

Etude expérimentale des vitesses et d'atténuation d'un polymère semi cristallin PEHD par des méthodes ultrasonores

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Abstract: Semi-crystalline polymers are materials that permeate our daily lives, and are used in a wide range of applications, generally when viscoelasticity is required. Therefore, numerous works of research have been conducted these last years to study their elastic properties. Since then, we propose the use of nondestructive analysis techniques based on detecting and spreading ultra sound waves with both immersion and contact. The results obtained on the analyzed materials presents us with good estimates judged to be very satisfying compared to literature. Measures of the velocity and mitigation of longitudinal and transverse ultra sound waves have been conducted on two samples of different thickness of a semi-crystalline polymer of the type PEHD. The experiments have been conducted in ambient temperature. The objective is the characterization of this polymer using ultra sound waves.

Keywords : Ultrasounds, Velocity, Attenuation, echoes, transmission, polymers.