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2.1.4. Density and porosity, in the case of hemp shiv 2.2. Particle Size Distribution (PSD); 2.2.1. General characteristics of aggregates made from fibrous plants; 2.2.2. Fiber content; 2.2.3. Methods for characterizing the PSD; 2.2.4. PSD analyses; 2.2.5. Comparison of the results obtained by image analysis; 2.2.6. Characterization of the geometry of the particles; 2.2.7. Characterization of the PSD; 2.2.8. Conclusions; 2.3. Compactness and compressibility; 2.4. Water absorption capacity; 2.5. Bibliography; Chapter 3. Binders; 3.1. Portland cements; 3.1.1. General; 3.1.2. Production 3.1.3. Chemical and mineral composition 3.1.4. Properties; 3.1.5. Environmental impacts; 3.2. Lime; 3.2.1. General; 3.2.2. Aerial lime; 3.2.3. Natural hydraulic limes; 3.3. Lime-pozzolan mixtures; 3.3.1. Natural pozzolans; 3.3.2. Calcined natural pozzolans: metakaolin; 3.3.3. Fly ash; 3.3.4. Blast furnace slag; 3.4. Plaster; 3.4.1. General; 3.4.2. Production; 3.4.3. Chemical and mineralogical composition; 3.4.4. Properties; 3.4.5. Environmental impacts; 3.5. Summary; 3.6. Bibliography; Chapter 4. Formulation and Implementation; 4.1. Objectives; 4.1.1. Preamble; 4.1.2. Traditional applications 4.1.3. Constituents and mixture 4.1.4. Methods of implementation; 4.2. Rules of formulation; 4.2.1. Basis of usual formulations; 4.2.2. Influence of the proportion of paste in the mixture; 4.2.3. Quality of the paste and water content; 4.2.4. Homogeneity of the paste; 4.2.5. The relationship between formulation and strength; 4.2.6. The relationship between formulation and thermo-hydric properties; 4.3. Examples of formulations; 4.3.1. Origin of the data; 4.3.2. Walling application; 4.3.3. Flooring application; 4.3.4. Roofing application; 4.3.5. Other applications; 4.4. Installation techniques 4.4.1. Building a wall using formwork

Sommario/riassunto

Using plant material as raw materials for construction is a relatively recent and original topic of research. This book presents an overview of the current knowledge on the material properties and environmental impact of construction materials made from plant particles, which are renewable, recyclable and easily available. It focuses on particles and as well on fibers issued from hemp plant, as well as discussing hemp concretes. The book begins by setting the environmental, economic and social context of agro-concretes, before discussing the nature of plant-based aggregates and binders.
