FIBRES RECHERCHE DÉVELOPPEMENT

Foundation
- 2008

Employees
- < 10

Branches
- Advising and services
- Innovation programs
- Research & Development
- Market studies
- Strategic studies
- Biomass preparation and processing

Key biobased materials
- Powders and flours
- Fibers
- Shives and pellets
- Woven and non-woven materials
- Compounds

Key products
- Plant fibers and flours
- Plastic applications
- Composites
- Insulation applications
- Concretes


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Fibres Recherche Développement®

Company

Fibres Recherche Développement (FRD) is a research and innovation company dedicated to the promotion of natural fibres for use in materials (panels, insulation, concrete, plastics, composites, etc.). It was established in 2008 by 11 shareholders, either producers of natural fibres (flax, hemp, miscanthus, linseed flax, and wood) and from agricultural coproducts (cereals straws, vine shoots…) or actively working to promote bioresources (ARD, Sofiprotéol). FRD now brings the majority of French natural-fibre producers and processors together.


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Products and materials solutions

FRD develops green, ready-to-use material solutions.

Thanks to FRD-Lab, the first French technological platform dedicated to the extraction and characterization of natural-based fibres and coproducts for material end-uses, FRD is able to:
- supply manufacturers with materials, pellets and fibre samples with application-specific characteristics so they can perform preliminary formulation and design tests for innovative products;
- offer technical support to fibre processors by helping them to adapt their extraction processes over the mid or long term, optimize their quality approach and prepare technical data sheets for their products;
- help partners develop R&D programs;


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FRD also offers a complete range of biobased reinforcement materials (pellets, powders, short and long fibres, woven and nonwoven fabrics, shives, unidirectionals, multiaxials, etc.) that can be tailored to the target product specifications. Thermoplastic compounds reinforced with natural fibres can also be developed on demand.


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Engineering Platform for projects

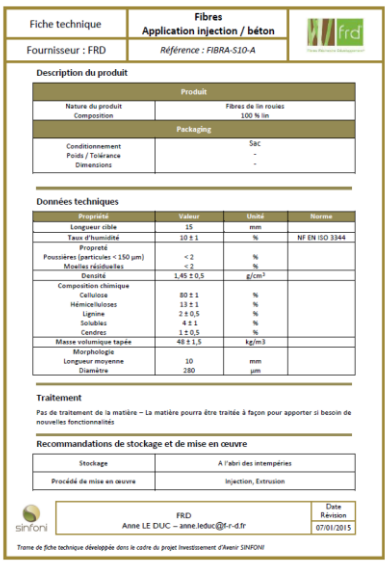
FRD benefits from a range of skills that are applicable to the design and development of innovative materials:

- data base of market, products, specifications, process, resource;
- enhancement of the performance of bio-based materials by transformation and functionalization;
- formulation of materials incorporating natural fibres;
- analysis and quality management;
- support to R&D projects development;

FRD applies its expertise to implementing innovation & research projects on the design or improvement of biosourced materials for thermoset and thermoplastic composites, plastics, insulation, panels, concretes, textiles applications…

FRD can also support fibre producers and industrials for the creation and the structuring of sources of supply of biomasses.

Technical support and services



Fiche technique — Fibres — Application injection / béton

Fournisseur : FRD — Référence : FIBRA-S10-A

Description du produit

Produit	
Nature du produit Composition	Fibres de lin rouies 100 % lin
Packaging	
Conditionnement Poids / Tolérance Dimensions	Sac - -

Données techniques

Propriété	Valeur	Unité	Norme
Longueur cible	15	mm	
Taux d'humidité	10 ± 1	%	NF EN ISO 3344
Propreté Poussières (particules < 150 µm) Moelles résiduelles	< 2 < 2	% %	
Densité	1,45 ± 0,5	g/cm³	
Composition chimique Cellulose Hémicelluloses Lignine Solubles Cendres	 80 ± 1 13 ± 1 2 ± 0,5 4 ± 1 1 ± 0,5	 % % % % %	
Masse volumique tapée	48 ± 1,5	kg/m3	
Morphologie Longueur moyenne Diamètre	10 280	mm µm	

Traitement

Pas de traitement de la matière – La matière pourra être traitée à façon pour apporter si besoin de nouvelles fonctionnalités

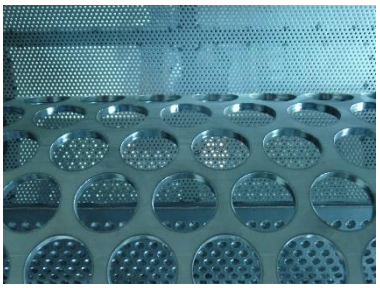
Recommandations de stockage et de mise en œuvre

Stockage	A l'abri des intempéries
Procédé de mise en œuvre	Injection, Extrusion

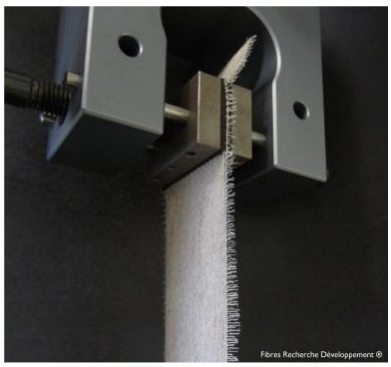
FRD — Anne LE DUC – anne.leduc@f-r-d.fr — Date Révision 07/01/2015

Trame de fiche technique développée dans le cadre du projet Investissement d'Avenir SINFONI

To support its customers and partners, FRD offers technical support in several main fields:



- **highlighting the potential of natural-based materials**: training on natural fibres, their performance and potential uses, and the processing methods used;
- **innovate and design bio-based composite materials**: support on developing innovative materials based on natural fibres, assistance on using natural fibres to replace mineral or synthetic fibres;
- **guaranteeing the supply of natural fibres and reinforcements**: supply-chain strategy definition, disposal of materials in compliance with industrial specifications, control and approval of incoming batches;
- **mastering performances during industrial process:** support to the implementation of a quality management system of bio-based products at input of process;
- **analyzes:** Characterization on materials, fibres, powders, reinforcements, composites, concrete and insulation wool; creation of technical data sheets; development and implementation of measurement methods;



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