

FUEL CELL NANOCOMPOSITE DOUBLE LIP SEAL

Nanocomposite double lip seal is a new nanotechnology based “over molded” seal for fuel cells from American Engineering Group (www.engineering-group.com), Akron, OH. This unique “double lip” seal has a primary and a secondary sealing surface. This EP terpolymer based elastomer formulation has a nano-blowing agent which helps to maintain high “long-term” sealing force retention in a fuel cell thermal cycling operational environment with vibration loads. This new nano technology based elastomer seal show very less “electrode poisoning” in fuel cell system. This sealing technology is adaptable to various planar fuel cell designs.

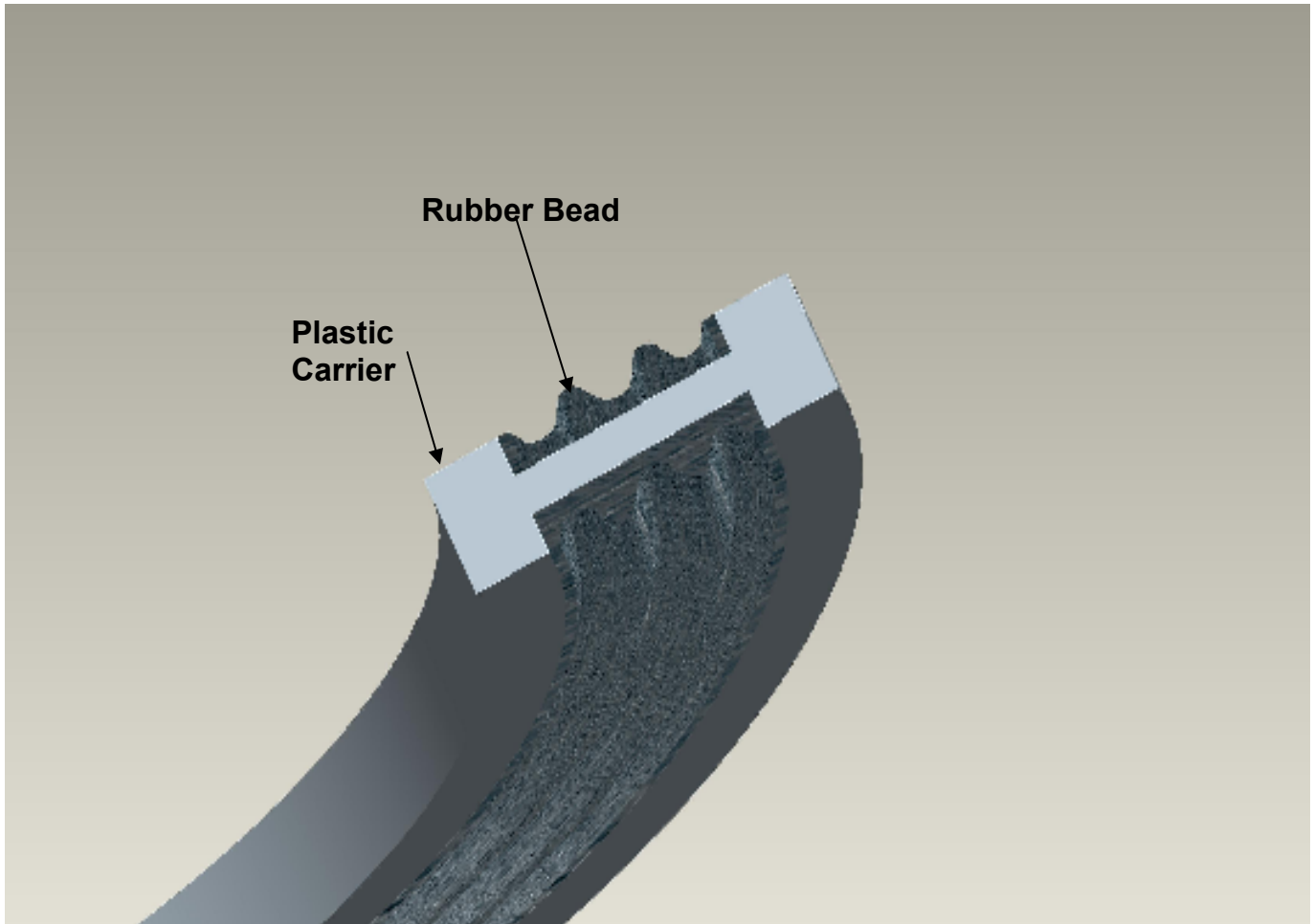
This acid resistant, high temperature stable over-molded plastic seal has a nano-blowing agent which activates in steam based curing. Compared to other elastomers, this nano-composite elastomer has excellent resistance to creep and fatigue with good flexibility and clear film. AEG’s proprietary steam post-curing protocol allow to extract all the un-reacted catalysts/monomers and also allow to activate nano-blowing agent in the EP terpolymer system. This seals has excellent chemical resistance with good UV and weather resistance. Low NBS smoke generation and high heat resistance with excellent dielectric strength.

AEG development engineers can help you to find a cost-effective fuel cell seal design based on this new seal technology. AEG has technology-driven design tools to provide optimum sealing on the customer fuel cell stack design using following analysis:

- “Volume fill” analysis
- Compression tolerance stack-up analysis
- Lateral tolerance stack-up analysis
- Design Failure Mode and Effects Analysis (DFMEA)
- Finite Element Analysis using a 3D CAD

Our Indian seal manufacturing facilities are ISO 9001/TS 16949 registered, and we constantly strive to improve customer satisfaction through the implementation of new seal technology with following quality/value improvement programs:

- Lean manufacturing/ Kaizen initiatives
- TQM studies
- Advance Product Quality Planning (APQP) studies
- Six Sigma scrap & cost reduction programs



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