencies. For purposes of selecting and developing personal respiratory protection programs, it is recommended to rely on the regulation codes established by NIOSH 29CFR84 and OSHA 29CFR1910.134.

RESOLUTION 4272 OF 2021: MINISTRY OF LABOR

Harnesses, Safety Belts, and Lines for Fall Prevention

Resolution 4272 of 2021 issued by the Ministry of Labor of Colombia, establishes that the elements or equipment of fall protection systems that are marketed in Colombia, which include harnesses, safety belts, and fall prevention lines, must have a certificate of conformity and must be compatible with each other in size, shape, materials, form, and diameter. Similarly, they must be resistant to strength, ageing, abrasion, corrosion and heat.

According to this standard, the following equipment must meet the characteristics mentioned below:

Harness

They must have a certificate of conformity; capacity to support a worker's weight of 140 kg, including their uniform, tools, and equipment; have the number of rings according to the needs of use at work. The width of the straps that hold the body during and after the fall is stopped must be a minimum of 1- 5/8".

Likewise, the harness and its hardware must meet the marking requirements in accordance with the standard under which it has its certificate of conformity.

Horizontal Lifelines

Horizontal lifelines must have a safety factor of not less than two in all their components, they may or may not have energy absorbing systems, depending on engineering calculations.

Likewise, horizontal lifelines must have sliders such as rings, pulleys, trolleys, or other certified systems according to their design, to connect hooks, carabiners, or other connection devices for fall arrest and/or restraint equipment.

In the case of portable horizontal lifelines, their design must allow the maximum simultaneous connection of up to two people, and all their components must have a certificate of conformity.

In the case of fixed horizontal lifelines, the cable to be used must be steel with a steel core with a nominal diameter equal to or greater than 5/16" (7.9 mm). If you have temporary lifelines, they can be made of steel with a steel core and a nominal diameter equal to or greater than 5/16" (7.9 mm), or they can be made of synthetic materials that meet the minimum resistance of 5,000 lbs. (22.2 kN, 2,268 kgf) per connected person. For this type of line, the inclusion of an energy absorber depends on the calculations made by the qualified person for the protection of the structure and the lifeline.

Rail systems must be certified by the manufacturer.

Vertical Lifelines

Vertical lifelines must be made of materials with a minimum strength of 5,000 lbs. (22.2 kN, 2,268 kgf) per connected person.

In the case of fixed vertical lifelines, the manufacturer must recommend the distances for the location of intermediate points and define the load and tension specifications as information for the design by the qualified person.

For portable vertical lifelines, they must be in nominal diameter steel cable between 5/16" (7.9 mm) to 3/8" (9.5 mm) or rope between 7/16" (11 mm) and 5/8" (16 mm) that comply with a minimum resistance of 5,000 lbs (22.2 kN, 2,268 kgf). Rope lifelines must not have knots at the end of their anchorage and their components must be certified, in addition to being compatible with each other in size, shape, materials, and diameter and guarantee that in a fall they generate arresting forces of less than 1,800 lbs (8 kN, 816 kgf).

Fixed horizontal and fixed vertical lifelines must have an identification system that indicates at least: date of installation and last inspection, resistance, brand, reference and series, use (restraint, positioning, detention), and number of users allowed. Likewise, the manufacturer must provide inspection and maintenance instructions in accordance with the certification standard.

Lanyards with Energy Absorbers

Resolution 4272 of 2021 of the Ministry of Labor establishes that lanyards with energy absorbers must have a maximum length of 1.8 m (6 ft) and when activated in the event of a fall, they must reduce the impact force to the worker's body at maximum 1,800 lbs (8 kN, 816 kgf).

Lanyards for Restraint or Positioning

Resolution 4272 of 2021 of the Ministry of Labor establishes that lanyards for restraint or positioning must have a minimum resistance of 5,000 lbs (22.2 kN, 2,268 kgf). These connectors may be made of rope, synthetic fiber band, chains, wide-opening carabiners, or other materials that guarantee a minimum resistance of 5,000 lbs (22.2 kN, 2,268 kgf).

RESOLUTION 661 OF 2014: NATIONAL BOARD OF FIREFIGHTERS OF COLOMBIA

Firefighter Gear

Resolution 661 of 2014, known as the Administrative, Technical, and Academic Regulation of the Colombian Firefighters, indicates the obligation that the fatigue uniform and the personal protective equipment of aeronautical firefighters must comply with international standards and be certified by laboratories in compliance with NIOSH, NFPA, or European EN standards. Regarding the characteristics and quality of the fabric of the fatigue uniform, there is still no specification from the National Fire Department.

On the other hand, this regulation establishes the obligation for fire departments to have the following protective equipment, which must have international standards for protection in activities against fire, rescue and control of incidents with dangerous substances:

- Helmet.
- Jacket.
- Pants.
- Boots.
- Hood.
- Gloves.
- Respiratory protective equipment (when applicable).
- Close-up suits.
- Special equipment for specific cases.

Regarding the fatigue uniform, the resolution establishes the following parameters:

- Two-piece uniform (shirt and pants), which must be used for fire risk management, preparation, rescue (of all its modalities), and attention to hazardous materials with the following specifications:
 - Dark-blue (navy-blue) American naval-type long-sleeve shirt for daily use.
 - Dark-blue (navy-blue) American naval-type pants with normal and overlapping side pockets with lid and zipper.
 - Hat in dark-blue denim (navy-blue) with the universal firefighter shield embroidered on the front.
 - Blue threaded t-shirt.
 - Card holder (identification badge) in blue fabric, yellow letters (rank at the top and name and surname at the bottom), sewn on the right pocket of the upper part of the shirt, 14 cm long and 3 cm wide.

- Mid-length boots, black (military type) with external zipper.
- The Colombian Firefighters Shield must be embroidered on the right sleeve of the shirt.
- The institution's shield must be on the left sleeve of the shirt.
- The words BOMBEROS COLOMBIA must be embroidered or stamped on the back of the shirt in yellow, and in black when the shirt is yellow for forestry groups;
- Items that may cause accidents should not be worn on work clothes (e.g. pens, metal badges, etc.);
- With the fatigue uniform (Work No. 3) only the hat or helmet must be used.
- For structural fires, the firefighter-type helmet will be used with the shield of each institution on the front of it and reflective side and rear bands.
- Heavy-duty black canvas belt or lanyard with safety buckles.

PARAGRAPH 1. The fatigue uniform and the personal protective equipment for aeronautical firefighters must comply with international standards applicable to this activity and must be certified by laboratories in compliance with NIOSH or NFPA standards or European EN standards, so as to guarantee the personal protection of the aeronautical firefighters against the risks associated with the activity.

PARAGRAPH 2. In territories where public-order conflicts arise, firefighters may choose to use Uniform No. 3 in red during incident attention.

On the other hand, this resolution establishes the following equipment for the firefighter, according to the kind of emergency that arises. The equipment must comply with NFPA or EN standards:

- Firefighter Protective Equipment for Structural Fires:
 - Helmet standardized to NFPA or EN
 - Nun or Hood standardized to NFPA or EN
 - Coat and trousers standardized to NFPA or EN
 - Gloves standardized to NFPA or EN
 - Boots standardized to NFPA or EN
 - Intrinsically safe portable flashlight (personal)
- Personal Protective Equipment for Forest Fires:
 - Helmet with standardized NFPA or EN tag for forest fires
 - Goggles for forest fires standardized to NFPA or EN
 - Nun or Hood standardized to NFPA or EN
 - Shirt and pants for forest fires standardized to NFPA or EN

- Gloves for forest fires standardized to NFPA or EN
- Boots for forest fires standardized to NFPA or EN
- Personal Protective Equipment for Urban Rescue:
 - Rescue helmet standardized to NFPA or EN
 - Goggles certified for impacts standardized to NFPA or EN
 - Colombian Firefighters Fatigue Shirt and Pants (Regulated)
 - Heavy duty elbow and knee pads
 - Gloves with biohazard protection standardized to NFPA or EN
 - Boots for urban rescue standardized to NFPA or EN
- Personal Protective Equipment for Vehicle Rescue:

For the attention of this type of emergencies, the Structural Firefighter Personal Protection Equipment must be used:

- Coat and trousers standardized to NFPA or EN
- Nun or hood standardized to NFPA or EN
- Boots standardized to NFPA or EN
- Intrinsically safe portable flashlight (personal)

Complemented by the following Personal Protection Equipment for Urban Rescue:

- Rescue helmet standardized to NFPA or EN
- Gloves with biohazard protection standardized to NFPA or EN
- Goggles certified for impacts standardized to NFPA or EN
- Additionally, in Colombia the use of a half-face or full-face mask (optional) with canister for biological risk and the use of internal nitrile gloves to those mentioned above is recommended.

- Personal Protective Equipment for Hazardous Materials:

A-Level

- Suit standardized to NFPA or EN
- Self-contained breathing apparatus with CBRN certification standardized to NFPA or EN
- Chemical boots standardized to NFPA or EN

B-Level

- Suit standardized to NFPA or EN
- Self-contained breathing apparatus with CBRN certification standardized to NFPA or EN
- Butyl, viton, PVC gloves, standardized to NFPA or EN
- Chemical boots standardized to NFPA or EN

C-Level

- Suit standardized to NFPA or EN
- Full face mask or respiratory protection with CBRN canister
- Butyl gloves standardized to NFPA or EN
- Chemical boots standardized to NFPA or EN

RESOLUTION 672 GENERAL MARITIME DIRECTORATE OF COLOMBIA – DIMAR

Personal Flotation Devices

This resolution issued by the Colombian Maritime Authority establishes in articles 4 and 5, the minimum personal safety equipment and elements that must be met by boats dedicated to the transport of maritime pilots within the jurisdiction of the General Maritime Directorate, indicating the obligation to include among the items lifejackets for all personnel on board. Pilots must wear retroreflective lifejackets with their respective light that activates in sea water, designed in such a way as to prevent the unconscious pilot's head from remaining face down, with a CO₂ automatic and manual inflation system, with an easily accessible inflation tube and whistle.

RESOLUTION 135 OF 2018 GENERAL MARITIME DIRECTORATE OF COLOMBIA – DIMAR

Personal Flotation Devices

The Colombian Maritime Regulation No 4 (REMAC 4), established by resolution 135 of 2018 of the General Maritime Directorate, in relation to the technical criteria to approve life-saving devices, establishes five types of individual life-saving devices which are considered lifejackets. The characteristics that each type of life-saving device marketed in Colombia must meet are:

- **Type I:** “OCEANIC” lifejacket or for TRIPS NOT CLOSE TO THE COAST. Must have the ability to keep unconscious people afloat. This type of lifejacket can be classified as a SOLAS (Safety Of Life At Sea) or non-SOLAS device. They must have a minimum buoyancy thrust of 150 N for adults and 50 N for minors.
- **Type II:** “COASTAL” lifejacket or for TRIPS NEAR THE COAST. Must have the ability to keep unconscious people afloat. This can be classified as a SOLAS or non-SOLAS device. They must have a minimum buoyancy thrust of 100 N for adults and 50 N for minors.
- **Type III:** “PROTECTED AND UNPROTECTED WATERS” lifejacket. It is also used in the practice of sports and recreational nautical activities. This can be classified as a SOLAS or

non-SOLAS device. They must have a minimum buoyancy thrust of 70 N for adults and 50 N for minors.

- **Type IV:** “FLOTATION AIDS”. This can be classified as a SOLAS or non-SOLAS device. They must have a minimum buoyancy thrust of 50 N.
- **Type V:** “WORK”. They must have the capacity to keep conscious people afloat and facilitate their rapid rescue. For use in work events on platforms, ships, and watercraft. They are not suitable for navigation. Suitable for conscious people and quick rescue. This can be classified as a SOLAS or non-SOLAS device. They must have a minimum buoyancy thrust of 70 N.

Markings for Personal Floatation Devices

According to article 4.2.1.9.1.4. of REMAC 4, lifejackets must have a printed or attached label, in which it is registered with indelible material and with a size that allows easy reading, with the following information:

- Approval by the Colombian Maritime Directorate (DIMAR) or a recognized organization.
- Date and identification number of the approval.
- Approval batch.
- Type of individual life-saving device, indicating if it is SOLAS/non-SOLAS (as applicable).
- Suitable for: adult or minor.
- Make and model of the device.
- Manufacturer and date of manufacture.
- Instructions for use.
- Validity of the approval.

For the classification of individual life-saving devices, REMAC 4 in its article 4.2.1.9.1.5. recognizes lifejackets manufactured in Colombia or abroad, which comply or do not comply with the requirements of the SOLAS Convention, as SOLAS or non-SOLAS, respectively.

Tests for Personal Floatation Devices

In accordance with article 4.2.1.9.1.5. of REMAC 4, SOLAS type lifejackets must comply with the tests described in the International Code of Life-Saving Devices, adopted for Colombia through resolution MSC.48(66) of the General Maritime Directorate of Colombia, carried out by a recognized organization, in order to verify compliance with the established specifications.

In relation to the individual non-SOLAS rescue devices, Type I, Type II, Type III, Type IV and Type V, they must comply with the specifications and be subjected to the tests described in Annex A of REMAC 4. The following are the specifications and tests of Annex A of REMAC 4:

- Construction Materials.
 - The flotation materials of the lifejackets must be recyclable materials; the use of cork, kapok and any other material made through the use of chlorofluorocarbons (CFC) or hydrochlorofluorocarbons (HCFC) is prohibited.
 - The material of the structural coating of the lifebuoy may be: fire-retardant textiles or fire-retardant vinyl coating. Type III is exempted.
 - Belts, lashing straps, and structural cords must be made of nylon or polypropylene.
 - Buckles and fittings must be made of high-impact plastic material: nylon or acetal. In the case of being metallic, they must be in stainless steel or aluminum.
 - The thread used in the seams must be a minimum of 40 gauge, synthetic, fire retardant and sealed.
- Design and Operation
 - The lifejackets will be of a highly visible contrasting color in all the parts which can contribute to their detection in the sea. It is recommended that they be international red or intense reddish orange.
 - They must be designed for different weights or sizes, in order to keep any person afloat regardless of size, weight, age or sex and/or additional protection, for at least 24 hours, while also preserving their buoyant material and buoyancy when remaining in the water.
 - The design shall allow all adjustment elements to be easily tightened and loosened both in and out of the water. They must have the necessary fasteners for proper function, which must be few and simple to provide a quick and effective closure that does not require tying knots. They must allow the people who are going to use them to easily determine how to put them on correctly without help, orientation, or previous demonstration, according to their size and weight, in less than 1 minute.
 - They should easily adjust to various sizes of adults dressed in light or heavy clothing.
 - Its design should not restrict the user's vision, hearing, breathing, or movement of the head and limbs, having the function of allowing the user to jump into the water without injuring themselves and that the lifejacket does not get out of adjustment, resisting violent contact with water without suffering damage such as contraction, cracking, swelling, decomposition, or alteration in its physical-mechanical properties. It must also allow swimming a distance of at least 25 meters to board a survival craft.
 - The lifejacket must have retro-reflective tape in order to allow its location by sea or air. This will be sewn with the thread of characteristics already stated. It will be distributed to the front in the body of the lifejacket and neck. In the case of yoke- type lifejackets, the required surface area must be met on both sides: 400 cm² for Type I and II, 200 cm² for Type III.
 - The lifejacket must be designed so that the user floats in the correct position according to the type of lifejacket, so that if a person finds themselves floating and incapacitated, exhausted, or unconscious in a face-down position, the lifejacket will immediately place

them in a face-up position with the corresponding level of support according to the following descriptions:

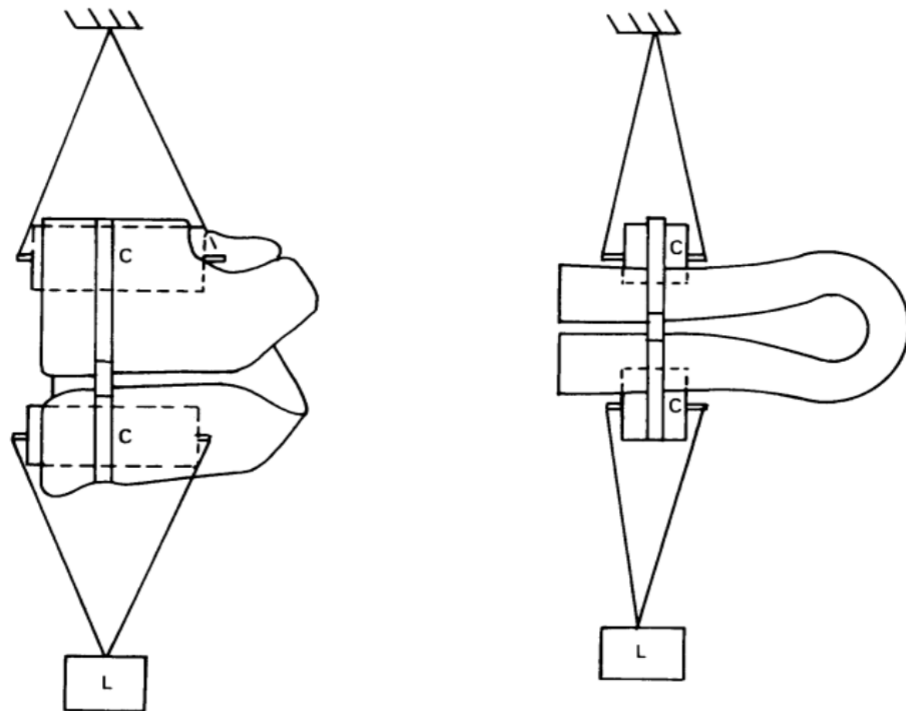
- For Type I and Type II, they must be able to turn an unconscious person into a stable position of safety and ensure the user floats in the correct position with the mouth and nose out of the water, without requiring any further action from the user in a maximum time of 5 seconds.
- For Type III, they must be able to turn an unconscious person to a stable position of safety and guarantee the user buoyancy in the correct position with the mouth and nose out of the water, without requiring any further action from the user within a maximum time to 10 seconds.
- Type I, Type II, Type III and Type V lifejackets must have a whistle that emits a sound of at least 110 decibels firmly attached to the lifejacket by means of a cord.
- Type I lifejackets must have a manual or automatic ignition lamp that emits white light, with a light intensity of at least 0.75 candelas, with a minimum duration of 8 hours, which must be visible in as large a segment as possible of the upper hemisphere, when attached to the lifejacket. In the event that the light is of the flash type, in addition to the above, it must be provided with a manual switch and will emit flashes at a minimum rate of 50 and a maximum of 70 per minute. Additionally, the lamp must be resistant to fire and the action of hydrocarbons and their derivatives without suffering damage.
- Type II and Type III lifejackets, which are used in ships and watercraft whatever their activity, which operate at night in coastal areas or trips near the coast, in protected and unprotected waters must have, in addition to the whistle, a lamp equal to that established for the Type I lifejacket.
- Type V lifejackets used for night work must have a whistle and lamp equal to that established for Type I lifejackets.
- Lifejacket Tests
 - Buoyancy thrust verification test:
 - The buoyancy thrust capacity of the lifejacket must not be less than that established by the manufacturer.
 - Buoyancy test:
 - The buoyancy of the lifejacket shall be measured before and after it has been completely submerged for 24 hours in fresh water just below the surface.

For Type I and Type II vests, the difference between the initial buoyancy and the final buoyancy must not exceed 5% of the initial buoyancy. For Type III and Type V vests, they must be kept afloat after 24 hours.
 - Fire exposure test:
 - The lifejacket will be placed in a 30 cm x 35 cm x 6 cm test tray, in a place free from drafts. Water will be poured into the bottom of the bucket up to a height of 1 cm and then the necessary gasoline to reach a total minimum depth of 4 cm. The gasoline will be ignited and allowed to burn freely for 30 seconds. The lifejacket shall then be

passed through the flames in a vertical position, freely suspended with its lower part 25 cm above the upper edge of the bucket, so that the exposure time to the fire is 2 seconds. The lifejacket must not continue to burn or melt after being removed from the flames. This test will only be performed for Type I lifejackets.

- Resistance tests
 - Resistance test of the body or the lifting collar of the vest. The vest will be submerged in water for 2 minutes and then removed and closed in the same way as when worn by a person. For Type I lifejackets, a minimum force of 900 N (92 kgf) for adults and 500 N (51 kgf) for children will be applied. For Type II, Type III and Type V lifejackets, a minimum force of 500 N (51 kgf) for adult vests or 300 N (31 kgf) for children's vests will be applied for 30 minutes on the part of the vest that holds it to the wearer's body (as shown in Figure I.) The wearer should not be damaged as a result of this test. For the test, cylinders will be used for the fastening of the lifejacket and the placement of the test load.

Figure I. Lifejacket body resistance test arrangement



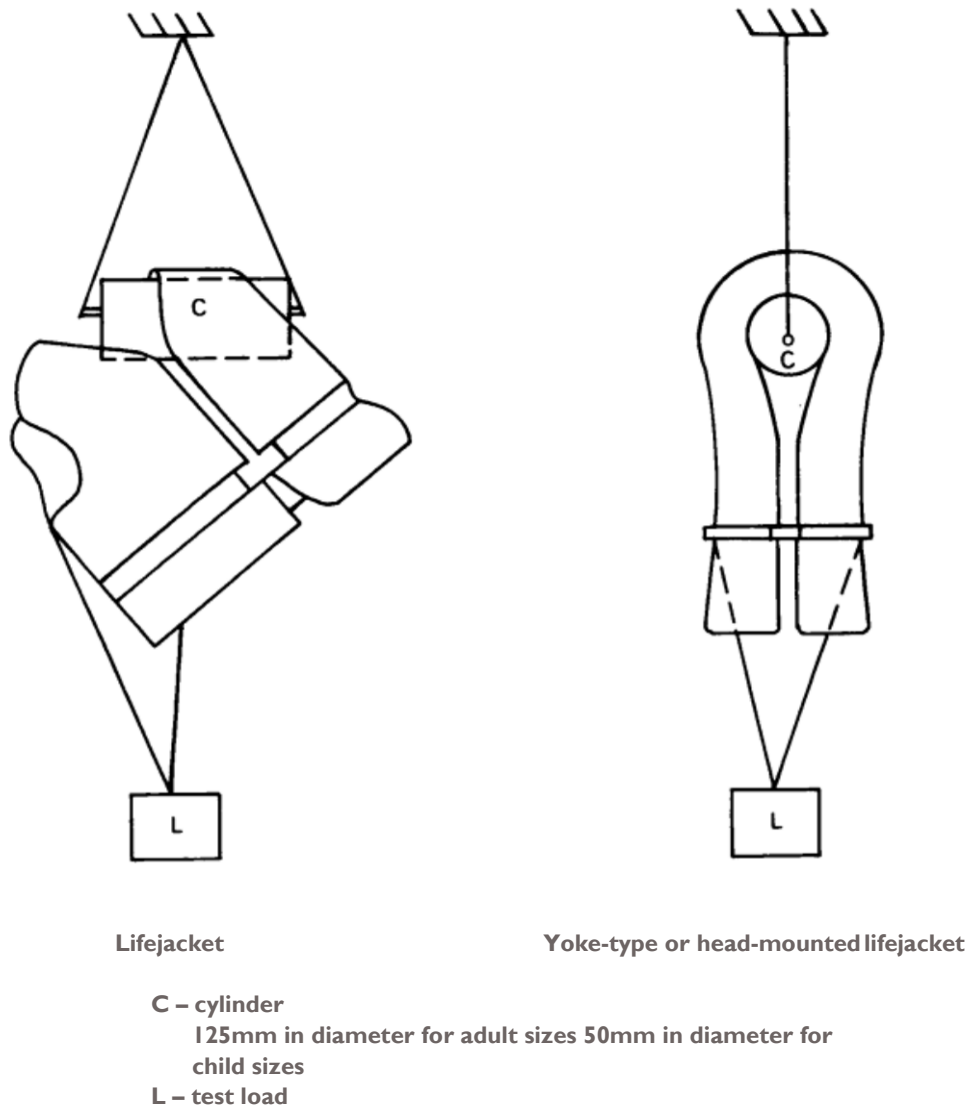
Lifejacket

Yoke-type or head-mounted lifejacket

C – cylinder
 125 mm in diameter for adult sizes 50 mm in diameter for child sizes
L – test load

- Lifejacket shoulder resistance test. The vest will be submerged in water for 2 minutes and then removed and closed in the same way as when worn by a person. For Type I lifejackets, a minimum force of 800 N (82 kgf) for adults and 500 N (51 kgf) for children will be applied. For Type II, Type III and Type V lifejackets, a minimum force of 500 N (51 kgf) for adult vests or 300 N (31 kgf) for children's vests will be applied for 30 minutes on the part of the vest that holds it to the wearer's body (as shown in figure 2.) The wearer should not be damaged as a result of this test. For the test, cylinders will be used for the fastening of the lifejacket and the placement of the test load.

Figure 2. Lifejacket Shoulder Strength Test Arrangement



- Placement test:

To minimize the risk that persons unfamiliar with lifejackets will not don them incorrectly, often under unfavorable conditions, the following characteristics of lifejackets shall be checked and tested:

- The fasteners necessary for proper performance should be few and simple, and provide a quick and effective closure that does not require knotting.
- Adult lifejackets should easily fit a variety of adult sizes, dressed in light or heavy clothing.
- All lifejackets must also be able to be worn inside out, unless it is clear that they can only be worn on one side.

The tests can be individual or in group.

A test will be done without and with instructions for use.

The vest must be in a stowed condition, it must be placed on the ground, face up, in front of the test subject.

When the instruction for the test is given, it should be the same for all subjects: “SÍRVASE COLOCARSE ESTE CHALECO TAN PRONTO COMO SEA POSIBLE Y AJUSTARLO CEÑIDAMENTE DE MODO QUE USTED PUEDA ABANDONAR EL BUQUE” (“PLEASE PUT ON THIS VEST AS SOON AS POSSIBLE AND ADJUST IT TIGHTLY SO YOU CAN ABANDON SHIP”)

After the appropriate demonstration, the subjects must put on the lifejackets correctly without assistance in a maximum of one minute.

- Behavior test in the water:

This part of the test is intended to determine if the lifejacket can help an incapacitated, exhausted, or unconscious person; that it will not cause damage; and to demonstrate that the lifejacket does not excessively impede the movements, will not deteriorate, or cause injury to the user.

- Tests of inflatable lifejackets:

Two inflated and non-inflated lifejackets will be subjected to the temperature cycle test established in Resolution MSC.81 (70) of the Maritime Safety Committee.

Automatic and manual inflation systems shall be tested immediately after each temperature cycling test.

The tests shall be carried out using lifejackets inflated both automatically and manually and also with one of the compartments deflated. The test carried out without inflating one of the compartments shall be repeated as many times as necessary to perform it once with each of the compartments deflated.

Testing of materials used for inflatable inner tubes, inflation systems, and components shall be tested to ensure that they do not rot, discolor, or deteriorate from exposure to sunlight and are not unduly affected by sea water, hydrocarbons, or mold.

- Lifejacket light tests:

After at least one temperature cycle, two of these lights shall be removed from lifejackets that have been stowed at -30°C and operated submerged in 4°C seawater, two lights shall be taken out that have been stowed at a temperature of +35°C then immersed in

sea water at a temperature of +30°C and another two lights shall be taken out that have been at room temperature and operated submerged in freshwater at room temperature.

A light attached to a lifejacket must be subjected to the 2-meter drop test.

- Approval

The criteria for the approval of individual life-saving devices are defined in numeral 4.2.1.9.1.7 of REMAC 4, where it is indicated that the approval will be carried out by the General Maritime Directorate of Colombia (DIMAR), or by the organization that delegates DIMAR, according to the following procedure:

SOLAS-type individual life-saving devices, of national manufacture or imported, must comply with the manufacturing requirements stipulated in the SOLAS Convention, the International Life-saving Appliance Code (LSA Code) and guidelines of the International Maritime Organization (IMO) for evaluation performance. Likewise, in the opinion of the General Maritime Directorate, they must comply with the tests established in Resolution MSC.81 (70) or other equivalent tests. These tests are:

- Temperature cycling test
- Buoyancy test
- Fire exposure test
- Hydrocarbon resistance test
- Test of the materials used for the lining, the straps, and the seams
- Resistance tests
- Additional tests of buoyancy materials for lifejackets other than cork and kapok
- Placement test
- Behavior tests in the water
- Children's lifejacket tests
- Tests of inflatable lifejackets

The individual life-saving devices of the non-SOLAS type, manufactured nationally or imported, must comply with the requirements and tests established in Annex A of REMAC 4, noted above.

When an individual life-saving device manufactured in series satisfactorily meets the manufacturing tests and/or the performance tests, the identical equipment (same batch) installed on board will be considered accepted, and the respective approval label must be affixed.

Life-saving devices manufactured abroad, produced in series and imported with the purpose of being installed on board a ship or watercraft, which have previously been approved directly or through a recognized organization by a contracting government of the SOLAS Convention.

74, may be homologated, approved, and accepted by the General Maritime Directorate, when:

- Submit the original certificate of approval.
- It is possible to reliably verify that the device is duly identified so that a correlation can be established with the approval certificate.
- It is verified through technical evaluation of operation by the General Maritime Directorate or by a duly designated recognized organization, that the life-saving device corresponds to the type for which it was designed, to the prescriptions of the Convention for the cases of SOLAS type or non-SOLAS type.

REMAC 4 also clarifies that when the individual life-saving devices have been approved by a Maritime Authority, a signatory of the SOLAS 74/78 Amended Agreement; once the authenticity of their approval has been duly verified, they will be accepted and approved by the General Maritime Directorate in Colombia, without the need for evidence.

Likewise, the General Maritime Directorate of Colombia clarifies in REMAC 4 that the approval of the individual rescue devices must be requested directly by the manufacturer, importer, distributor, shipowner, or user to the General Maritime Directorate, who may delegate to a recognized organization to carry out the pertinent tests. The costs of carrying out the tests will be borne by the applicant.

Likewise, REMAC 4 indicates that, during the process of approving the life-saving devices, and when it deems it necessary, the General Maritime Directorate may require the presentation of elements that detail the characteristics and/or construction specifications of the device to be approved.

Once the results of the tests and requirements required for the life-saving devices have been satisfactorily fulfilled, the General Maritime Directorate or recognized organization designated for this purpose will proceed to issue the certificate of approval. After obtaining the certificate of approval, the lifejackets must be marked with an approval label attached to the device, for which REMAC 4 indicates the following example, taking into account that the label must be 10 x 12 cm in size and made with ink resistant to the action of water.

ETIQUETA DE APROBACIÓN

DISPOSITIVO DE SALVAMENTO APROBADO DIMAR – Colombia	
Chaleco Salvavidas Tipo	
Flotabilidad de	Newton
<p>Para ser utilizados en navegación en áreas marítimas parcialmente abrigadas que en ningún caso superen las ____ milas náuticas, medidas desde la línea de costa, y vías fluviales, u otras aguas cuya configuración geográfica presente una protección física a la navegación.</p>	
INSTRUCCIONES DE USO	
<ul style="list-style-type: none">- Verifique el buen estado del chaleco- Elija el tamaño apropiado a su talla y peso- Abroche y ajuste el cinturón, el chaleco debe quedar pegado al cuerpo- Peso máximo de ____ kg	
<p>Después del uso enjuagar con agua dulce, limpia y fría. Dejar secar al aire, nunca aproximándolo a una Fuente de calor directo.</p>	
APROBADO POR LA DIRECCIÓN GENERAL MARÍTIMA: DIMAR – Colombia	
No. DE APROBACIÓN: _____	Fecha: D M A
VIGENCIA DE APROBACIÓN: D M A	
FABRICADO POR: XXXXXXXXXX	FECHA DE FABRICACIÓN: D M A
MODELO:	
Evaluación técnica en Colombia, Organización Reconocida	

In accordance with REMAC 4, the certificate of approval must be renewed every two years.

Likewise, in REMAC 4 there is the following format to request the approval of the individual life-saving device:

ANEXO "C"

FORMATO DE SOLICITUD PARA APROBACIÓN DE UN DISPOSITIVO INDIVIDUAL DE SALVAMENTO

Ciudad y Fecha

Señores Mercante
Dirección General Marítima
Subdirección de Marina
Bogotá. D.C.

Comendidamente solicito a Uds. Otorgar Certificado de Aprobación al dispositivo o medio de salvamento que se señala a continuación, para lo cual se adjuntan los requisitos necesarios:

Identificación del dispositivo individual de salvamento que requiere aprobación

Caleco salvavidas: _____ Aro salvavidas (o similar): _____

Estado del dispositivo:

En proceso de fabricación: Sí _____ No _____ Ya fabricado: Sí _____ No _____

Importado: Sí _____ No _____ En uso a bordo: Sí _____ No _____

Si esta en uso, indicar tipo instalación:

Nave: _____ Artefacto Naval: _____ Instalación terrestre: _____

Nombre de la nave o artefacto naval y lugar en donde se encuentra en uso:

Fabricado o en proceso de fabricación en:

Colombia: _____ Extranjero: _____ País: _____

Nombre Fabricante: _____ Fecha fabricación: _____

Aprobado por Administración Marítima: Sí _____ No _____

Certificado por: _____

Características del dispositivo:

Tipo: _____ Color: _____ Material: _____

Talla: _____ Empuje de flotación: Newton: _____ Otra: _____

Documentos que se adjuntan:

Documentos de aprobación adjuntos (solo para los que serán homologados):

02 ejemplares de instrucciones de uso: Sí _____ No _____

02 ejemplares de Manual de mantenimiento: Sí _____ No _____

Muestras del dispositivo (cantidad):

En fabricación: 01 Prototipo

Ya fabricado: 02 del lote a aprobar

A bordo: 01 idéntico al grupo

Firma del solicitante

CC. Tel, Correo, Dirección, etc.

TECHNICAL STANDARDIZATION. VOLUNTARY STANDARDS

ENTITIES THAT ISSUE COLOMBIAN TECHNICAL STANDARDS

In Colombia, the Colombian Standards and Technical Guides are issued by ICONTEC, in its capacity as the national standardization body of Colombia.

COLOMBIAN TECHNICAL STANDARDS

EYE AND FACE PROTECTION

NTC 1771: Higiene y seguridad. Protectores de ojos. Vocabulario (*Hygiene and Safety. Eye Protectors. Vocabulary*)

Establishes the definitions of eye protectors for personal use.

NTC 1825: Higiene y seguridad. Protectores individuales de ojos (*Hygiene and Safety. Personal Eye Protectors*)

Establishes the functional requirements for the different types of individual eye protectors, used mainly in industry.

NTC 1826: Higiene y seguridad. Protectores individuales de ojos. Métodos de ensayo no ópticos (*Hygiene and Safety. Personal Eye Protectors. Non-Optical Test Methods*).

Establishes non-optical test methods for eye protectors.

NTC 1827: Higiene y seguridad. Protector de ojos. Métodos de ensayo ópticos (*Hygiene and Safety. Eye Protectors. Optical Test Methods*).

Establishes optical test methods for eye protectors.

NTC 1834: Higiene y seguridad. Protectores individuales de ojos. Filtros infrarojos (*Hygiene and Safety. Personal Eye Protectors. Infrared Filters*).

Establishes the designation and the requirements that must be met by filters for protection against infrared radiation, used in individual eye protectors.

NTC 1835: Higiene y seguridad. Protectores individuales de ojos. Filtros ultravioleta (*Hygiene and Safety. Personal Eye Protectors. Ultraviolet Filters*).

Establishes the designation and requirements that must be met by filters for protection against ultraviolet (UV) radiation used in individual eye protectors.

NTC 1836: Higiene y seguridad. Protectores individuales de ojos para soldar. Utilización y requisitos de transmitancia (*Hygiene and Safety. Personal Eye Protectors for Welding. Utilization and Transmittance Requirements*).

Establishes the designation and the requirements that must be met by filters in individual eye protectors for protection in manual welding and other industrial operations that present similar risks.

NTC 3610: Dispositivos de protección personal ocular y facial en el trabajo y la educación (American National Standard for Occupational and Educational Personal Eye- and Face-Protection Devices)

This standard establishes criteria related to the general requirements, testing, permanent marking, selection, care, and use of protectors to minimize the occurrence and severity or prevention of injury from hazards such as impact, non-ionizing radiation, and liquid splash exposure in occupational and educational settings, including but not limited to, machine operations, welding and cutting materials, chemical handling, and assembly operations. Certain hazardous exposures are not covered in this standard. These include, but are not limited to the following: bloodborne pathogens, x-rays, high-energy particulate radiation, microwaves, radio frequency radiation, lasers, masks, and sports and recreation.

NTC 6493: Protección individual de los ojos. Especificaciones. (Personal Eye Protection Specifications)

This document specifies the functional requirements for different types of individual eye protectors and incorporates general considerations such as:

- Designation.
- Classification.
- Basic requirements applicable to all eyeprotectors.
- Various particular and optional requirements.
- Allocation of requirements, tests, and applications.
- Marking.
- Information for users.

The transmittance requirements for the different types of filter eyepieces are indicated in other standards (see section 2).

This document is applicable to all types of individual eye protectors that are used against different hazards such as those found in industry, laboratories, educational centers, DIY activities, etc., which can cause eye injuries of the eyes or alterations to vision, with the exception of nuclear radiation, X-rays, lasers, and infrared (IR) radiation emitted by low-temperature sources.

The requirements of this standard are not applicable to eye protectors for which other complete and independent standards exist, such as laser protectors, sun glasses for general use, etc., unless explicit reference is made to this standard in those standards.

HEAD PROTECTION

NTC 1523: Higiene y seguridad. Cascos de seguridad industrial (Hygiene and Safety. Industrial Safety Helmets)

Establishes the minimum performance requirements for industrial safety helmets that reduce impact and penetration forces and can provide protection against electric shock.

NTC 5949: Higiene y seguridad. Cascos de protección para la industria (*Hygiene and Safety. Safety Helmets for the Industry*)

Specifies the physical and behavioral requirements, test methods, and marking requirements for industrial protective helmets.

FOOT AND LEG PROTECTION

NTC-ISO 20346: Equipo de protección personal. Calzado de protección (*Personal Protective Equipment. Protective Footwear*)

Specifies the basic and additional (optional) requirements for protective footwear.

NTC-ISO 20344: Equipo de protección personal. Métodos de ensayo para calzado (*Personal Protective Equipment. Test Methods for Footwear*)

Specifies the test methods for footwear designed as personal protective equipment.

NTC-ISO 20345: Equipo de protección individual. Calzado de seguridad (*Personal Protective Equipment. Safety Footwear*)

Specifies the basic and additional (optional) requirements for safety footwear.

NTC-ISO 20347: Equipo de protección personal. Calzado de trabajo (*Personal Protective Equipment. Occupational Footwear*)

Specifies the basic and additional (optional) requirements for work footwear.

HAND AND ARM PROTECTION

NTC 5684: Guantes de protección contra riesgos mecánicos. (*Protective Gloves against Mechanical Risks*)

Specifies the requirements, test methods, marking and information that must be supplied for gloves intended to protect against the mechanical risks of abrasion, blade cuts, tearing and perforation.

NTC 6492: Guantes de protección. Requisitos generales y métodos de ensayo. (*Protective Gloves. General Requirements and Test Methods*)

Establishes the general requirements and appropriate test procedures for glove construction and design, resistance of glove materials to water penetration, safety, comfort, and efficacy, marking and information supplied by the manufacturer applicable to all protective gloves.

NOTE: May also apply to arm protectors and gloves permanently attached to gas-tight suits.

This document does not refer to the protective properties of the gloves and therefore it should not be used alone but in combination with the specific standard(s).

A non-exhaustive list of these standards is provided in the bibliography.

NTC-ISO 374-5: Guantes de protección contra químicos y microorganismos peligrosos. Parte 5. Terminología y requisitos de desempeño para los riesgos de microorganismos (*Protective Gloves against Dangerous Chemicals and Microorganisms. Part. 5: Terminology and Performance Requirements for Microorganism Risk*)

Specifies the requirements and test methods for protective gloves intended to protect the user against microorganisms.

GLOVES AND SLEEVES FOR ELECTRICAL PROTECTION

NTC 2219: Higiene y seguridad. Gantes aislantes de electricidad (*Hygiene and Safety. Electric Insulating Gloves*)

Establishes the requirements that must be met and the tests to which insulating gloves must be subjected when used to protect the user against direct contact with electric current.

HEARING PROTECTION

To date, there are no Colombian Technical Standards that address requirements for hearing protective equipment.

RESPIRATORY PROTECTION, INCLUDING BREATHING APPARATUS

NTC 1733: Mascarillas quirúrgicas. Requisitos y métodos de ensayo (*Medical Face Masks. Requirements and Test Methods*)

This document specifies the construction, design, performance requirements, and test methods for surgical masks intended to limit the transmission of infectious agents from medical personnel to patients during surgical procedures and other medical settings with similar requirements. A surgical mask with an appropriate microbial barrier can also be effective in reducing the emission of infectious agents from the nose and mouth of an asymptomatic carrier or a patient with clinical symptoms.

This standard is not applicable to masks provided exclusively for the personal protection of medical personnel.

NOTE 1: There are published standards for masks intended for use as personal respiratory protective equipment.

NOTE 2: Annex A of this standard provides information for users of surgical masks.

NTC 3852: Dispositivos de protección respiratoria. Medias máscaras filtrantes de protección contra partículas. Requisitos, ensayos, marcado (*Respiratory Protective Devices. Filtering Half Masks to Protect against Particles. Requirements, Testing, Marking*)

This document specifies the minimum requirements that must be met by filtering half masks used as respiratory protection devices against particles, except those designed for escape situations.

The document also includes laboratory and practical performance tests for the evaluation of compliance with the requirements.

NTC 6486: Aprobación de dispositivos de protección respiratoria (*Respiratory Protective Devices*)

This document specifies the minimum requirements and prescribes methods to be used to conduct inspections, examinations, and tests to determine the performance of respirators used during entry or escape from hazardous atmospheres.

NTC-EN 1827: Equipos de protección respiratoria. Respiradores de mediana cara con filtros desmontables para elementos particulados y/o gaseosos simples o combinados. Requisitos, ensayos, marcado (*Respiratory Protective Devices. Half Masks with Removable Valves for Simple or Combined Particulate and/or Gaseous Elements. Requirements, Testing, Marking*)

This standard specifies the performance requirements, test methods, and marking for (reusable) masks without inhalation valves and with removable filters (designed to be used for a maximum of one work shift), and that offer protection against gases, gases and particles, or particles only. This standard does not cover equipment designed for use in circumstances where there is or may be oxygen deficiency (oxygen below 17% by volume) or for evacuation situations.

HARNESSES, SAFETY BELTS AND LINES FOR FALL PREVENTION

NTC 2037: Requisitos de seguridad para sistemas, subsistemas y componentes personales de detención de caídas (*Safety Requirements for Personal Fall Arrest System, Subsystems, and Components*)

Establishes requirements for the operation (performance), design, marking, qualification, instruction, training, inspection, use, maintenance, and removal from service for connectors, full body harnesses, slings, energy absorbers, anchorage connectors, fall arresters, vertical lifelines and self-retracting lanyards that make up personal fall arrest systems for users who are within the capacity range of 59 kg to 140 kg (130 lbs to 310 lbs).

FIREFIGHTER GEAR

NTC 3251: Vestidos de protección contra calor y fuego. Evaluación del comportamiento térmico de los materiales y ensambles de materiales cuando se exponen a una fuente de calor radiante (*Clothing for Protection against Heat and Fire, Evaluation of Thermal Behaviour of Materials and Material Assemblies when Exposed to a Source of Radiant Heat*)

Specifies two complementary methods for the evaluation of the thermal behavior of materials and their assemblies used in protective clothing against heat and fire, when exposed to a radiant heat source.

NTC-EN 13034: Ropa de protección contra productos químicos líquidos. Requisitos de desempeño para la ropa de protección química que ofrece protección limitada contra productos químicos líquidos (equipos del Tipo 6 y PB [6]) (*Protective Clothing against Liquid Chemicals. Performance Requirements for Chemical Protective Clothing Offering Limited Protective Performance against Liquid Chemicals (Type 6 and Type PB [6] Equipment)*)

This document specifies the minimum requirements for limited-use and reusable limited-performance chemical protective clothing. Limited performance chemical protective clothing is intended for use in cases of potential exposure to light spray, liquid aerosols, or low volume and pressure splashes where a complete liquid permeation barrier is not required (at the molecular level).

This document covers both chemical protective suits (Type 6) and partial body protection (Type PB [6]).

Chemical protective suits (Type 6) cover and protect at least the trunk and extremities, e.g. one-piece coveralls or two-piece suits, with or without hood, socks, or boot covers. This document specifies the minimum requirements for connections between different parts of type 6 suits by using a reduced spray test of the entire suit, which is a variant of EN ISO 17491-4 as described in 5.2.

Equally limited performance partial body protection (Type PB [6]) covers and protects only specific parts of the body, e.g. jackets, aprons, sleeves, etc. These should not be subjected to the full suit test (5.2).

NTC-EN 14605: Ropas de protección contra productos químicos líquidos. Requisitos de desempeño para la ropa con uniones herméticas a los líquidos (Tipo 3) o con uniones herméticas a las pulverizaciones (Tipo 4), incluyendo las prendas que ofrecen protección únicamente a ciertas partes del cuerpo (Tipos PB [3] y PB [4]) (Protective Clothing Against Liquid Chemicals. Performance Requirements for Clothing with Liquid-Tight (Type 3) or Spray-Tight (Type 4) Connections, Including Items Providing Protection to Parts of the Body Only (Types PB [3] and PB [4]))

This document specifies the minimum requirements for the following types of reusable, limited-use chemical protective clothing:

- Full body protective clothing with liquid-tight joints between the different parts of the clothing (Type 3: liquid-tight clothing) and, if applicable, with liquid-tight joints with component parts such as hoods, gloves, boots, visors, or respiratory protection equipment, which may be specified in other standards.

Examples of this clothing are one-piece jumpsuits or two-piece suits, with or without hoods or visors, with or without socks or boot covers, and with or without gloves.

- Full body protective clothing with spray-tight joints between different parts of the clothing (Type 4: spray-tight clothing) and, if applicable, with spray-tight joints with component parts, such as hoods, gloves, boots, visors or respiratory protection equipment, which may be specified in other standards.

Examples of this clothing are one-piece jumpsuits or two-piece suits, with or without a hood or visor, with or without socks or boot covers, and with or without gloves.

- Garments for partial body protection that offer protection to specific parts of the body against the permeation of liquid chemical products.

Examples of these garments are lab coats, jackets, pants, aprons, sleeves, hoods (without air supply), among others. As partial body protection leaves some parts of the body unprotected, this document only specifies performance requirements for clothing material and seams.

NOTE: Garments for partial body protection that offer protection only against the penetration of liquid chemicals are listed in Standard EN 13034 (Type PB [6] clothing).

NTC-EN 943-1: Ropa de protección contra productos químicos sólidos, líquidos y gaseosos, incluyendo aerosoles líquidos y sólidos. Parte I: Requisitos de desempeño de los trajes de protección química, ventilados y no ventilados, herméticos a gases (Tipo I) (Protective Clothing against Dangerous Solid, Liquid and Gaseous Chemicals, Including Liquid and Solid Aerosols. Part I: Performance Requirements for Type I (Gas-Tight) Chemical Protective Suits)

Specifies the minimum requirements, test methods, marking, and information supplied by the manufacturer for gas-tight, ventilated, and non-ventilated chemical protective suits.

Specifies that full-body personal protective ensembles must be worn to protect against solid, liquid, and gaseous chemicals, including liquid and solid aerosols.

PERSONAL FLOTATION DEVICES

NTC 5563: Prenda de señalización de alta visibilidad. Métodos de ensayo y requisitos. (High-Visibility Warning Clothing for Professional Use. Test Methods and Requirements)

This standard specifies the requirements for protective clothing capable of visually signaling the presence of the user, intended to make the user visible in risk situations with any type of daylight and when illuminated in the dark by any artificial light source.

Performance requirements for color and retro-reflection are included, as well as requirements for minimum area and the layout of materials used in the protective garment.

COLOMBIAN LEGAL COMMERCIAL AND TARIFF RULES

DECREE 1881 OF 2021: THE MINISTRY OF COMMERCE, INDUSTRY, AND TOURISM

This decree adopts the National Customs Tariff, which must be applied to products imported into the country, as of January 1, 2022. Among the provisions, the Decree establishes that for the classification of goods in the Customs Tariff the brand, the name of the manufacturer, or the seller should not be taken into account. Likewise, the taxes indicated in this Decree include *ad-valorem* rights whose payment must be made in legal currency of the country.

DECREE 735 OF 2013: MINISTRY OF COMMERCE, INDUSTRY, AND TOURISM

Through Decree 735 of 2013, rules are established to make effective the legal guarantee and its supplements. It contemplates the aspects for the request, compliance, and deadlines to make a legal guarantee effective.

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Rules available to the community:

Below are the standards that ICONTEC shares with the community to support the management of the crisis generated by COVID-19.

MEDICAL DEVICES	
STANDARD	TITLE
NTC 5427:2017	Clinical analysis. Reagents for use in in vitro diagnostics. Conservation of the cold chain and conditions of temperature, storage, transport and distribution.
NTC 6169:2016	Reagents for in vitro diagnosis. Evaluation of the stability of reagents for in vitro diagnostics
NTC 6097:2014	Elimination or reduction of the risk of infection related to in vitro diagnostic reagents
NTC 1733:2020	Surgical masks. Requirements and test methods
NTC 6436	Standardized specification for the performance of materials used in medical masks
NTC 6435	Standard practice for respiratory protection
NTC-ISO 14155:2020	Clinical research of medical devices for human subjects. Good clinical practice
NTC-ISO 14971:2020	Medical devices. Applying Risk Management to Medical Devices
NTC-ISO 13485	Medical Devices. Quality Management. Requirements for Regulatory Purposes
NTC-ISO 80601-2-79	Medical electrical equipment. Particular requirements for basic safety and essential performance of ventilatory support equipment for ventilatory impairment
NTC 6486	Approval of respiratory protection devices
NTC-ISO 80601-2-80	Medical electrical equipment. Particular requirements for basic safety and essential performance of ventilatory support equipment for ventilatory insufficiency
NTC-ISO 80601-2-12	Medical electrical equipment. Part 2-12: Particular requirements for basic safety and essential performance of critical care ventilators
NTC-ISO 19223	Lung ventilators and related equipment - Vocabulary and semantics
NTC- IEC 60601-1:2020	Electromedical equipment. Part 1: General requirements for basic safety and essential performance
NTC-ISO 10993-1	Biological evaluation of medical devices. Part 1: Evaluation and testing within a risk management process.

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NTC IEC 60601-1-2	Electromedical equipment. part 1-2: General security requirements. Collateral norm. Electromagnetic compatibility. Requirements and tests.
NTC-ISO 80601-2-70:2020	Electromedical equipment. part 1-2: General security requirements. Collateral norm. Electromedical equipment. part 2-70: Particular requirements for basic safety and essential performance of respiratory therapy equipment for electromagnetic sleep apnea. Requirements and tests.
END-ISO 17664:2020	Processing of health care products. Information that must be provided by the manufacturer of the medical device for processing.
END-ISO 4037-1:2020	Radiation protection. Reference X and gamma radiation to calibrate dosimeters and dose meters and to determine their response as a function of photon energy. Part 1: Radiation characteristics and production methods
END-ISO 4037-2:2020	Radiation protection. Reference X and gamma radiation to calibrate dosimeters and dose meters and to determine their response as a function of photon energy. Part 2: Dosimetry for radiation protection over the energy ranges 8 keV to 1.3 MeV and 4 MeV to 9 MeV
END-ISO 4037-3:2020	Radiation protection. Reference x and gamma radiation to calibrate dosimeters and unit dose meters and to determine their response as a function of photon energy. Part 3: Calibration of area and personal dosimeters and measurement of their response as a function of energy and angle of incidence
END-ISO 4037-4	Radiation protection. Reference X and gamma radiation to calibrate dosimeters and dose meters and to determine their response as a function of photon energy. Part 4: Calibration of area and personal dosimeters in low energy X reference radiation fields
END IEC 62471	Photo biological safety of lamps and devices that use lamps
END - ISO 7886-1	Sterile single-use hypodermic syringes. Part 1: Syringes for manual use
END - ISO 7886-3	Sterile single-use hypodermic syringes. Part 3: Self-locking syringes for fixed dose immunization
TEST METHODS	
NTC-ISO 22870:2017	Point-of-care testing (POCT) - Requirements for quality and competence
GTC 264:2016	Clinical laboratories. Error reduction through risk management and continuous improvement
NTC 6433	Detection of Coronavirus 2019 (COVID-19) by RT-PCR in real time
NTC-ISO-TS 20658:2020	Clinical laboratories. Requirements for the collection, transportation, reception and handling of samples
NTC 6437	Coronavirus sample handling protocol

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GTC-ISO 22583	Guidance for supervisors and operators of point-of-care testing (POCT) devices
NTC-ISO 15190	Medical laboratories — Requirements for safety
NTC-ISO 20395	Biotechnology - Requirements for evaluating the performance of quantification methods for nucleic acid target sequences - qPCR and dPCR
INFRASTRUCTURE AND EQUIPMENT	
STANDARD	TITLE
NTC 6346:2019	Validation and qualification of controlled environment rooms in hospitals
NTC 6347:2019	System for the surveillance, prevention and control of infections related to health care in hospitals. Requirements
NTC-ISO 13131	Health informatics — Telehealth services — Quality planning guidelines
NTC-ISO/TR 17791	Health informatics. Guidance on standards to enable healthcare software security.
NTC-IEC 82304-1	Health Software Part 1: General Product Safety Requirements.
BIOSECURITY	
STANDARD	TITLE
NTC 6308:2018	Risk management for patient safety
NTC 5623 First Version	Surgical cloths and sheets. Requirements and test methods. Part 1: surgical drapes and gowns
NTC 5624 First Version	Cloths, gowns and clean air suits for surgical use as sanitary products for patients, clinical staff and equipment. Part 2: Test methods
NTC-ISO 22610:2020	Surgical drapes, gowns and clean air suits, used as medical devices, for patients, clinical staff and equipment. Test method for determining resistance to wet bacterial penetration
NTC-ISO 35001:2020	Bio-risk management for laboratories and other related organizations
GTC 315	Guide for cleaning and disinfecting hands and surfaces
NTC-ISO 11193-1	Single-use medical examination gloves Part 1: Specification for gloves made from rubber latex or rubber solution
NTC-ISO 11193-2	Single-use medical examination gloves Part 2: Specification for gloves made from poly(vinyl chloride)
NTC 6457	Cap - disposable

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NTC 6451	Disposable gaiters
PROTECTION AND SAFETY EQUIPMENT	
STANDARD	TITLE
NTC 1584:1980	Hygiene and safety. Respiratory protective equipment. Definitions and classification.
NTC 1589:1980	Hygiene and safety. Respiratory protective equipment. Test methods.
NTC 1728:1982	Hygiene and safety. Respiratory protection equipment against toxic gases.
NTC 3398:1992	Hygiene and safety. Protective clothing. Protection against liquid chemicals. Determination of liquid penetration into air-impermeable materials.
NTC 3399:1992	Hygiene and safety. Respiratory protection devices. Particle filters. Requirements. Testing and marking.
NTC 3763:1996	Criteria for the selection and use of respiratory protective equipment. Part III Combined respiratory protective equipment for gas or vapor and particles.
NTC 3851:1996	Criteria for the selection and use of respiratory protective equipment. Part I. Definitions.
NTC 3852:2020	Respiratory protection devices. Filtering half masks for protection against particles. Requirements, tests, marking.
NTC-EN 13034	Protective clothing against liquid chemicals. Performance requirements for chemical protective clothing offering limited protection against liquid chemicals (type 6 and pb [6] equipment)
NTC-EN 14605	Protective clothing against liquid chemicals. Performance requirements for clothing with liquid-tight seams (type 3) or spray-tight seams (type 4), including garments that offer protection only to certain parts of the body (types pb [3] and pb [4])
NTC EN 1827	Half-face respirators with removable filters for simple or combined particulate and/or gaseous elements. Requirements, tests, marking.
NTC 6492	Protective gloves. General requirements and test methods
NTC 6493	Individual eye protection. Specifications.
NTC 6434	Protective clothing. Requirements and test methods for protective clothing against biological agents.
NTC ISO 374-5	Protective gloves against dangerous chemicals and micro-organisms Part 5: Terminology and performance requirements for micro-organisms

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	risks
NTC- ISO 18184:2020	Textiles — Determination of antiviral activity of textile products
NTC EN 943-1	Protective clothing against chemical, liquid and gaseous products, including liquid aerosols and solid particles. Part 1: Performance requirements for chemical protective suits, ventilated and non-ventilated, gas-tight (type 1) and non-tight (type 2).***
NTC-ISO 11737-1	Sterilization of health products. Microbiological methods. Part 1: Determination of the population of microorganisms in products
END-ISO 14937	Sterilization of health care products. General requirements for the characterization of a sterilizing agent and for the development, validation and routine control of a sterilization process for medical devices.
END-ISO 11139:2020	Sterilization of health products. Vocabulary Terms used in sterilization and related equipment and process standards
NTC 5571:2007	Textiles. Normal atmospheres for conditioning and testing
NTC 2600:1996	Textiles. Test methods for nonwoven fabrics. Determination of elongation and tensile strength.
NTC-ISO 9073-10:2020	Textiles — Test methods for nonwovens. Part 10: Lint and other particles generation in the dry state
NTC-ISO 13938-1:2020	Textiles — Bursting properties of fabrics. Part 1: Hydraulic method for determination of bursting strength and bursting distension
NTC-ISO 22612:2020	Clothing for protection against infectious agents — Test method for resistance to dry microbial penetration
NTC-ISO 811:2020	Textiles — Determination of resistance to water penetration — Hydrostatic pressure test
NTC 6449	Masks for use in environments other than the health sector
NTC 3610:2020	Personal eye and face protection devices at work and for education.
CONTINUITY AND RECOVERY IN COMPANIES	
STANDARD	TITLE
NTC-ISO 22301:2019	Security and resilience. Business continuity management system. Requirements
NTC-ISO 22316:2018	Security and resilience. Organizational resilience. Principles and attributes
NTC-ISO 31000:2018	Risk management. Guidelines
First Version	

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GTC-ISO 22320	Security and resilience. Emergency management. Incident Management Guidelines
GTC-ISO 22395:2020	Security and resilience. Community resilience. Guidelines to support vulnerable people in an emergency
GTC-ISO 22313	Security and resilience. Business continuity management systems. Guidelines on the use of NTC-ISO 22301
END 170	Security and resilience. Emergency management. guidelines for monitoring facilities with identified hazards**
END-ISO-TR 44000:2020	Principles for managing successful collaborative business relationships**
END-ISO-IEC 27009:2020	Information security, cybersecurity and privacy protection. Sectoral application of the ISO/IEC 27001 standard. Requirements**
END 172	Security and resilience of organizations and their supply chains. Requirements with guidance**
END-ISO/TS 22330	Security and resilience. management systems for business continuity. Guidelines for people-related aspects of business continuity.
END-ISO/TR 22370	Security and resilience. Urban resilience. Framework and principles**
END-ISO/TS 22331	Security and resilience. Business continuity management systems - guidelines for business continuity strategy**
END-ISO 22319: 2020	Security and resilience. community resilience. Guidelines for planning volunteer participation
END-ISO 22396:2020	Spontaneous safety and resilience — community resilience — guidelines for information sharing between organizations**
END-ISO 44001:2020	Collaborative business relationship management systems. Requirements and frame of reference**
END-ISO 44002:2020	Collaborative business relationship management systems. Guidelines for the implementation of the END-ISO 44001 standard**
END-ISO 22300	Security and resilience. Vocabulary**
NTC 6491	Information technologies. Information security in teleworking
END 156	Safe work during the COVID-19 pandemic. General guidelines for organizations
Disinfecting Products	
NTC 2139:2005	Chemical products for industrial use. Sodium hypochlorite.

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NTC 4110:1997	Chemical products for household use. Sodium hypochlorite solutions for home use.
NTC 5848:2011	Products with antimicrobial activity
NTC 760:2001	Soaps and detergents. Toilet soap.
NTC 4547:2017	Disinfectants for hospital use. Vocabulary
NTC 6424	Test method for the evaluation of the activity of microbicides against viruses in suspension***
NTC 6425	Test method for the evaluation of the virucidal activity of chemicals intended for the disinfection of inanimate and non-porous environmental surfaces***
NTC 6426	Test method for the determination of the residual removal activity of hand antiseptic formulations***
NTC 6438	Standardized Test Method for the Evaluation of Surgical Hand Wash Formulations***
NTC 6439	Standard Test Method for Determination of Bacterial Removal Efficiency in Healthcare Personnel Hand Rub Formulas Using Adult Hands***
NTC 6440	Test method for the evaluation of hygienic hand washing and hand rubbing formulations to determine virus removal activity using the whole hand
NTC 6441	Test method for the evaluation of the effectiveness of hand washing formulas with the hand contamination method (palm) with paper towel***
NTC 6442	Test method for evaluation of the effectiveness of formulations of agents for hand washing of health personnel***
NTC 6443	Test method for the evaluation of antimicrobial handwashing formulations using nail regions***
NTC 6444	Test method to determine the effectiveness of virus elimination of hygienic agents for hand washing and rubbing using fingertips in adults***
NTC 6427	Quantitative carrier/support disc test method for determining bactericidal, virucidal, fungicidal, mycobactericidal and sporicidal activities of chemicals***
NTC 6428	Test method for the evaluation of sanitizers and disinfectants for washing clothes***
NTC 6445	Standardized test method for determining the effectiveness of bacteria elimination in hand washing and hygienic rubbing with fingertips in adults***
NTC 6429	Test method for the evaluation of pre-saturated or impregnated wipes for disinfection of hard surfaces***

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NTC 6446	Standard practice for evaluating the effectiveness of decontamination procedures for air-permeable materials when exposed to biological aerosols containing human pathogenic viruses***
NTC 6494	Guide for the use of standardized test methods and practices to evaluate antibacterial activity in textiles***
NTC 6430	Test method to determine the effectiveness of sanitizers Recommended for non-porous, inert and hard surfaces that do not come into contact with food***
NTC 6431	Test method for the evaluation of an antibacterial product for handwashing using the multiple handwashing technique***
NTC 6432	Guide for evaluation of the residual effectiveness of antibacterial personal cleaning products***
NTC 6447	Guide for evaluation of the residual effectiveness of antibacterial personal cleaning products***
NTC 6448	Standardized Procedure for the Evaluation of the Relative Effectiveness of Antimicrobial Handwashing Formulations Using Palmar Surface and Mechanical Hand Sampling***
END 148	Test method for the determination of the antimicrobial activity of antimicrobial agents under dynamic contact conditions.
END 154	Test method for evaluating the effectiveness of cleaning agents
END 155	Standardized test method for the determination of bacterial retention in filter membranes used for liquid filtration
NTC 731:2020	Antiseptic alcohol for external use
SUPPORT SERVICES FOR PATIENT CARE AND SOCIETY	
STANDARD	TITLE
NTC 4737:1999	Typology and general requirements for river passenger transport vehicles.
NTC 5211:2003	River Ambulances
NTC 6410	Good hygiene practices for pre-cooked and cooked foods used in food services (catering)
NTC 6411	Good hygiene practices for the provision of home delivery service for food, beverages and pharmaceutical products

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NTC IEC 60601-2-52	Particular requirements for the basic safety and essential performance of medical beds.
GTC 321	Guide on preparing workplaces for the Covid-19 virus
END 168	Community emergency preparedness for people with disabilities**
NTC-ISO/TR 17522	Health informatics. Provisions for health applications on mobile/smart devices.
NTC 6450	Bags for the transfer of corpses generated by a health emergency. General requirements
END 140	Guide to business teleworking, remote access, and security in bring your own device (byod)

To see the content of these standards please visit the e-collection (<https://ecollection.icontec.org/>) and log in with the following information:

- Empresa: COVID-19
- Usuario: ICONTEC*CONSULTA
- Contraseña: ICONTEC*CONSULTA

By entering “My Collection” you can see the standards of your selection available to view.

If you would like to see the most recent update of this list of standards, please visit:

<https://www.icontec.org/nuestro-proposito-es-dejar-una-huella-de-confianza-en-cada-una-de-nuestras-acciones-2/>

***The translation of the regulatory reference of this document was supported by the GQSP Colombia project of the United Nations Industrial Development Organization

** The translation of the regulatory reference of this document had the support of the Delegation of the European Union, through the Colombia Mide Project

Only standards with the prefix ISO or IEC are available in English.

Appendix B

ELEMENTOS DE PROTECCIÓN PERSONAL QUE DEBEMOS USAR EN LA ATENCIÓN DE PACIENTES DURANTE LA PANDEMIA COVID -19



HIGIENE DE MANOS



GORRO QUIRÚRGICO



RESPIRADOR N 95



MASCARILLA QUIRÚRGICA



MONOGAFAS



CARETA



VESTIDO QUIRÚRGICO O UNIFORME



BATA ANTIFLUIDOS



GUANTES



POLAINAS O CALZADO ESPECIAL



PETO O DELANTAL



ESCAFANDRA DESECHABLE

URGENCIAS

Orientador de Servicio Urgencias	•			•	•	•	•					
Enfermera y Auxiliar de enfermería de Triage respiratorio	•			•	•	•	•	•	•			
Enfermera y auxiliar de enfermería de triage NO respiratorio	•			•	•	•	•					
Enfermera y auxiliar de enfermería de Reanimación, durante los PROCEDIMIENTOS QUE GENEREN AEROSLES	•	•	•		•	•	•	•	•			
Enfermera, Auxiliar de enfermería Consulta y observación, de pacientes NO respiratorios	•			•	•	•	•					
Enfermera, Auxiliar de enfermería de toma de muestras NO respiratorias	•			•	•	•	•					
Médicos generales y especialistas y otro personal clínico*consulta urgencias y observación pacientes NO respiratorios	•			•	•	•	•	•	•			
Médicos generales y especialistas y otro personal clínico*consulta urgencias y observación pacientes respiratorios	•			•	•	•	•	•	•			
Médicos generales y especialistas y otro personal clínico*en área de reanimación en PROCEDIMIENTOS QUE GENEREN AEROSLES	•			•	•	•	•	•	•			
Camillero con pacientes NO respiratorios	•			•	•	•	•					
Camillero con pacientes respiratorios	•			•	•	•	•	•	•			
Técnico Radiología para pacientes respiratorios	•			•	•	•	•	•	•			
Técnico Radiología para pacientes NO respiratorios	•			•	•	•	•					
Terapeuta Respiratoria en PROCEDIMIENTOS GENERADORES DE AEROSLES	•		•		•	•	•	•	•			
Terapeuta Respiratoria en PROCEDIMIENTOS NO GENERADORES DE AEROSLES	•			•	•	•	•	•	•			
Servicios generales	•			•	•	•	•	•	•			
Guardia de Seguridad	•			•			•					
Personal de admisiones, facturación, autorizaciones, biomedica, mantenimiento, personal administra vo en contacto con pacientes	•			•			•					

1. EPP ajustados durante el periodo pandémico de COVID-19
2. En caso de riesgo de salpicadura puede proteger el respirador con una pantalla o con una mascarilla.
3. Las gafas de corrección visual no deben ser consideradas como EPP.
4. Estas son recomendaciones, su aplicación debe ser establecida en el contexto de cada institución.



La salud es de todos

Minsalud

Tomado de A C I N

ELEMENTOS DE PROTECCIÓN PERSONAL QUE DEBEMOS USAR EN LA ATENCIÓN DE PACIENTES DURANTE LA PANDEMIA COVID - 19



HIGIENE DE MANOS



GORRO QUIRÚRGICO



RESPIRADOR N 95



MASCARILLA QUIRÚRGICA



MONOGAFAS



CARETA



VESTIDO QUIRÚRGICO O UNIFORME



BATA ANTIFLUIDOS



GUANTES



POLAINAS O CALZADO ESPECIAL



PETO O DELANTAL



ESCAFANDRA DESECHABLE

HOSPITALIZACIÓN

	Higiene de Manos	GORRO QUIRÚRGICO	RESPIRADOR N 95	MASCARILLA QUIRÚRGICA	MONOGAFAS	CARETA	VESTIDO QUIRÚRGICO O UNIFORME	BATA ANTIFLUIDOS	GUANTES	POLAINAS O CALZADO ESPECIAL	PETO O DELANTAL	ESCAFANDRA DESECHABLE
Enfermera, Auxiliar de enfermería pacientes NO respiratorios	●			●	●	●	●					
Enfermera, Auxiliar de enfermería pacientes respiratorios	●	●		●	●	●	●	●	●			
Médicos generales y especialistas y otro personal clínico *tratante pacientes NO respiratorios	●			●	●	●	●					
Médicos generales y especialistas y otro personal clínico*tratante pacientes respiratorios	●	●		●	●	●	●	●	●			
Terapeuta respiratoria para pacientes NO respiratorios	●	●		●	●	●	●	●	●			
Terapeuta respiratoria para pacientes respiratorios	●	●		●	●	●	●	●	●			
Todo el personal para PROCEDIMIENTOS GENERADORES DE AEROSOLES	●	●	●		●	●	●	●	●			
Técnico de Radiología pacientes respiratorios	●	●		●	●	●	●	●	●			
Técnico de Radiología pacientes NO respiratorios	●				●							
Administra vo en contacto con pacientes NO Respiratorios (incluye personal biomédico y mantenimiento)	●			●			●					
Administra vo en contacto con pacientes Respiratorios solo al ingreso a la habitación del paciente (incluye personal biomédico y mantenimiento)	●	●		●			●	●				
Servicios Generales	●	●		●	●	●	●	●	●			
Guardia de Seguridad	●			●			●					
Servicio de Alimentación	●	●		●			●					
Camillero con pacientes NO respiratorios	●			●	●	●	●					
Camillero con pacientes respiratorios	●	●		●	●	●	●	●	●			



La salud es de todos

Minsalud

1. EPP ajustados durante el periodo pandémico de COVID-19
2. En caso de riesgo de salpicadura puede proteger el respirador con una pantalla o con una mascarilla.
3. Las gafas de corrección visual no deben ser consideradas como EPP.
4. Estas son recomendaciones, su aplicación debe ser establecida en el contexto de cada institución.

Tomado de A C I N

ELEMENTOS DE PROTECCIÓN PERSONAL QUE DEBEMOS USAR EN LA ATENCIÓN DE PACIENTES DURANTE LA PANDEMIA COVID - 19



HIGIENE DE MANOS



GORRO QUIRÚRGICO



RESPIRADOR N 95



MASCARILLA QUIRÚRGICA



MONOGAFAS



CARETA



VESTIDO QUIRÚRGICO O UNIFORME



BATA ANTIFLUIDOS



GUANTES



POLAINAS O CALZADO ESPECIAL



PETO O DELANTAL



ESCAFANDRA DESECHABLE

UCI ADULTOS, NEONATAL Y PEDIÁTRICO UNIDAD DE CUIDADOS INTERMEDIOS PEDIÁTRICOS

	Higiene de Manos	Gorro Quirúrgico	Respirador N 95	Mascarilla Quirúrgica	Monogafas	Careta	Vestido Quirúrgico o Uniforme	Bata Antifluidos	Guantes	Polainas o Calzado Especial	Peto o Delantal	Escafandra Desechable
Enfermera, auxiliar de enfermería pacientes NO respiratorios	●	●		●	●	●	●					
Enfermera, auxiliar de enfermería pacientes respiratorios	●	●		●	●	●	●	●				
Médicos generales y especialistas y otro personal clínico* tratante pacientes NO respiratorios	●			●	●	●	●					
Médicos generales y especialistas y otro personal clínico* tratante pacientes respiratorios	●	●		●	●	●	●	●				
Terapeuta respiratoria para pacientes NO respiratorios	●	●		●	●	●	●	●				
Terapeuta respiratoria para pacientes respiratorios	●	●		●	●	●	●	●				
Todo el personal para PROCEDIMIENTOS GENERADORES DE AEROSLES	●	●	●		●	●	●	●				
Técnico de Radiología pacientes respiratorios	●	●		●	●	●	●	●				
Técnico de Radiología pacientes NO respiratorios	●			●	●	●	●	●				
Administrativo en contacto con pacientes NO Respiratorios (incluye personal biomédico y mantenimiento)	●			●	●	●	●					
Administrativo en contacto con pacientes Respiratorios solo al ingreso a la habitación del paciente (incluye personal biomédico y mantenimiento)	●	●		●	●	●	●					
Servicios Generales	●	●		●	●	●	●	●	●			
Camillero con pacientes NO respiratorios	●			●	●	●	●					
Camillero con pacientes Respiratorios	●	●		●	●	●	●	●				

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Minsalud

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ESCAFANDRA DESECHABLE

CIRUGIA-OTROS PROCEDIMIENTOS

Médicos (cirujanos, ayudantes) durante procedimientos quirúrgicos generadores de aerosoles	●	●	●	●	●	●	●	●	●			
Médico Anestesiólogo	●	●	●	●	●	●	●	●	●			
Instrumentador durante procedimientos quirúrgicos generadores de aerosoles	●	●	●	●	●	●	●	●	●			
Enfermera, auxiliar de enfermería durante procedimientos quirúrgicos generadores de aerosoles	●	●	●	●	●	●	●	●	●			
Áreas de trabajo de parto sala de partos y cesárea	●	●	●	●	●	●	●	●	●			
Todo el personal asistencial en áreas de circulación de área quirúrgica	●	●		●			●				●	
Servicios Generales	●	●		●	●	●	●	●	●			
Administra vos (incluye biomédica, mantenimiento, auditoría, etc)	●	●		●	●	●	●	●	●			
Procedimientos odontológicos	●	●	●	●	●	●	●	●	●			
Endoscopias, digestivos, de vías aéreas superiores, de vías aéreas inferiores	●	●	●	●	●	●	●	●	●			
Procedimientos invasivos con requerimiento videofluoroscopia y protección de elementos plomados	●	●	●	●	●	●	●	●	●	●	●	●

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ESCAFANDRA DESECHABLE

CONSULTA EXTERNA

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Enfermera, Auxiliar de Enfermería de consultorios	●			●	●	●						
Médicos generales y especialistas y otro personal clínico*Atención de pacientes NO respiratorios	●			●	●	●						
Médicos generales y especialistas y otro personal clínico*Atención de pacientes respiratorios	●	●		●	●	●	●	●				
Todo el personal para PROCEDIMIENTOS GENERADORES DE AEROSOL	●	●	●		●	●	●	●				
Servicios Generales	●	●		●	●	●	●				●	
Guardia de Seguridad	●			●			●					
Administrativo en contacto con usuarios	●			●	●	●						



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ESCAFANDRA DESECHABLE

OFTALMOLOGÍA

CONSULTA EXTERNA

HOSPITALIZACIÓN

OTORRINOLA- RINGOLOGÍA FONOAUDILOGÍA

CONSULTA EXTERNA

HOSPITALIZACIÓN

ODONTOLOGÍA

CONSULTA EXTERNA

HOSPITALIZACIÓN

	Higiene de Manos	GORRO QUIRÚRGICO	RESPIRADOR N 95	MASCARILLA QUIRÚRGICA	MONOGAFAS	CARETA	VESTIDO QUIRÚRGICO O UNIFORME	BATA ANTIFLUIDOS	GUANTES	POLAINAS O CALZADO ESPECIAL	PETO O DELANTAL	ESCAFANDRA DESECHABLE
CONSULTA EXTERNA	●			●	●	●					●	
HOSPITALIZACIÓN	●			●	●	●	●	●			●	
CONSULTA EXTERNA	●	●		●	●	●	●	●	●		●	●
HOSPITALIZACIÓN	●	●		●	●	●	●	●			●	●
CONSULTA EXTERNA	●	●	●		●	●	●	●	●		●	●
HOSPITALIZACIÓN	●	●	●		●	●	●	●			●	●



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ESCAFANDRA DESECHABLE

LABORATORIO BANCO DE SANGRE FARMACIA

Personal de Servicio Farmacéu co

Personal de laboratorio en paciente o muestra NO respiratorio

Personal de laboratorio en paciente o muestra respiratorio



Personal de Servicio Farmacéu co	•		•				•					
Personal de laboratorio en paciente o muestra NO respiratorio	•		•	•	•	•	•		•			
Personal de laboratorio en paciente o muestra respiratorio	•	•	•		•	•	•	•	•			

ADMINISTRATIVO

Administra vos sin contacto con pacientes



Administra vos sin contacto con pacientes	•		•				•					
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TRIPULACIÓN DE AMBULANCIA

Tripuación de ambulancia



Tripuación de ambulancia	•	•	•		•	•	•	•	•			
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