OBJECTIVES

The main objective of this work is to evaluate the production viability of sandwich panels constituted by fibrocement faces and composite core based on residues and vegetal polyurethane resin (Figure 01).

BACKGROUND AND JUSTIFICATION

Buildings - enormous resourceconsumers (about 40% of energy, water, materials);
Brazil - the lack of organization in the building construction sector, at all levels, results in:
- Low productivity;
- Great waste of materials and labor;
- Debris generation.

Abundant generation of many types of residues and by-products:
- Wood chips - there is data that in Brazil 50% of the wood is transformed into wood sawdust, chips, pieces etc.
- Leather shavings - the Brazilian leather shaving generation is in the range of 66,3 to 88,4 thousand tons/year, 23,3% in São Paulo State.
- Scrap tires, tire pieces - in Brazil 180 million discarded tires are disposed off at landfill sites, more than 35 millions are discarded per year and 2 to 3 billions are stored in open areas.

SUSTAINABILITY ISSUES

The proposed panel employment allows the following environmental benefits:
- Lower building energy consumption provided by the insulating behavior of the panel;
- Uses of a natural and renewable Polyurethane resin (Figure 02);
- Reduction of some types of residues;
- Advantages related to the industrialized construction process, which permits raw-material and labour rationalization, besides debris and waste reduction;
- Production of the core composites by the use of a low energy demand technique.

COORDINATES

São Carlos (Figure 07) is located in the central area of the São Paulo State, 228 km distant of the capital (São Paulo). in the southeast area of Brazil (Figure 08). Latitude 22°01'10''S - Longitude 47°53'38''W Climate predominantly tropical, with average temperatures varying between the maxim of 26,9°c

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