SHAPING A BETTER MARITIME WORLD

YOUR CLASSIFICATION PARTNER FOR TODAY AND TOMORROW

BUREAU VERITAS

Your Classification Partner for today and tomorrow

The Ship Classification system begins at the ship's initial design and steel manufacture stages, and extends to block fabrication and the manufacture of machinery components, the building of the ship's structure, cargo hold testing, tank testing, and installation of machinery systems.

Bureau Veritas aims at ensuring that ships remain fit to operate from the day of delivery when ships' first classification certificate is issued, until the day ships are taken out of service.

Therefore, BV's role embrace today two fundamental aspects: the first one relates to developing classification rules and the second one concerns implementing them.

A statutory survey, if carried out by a BV surveyor, is being conducted on behalf of the Flag Administration for the Flag State with which the ship is registered.
On the other hand, a classification survey is carried out on behalf of the classification society itself.

REFLECTING OUR BUSINESS AND VALUES

SILHOUETTE OF TRUTH
Our commitment, which is delivered by people

MIRROR
The impartiality that guides our activity

TORCH
Our knowledge, experience and know-how

SEAL
The endorsement we bring our clients

ROOSTER
Our employees' constant vigilance and attention

SHIP
Our business origins

SCALES
The justice that governs how we act

CADUCEUS
Our entrepreneurial ambition

1828
The year of our founding

GLOBE
Our worldwide activity

SHAPING TRUST IN GLOBAL MARITIME AND ENERGY INDUSTRIES

A LEADER IN SHIP CLASSIFICATION

Our surveyors are on-hand in major ports worldwide to ensure the safety and compliance of all types of vessel and offshore structure.

PARTNERING OFFSHORE ENERGY PROJECTS

We support the world's major energy operators with classification of innovative designs and verification of offshore structures and equipment.

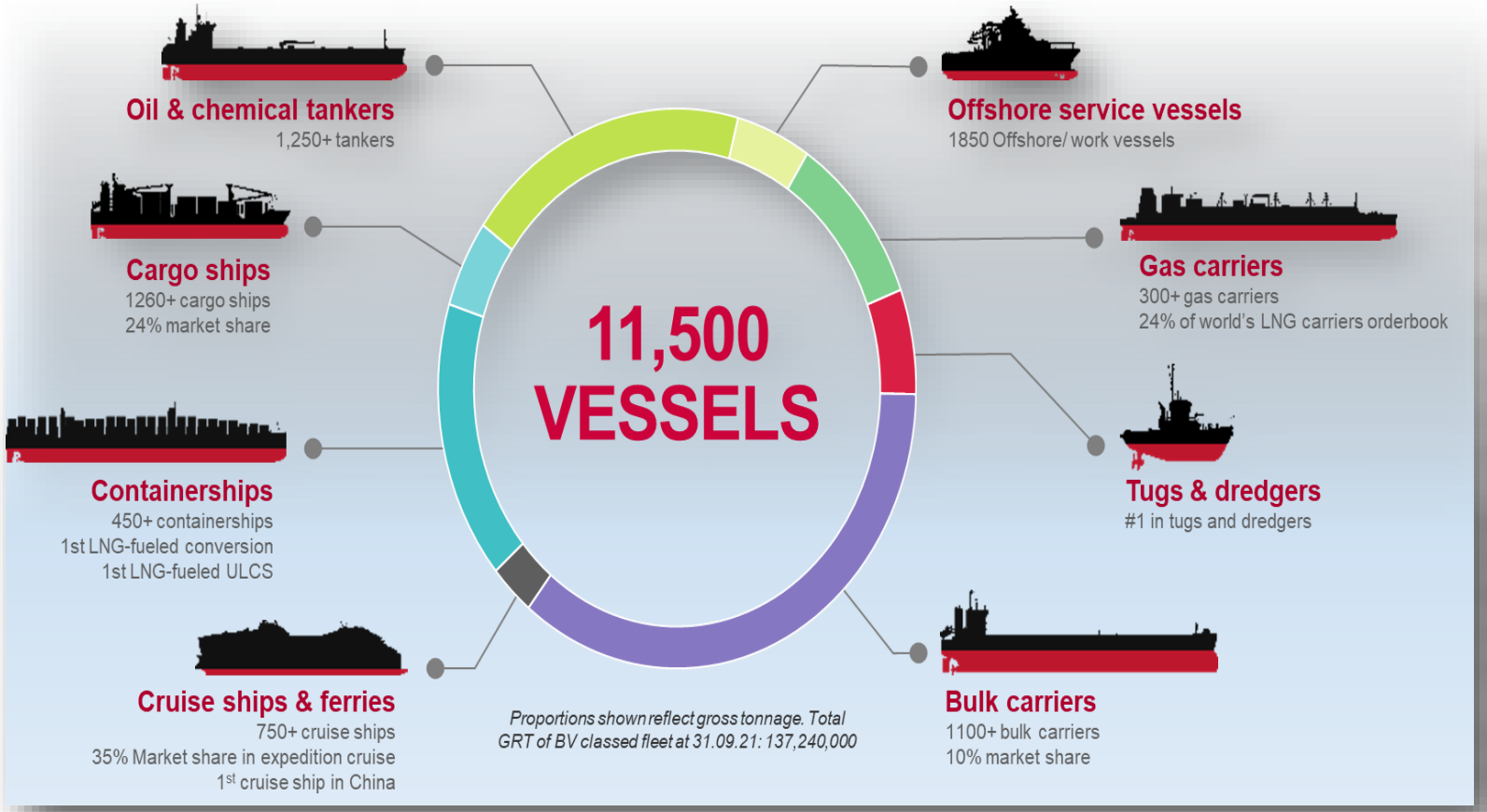
BEYOND COMPLIANCE

We reduce risk and improve performance for our clients via value-add risk, engineering and assurance services for marine and offshore assets.

BUREAU VERITAS

SERVING A WIDE RANGE OF SHIP TYPES

Our experience, leading research programs and participation in industry and regulatory bodies ensure we understand the challenges facing owners and yards. Our dedicated Rules and tools continually evolve, supporting our clients' work to improve the performance of their vessels – whether by increasing size, improving energy efficiency.



⟹ What does Classification cover?

Classification is a means to ensure safety and comply with international military best practice at every stage of your vessel's life.

Design review provides a thorough health check on safety and performance specifications, resulting in improvements to your vessel. It covers structure, stability, electricity, automatization, and propulsion, as well as fire safety and, escape and evacuation routes.

Certification of materials and safety equipment at manufacturing sites enables you to tightly control your construction supply chain. **Construction survey** confirms your ship is built to specifications and validated by onboard inspection surveys and tests, quay and sea trials.

Finally **periodic surveys** of the ship in-service provide independent verification that your vessel is maintained to high standards of safety and performance throughout its working life.

BUREAU VERITAS CLASSIFICATION

DESIGN

Approval In Principle

—

Design Assessment

—

Joint Development Project

—

Advise On Imo Regulations

—

Advise On Notations

—

Advise On Approved Equipment

CONSTRUCTION

Request For Certificate

—

Plan Approval

—

Yard Inspection

—

Issue Compliance Certificates

—

Equipment Certification

—

Support Throughout The Construction Process

—

Surveys And Plan Approval Upon Delivery

IN SERVICE

Annual And Class Surveys

—

Unplanned Surveys

—

Issuance Of Certificates

—

Advise On Regulation Compliance Throughout Service Life

END OF LIFE

Administration Procedures To Withdrawn Class And Flag Certificates

—

Testing And Certification Of Materials

COMMERCIAL VESSELS - MRO

BV integrated services for the complete shipping cycle includes design, building, shipyard management, inspection and testing of materials/ components and surveys to maintain the class are used by commercial vessels, naval vessels , yatch or offshore vessels.

SERVICES/ CERTIFICATES OFFERED:

1. Classification and Statutory services:
   - ISM
   - ISPS
   - MLC
   - Marpol
   - New Building
   - Remote Surveys
   - Remote Testing
   - Ships in Services
   - Solas
2. ISO Quality, Environment and Safety Management Certificate
3. Welder and Welding Procedure Certificate
4. Non-Destructive Testing recognition Certificate
5. Equipment and Material Certificate for Marine and Offshore Application

NAVAL VESSELS BUILDING AND MRO

Bureau Veritas helps ensure the design of your vessel meets recognized standards, working with you to optimize designs and identify innovative solutions. Our classification services cover a range of combat and governmental vessels: frigates, corvettes, submarines, multipurpose vessels, aircraft carriers, amphibious vessels, auxiliary vessels, landing crafts, replenishment crafts, OPVs and other governmental vessels. Classification with Bureau Veritas saves you time, from project outset. Our detailed rules bring together years of accumulated shipbuilding and operational experience and knowledge. And by classing your vessel throughout its life, you gain independent verification that it is correctly maintained each year, ensuring long-term performance.

MAIN NOTATION USED IN THE CLASSIFICATION OF NAVAL SHIPS

Class Notation:

- I✠HULL✠MACH
- FRIGATE, AIRCRAFT CARRIER, CORVETTE, MILITARY OPV
- AMPHIBIOUS VESSEL

Voluntary Notations:

Performance

- ✠AVM (availability of machinery)
- ✠AUT (automation of the engine room)
- SEA-KEEP (Sea keeping performance of the propelled platform)

NAVAL VESSELS BUILDING AND MRO

Environment

- CLEANSHIP (pollution prevention)

Safety & comfort

- FFS (flooding fighting systems)
- COMF-NOISE, COMF-VIB (comfort criteria noise & vibrations)

Service features

- INWATERSURVEY (provisions for bottom survey while afloat)
- REFSTORE (refrigerating plants for ship domestic supply)

YATCH AND RECREATIONAL BOATS BUILDING AND MRO

Yacht owners, charterers and passengers increasingly expect both top-notch comfort and green credentials from their yacht or from the commercial vessel they charter. While luxury remains at the core of the yacht business, ship owners, operators and charterers must meet port requirements and national regulations for limited emissions.
Our notations, digital tools, global network, and expertise with super and mega yachts provide a safe and eco-friendly onboard experience.

ENABLING REGULATORY COMPLIANCE

Bureau Veritas' **NR 500 Rules for the classification and certification of yachts under 100 meters**[1] outline detailed requirements for building materials, hull structure, machinery, automation and more.

IMPROVING SHIP SUSTAINABILITY

To meet changing social and regulatory expectations, yacht owners are increasingly exploring greener shipbuilding and operating practices.

Bureau Veritas' Green notation verifies that yachts have been optimized for energy efficiency, assessing fuel consumption, ship super structure and hull design.

Yachts that currently limit their emissions by using hybrid electric power can also earn a Hybrid notation. Those designed to someday use hybrid electric power can earn a Hybrid-Prepared notation

YATCH AND RECREATIONAL BOATS BUILDING AND MRO

INCREASING ONBOARD COMFORT AND WELLBEING

Comfort is a non-negotiable element for yacht owners and passengers, and this means ensuring limited onboard noise and vibrations. Yachts can earn Bureau Veritas' Comfort notation by undergoing an assessment of sources of noise and vibration, such as engines and propellers.
Owners and yards can then take measures to improve ship structure and design, reducing noise and increasing comfort.
Bureau Veritas has also partnered with owners and operators to establish better bio-risk management. This includes outbreak management plans, embarkation and debarkation plans, protective measures and other health best practices to safeguard the wellbeing of all passengers and crew.

DIGITAL TOOLS FOR YACHTS:

Bureau Veritas offers a range of digital tools to help yacht owners quickly and accurately conduct classification, assess safety and manage their fleets. These include **Veristar Project Management**, **Digital Classification and remote surveys**, and our **ComposeIT** and **StarBoat structural assessment** tools.

Increased digitalization naturally increases cyber security concerns. Bureau Veritas' **CYBER SECURE notation** helps owners comply with IMO legislation (Resolution MSC.428 (98)).

HUMAN CAPITAL DEVELOPMENT

With **80,000 employees** working in **140 different countries**, **our workforce is our most valuable asset**.

The **health**, **safety**, **well-being** and **development** of our people are priorities.

By promoting an **inclusive environment**, we strive to Shape a Better Workplace.

OUR VALUE CREATION

- **Positive impact** on the lives of millions of people
- **Health and safety are Group absolutes**
- **Human capital development** with a growing number of learning hours
- **Comprehensive framework** in line with digital and societal challenges
- **Growing number of women in management** positions
- **Monitoring** and **taking action** to **close any gender pay gaps.** In 2020, at the non-management level this female/male ratio is 1.00, based on 74 countries covering 76% of our employees[1]

BUREAU VERITAS CONTRIBUTION TO UNITED NATIONS' SUSTAINABLE DEVELOPMENT GOALS:

HUMAN CAPITAL DEVELOPMENT

OUR COMMITMENT

- **Guaranteeing** each worker **an accident-free workplace: achieve 0.26 accident rate** (TAR[2]) by 2025
- **Reaching 35% of female representation in leadership positions**[3] by 2025
- **Achieving 35 training hours per employee** (per annum) by 2025
- **Fostering an inclusive environment** to ensure diversity
- **Ensuring an environment that enables** all workers at Bureau Veritas to **learn and grow**
- **Enhancing the expertise of our employees** in order to provide our services
- **Engaging our people** by actively listening and measuring feedbacks
- **Complying** with the **Human Rights** principles
- **Fighting against discrimination**

TRAINING SOLUTIONS
SHOWING EXPERT KNOWLEDGE

The training services provided by Bureau Veritas are built upon the skills gained from more than 190 years of experience in inspection and design review. We offer a comprehensive and cost-effective solution to your training needs, whether you are a small or large, and a local or multinational organization. We design and deliver courses that can be tailored to your specific requirements, backed up by comprehensive teaching materials and literature.

No matter your training needs, Bureau Veritas delivers tailored-courses to successfully increase your knowledge within the marine and offshore industries.

FEATURES OF BUREAU VERITAS TRAINING

- Over 100 Instructors Globally
- Dedicated Training Service Team
- Fully Integrated Exercises & Workshops
- Over 10,000 Delegates Annually
- Present in 42 countries
- Blended Flexible Learning Competency
- Global Accredited Bodies
- Industry Recognised Qualifications
- Full Training Portfolio
- Expert Service Team

https://marine-offshore.bureauveritas.com/training-catalogue

RESEARCH AND DEVELOPMENT

INNOVATION IN CLASSIFICATION TO ANTICIPATE FUTURE REQUIREMENTS

RULES GROUNDED IN RESEARCH

Tentative Rules for structural assessment of steel ships **based on real-life simulations**

—

Proprietary tools for ship analysis and modeling, made available for client use

RAPID RESPONSE TO NEW RISKS

Guidelines for the management of COVID-19 and infectious diseases.

—

Bio-Risk notation

—

Restart Your Business

ENABLING TRANSFORMATION

Notations for **cybersecurity** and **smart** ships:
- CYBER MANAGED / - SMART

—

Draft Rules for **alternative fuels and propulsion**
- Methanol as fuel
- Ammonia as fuel
- Wind propulsion

—

Digital class: Approval of 3D model of the hull structure of FTI frigate designed by Naval Group

BUREAU VERITAS

WE WORK WITH YOU TO ADDRESS TOMORROW'S BIGGEST CHALLENGES

DECARBONIZATION

Develop alternative fuels and propulsion systems to reach net zero emissions

—

Develop green hydrogen from fuels such as ammonia and methanol

—

Protect the marine environment (air, water, marine life)

DIGITALIZATION

Improve cybersecurity

—

Enable development of smart and autonomous ships

—

Develop 3D Class

SAFETY

Better address traditional physical safety risks

—

Ensure compliance with regulations and best practice

—

Address new biosafety risks

—

Enable safe transformation linked to new fuels and smart ships

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THE PATH TOWARD GHG EMISSIONS COMPLIANCE

WHILE LNG IS CURRENTLY THE MOST WIDELY USED ALTERNATIVE FUEL, THE SHIPPING WORLD IS QUICKLY DEVELOPING OTHER LOW-CARBON ALTERNATIVE FUELS AND PROPULSION METHODS

CCUS

Well-known to onshore industry but relatively new to shipping

—

A transitional technology to reduce the carbon footprint of vessels

METHANOL

Can be stored onboard in liquid form at ambient temperature and atmospheric pressure

—

Strong level of infrastructure already existing in ports

BIOFUELS

Likely to be used alongside LNG

—

Offers compatibility with modern engines

AMMONIA

Well established storage and transport processes

—

BV rules in place already for use as fuel

HYDROGEN

Can be produced using renewable electricity

—

BV rules for safe hydrogen use to be published in 2022

WIND PROPULSION

Limits vessels' reliance on conventional propulsion

—

BV's classification framework and notations helping advance wind-assisted propulsion

FUTURE MARINE FUELS

CARBON FUELS

Liquefied Natural Gas (LNG)

- Established infrastructure
- Long-term solution
- Global fuel availability
- Safe to handle
- Increased CAPEX

Liquefied Petroleum Gas (LPG)

- Global fuel availability
- Safe to handle

Methanol / Ethanol

- Increased CAPEX
- High fuel cost

CARBON NEUTRAL

Biofuels / Biomethane

- Safe to handle
- High fuel cost

Synthetic methane / SNG

- Safe to handle
- High fuel cost

ZERO CARBON

Hydrogen

- Long-term solution
- Increased CAPEX
- High fuel cost

Ammonia

- Long-term solution
- Increased CAPEX
- High fuel cost

PATHWAYS TO DECARBONIZATION

Shipowners have **alternative fuel options** to help them meet IMO's ambitious targets, each with its new advantages and challenges.

A CLASSIFICATION PARTNER COMMITTED TO SUSTAINABILITY

OUR FOUR PILLARS OF SUSTAINABILITY ENABLE US TO GUIDE SHIPOWNERS THROUGH THE SHIFT TO LOW-CARBON FUELS.

1 ENVIRONMENTAL PROTECTION

MARPOL regulations implementation

—

Compliance with IMO Ballast Water Convention

—

Additional class notations: URN, ULEV

2 ENERGY TRANSITION & EFFICIENCY

Rules & Guidelines for alternative fuels & propulsion technologies

—

Tools development

—

Partnering in innovative projects (JDP/JIP)
& consortium

3 CARBON SERVICES

Compliance with carbon indexes

—

Compliance with green financing programs

—

ESG Reporting

4 SOCIAL, ETHICS AND GOVERNANCE

Auditing services for the Maritime Labor Convention

—

Implementation of onboard health, hygiene & safety protocols

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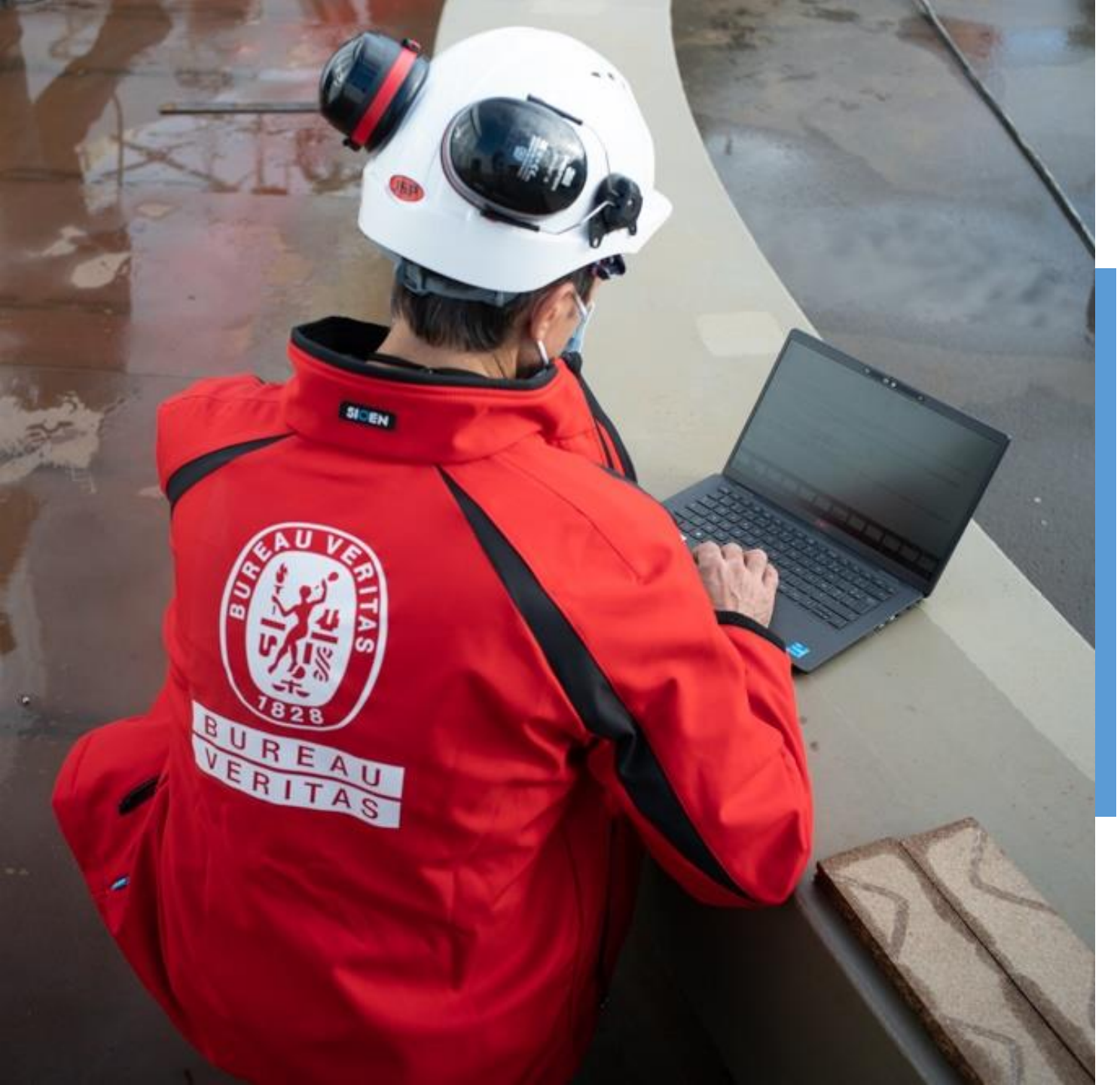

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