Partner Profile

INTROMAC: TECHNOLOGICAL INSTITUTE OF ORNAMENTAL STONE AND CONSTRUCTION MATERIALS.

About

INTROMAC is a public Research Institute of the Extremadura Regional Government (Spain). The center is aimed to improve the competitiveness of companies within the energy-efficient building sector through R&D and innovation activities. It focuses its research lines in fundamental areas such as Energy Efficiency, Sustainability, New/ improved materials and structures, Historical Heritage, and Industrial Processes optimization, relying upon specialized researchers and leading testing facilities. INTROMAC is organized in two main technical departments: 'Technologies & Sustainable Construction' and 'Ornamental Stones, Construction Products and Techniques'.

The 'Technologies & Sustainable Construction' department's expertise focuses on environmental impact, energy performance, monitoring, building acoustics, building retrofitting, circular economy, innovative and sustainable solutions, knowledge transfer, and capacity building.

The 'Ornamental Stones, Construction Products and Techniques' department's expertise focuses on the construction/ industry waste recycling, reuse and revalorization, life cycle optimization, landscape recovery, sustainable mining, and water management. It also takes part of the main technical building material normalization committees in the country.

ROLE AS A PARTNER IN HORIZON EUROPE PROJETCS.

Intromac can provide the necessary expertise to address projects where it is necessary to follow up on primary and secondary mineral resources throughout their full life cycles, mainly through.

- Bio-innovation and circular systems through the valorization of waste (urban, agricultural, forestry, organic, biomass, etc.) into renewable raw materials or biomaterials for the construction sector, promoting a sustainable circular economy.
- Development and demonstration of innovative pilots for clean, innovative and sustainable production of non-agricultural and non-energy feedstocks in the EU from end-of-life products.
- Technical development of processing, reuse, recycling and recovery schemes for complex primary and secondary resources.
- Mapping the potential supply of secondary raw materials from analyzed wastes, and identification of the future availability of secondary raw materials based on the collection and classification of the relevant data and information in the harmonized UNFC.

TOPICS CLUSTER 6: FOOD, BIOECONOMY, NATURAL RESOURCES, AGRICULTURE AND ENVIRONMENT

TOPIC REFERENCE	**HORIZON-CL6-2026-02-CLIMATE-02 - TOWARDS THE WATER INFRASTRUCTURES OF THE FUTURE**

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IDENTIFIED WEAKNESS (GAP)

Traditional infrastructures are rigid and impermeable, failing to integrate with Sustainable Urban Drainage Systems (SUDS) and relying heavily on virgin raw materials with high carbon footprints.

OUR KNOWLEDGE & TECHNICAL CAPACITY

Our capacity focuses on enabling **future-proof water infrastructures** through technical innovation in construction materials. We engineer **circular draining layers** (bituminous and cementitious) **incorporating industrial by-products and secondary raw materials** that function as active components of SUDS. We turn static pavement into a dynamic, waste-valorized tool that effectively manages heavy stormwater loads while ensuring structural performance and circularity.

Experimental Infrastructure EDEACICE

INTROMAC manages the Centre for Innovation and Quality of Buildings EDEA-CICE, consisting of experimental infrastructure & 2 real scale social house prototypes www.edeacice.juntaex.es

EDEA-CICE has its origin in the Life projects EDEA and EDEA RENOV, both awarded at the European level as the best research projects in environmental matters.

EDEA-CICE includes a set of fully monitored spaces, buildings, and facilities that allow the study and experimentation on a real scale of equipment, products, materials, and construction systems to improve quality and energy performance.

Hosts energy-efficient systems (solar, geothermic pump, wind, biomass pump...) and a complete monitoring and remote-controlled system for testing innovative passive and active building technologies.

The two house prototypes are unoccupied and built identically, enabling real time comparison and allowing the integration of technology solutions for confort, IAQ and energy performance assessment.

Expertise

INTROMAC has been involved in almost 200 R&D projects since 2000, implementing different activities and roles. The most relevant European Projects for energy efficient and climate neutral building stock are presented below:

- **ReNaturalNZEB:** Recycled and Natural Materials and Products to develop nearly zero energy buildings with low carbon footprint. Life+17'. Duration: 2018-2021. Role: Partner.
- **iCirBus-4Industries:** Innovate Circular Businesses on Energy, Water, Fertilizer & Construction Industries towards Greener Regional Economy. Life+15'. Duration: 2016-2019. Role: Coordinator.
- **LearnEER**: Mutual Learning for Energy Efficient Building Retrofitting. Erasmus+ 2016. Duration: 2016-2018. Role: Coordinator.
- **EDEA-RENOV:** Development of Energy Efficiency in Architecture: Energy Renovation, Innovation and ICTs. Life+ 09'. *Awarded as Best LIFE-Environment/ Information Projects 2015*. Duration: 2011-2015. Role: Partner
- **EDEA:** Experimental Demonstrators on Energy and Architecture. Life+ 07'. *Awarded as Best LIFE-Environment/ Information Projects 2013*. Duration: 2009-2013. Role: Partner
- **ee-WiSE**: Energy Efficiecny Knowledge Transfer Framework for Building Retrofitting in the Mediterranean Area. FP7. Duration: 2012-2014. Role: Coordinator.
- **DEGREN / DEGREN Plus**: *Centro Transfronterizo de Innovación Empresarial en Ecodiseño en la EUROACE – Design & Green Engineering. Poctep Role: Coordinator*
- **Bio-EcoMatter:** *Mortar without cement or sand that valorizes agricultural waste. SME*
- **Tecnocir:** *Research and development for circular construction. Convocatoria CIEN 2021*
- **BGRENEER**, *Biodiversity and hemp, new enclaves in the area EUROACE. Poctep 2021*
- **CARBOSAN:** Obtaining CaCO3 and recycled aggregates from the carbonation of residual sludge from concrete plants using CO2 emissions from hot mix asphalt plants. Decreto regional 211/2020
- **GEOSHIVE**: Development of a new biocomposite construction material from industrial hemp waste and geopolymer matrix for the manufacture of innovative modular construction products. CDTI
- **Eco-Mortar 2.0** Eco-friendly and high-performance thermal insulating fibre reinforced mortar to be applied on walls as a coating or panel. **HORIZON 2022**