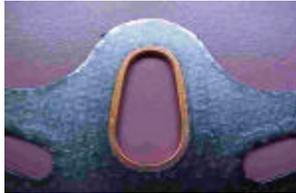


GASKET ENHANCEMENTS

FEATURE	DESCRIPTION	ADVANTAGES	DISCUSSION/EXAMPLES
SCREEN PRINTING	Application of materials (usually elastomerics) using silk screening techniques	A: Relatively inexpensive screens B: Good surface sealing. C: Increases density, seal under the screened bead. D: Can be used to vary load distribution. E: Selectively build up gasket thickness, increases compressibility of the gasket.	Cannot be applied over holes or to cut edges 
COATINGS			
SURFACE	Application of soft coating to gasket surfaces	A: Reduces surface leakage. B: Can reduce/promote stick of the paper to the flange surface.	Should be applied in thin, uniform layers. Bond and durability are often issues. 
ANTI-FRICTION	Coating to reduce friction at the flange surface	Allows surfaces to slip, reducing internal shear stresses which may cause gasket distress.	
CURED RUBBER	Application of thin cured rubber to surfaces of solid steel sheets. Being widely used by Ford, GM, Chrysler, others with spring tempered steel substrate.	Essentially a metal-to-metal gasket joint with minimal fastener torque loss. Generally embossed around openings. Low torque loss if designed properly. "Spring" gasket.	Bonding critical. Must to impervious to attack by fluid being sealed. Good surface finishes required. 
SATURANT	Penetrating coating/substance	Fills pores of gasket material to resist migration of leakage through the material.	Can be messy

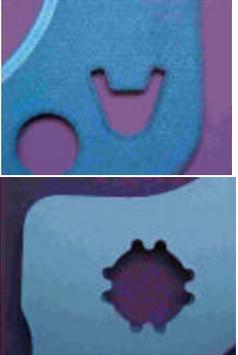
GASKET ENHANCEMENTS

FEATURE	DESCRIPTION	ADVANTAGES	DISCUSSION/EXAMPLES
EMBOSSING	Mechanically upsetting the material	A: Improves sealing of problem holes (like high temperature gas openings) and higher pressures. B: used to reduce bending of joint flanges	Generally only effective on gasket/steel laminates. Relatively inexpensive means for increasing compressibility. 
SELECTIVE DENSIFICATION	Densifying the material to alter the load distribution on the gasket by decreasing the loaded area.	Uses pressure and/or heat to selectively compress portions of the gasket.	Costly 
METAL EYELETS	Small metal grommets at individual openings	A: Improves sealing of problem holes (like high temperature gas openings) and higher pressures. B: used to reduce bending of joint flanges	Will distort unreinforced paper, soft gaskets. Normally used with steel core laminates. 
WIRE RINGS	Round wire rings attached to gaskets (reinforced laminates) with eyelets (commonly called armors)	Used for high pressure seals (I.e.: diesel combustion seals). Low Carbon steel, stainless, copper commonly used)	Design/production dimensions/tolerances critical. Gasket body/rings must be "balanced" to work. Care must be used with aluminum flanges. 
METAL LACING	Layers of steel lying on the surface	A: Increases density under the lace to improve internal seal. B: Like eyelets, used to reduce bending, particularly where bolt loading is not uniform.	Complex tooling. Requires flattening the gasket by mechanical/hydraulic means. 
MOLDED INSERTS	Either A: fully molded o-rings glued in or B: fully molded rubber-to-steel affixed by mechanical means.	A: Improved ability to follow vertical motion. B: Prevents leakage through the primary gasket material. Like an o-ring in a groove.	Expensive, generally only used when other, less costly methods don't work. % compression of the rubber is limited, requiring tight control of gasket compressed thickness. 

GASKET ENHANCEMENTS

FEATURE	DESCRIPTION	ADVANTAGES	DISCUSSION/EXAMPLES
EDGE MOLDED SEAL	Application of elastomeric edge seals	Improves sealing of paper gasket materials by creating solid rubber seal face. Molded rubber-to-metal carrier creates O-ring and spacer as unit	Difficult in narrow gasket sections 
LAMINATING			
PERFORATED CORE	Application of gasket materials to a metal layer by means of a mechanical connection	A: Increased strength to resist blowout of high pressures. B: Improved dimensional stability. C: Can be mechanically embossed.	Discontinuous loading pattern. High stress concentrations at edges of mechanical connections can be crack initiation sites. Limits on thickness of core that can be perforated. 
ADHESIVE BONDED SOLID STEEL CORE	Laminated to solid steel (unperforated) or to higher tensile strength materials	A: Can vary the gasket thickness over a wide range by changing core thickness without effecting compressibility, torque loss. B: Good dimensional stability, handling. Increases radial strength, blowout resistance.	Bonding critical. Must to impervious to attack by fluid being sealed. 
GASKET MATERIALS	Soft gasket surfaces laminated to harder gasket material.	Increases stiffness and handling characteristics, maintaining "soft" surface.	(NO EXAMPLE TO SHOW)

GASKET ENHANCEMENTS

FEATURE	DESCRIPTION	ADVANTAGES	DISCUSSION/EXAMPLES
INSTALLATION AIDS	Application of features which facilitate the installation of the product.	Design features which can be added without additional cost but greatly improve the efficiency and dependability of the gasket installation and save installation time.	Can add cost which can be sold as overall installed cost savings.
Pressure Sensitive Adhesives & Liquid Adhesives		Aids in assembly by affixing the gasket to one surface	Any adhesive used must be resistant to attack by the fluid being sealed and the sealing environment. 
Designed-in features	Any feature in the design which is not an essential element of the seal but has the purpose to aid in the installation of the seal	Often incorporated at no additional cost	Sizing or shaping of holes to grip fasteners. Mechanical inserts which affix the gasket in place. Numerous aids can be employed. 
Mechanical installation aids		Additional pieces which may hold the gasket in place, particularly if the installation is on a vertical plane and gasket is difficult to hold in place.	
Multi-layered gasket manufacturing aids	These aids are often used when more than two layers are assembled.	Used to assure proper assembly and orientation of different gasket layer, especially hidden layers	