Innovation in Architectural Envelopes

Comprehensive capabilities on development, performance assessment and characterisation of your product to enhance your value proposition and market success.

www.tecnalia.com
TECNALIA Research & Innovation is the first privately funded applied research centre in Spain and one of the leading such centres in Europe. A combination of technology, tenacity, efficiency, courage and imagination.

We identify and develop business opportunities through applied research. Inspiring Business is a different, unique vision: we visualise ideas that generate value and provide creative technological solutions to produce real results.

At TECNALIA we are organised in 7 fully interconnected Business Divisions. Cooperation works thanks to the transversality of teams, projects and clients collaborating with each other, combining expertise and commitment. Our best asset is our team, made up of more than 1,500 experts who work to transform knowledge into GDP in order to improve people’s quality of life by generating business opportunities for companies.

We are committed to the future, society, our planet and our environment. This responsibility provides focus to our values and reinforces our activities.

"TECNALIA transforms Knowledge into GDP to improve people’s quality of life by generating business opportunities for Companies"
Innovation in Architectural Envelopes

TECNALIA is your strategic partner for the development of new products and the improvement of the performance of your current portfolio aimed at the Architectural Envelope sector. We offer the industry RTD, Intellectual Property transfer and technological services customised to meet the needs of the industry, with a focus on value proposition and market success.

We have modern laboratories and the technological knowledge to fulfill the needs of the Architectural Envelope sector for the development, performance assessment and characterisation of innovative products for their commercialisation.

TECNALIA is also working in the integration of electronic systems and IT technologies in the several components of the Architectural Envelopes to face the development needs of the new “Smart Products” for the “Façades of the Future”.

At TECNALIA it is possible to assess your new developments from the prototype stage to the final product in facilities designed specially for that purpose, by assessing performance and functionality of all the components of an Architectural Envelope, to guarantee their safety and reliability.
Holistic Development of Solutions for the Optimisation of the Energy Efficiency in Buildings

NEAR ZERO ENERGY BUILDINGS “NZEB”

The research developed at international level, allows to state that the achievement of the energy efficiency in buildings is the result of three approaches needed to be solved:

• The improvement of the energy efficiency in buildings through the architectural or construction solutions and the envelope insulation materials performance.

• The reduction of the energy consumption by means of an optimisation of the climatisation, lighting and ventilation of the indoor environment, with the support of intelligent building management systems (BMS).

• The increase of the renewable energy generation to make the building co-responsible for the harvesting of the energy necessary to meets the demands of the occupants.

In conclusion, there is a need for a comprehensive and more realistic analysis of the buildings, and, as result, there is an opportunity to develop new products and services.

Thanks to the commitment of TECNALIA in the Energy Efficiency in Buildings and the research infrastructure KUBIK, it is possible to offer the industrial sector the support to benefit from the opportunity of the energy efficiency in buildings challenge.

Research and Technological Development

In KUBIK innovative products and systems are developed and assessed for the optimisation of the energy efficiency of the building, from the concept stage up to its implementation.

Solutions for the building envelope with low environmental impact

The relevance of sustainability in construction is totally consolidated and the industry of materials is aware of the necessity to offer constructors and specifiers solutions with lower environmental impact but economically competitive in the marketplace. Lately in TECNALIA we have developed new concepts and validated prototypes of solutions made of bio-based materials with low-embodied energy (biomaterials) as well as recycling of subproducts for both the envelope and thermal insulation. Some examples include: “Forest based composites for façades and interior partitions to improve indoor air quality”; “Thermal performance evaluation of an industrialized façade based on biomaterials”; “High durability and fire performance wood-plastic composites (WPC) for ventilated façades”.

Cloud software for the collaborative design (industry - architect) of projects for the building envelope

• Design stage process automation by means of web based virtual models (e.g. BIM) for the optimisation of the engineering offices for the workflow and cost minimisation.

• Improvement of collaborative design along the whole value chain for an effective involvement of all the stakeholders.

• Comprehensive interoperability between existing formats and software for performance assessment (energy, acoustics...), based on shared models on web to guarantee greater productivity on the design stage and on the operation stage of the developed systems.

New solutions with renewable energy integration in the architectural envelopes

The achievement of nearly zero-energy building (NZEB) is a demanding challenge that requires the design for the self-sufficiency of the building in relation to satisfy the demand for climatisation and indoor comfort according to the intended occupancy. TECNALIA’s offer is the integration of the renewable solar thermal energy harvesting and supply in Smart Solutions for the envelope. These solutions are based on the design of new systems for low intrusive energy retrofitting and envelope industrialisation by means of: “The use and management of the harvested thermal energy in the air gap of the ventilated façades”; “The use of the solar thermal energy as support to the HVAC system and performance improvement”.

In addition, at TECNALIA we do not forget the relevance of the photovoltaic integration (BIPV) in the envelope; for that, our own system has been developed and patented: Modular PV Curtain Wall.

Smart Envelopes. Environment adaptable solutions for the improvement of user comfort

Due to the relevance of the envelope to improve the building thermal and energy performance, in the last years, significant advances are being made to integrate new functionalities and capabilities in the envelope to adapt it to outdoor and indoor environments. This is being achieved by means of sensors and actuators that allow changing the building thermal and energy configuration according to real demand.

However, for that to happen it is necessary to have solutions able to manage correctly, the unbalanced scenarios of energy generation and energy demand in the building. TECNALIA is making a great effort in the development of these systems able to benefit from the energy harvested in the envelope and, at the same time, to improve the performance and efficiency of the building energy installations.


**Curtain Walls**

**RTD ACTIVITIES**
- Development of curtain wall systems with composite profiles.
- Development of curtain wall systems made of biomaterials.
- Development of curtain wall systems with translucent and/or transparent profiles.

**TECHNICAL SERVICES**
- Product development: Design of building envelope made of aluminium, steel, timber and glass.
- Advanced studies on acoustics and structure/mechanical analysis.
- Eco-design.
- Integration of systems for the envelope’s sensorisation and control and energy generation.
- 3D Design & BIM integration, new building, assembly and distribution processes.
- Testing to national and international standards and regulations.
- Curtain Wall’s CE mark: initial type tests.
- Ad-hoc test protocols to assess the performance of “Landmark Buildings” or highly innovative buildings.

**TESTING**
- Air permeability, watertightness and resistance to wind load.
- Impact tests.
- Thermal transmittance.
- Fire Resistance tests.
- Seismic tests.
- Acoustic insulation.
- Thermal dilatation.
- Watertightness under dynamic pressure.
- Equipotentiality.
- Resistance to live load.
- "On-site" tests to monitor the correct installation of enclosures.

**Aimed at:**
- Manufacturers of light façades and curtain walls.
- Construction specifiers.
- Constructors.
- Developers.


**Ventilated Façades**

**RTD ACTIVITIES**
- Energy performance optimisation for ventilated façades.
- Development of ventilated façades with integration of HVAC systems.
- New ventilated façade systems made of wood-plastic composites (WPC) with high durability and fire performance.
- Advanced studies: energy efficiency.
- Use of new materials with improved performance against weathering, fire, etc.
- Advanced studies on acoustics and structure/mechanical analysis.
- Eco-design.
- Integration of systems for the envelope’s sensing and control and energy generation.
- 3D Design & BIM integration, new building, assembly and distribution processes.
- Testing of the façade and its components to national and international standards.
- Issue of European Technical Assessments (ETA) to CE mark the façade.
- Fire resistance and reaction to fire.
- Acoustic insulation.
- Watertightness.
- Water vapour permeability.
- Resistance to wind pressure and suction.
- Mechanical resistance tests.
- Hard and soft body impact tests.
- Durability tests.
- "On-site" tests to monitor the correct installation of enclosures.

**TECHNICAL SERVICES**
- Advanced studies: energy efficiency.
- Use of new materials with improved performance against weathering, fire, etc.
- Advanced studies on acoustics and structure/mechanical analysis.
- Eco-design.
- Integration of systems for the envelope’s sensing and control and energy generation.
- 3D Design & BIM integration, new building, assembly and distribution processes.
- Testing of the façade and its components to national and international standards.
- Issue of European Technical Assessments (ETA) to CE mark the façade.

**Aimed at:**
- Manufacturers of light façades and curtain walls.
- Construction specifiers.
- Constructors.
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**TESTING**
- Air permeability, watertightness and resistance to wind load.
- Impact tests.
- Thermal transmittance.
- Fire Resistance tests.
- Seismic tests.
- Acoustic insulation.
- Thermal dilatation.
- Watertightness under dynamic pressure.
- Equipotentiality.
- Resistance to live load.
- "On-site" tests to monitor the correct installation of enclosures.
Glass

RTD ACTIVITIES

• Development of new materials with translucent and/or transparent profiles.

TECHNOLOGICAL SERVICES

Aimed at:
• Building Glass manufacturers.
• Special glass manufacturers.
• Insulated glass units manufacturers.
• ...

TESTING

• Mechanical tests: fragmentation, compression strength measurement, mechanical strength, pendulum test and manual attack tests (ball drop and axe test).
• Optical characteristics: transmittance, reflectance and absorbance UV-VIS-NIR color coordinates, optical distortions and secondary image separation.
• Durability of laminated glass: humidity, high-temperature and radiation tests.
• Fire resistance and reaction to fire of laminated glass and insulating glass units.
• Thermal transmittance.
• Airborne sound insulation.
• Characterisation of IGUs: Moisture penetration index, gas leakage rate, etc.

Windows and Accessories

RTD ACTIVITIES

• Development of systems with renewable thermal energy integration and heat recovery ventilation (MODULTAR, European Patent EP 2520870).
• Integration of automated ventilation on window profiles.

TECHNOLOGICAL SERVICES

RTD ACTIVITIES

• Assessment of performance under national and international standards and bespoke procedures.
• Compulsory and voluntary certification: CE mark, ecological label, etc.
• Product development: design of windows made of aluminium, steel, timber and glass.
• Advanced studies on acoustics and structure/mechanical analysis.
• Advanced studies on energy efficiency.
• Eco-design.
• Integration of systems for the sensing and control of windows and energy generation.

TESTING

Aimed at:
• Manufactures of:
  - Windows.
  - Aerators.
  - Shutter casings.
  - Louvres, awnings.
  - Window’s hardware.
  - Window accessories in general.

• Air permeability.
• Watertightness.
• Resistance to wind load.
• Loadbearing capacity of safety devices.
• Thermal insulation through testing or simulation.
• Airborne sound insulation.
• Reaction to fire and fire resistance.
• Durability.

Collaboration with the manufacturer on the compliance with different requirements, both mandatory (CE mark) and voluntary (quality labels, internal monitoring for factory production control).

• Study of advanced materials for the development of new systems.
Doors and Components

Aimed at:
- Manufacturers of:
  - Pedestrian doors.
  - Fire doors.
  - Security doors.
- Specifiers.
- Developers.
- Construction companies.

TECHNOLOGICAL SERVICES

- Development of panic Electronic Activated Systems (EAS) and innovative control access.
- Assessment of performance under national and international standards and bespoke procedures.
- Compulsory and voluntary certification: CE mark, N mark, etc.
- Technological partner for CERTIFIRE to get access to international markets.
- Certification of fire products issued by DCD (Dubai Civil Defense) for the United Arab Emirates.
- Issue of European Technical Assessments (ETA) for CE mark.
- Advanced studies on acoustics performance and fire protection.
- Integration of systems for the sensorisation and control.
- Study of advanced materials for the development of new systems.

TESTING

- Fire resistance.
- Airborne sound insulation.
- Thermal transmittance calculation.
- Mechanical durability.
- Air permeability - watertightness - resistance to wind load.
- Burglar resistance tests.

Aimed at:
- Manufacturers of:
  - Pedestrian doors.
  - Fire doors.
  - Security doors.
- Specifiers.
- Developers.
- Construction companies.

Sandwich Panels

Aimed at:
- Manufacturers of sandwich panels made of metal or wood derivatives.

TECHNOLOGICAL SERVICES

- Development of sandwich based solutions with integration of solar collectors.
- Durability assessment of sandwich panels for building cladding and roofing.

TESTING

- Assessment of performance under national and international standards and bespoke procedures.
- Third party assessment for voluntary certification: N mark.
- Characterisation and performance assessment: mechanics, acoustics, physics, chemistry, fire protection.
- Technological services for performance improvement.
- Design of ad-hoc test procedures for innovative products.
- Issue of European Technical Assessments (ETA) for CE mark.
- Advanced studies on acoustics and structure/mechanical analysis.
- Eco-design
- Study of advanced materials for the development of new systems.

TECNALIA is the only lab in Spain providing a comprehensive service on door’s security.

Mechanical Tests on End Product /
- Dimensions and safety requirements.
- Stability, resistance to static load, impact, drop and fatigue tests.

Physical-Chemical Tests on Raw Materials /
- Tensile strength, elasticity, impact, abrasion, bending, colour, gloss.
- Natural and artificial ageing: QUV, ATLAS, climate chambers, salt spray, cold check, humidity.

Fire Performance Tests /
- Fire reaction, resistance to fire, toxicity of smoke.

Acoustics /
- Airborne sound insulation, acoustic absorption.
Fixings

RTD ACTIVITIES
- Development of joints for envelopes with large format cladding.
- Development of joint systems for open prefabricated structures.

TECHNOLOGICAL SERVICES
- Issue of European Technical Assessments (ETA) for CE mark of fixings.
- Advanced studies on structure and mechanical analysis.

TESTING
- Assessment of performance under national and international standards.
- Design of bespoke test procedures.
- "On-site" tests to monitor the correct installation of fixings.
- Shear strength test.
- Tensile strength test.
- Vertical load test.
- Pulsating loads.
- Corrosion resistance tests.

Aimed at:
- Manufacturers of roofing systems.
- Construction specifiers.
- Constructors.
- Developers.
- ...
Smoke Control Systems (NSHEV) and Skylights

Aimed at:
- Manufacturers of roofing systems.
- Construction specifiers.
- Constructors.
- Developers.
- ...

• Experimental and numerical assessment of the ventilation performance in Smoke and Heat Exhaust Systems in transport terminals.
• Performance based analysis of the alternative fire safety solutions in logistic and warehouse halls.
• Definition of wind models for the assessment of the ventilation performance in Smoke and Heat Exhaust Systems in building envelopes.

Aimed at:
- Manufacturers of roofing systems.
- Construction specifiers.
- Constructors.
- Developers.
- ...

• Operation under adverse conditions (wind or snow loads).
• Operation at low ambient temperature.
• Watertightness.
• Water vapour permeability.
• Resistance to wind suction.
• Mechanical resistance.
• Hard and soft body impact tests.
• Durability tests.
• Fire resistance.

Durability of fire protection products.
Fire resistance and reaction to fire.
Thermal insulation.
Thermal dilatation.
Watertightness under dynamic pressure.
Mechanical resistance and stability.
Air permeability and watertightness.
Impact resistance.
Acoustic tests.
Thermal resistance.

TECNALIA helps its clients innovate and keep ahead of future developments and respond to their challenges, access new business opportunities, new markets, develop new products.

Ducts

Aimed at:
- Ducts manufacturers
- Construction specifiers
- Constructors
- Developers
- ...

• Issue of European Technical Assessments (ETA) for CE mark.
• Ad-hoc test protocols to assess the performance of “Landmark Buildings” or highly innovative buildings.
Adhesives and Sealants

TECNALIA helps its clients keep ahead of future developments and respond to their challenges, access new business opportunities, new markets, develop new products and innovate.

TECNALIA is the only Notified Body in Spain for the CE mark of non-structural sealants.

Aimed at manufacturers of:
- Sealant for construction joints and glazing.
- Double glazing sealants.
- Structural sealants.
- Adhesives for wood.
- Adhesives for floors.
- Hot-melt adhesives.
- Structural adhesives to repair concrete, construction adhesives for ventilated cladding.

TECHNOLOGICAL SERVICES

- Assessment of performance under national and international standards and bespoke procedures.
- Certification, both mandatory (CE mark) and voluntary (N mark).
- Product characterisation.
- Failure analysis.
- Technological Services for performance improvement.
- Ongoing surveillance of production processes through periodic testing.
- Adhesive’s analysis and chemical identification.
- Quantitative and qualitative determination of components.
- Issue of European Technical Assessments (ETA) for CE mark.

TESTING

Physical-Mechanical Tests /
- Mechanical resistance.
- Adhesion cohesion after various ageing.
- Durability.
- Water vapour transmission.
- Compatibility with adjacent materials.

Chemical Tests and Analysis /
- Spectroscopy analysis FTIR, TGA.
- Classification according to French regulation of emissions: Decree 2011-321.
- Proficiency study of sealants for use in contact with food.

Fire Performance Tests /
- Reaction to Fire, Smoke Toxicity and Fire Resistance.

Biological Tests /
- Evaluation of the action of microorganisms.

Aimed at:
- Manufacturers of paint, varnish and coating for construction.

Paints and Waterproofing Systems

TECNALIA helps its clients keep ahead of future developments and respond to their challenges, access new business opportunities, new markets, develop new products and innovate.

TECNALIA is the only Notified Body in Spain for the CE mark of non-structural sealants.

Aimed at manufacturers of:
- Sealant for construction joints and glazing.
- Double glazing sealants.
- Structural sealants.
- Adhesives for wood.
- Adhesives for floors.
- Hot-melt adhesives.
- Structural adhesives to repair concrete, construction adhesives for ventilated cladding.

TECHNOLOGICAL SERVICES

- Assessment of performance under national and international standards and bespoke procedures.
- Certification, both mandatory (CE mark) and voluntary (N mark).
- Full characterisation of paints and coatings.
- Design of ad-hoc test procedures for innovative products.
- Assessment of the innovation for new building products.
- Consultancy on raw materials and products approval.
- Quantitative and qualitative determination of components.

TESTING

Physical-Chemical Tests on Raw Materials /
- Tensile strength, elasticity, impact, abrasion, bending, colour, gloss.
- Natural and artificial ageing: QUV, ATLAS Ci3000, climate chambers, salt spray, cold check, humidity.
- Permeability to water vapour, liquid water, CO₂, water tightness.

Identification and Composition /
- FTIR, DSC, TGA, HPLC-GC, CG-MS, and other techniques.
- Industrial hygiene sampling; ionic chromatography.
- VOC’s analysis.
- Heavy metals analysis: ICP.

Fire Performance Tests /
- Fire reaction, resistance to fire, toxicity of smoke.

Biological Tests /
- Bactericide, fungicide and algicide efficacy.
- Efficacy and ecotoxicity testing of preservatives and biocides.
- Antifouling paints tests.
Innovative Materials

RTD ACTIVITIES

• High durability and fire performance wood-plastic composites (WPC) for ventilated façades.
• Bio-based formulations for Eco-coatings.
• Transforming urban and agricultural residues into high performance biomaterials for green construction.

Aimed at:
• Manufacturers of plastic and composite materials.
• Concrete manufacturers.
• Coatings manufacturers.
• Chemicals manufacturers.
• Wood protection.

TECHNOLOGICAL SERVICES

• Recycling of subproducts generated in industrial sectors, Construction and Demolition and agroforestry into construction materials (concrete, plastic composites, coatings).
• Ecologic cements with low synthesis energy and low CO₂ emissions.
• Nanoadditivated concrete with improved performance (mechanical, etc.).
• New thermal insulators: ecologic (biopolyurethanes, biobased), superinsulators (aerogels).
• Substitution of traditional materials by polymeric composites/biocomposites.
• Improvement of fire performance of materials and adaptation to fire normative.
• Development of halogen-free systems for fire protection.
• Natural biobased protectors and synergists for wood and derivatives.
• Adaptation to environmental normative for wood protection: reduction of the biocide content, improvement of the active fixation, fading reduction, …
• Ecologic coatings: low VOC, biobased resins and additives.
• Functional coatings: control release of substances, sensors, photocatalytic, antiallergic, self-cleaning, antislippery, thermal, etc.

Processing of Plastic Materials /
• Compounding, extrusion, injection, compression, infusion.

Computational Design and Nanoengineering for Cements and Concrete /

Physical-Chemical-Mechanical Tests /
• Mechanical properties: tensile, flexural, abrasion, etc.
• Artificial weathering: QUV, ATLAS, climatic chambers, thermal shock, etc.
• Physical properties: density, softening temperature, contact angle, adhesion, etc.
• Analysis by FTIR spectroscopy, TGA, DSC, chromatography, etc.
• Optical microscopy, scanning electron microscopy (SEM), EDAX, X-ray diffraction.

Fire Performance Tests /
• Cone-calorimeter, smoke toxicity, reaction and resistance to fire.

Biological Tests /
• Bactericide, algaeicide and fungicide efficacy tests.
• Tests of efficacy and ecotoxicity of preservatives and/or toxicity.

Security in Nanoparticles /
• Environmental, health and in-use security (GHS).

TESTS

References of Technical Support in Landmark Buildings

BOTIN ARTS CENTRE (SANTANDER)

Ownership
FUNDACION BOTIN

Design
RENZO PIANO BUILDING WORKSHOP - LUIS VIDAL Y ARQUITECTOS

Construction
UTE CENTRO BOTIN (OLH-ASCAN)

Façade Manufacturer
DOVAL BUILDING & DISSET (2014)
SAINT GOBAIN (2014)

WARSaw SPIRE (VARSAW - POLAND)

Ownership
EASTERN EUROPE BUD

Design
JASPERS EYERS ARCHITECTS

Construction
GHELAMCO POLSKA

Façade Consultant
MURPHY FAÇADE STUDIO

Façade Manufacturer
MARTIFER CONSTRUCCIONES METÁLICAS (2014)

BACATA TOWER (COLOMBIA)

Ownership
BD PROMOTORES

Design
ALONSO BALAGUER ARQUITECTOS

Construction
PRAIHK

Façade Manufacturer
GRUPO ALUMAN

Glazing
LA VENECIANA GLASS SOLUTIONS SANT GOBAIN (2014)

PUERTO TRIANA TOWER (SEVILLA)

Ownership
TORRE PUERTO TRIANA (CAIXABANK)

Design
PELLI CLARKE PELLI ARCHITECTS

Construction
DRAGADOS

Project Manager
AYESA

Façade Consultant
ENAR (ENVOLVENTES ARQUITECTONICAS)

Façade Manufacturer
MARTIFER CONSTRUCCIONES METÁLICAS (2014)
References of Technical Support in Landmark Buildings

BBVA HQ LAS TABLAS PHASE 2 (MADRID)
Ownership BBVA
Design HERZOG & DE MEURON - ORTIZ LEÓN ARQUITECTOS
Project Manager CB RICHARD ELLIS
Façade Consultant ENAR (ENVIQUENTES ARQUITETÓNICAS)
Façade Manufacturer PERMASTEELISA (2014)

"MUSIKENE" SCHOOL OF MUSIC (DONOSTIA - SAN SEBASTIÁN)
Ownership BASQUE GOVERNMENT - EDUCATION DEPT. UNIVERSITY OF THE BASQUE COUNTRY
Design GAZ ARQUITECTOS
Project Manager GERENS HILL INTERNACIONAL
Façade Consultant ENAR (ENVIQUENTES ARQUITETÓNICAS)
Louvers System MARTIFER CONSTRCCIONES METÁLICAS

BBVA HQ LAS TABLAS PHASE 1 (MADRID)
Ownership BBVA
Design HERZOG & DE MEURON - ORTIZ LEÓN ARQUITECTOS
Project Manager GERENS HILL INTERNACIONAL
Façade Consultant ENAR (ENVIQUENTES ARQUITETÓNICAS)

EDP NEW HQ (LISBOA - PORTUGAL)
Ownership EDP (ENERGÍAS DE PORTUGAL)
Design ATELIER AIRES MATEUS ASSOCIADOS
Project Manager OTÍC ENGI - HCl
Façade Manufacturer MARTIFER CONSTRCCIONES METÁLICAS (2013)
Roof PROJEK HABITAT & EQUIPMENT (2013)

MUSEUM OF EUROPEAN HISTORY (BRUSSELS - BELGIUM)
Ownership PARLAMENTO EUROPEO
Design ATELIER D'ARCHITECTURE CHAIX & MOREL ET ASSOCIÉS - JSW ARCHITEKTEN
Construction GROUPEMENT BPC/CFE
Façade Consultant WERNER SOBEK
Façade Manufacturer INDUSTRIAS LAGUNA BELVIS (2013)

"SAN MAMÉS" NEW STADIUM (BILBAO)
Ownership SOCIEDAD SAN MAMÉS BARRIA
Design ACXT - IDOM
Construction UTE SAN MAMES (ACCCIÓN - INBISA - MURAS - ALTUNA Y URUA)
Façade Manufacturer PROJEK HABITAT & EQUIPMENT (2013)

BBVA HQ LAS TABLAS PHASE 1 (MADRID)
Ownership BBVA
Design HERZOG & DE MEURON - ORTIZ LEÓN ARQUITECTOS
Project Manager CB RICHARD ELLIS
Façade Consultant ENAR (ENVIQUENTES ARQUITETÓNICAS)
Façade Manufacturer PERMASTEELISA (2014)

MERCAT DELS ENCANTS (BARCELONA)
Ownership BIMSA (BARCELONA D'INFRAESTRUCTURES MUNICIPALS S.A.)
Design B720 ARQUITECTOS
Construction UTE ENCANTS (OLH - G&A - EXCOVER)
Roof TEULADES 2012)

TECNALIA delivers a comprehensive technological service in the performance evaluation and technical support in all these projects.
References of Technical Support in Landmark Buildings

**IBERDROLA TOWER (BILBAO)**

Ownership: TORRE IBERDROLA A.I.E.

Design: PELLI CLARKE PELLI ARCHITECTS - ORTIZ LEÓN ARQUITECTOS

Structural Engineering: IDOM

Construction: FONORTE (GRUPO AFER)

Façade Manufacturer: UXAMA

Roof: ACIEROID (2013)

**ORNARA HQ (HERNANI)**

Ownership: ORONA

Design: LKS INGENIERÍA

Construcción: UTE ORONA-IDIX (CONS. MARIEZCURREÑA, CONS. ZUBIED & URBY COLAN)

Façade Manufacturer: UXAMA

**GRAN CANARIA AIRPORT (GRAN CANARIA)**

Ownership: AENA (AEROPUERTOS ESPAÑOLES Y NAVEGACIÓN AÉREA)

Design: ESTUDIO LAMELA ARQUITECTOS

Construction: FCC (FOMENTO CONSTRUCCIONES Y CONTRATAS)

Façade Manufacturer: GRUPO FOLCRA EDIFICACIÓN

Roof: ACIEROID (2013)

**WAVES GRAND SUD SHOPPING CENTRE (METZ-FRANCE)**

Ownership: COMPAGNIE DE PHALSBOURG - LES ARCHES MÉTROPOLE

Design: GIANNI RANAULO - LIGHT ARCHITECTURE

Construction: COMPAGNIE DE PHALSBOURG - LES ARCHES MÉTROPOLE

Façade Manufacturer: ACIEROID (2014)

**Clients and Partners**

- ACIEROID
- AKZO NOBEL
- ALUCOR
- ALUMINOS EIBAR
- ALUMINIOS NAVARRA
- ALUYOMA
- ARCELORMITTAL
- ARINO DUGLASS
- ASTIGLASS
- BEISSIER
- BELLAPART
- CARINBISA
- COSENTINO
- DECEUNINCK
- DINAK
- DISSET
- EUPINCA
- EUROPERFIL
- EUROQUIMICA
- EXPALUM
- EXTHA IBERICA
- EXTRUGASA
- FACHADAS SINGULARES UXAMA, S.L.
- FAKOLITH
- FELIX CONSTRUCTIONS
- FEYS
- FS FJACIONES
- GLASS SOLUTIONS
- GRUPO ALUMAN
- GRUPO FOLCRA EDIFICACIÓN
- GUARDIAN
- HENKEL
- IMAR
- INASA
- INBOBE
- INDUSTRIAS LAGUNA BELVIS
- ISOLPACK
- KOMMERLING
- KOMTES
- LA VIUDA
- MARTIFER CONSTRUCCIÓN
- METECNO HUNSTMANN
- OLIVE QUIMICA
- PERMASTEELISA
- PERSIANAS PERSAX
- PILKINGTON IBERICA
- PROFINE IBERIA
- PROMAT
- SAINT-GOBAIN
- SAPA PROFILES
- SELENA
- STOBAG IBERIA
- STRUGAL
- TECHNAL
- ULMA ARCHITECTURAL SOLUTIONS
- VEKAPLAST IBERICA
- WICONA
Accreditations and Recognitions

ENAC Accreditation No. 4/LE024 for Construction Sector /
• Construction Elements, Building Enclosures and its Accessories (Windows and Accessories, Building Envelopes, Doors, Building Hardware, Noise Barriers, Glass in Building, Sandwich Panels Testing).
• Fire Protection.
• Concrete, Byproducts and their Constituents.
• Ceramics, Baked Clay and their Constituents.
• Wood and Wood Protection.
• Furniture.
• Thermal insulation.

ENAC Accreditation No. 4/LE456 for Acoustics in Building /
Recognition of TECNALIA’s Fire Protection Laboratory by VKF (Association of Public Building Insurance Companies and FBT (Construction Technology Commission) in Switzerland /
TECNALIA is registered by the Ministry of Development under the code CTE PVS-L-013 as Laboratory for Quality Control in Building /
TECNALIA - Technical Assessment Body (TAB) for the issue of the European Technical Assessment (ETA) for Construction Products /

TECNALIA is Notified Body Number 1292 for Construction Product Regulation /
TECNALIA is recognised by IMO (International Maritime Organisation) for fire reaction and resistance to fire tests (PEF 2010) (FTP 2010) /
TECNALIA is recognised by Dubai Civil Defence (DOD) for fire protection testing and certification /
TECNALIA is approved by the Ministry of Development to issue Technical Conformity (TC) reports. This TC is also recognised as approved mark for innovative construction products /
The recognition of our accreditations abroad gives our customers access to international markets.

Alliances and Partnerships

amanac.eu/
TECNALIA is member of AMANAC (Advanced Material and Nanotechnology Cluster).

www.asefave.org/
TECNALIA is member of the Asociación Española de Fabricantes de Fachadas Ligeras y Ventanas (ASEFAVE).

www.ectp.org/
TECNALIA is member of the European Construction Technology Platform, ECTP.

facades.ning.com/
TECNALIA is member of the European Façade Network, EFN.

cordis.europa.eu/estep/
TECNALIA is member of the European Steel Technology Platform, ESTEP.

internationalfacade.com/
TECNALIA is member of the Federation of the European Window and Curtain Wall Manufacturer Associations, FAECF.

www.egolf.org.uk/
TECNALIA is member of the European Group of Organisations for Fire Testing, Inspection and Certification, EGOLF.

www.icae2015.com/
TECNALIA is the organiser of the International Congress on Architectural Envelopes, ICAE.

www. PLATEA.org/
TECNALIA is member of the Plataforma Tecnológica Española de Ayuntamientos, PLATEA.

www.egolf.org.uk/