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LIFE CYCLE ASSESSMENT FOR CARBON EMISSION OF PLATE GLASS INDUSTRY

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Abstract

Carbon issue is becoming more important all over the world. Plate glass is a typical kind of building materials and the life cycle carbon emission of plate glass is a big contributor, resulting from the energy consumption in the stages of its life cycle which includes four aspects: raw materials acquirement, materials transportation, production and embodied consumption of energy carriers. Based on the relevant data calculation from China's condition, the life cycle carbon emission of plate glass is around 46.41 kg carbon/weight box. Among this, around 70% is contributed by production stage, while the stages of raw materials acquirement and transportation take the share of 29% and 1%, respectively. As regards the energy structure, coke is responsible for 41% emission and the contributions of power and oil products are 35% and 24%, respectively. From the results, the production stage is the key stage for carbon reduction of plate glass, while the stage of raw materials acquirement cannot be neglected since around 30% share by the stage.

Key words: energy efficiency, life cycle, plate glass, sustainability

Received: March, 2011; *Revised final:* July, 2011; *Accepted:* July, 2011

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