Gasket & Seal Design Basics

With today's manufacturing processes, you can expect highly uniform consistency within a production lot, and from lot-to-lot. To take full advantage of these characteristics, a few simple guidelines should be considered for the continued long-term mechanical effectiveness of your final assembly.

Material Selection

- environmental strengths, limitations
- static or dynamic sealing

Attachment

- groove fit, adhesive, hardware mounting
- compression fit

Cross section profile

- gap sealing (min/max compression) depending on material selected
  sponges, foam, hollow shapes @ 10%-30%
  dense solid shapes @ 2%-30%
- shape
  exterior perimeter
  interior solid or hollow

Compression force

- closing force
  durometer low or high (see below)
  solid vs. sponge or foam
  hollow interior to lessen force
  static or dynamic pressure
- trade offs
  sponges have low closure force; and, dense shapes have higher sealing capability

Compression set

- allowable percentage of height relaxation
- recovery rate from compressed state to relaxed height

Other

- abrasion resistance
- color matching
- secondary finishing - holes, notches, die-cutting, etc.