

Sealing Solutions for Cement Industry

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- Stacker & Reclaimer
- Bucket Elevators
- Vertical Roller Mills
- Rotary Kiln
- Ball Mill
- Roller Presses

Customized Seals for different application

Compliant Materials

Standard Product Range for Cement Industry



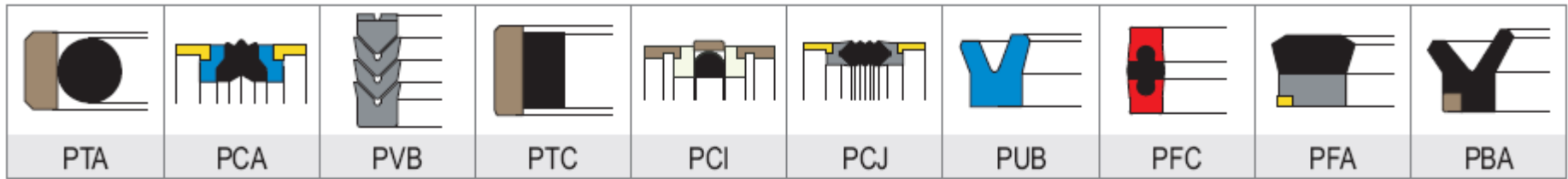
Various Applications in Cement Processing

| | | | | |
|-------------------------|---|--|---|--------------------------------------|
| ● Stacker & Reclaimer | → | Hydraulic Cylinders | → | Hydraulic Seals |
| ● Bucket Elevators | → | Pillow Block unit | → | Special Seals |
| ● Vertical Roller Mills | → | Hydraulic System Bearings Gear Boxes | → | Hydraulic Seal Rotary Seals |
| ● Rotary Kiln | → | Gear Drive | → | Rotary Seals |
| ● Ball Mill | → | Main Gear Drive Slide Shoe Bearing Gear Housing Seal | → | Rotary Seals Special Profile Seal |
| ● Roller Presses | → | Main Roller Bearing Planetary Gear Box | → | Rotary Seals Special Profile Seal |

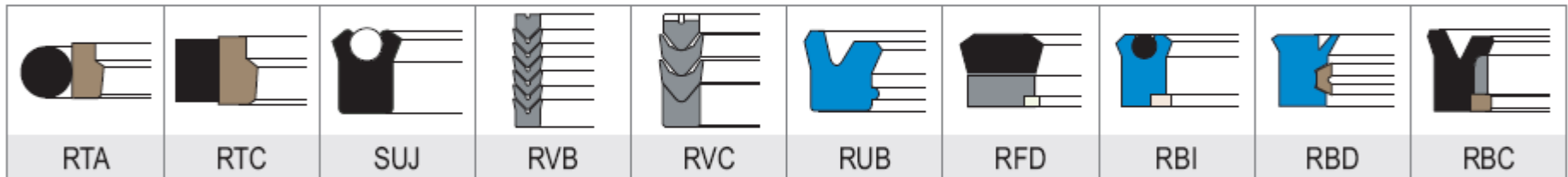
Spareage Product Line in Cement Industry

Hydraulic Seals :

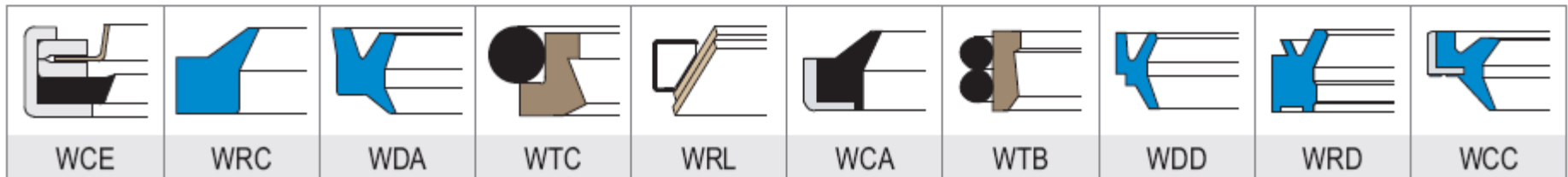
Piston Seal



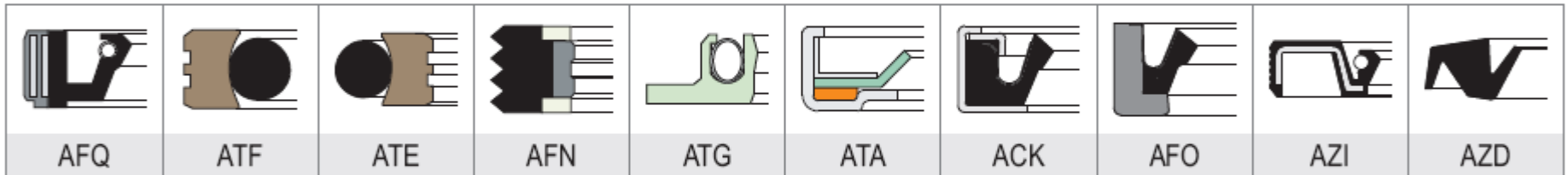
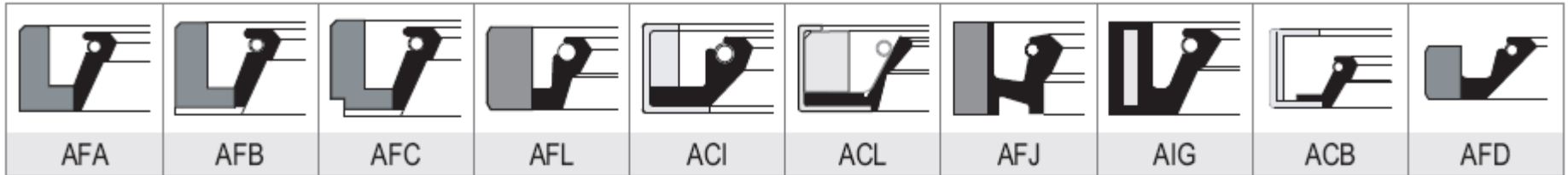
Rod Seals



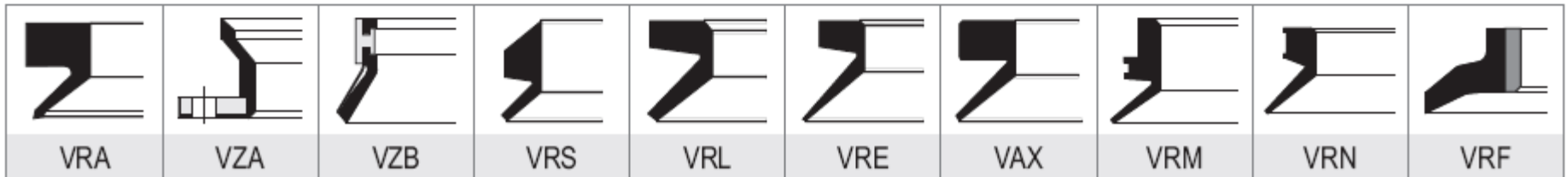
Wiper Seals



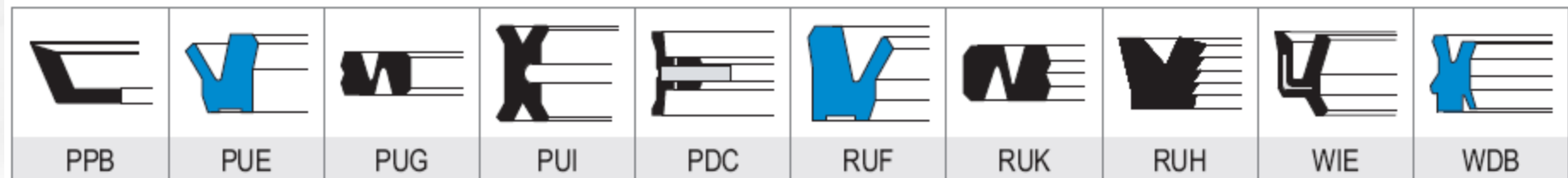
Rotary Seals :



V-Rings



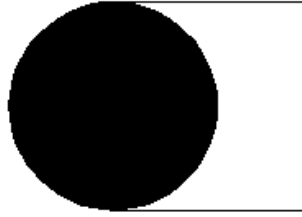
Pneumatic Seals :



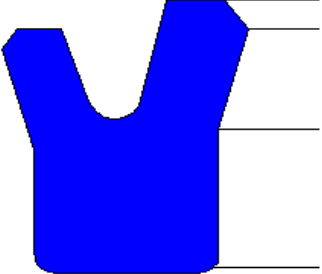
Spareage has developed seals in Stacker & Reclaimer applications in cement industries.

Material is deposited by the stacker moving to and fro over the centre line of the pile. The reclaimer is usually equipped with constant speed motors

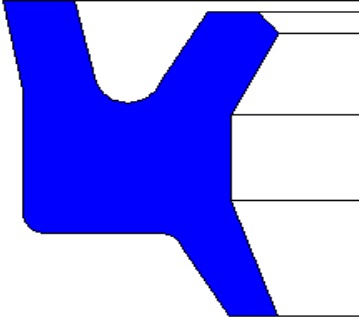
The reclaimed material is carried by belt conveyors driven by constant speed motors and discharged into a feed bin of a relatively large volume. And the following seals are used in these applications.



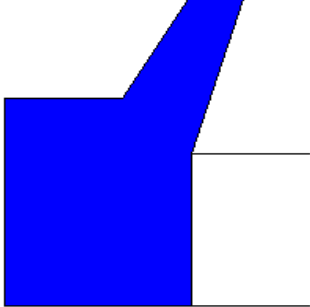
| ORING | |
|-------------|-----------------|
| PRESSURE | 160 BAR |
| TEMPERATURE | -30°C TO +100°C |
| SPEED | |
| MATERIAL | NBR |



| PUB | |
|-------------|-----------------|
| PRESSURE | 400 BAR |
| TEMPERATURE | -30°C TO +100°C |
| SPEED | 0.5 m/s |
| MATERIAL | POLYURETHANE |

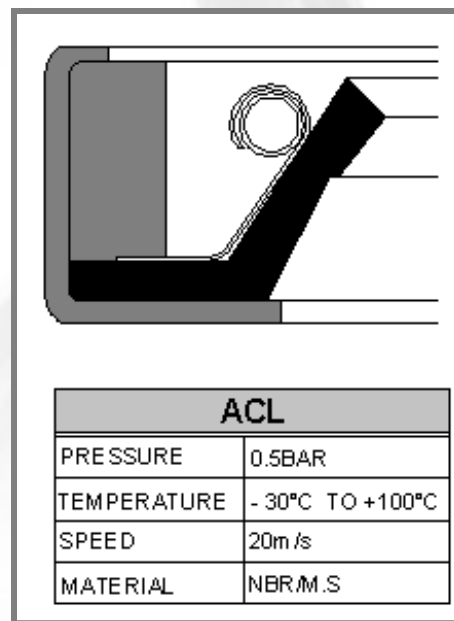
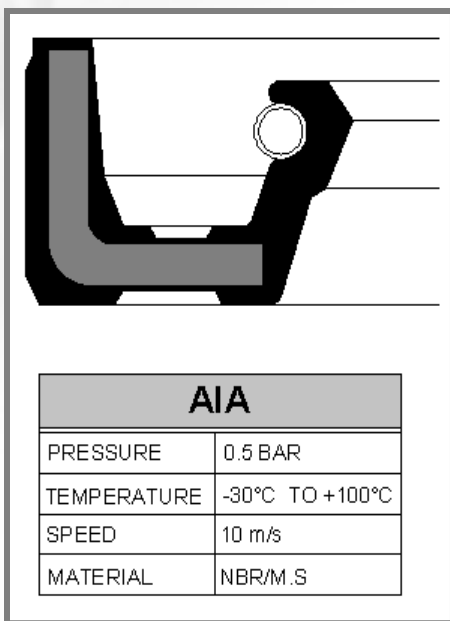


| WDA | |
|-------------|-----------------|
| PRESSURE | |
| TEMPERATURE | -40°C TO +100°C |
| SPEED | 2m/s |
| MATERIAL | POLYURETHANE |



| WRC | |
|-------------|-----------------|
| PRESSURE | |
| TEMPERATURE | -30°C TO +100°C |
| SPEED | 0.5 m/s |
| MATERIAL | POLYURETHANE |

- Spareage has developed seals for Bucket Elevators in cement industries.
- Bucket elevators used for vertical transport of bulk materials .
- Used to lift cement raw meal into plant pyro-processing systems and finish grinding mills,
- Following seals are used to transport the bulk material in Bucket Elevators

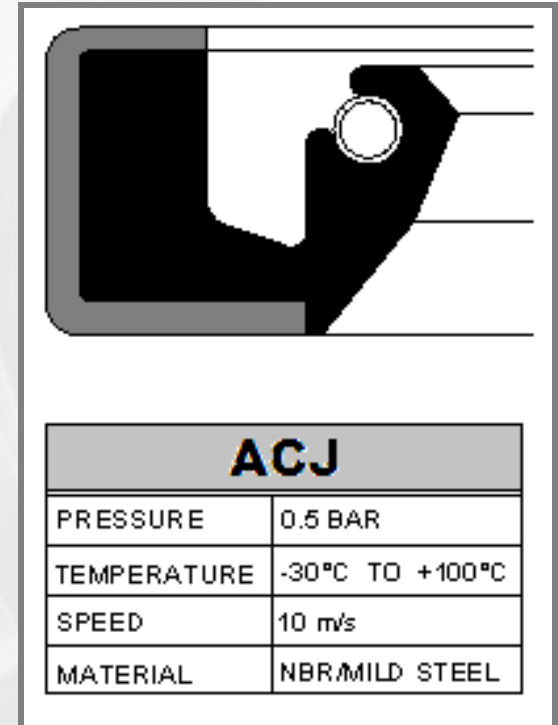


VERTICAL ROLLER MILLS

Spareage has developed seals for Vertical roller mills (VRM) in cement industries. Vertical roller mills used for grinding raw materials in the cement manufacturing process.

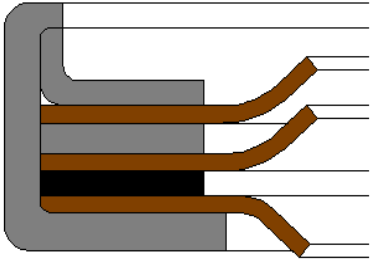
VRMs have the tendency to produce with a steep PSD curve resulting in cement.

This application includes rotary motion so following seal is used .



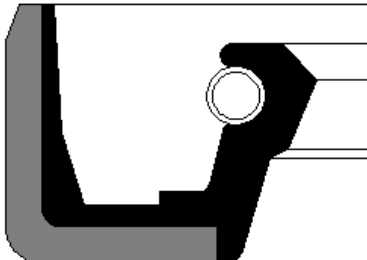
ROTARY KILN SEALS

- Spareage has developed seals for Rotary Kiln in cement industries.
- Rotary Kiln are long cylinder which rotates slowly.
- Rotary Kiln are used to move the raw material from upper end to lower end.
- Following seals are used in this application.



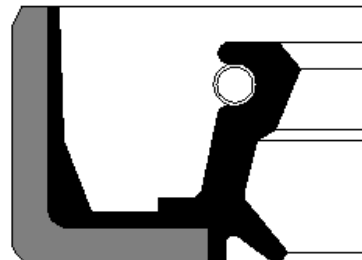
A cross-sectional diagram of the ATO seal. It shows a grey housing on the left with a black seal lip extending to the right. Two brown, curved lips are attached to the seal lip, extending further to the right. The diagram is set against a background of horizontal lines.

| ATO | |
|-------------|------------------|
| PRESSURE | 15BAR |
| TEMPERATURE | - 40°C TO +220°C |
| SPEED | 30m/s |
| MATERIAL | CFT/S.S/FKM |



A cross-sectional diagram of the ACA seal. It shows a grey housing on the left with a black seal lip extending to the right. A white circular ring is mounted on the seal lip. The diagram is set against a background of horizontal lines.

| ACA | |
|-------------|-----------------|
| PRESSURE | 0.5 BAR |
| TEMPERATURE | -30°C TO +100°C |
| SPEED | 10 m/s |
| MATERIAL | NBR/M.S |



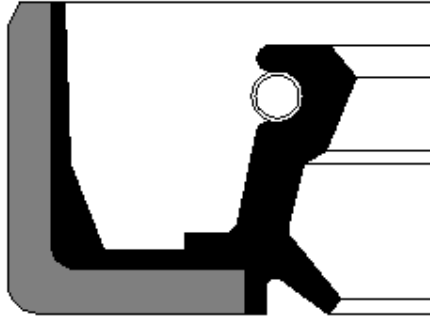
A cross-sectional diagram of the ACC seal. It shows a grey housing on the left with a black seal lip extending to the right. A white circular ring is mounted on the seal lip. The diagram is set against a background of horizontal lines.

| ACC | |
|-------------|-----------------|
| PRESSURE | 0.5 BAR |
| TEMPERATURE | -30°C TO +100°C |
| SPEED | 10 m/s |
| MATERIAL | NBR/M.S |

Spareage has developed seals for Ball Mill in cement industries.

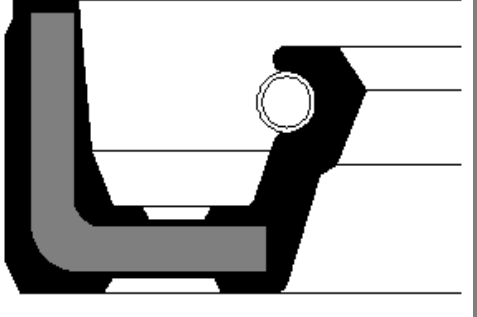
Ball mill is used for recrushing the materials after they are primarily crushed. Ball mill is widely used for the dry type or wet type grinding of all kinds of ores and other grind able materials in cement.

Following are the seals used in this application



A cross-sectional diagram of a ball mill seal labeled 'ACC'. It shows a black seal lip with a circular groove, mounted on a grey shaft. The seal is positioned to prevent leakage from a chamber containing a ball mill ball.

| ACC | |
|-------------|-----------------|
| PRESSURE | 0.5 BAR |
| TEMPERATURE | -30°C TO +100°C |
| SPEED | 10 m/s |
| MATERIAL | NBR/M.S |



A cross-sectional diagram of a ball mill seal labeled 'AIA'. It shows a black seal lip with a circular groove, mounted on a grey shaft. The seal is positioned to prevent leakage from a chamber containing a ball mill ball.

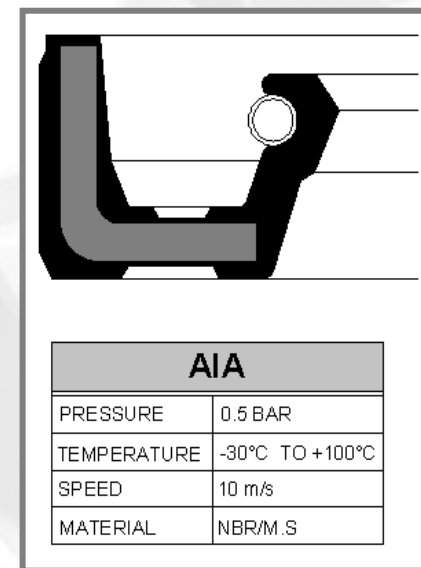
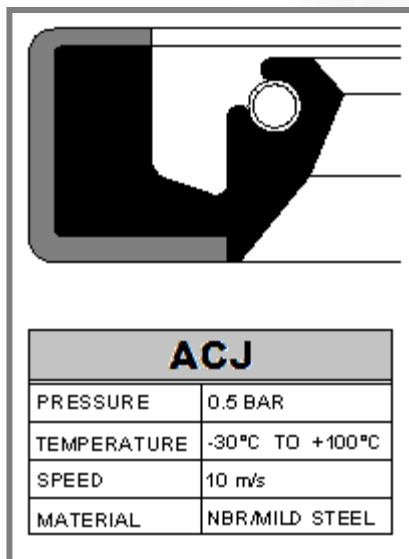
| AIA | |
|-------------|-----------------|
| PRESSURE | 0.5 BAR |
| TEMPERATURE | -30°C TO +100°C |
| SPEED | 10 m/s |
| MATERIAL | NBR/M.S |

Spareage has developed seals for Roller Presses in cement industries.

The roller presses are used to grind the cement .

Two sets of motor rotate two mill rollers via gear reducers and material extracted in between two rollers due to action of gravity.

This application includes rotary motion so following seal is used .

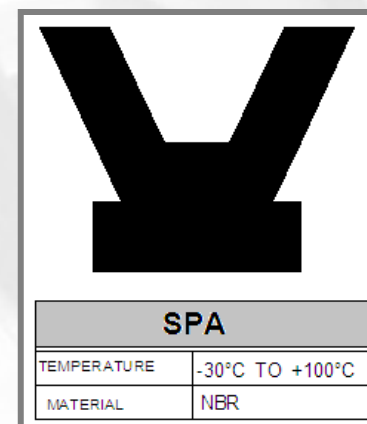
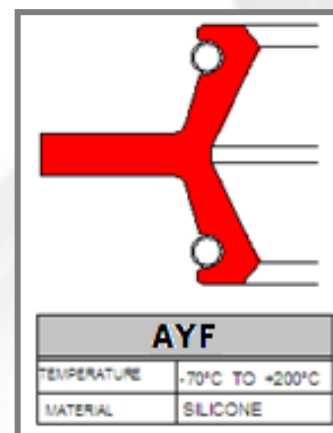
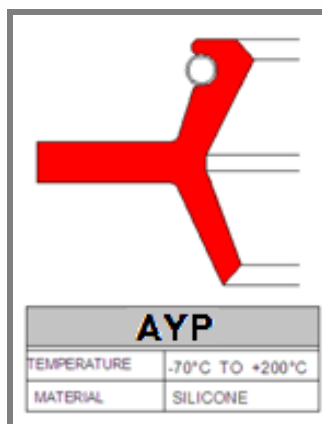
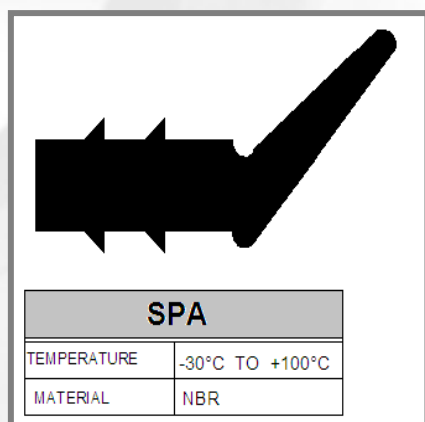
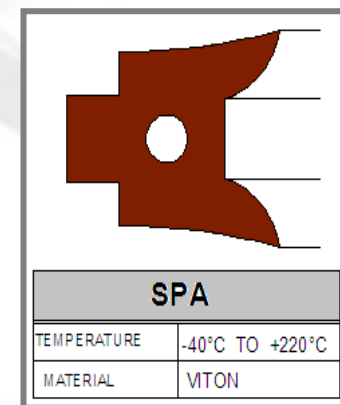
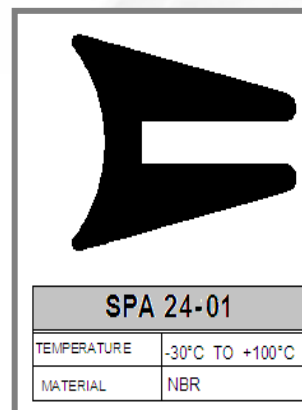
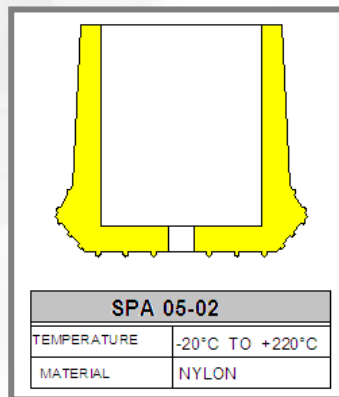


CUSTOMIZED SEALS

Spareage has developed customized seals for cement industry in different applications.

Applications :

- Slide Shoe Bearing
- Trunion Bearing
- TML Bearing
- Kiln



Thank you
for this opportunity.

