

FML Flexibility & Fatigue Testing



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- Not aware of current industry geomembrane test method for flexibility & fatigue properties
- Numerous adapted test methods
- Cycle Testing to determine material flexibility & fatigue properties
- Expectation - different flexibility rates by material resins & material types
 - EPDM / PVC / PP / LLDPE / HDPE
 - Reinforced versus Non-Reinforced
- Certain applications do not require high fatigue properties
 - Liners / Covers / Baffle Curtains
 - Landfill or biog Gas Covers, Floating Covers
- Should the FGI take the lead role in defining a flexibility test and test methods?

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- ASTM D6182-00 (2015) – Standard test method for flexibility and adhesion of finish on leather
- ISO 32100: 2018 Rubber- or plastics-coated fabrics — Physical and mechanical tests — Determination of flex resistance by the flexometer method
- AS 4878.9-2001- Methods Of Test For Coated Fabrics - Determination Of Resistance To Damage By Flexing
- ISO 7854:1995 - Rubber- or plastics-coated fabrics — Determination of resistance to damage by flexing
- ASTM D2097 – Standard Test Method for Flex Testing of Finish on Upholstery Leather
- ASTM D882 – test method for testing tensile properties of thin plastic sheeting.
- ASTM 5323-19a - Standard Practice for Determination of 2 % Secant Modulus for Polyethylene Geomembranes

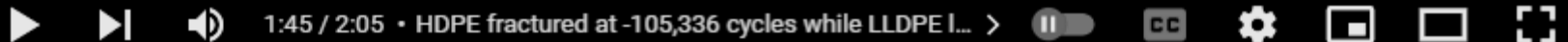
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**EPDM liner survives an incredible
15 million flex cycles without failure.**

**HDPE fractured at ~105,336 cycles while
LLDPE liner survived to ~833,536 cycles.**

**The results underscore the amazing
flex fatigue resistance of EPDM rubber.**

ExcelPlus



<https://www.youtube.com/watch?v=slntG2bD07s>