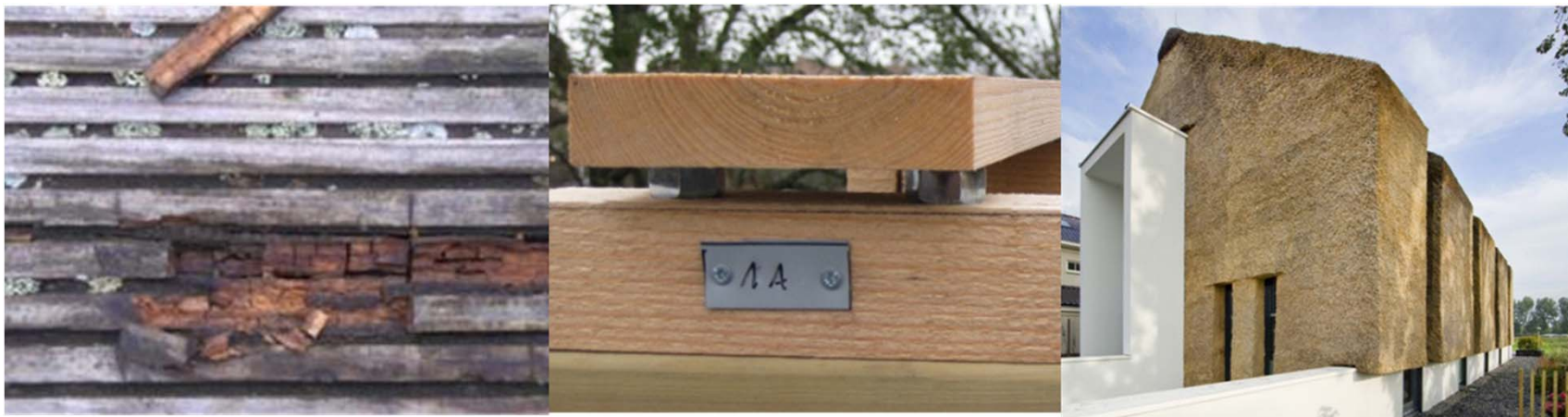
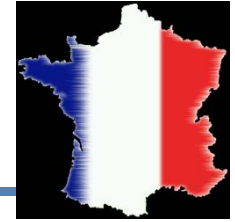


Ongoing R&D projects in COST member countries

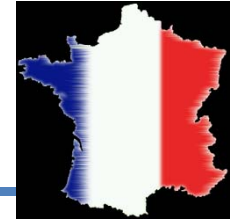
January 2014



COST FP1303: Performance of bio-based building materials



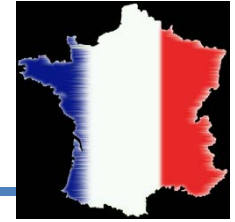
Institute	Acronym	Research Groups
Ecole Supérieure du Bois, Nantes	ESB	Forest products processing Wood and composites Construction
École Nationale Supérieure des Technologies et Industries du Bois, Epinal - Laboratoire d'Etudes et de Recherche sur le Matériau Bois	ENSTIB - LERMAB	Wood anatomy and physics Physical chemistry of polymers Energy and processes Mechanics, civil engineering and manufacturing By-products and recycling Wood chemistry and preservation processes Chemical valorization of biomass (biorefinery, extraction of biomolecules and biopolymers) Wood in structure



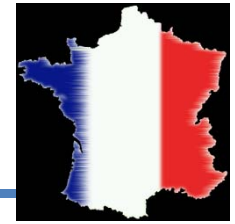
Institute	Acronym	Research Groups
Technological Institute Forêt Cellulose Bois- construction Ameublement	FCBA	Forest products processing Packaging Pulp and paper / Fibres Construction Wood preservation and durability Biology, Microbiology, Biotechnologies Wood anatomy and physics (fire ...) Chemistry (biocides ...), Air quality
Scientific and Technical Center for Building	CSTB	Energy, Environment Uses, Health, Comfort Microbiology, Air quality Structures testing laboratory Hydraulic and sanitary equipment laboratories Envelopes and coatings Fire testing laboratories

France

January 2014



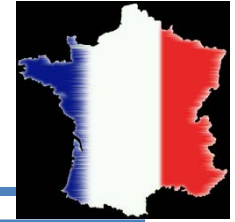
Institute	Acronym	Research Groups
CIRAD (Laboratoire de préservation des bois)	CIRAD	Wood preservation Biology, Durability Wood anatomy
Université de Montpellier II	LMGC	Wood rheology Timber conservation Wood physics
Laboratoire d'Ingénierie des MATériaux de Bretagne (Université de Bretagne)	LIMATB	Bio-based materials, nano-materials Physics (spectroscopy, rheology, ...) Energy, durability,
Laboratoire de Recherche sur les monuments Historiques	LRMH	Conservation of timber, textile, metal, stone ... Acoustic detection of insects Wood rheology Microbiology (molds, lichens, algae, bacteria)



Institute	Acronym	Research Groups
Ecole Centrale Paris Laboratoire de Génie des Procédés et Matériaux	ECP/LGPM	Materials and bio-materials Physics and Mechanics of wood Coupled Heat & Mass Transfer Characterisation Modelling and simulation Bio-processes and Biological degradation
l'Institut français des sciences et technologies des transports, de l'aménagement et des réseaux	IFSTTAR	Wood combined with other material assemblies

France

January 2014



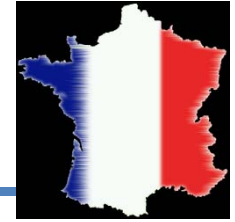
Institute	Acronym	Research Groups
Université Bordeaux I and Arts et Metiers ParisTech and Ecole Nationale Supérieure des Sciences Agronomiques de Bordeaux-Aquitaine, Bordeaux	I2M	Wood and composites Veneer production and properties Wood durability Wood rheology Modelling
Université de Pau	IPREM- EPCP	Wood chemistry Wood durability Wood and composites Adhesives



COST FP1303: Performance of bio-based building materials

Specialist equipment

January 2014



Acronym	Equipment
ESB	Environmental Scanning Electron Microscope - EDAX + mechanical testing VOC emission chambers - GC-MS for analysis of VOCs Artificial weathering - weathering wheel + QUV
I2M	X-ray tomographer Non-woven fibre mat needling machine Pilot-scale veneer production
ECP/LGPM	Experimental tools : ESEM microscope, Confocal microscope, Climatic Chambers (controlled in temperature, humidity and pressure), Magnetic suspension balance (isotherm, diffusivity), Permeability, Dimensional variations (Laser micrometer coupled with a sorption balance + DMA coupled with ATG-DSC), VOC emission (ATG coupled with GS-MS), Calorimeter equipped for biological activity... Modeling tools : Lattice Boltzmann, Material Point Method, <i>TransPore</i> (H&M transfer in 2-D and 3-D), inverse methods, cellular automata to model biological colonization...



materials

Specialist equipment

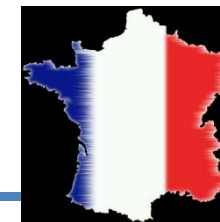
January 2014



Acronym	Equipment
FCBA	VOC emission chambers GC-MS, semi-pilot scale autoclaves Microscopy, Microbiology, DNA analyses Artificial weathering - weathering wheel + QUV + EN73 tunnels Adhesive evaluation Seismic platform, Fire testing Test fields (France, Guadeloupe & Guyana)
CSTB	Sanitary quality of construction products and equipment and structures Testing structure crushing and seismic responses Fire testing Full-scale experimenting and simulating the water cycle Climatic wind tunnel

Specialist equipment

January 2014



Acronym	Equipment
ENSTIB - LERMAB	Artificial weathering - weathering wheel + QUV Adhesive evaluation Sorption equipments (DVS-intrinsic, Rubotherm balance) X-ray tomographer Scanning Electron Microscope
IPREM-EPCP (University of Pau)	Differential Scanning Calorimetry (DSC), Thermogravimetric Analysis (TGA) GC, HPLC Adhesive evaluation Environmental Scanning Electron Microscope

Specialist equipment

January 2014



INSTITUTE	Properties						Environmental				
	Natural Durability	Moisture / sorption studies	Resistance to mould	Fire resistance / reaction to fire	Insect /termites / pests	Dimensional stability	Life Cycle Assessments	Whole Life evaluations	Product accreditation	Emission testing	Environmental Product Declaration (EPD)
ESB		X		X		X	X			X	
ENSTIB	X	X				X			X		
I2M		X									
IPREM-EPCP	X					X					
FCBA	X	X	X	X	X	X	X	X	X	X	X
CSTB			X	X			X			X	
LERMAB	x	X				X					
ECP/LGPM		X	X	X		X					



COST FP1303: Performance of bio-based building materials

Specialist equipment

January 2014



INSTITUTE	Laboratory tests						Field tests				
	Natural Durability	Mould resistance	Insect /ermite testing	Leaching / weathering	Sorption studies	Dimensional stability	In ground contact tests	Out of ground contact tests	Natural weathering	Surface performance / coatings	Moisture data logging
ESB				X		X			X		X
ENSTIB					X	X			X		
I2M				X		X					
IPREM-EPCP	x					X					
FCBA	x	x	x	x	x	x	x	x	x	x	
CSTB											
LERMAB	x			x	x	x					
ECP/LGPM		X		X	X	X					