OZONE EFFECT MODULE

Required when rubber that has a susceptibility to ozone attack is operating in an environment with ozone.

Ozone is a trace gas that strongly reacts with some rubbers to produce surface cracking following exposure. Ozone cracking can limit useful product life, even when mechanical cycles operate below the mechanical fatigue threshold. The Endurica ozone attack testing method determines: $\mathcal{E}_z$ the critical strain for ozone attack; T_z the critical tearing energy for ozone attack; and r_z the rate of crack growth due to ozone attack.

Experiment Overview

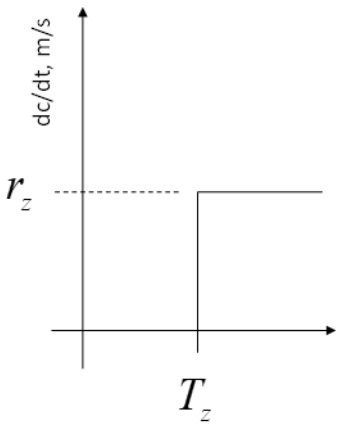
- images of crack development on specimen
- 3 replicates
- number of slabs needed for test: 1

Use with

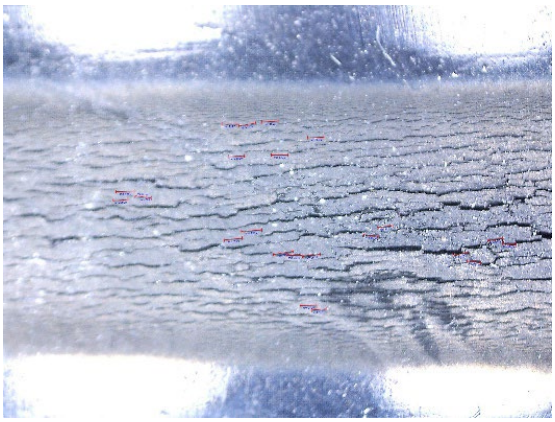
- Williams ozone attack model
- Gent-McGrath ozone attack model

Analysis and Reporting / Deliverables

- determine $\mathcal{E}_z$ - critical strain
- determine r_z - ozone crack growth rate
- determine T_z - critical energy for ozone attack



Typical crack growth rate behavior and parameters under ozone attack.



Typical surface cracking after ozone attack

FPM-O **Elastomer Fatigue Property Map – Ozone Effect Module** **$950**

Default exposure: 50 pphm O_3 concentration, 72 hrs @ room temperature 23°C