

# GEECO

## HiFlex™ Seals for Air Preheaters

### (High Life Flexible Seals)

GEECO specializes in the design, engineering, manufacturing, supply and erection & commissioning of air preheaters (APHs). Continuous efforts are being taken by GEECO to upgrade the performance of APHs.

Air-to-gas leakage, a key factor affecting the performance of APH, is reduced by the sealing system. The major contribution, nearly 40-50%, of the leakage occurs at the hot end radial air-gas interface.

GEECO introduced the concept of soft touch seals as an add-on to the conventional seals to reduce the overall leakage by ~ 20%. Present soft touch seals (Fig. 1) show superior leakage reduction with moderate life lasting around 6 months.

GEECO R&D laboratory has an inhouse developed Seal Test Apparatus (Fig. 2) to study the performance of soft touch seals based on abrasive wear, failure mode, flexibility, drag force and life.

GEECO's new HiFlex™ seals (Fig. 3) made of several thin layers of steel are so designed to be more flexible thus reducing the drag force between the seal and the sealing surface, and dramatically increasing seal life. One or more layers of HiFlex™ seals are made of special material to have better flexibility, wear protection and corrosion resistance. The height of HiFlex™ seal is based on theoretical calculations and rich field knowledge which also account for the seal location, APH size and the site operating conditions.

Present and HiFlex™ soft touch seals are evaluated in the test apparatus under the same test conditions. Our findings reveal that the life of HiFlex™ seal is much more than the life of the present soft touch seal and is expected to last more than one year, say 2-3 years. However, long cold running, irregularity in sealing surface and frequent start-stop operation of air preheater will have influence on the life of any seal, particularly soft touch seals.

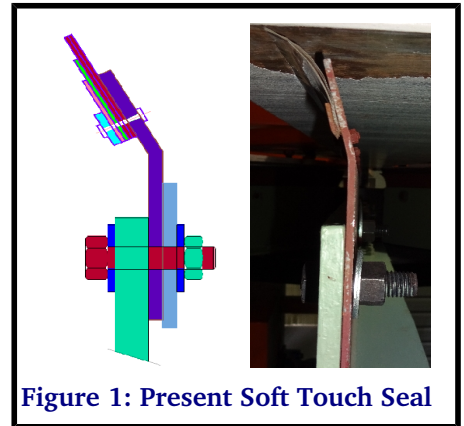


Figure 1: Present Soft Touch Seal



Figure 2: Seal Test Apparatus by GEECO R&D

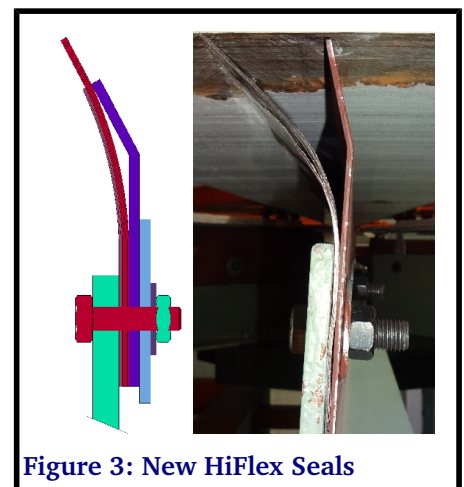


Figure 3: New HiFlex Seals

***HiFlex™ seals are low cost with payback less than three months***