

COMPRESSION PACKING: A TRADITIONAL SEALING METHOD ACHIEVING HIGH LEVELS OF PERFORMANCE WITH MODERN TECHNOLOGY.

Chuck Tanner

Market Specialist
SEPCO Sealing Equipment Products Co.
Alabaster, Alabama, U.S.A.



Mr. Chuck Tanner is the Market Development Manager for Sealing Equipment Products Company. His responsibilities include in addition to negotiating and managing national service agreements. He is also involved in new product development and application technology. He has received a BS in Marketing and Economics from the University of Alabama in Birmingham and is certified by the ISD as a Certified Fluid Sealing Professional.

Henri Azibert

FSA Technical Director
Fluid Sealing Association
Windham, New Hampshire, U.S.A.



Mr. Henri V. Azibert worked for the A.W. Chesterton Company, with its most recent position being Chief Technology Officer, where he had responsibility for all the mechanical seal and mechanical packing engineering staff and product lines. He has now been retained as the Technical Director for the Fluid Sealing Association. He received a B.A. in Political Science from the University of Massachusetts, a Jurisprudence Doctor degree from Boston College, and a Master's degree in Mechanical engineering from Northeastern University.

ABSTRACT

The oldest and still quite common sealing device for pumps is compression packing, so called because of the manner in which it performs the sealing function.

This tutorial will explain the technology and also clarify some deep rooted misconceptions.

INTRODUCTION

Compression Packings have tended to suffer from a conception of being an old fashioned technology not really suited to modern industrial processes and in the case of rotating equipment, largely superseded by mechanical seals. In particular it is widely believed that packings are inefficient in terms of energy consumption due to high frictional losses. Much of this perception is based on outdated products such as those based on minerals or vegetable fibers, and not modern types utilising sophisticated synthetic yarns such as ePTFE and aramids combined with complex lubricants. This tutorial, prepared by members of the Fluid Sealing Association provides extensive coverage of a wide range of topics from the latest technological improvements and constructions, their performance parameters, and proper selection for various applications to safe installation practices, troubleshooting and environmental controls.

TOPICS TO BE COVERED WILL INCLUDE:

- The materials common for most pump applications including severe services:
 - Carbon yarn impregnated with PTFE or graphite dispersion
 - PTFE yarns impregnated with PTFE dispersion or other lubricant
 - PTFE or ePTFE/graphite yarns with lubricants or anti-extrusion corner fibers
 - Flexible graphite yarns with lubricants or anti-extrusion corner fibers
 - Blends of the above fibers or other synthetic fibers impregnated with dispersions or lubricants
- Quality pump packings constructions:
 - Interbraid
 - Square braid

- Braid-over-braid
- Careful selection of packing materials to meet the specific application requirements of the application.
 - Complete consideration of surface speeds, pressures, temperatures, and media being sealed
 - Proper attention to good installation and break-in procedures
 - High standards of equipment maintenance
 - Correct design of the stuffing box
- Pump Packing testing Standard
- Pump Packing Power Consumption
- Pump Packing Environmental Controls

CONCLUSIONS

Compression Packings have an important role in a modern plant as an effective sealing method for pumps. It provides unique benefits and solutions that contribute to reliable and efficient pumping systems.

REFERENCES

FSA/ESA Compression Packing Technical Manual, Third Edition.

<http://www.fluidsealing.com/pump-and-valve-packings/pump-and-valve-packings-publications/>

ACKNOWLEDGEMENTS

The material presented in this tutorial has been prepared by members of the Fluid Sealing Association (FSA) and is available from the organization. The FSA is an international trade association representing member companies involved in the production of sealing devices. Educational material relating to compression packing as well as other types of sealing devices can be obtained by contacting the FSA directly.