

2600T Pressure Transmitters

Diaflex Anti-abrasive Diaphragms Surface Treatment



- Anti-abrasive SST 316L TiN nanostructured diaphragm
- Best in class resistance to slurries combined with optimum performance
- Up to 10 times harder than traditional metallic diaphragms
- Available on 264, 268 and 364 pressure and differential pressure transmitters

ABB Instrumentation



Solid Reliability

Diaflex, the diaphragm protection material for measuring assets



In many process industries one of the most frequent causes for pressure transmitter failures is a damaged process diaphragm. This type of damage is the result of the action of suspended solids in the measured media causing the erosion of the thin metal diaphragm.

- Sands particles in crude oil production
- Pulp & Paper defibration
- Abrasive chemical processes
- Powder airflow transport applications
- Centrifugal separators in mining industries

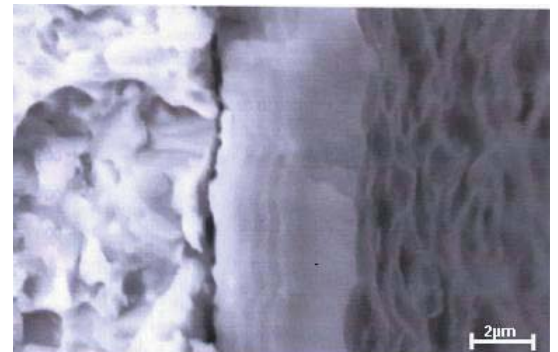


- The picture taken from a SEM (Scansion Electronic Microscope) shows the structure of *Diaflex* (on the right) coated on a 316 L SST diaphragms (on the left). This photo shows the adhesion of the *Diaflex* coating to the diaphragm.

One of the properties of *Diaflex* is a smooth surface for anti-stick applications.

AISI 316 L ss

Diaflex



What is *Diaflex*?

Diaflex is a nanostructured material with specific antiabrasion physical characteristics. *Diaflex* is deposited via PVD technology (Physical Vapor Deposition) on both pressure and differential pressure transmitter process diaphragms.

What are the advantages compared to ceramic?

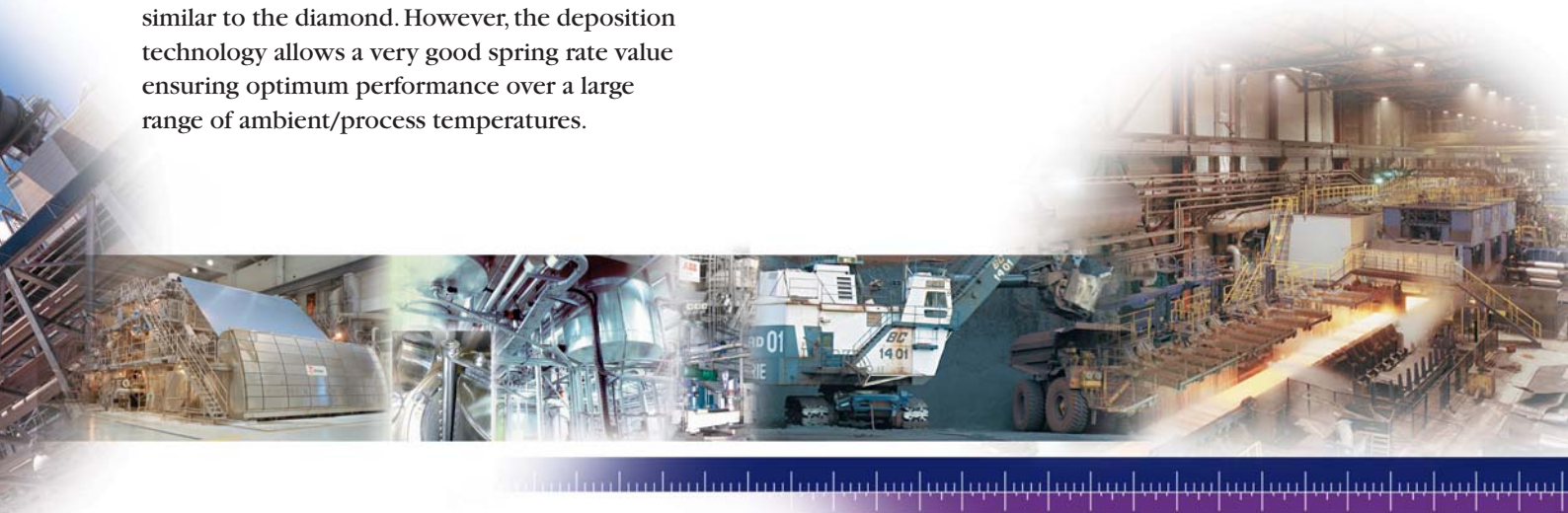
Diaflex has a hardness of 4000 HV, which is similar to the diamond. However, the deposition technology allows a very good spring rate value ensuring optimum performance over a large range of ambient/process temperatures.

How stable is *Diaflex*?

Diaflex physical characteristic remains stable between -100°C up to 700°C (-148° to 1292° F). However, transmitter maximum working process temperatures are limited by the fill fluid which ranges from -100°C to 390°C (-148° to 734° F).

How thick is *Diaflex*?

Diaflex coating thickness is in the range of 3 to 5 µm.



What are the material components of *Diaflex*?

Diaflex is produced via a patented process that consists in a quaternary coating based on Titanium and Silicon (SiTiN) of the nitrides class using a direct-current arc: the LARC System®. The scansion on the right shows the composition of a *Diaflex* coated diaphragm.

Characteristics	<i>Diaflex</i>
Thickness (µmeters)	3-5
Maximum Temperature (°C)	700
Hardness (HV)	4000

Diaflex is available with S264 diaphragm seals and 264xP transmitters and can be selected from the catalogue code.

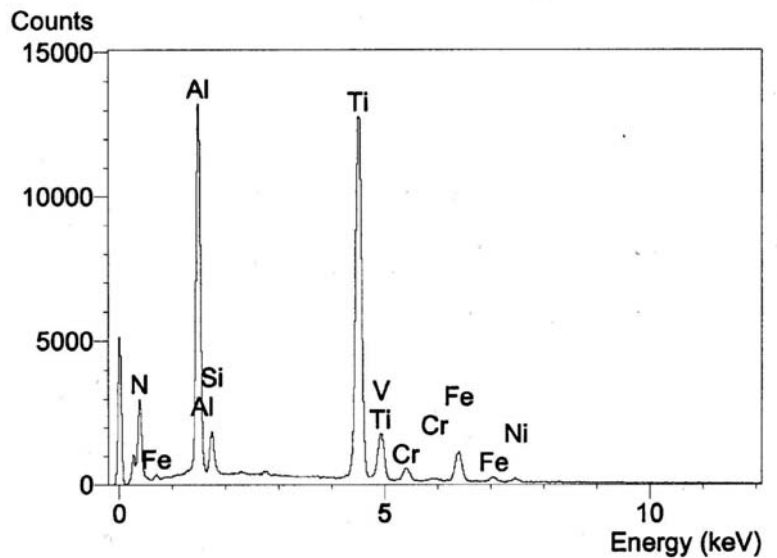


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