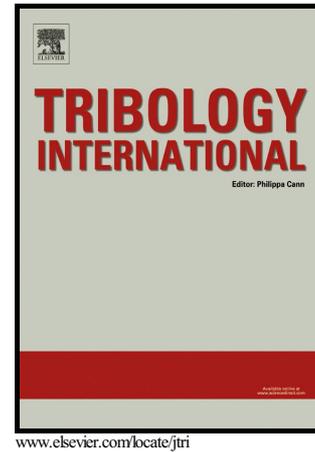


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Developments of rubber material wear in conveyer belt system

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Abstract

Regular degradation of rubbers contribute frequent maintenance of conveyer belt system. This paper investigates wear rate and mechanisms of rubber and associated influential parameters based on the information available in literature. Abrasion, fatigue and roll formation are dominate wear mechanisms that are influenced by load, sliding velocity, hardness and friction. Correlations among influential parameters and their effect on rubber wear was established in details. Archad's equation does not work for rubber wear but researchers have proposed equations similar to that. Adhesion wear forms roll in the smooth surface when tear strength of rubber is low. Wear caused by adhesion is abrasion when surface texture is harsh. Hysteresis enhances fatigue wear if the substrate asperities are round or blunt.

Keywords: Rubber; wear mechanism; abrasion; friction.

Abbreviation:

AFM	Atomic force microscopy
EPDM	Ethylene propylene diene
HNBR	Hydrogenated acrylonitrile-butadiene rubber
PDMS	Poly dimethyl siloxane
PEEK	Poly ether ketone
PTFE	Polytetrafluoroethylene
PVC	Polyvinyl chloride
NBR	Acrylonitrile butadiene rubber
NR	Natural rubber

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