

Vacuum suction pads

The material is decisive



Material overview

| Chemical designation | Nitrile rubber | | Silicone rubber | | Natural rubber | High temp. material | Polyurethane |
|--|-------------------------------|----------------------------|----------------------------|-------------------|--------------------------|---------------------|-----------------|
| | Trade name | Perbunan (AS = antistatic) | Silicone (AS = antistatic) | | | | |
| Abbreviation | NBR | NBR-AS | SI | SI-AS | NK | HT1 | PU |
| Wear resistance | ●● | ●● | ● | ● | ●● | ●●● | ●●● |
| Resistance to permanent deformation | ●● | ●● | ●● | ●● | ●●● | ●● | ● |
| General weathering resistance | ●● | ●● | ●●● | ●●● | ●● | ●●● | ●●● |
| Resistance to ozone | ● | ● | ●●●● | ●●●● | ●● | ●●●● | ●●● |
| Resistance to oil | ●●●● | ●●●● | ● | ● | ● | ●●●● | ●●● |
| Resistance to fuels | ●● | ●● | ● | ● | ● | ●● | ●● |
| Resistance to alcohol, ethanol 96% | ●●●● | ●● | ●●●● | ●● | ●●●● | ●●●● | ●●●● |
| Resistance to solvents | ●● | ●● | ●● | ●● | ● | ●● | ● |
| General resistance to acids | ● | ● | ● | ● | ●● | ● | ● |
| Resistance to steam | ●● | ●● | ●● | ●● | ● | ●●● | ● |
| Tensile strength | ●● | ●● | ● | ● | ●● | ●● | ●●● |
| Abrasion value in mm ³ to DIN 53516 (approx.) | 100–120 at 55 Sh. | 100–120 at 55 Sh. | 180–200 at 55 Sh. | 180–200 at 55 Sh. | 100–120 at 40 Sh. | 100–120 at 60 Sh. | 60–80 at 55 Sh. |
| Specific resistance in [Ω · cm] | – | ≤ 10 ⁷ | – | ≤ 10 ⁷ | – | – | – |
| Short-term temperature* resistance in °C (< 30 sec.) | -30° to +120° | -30° to +120° | -50° to +220° | -35° to +220° | -35° to +120° | -30° to +170° | -40° to +130° |
| Longer-term temperature resistance in °C | -10° to +70° | -10° to +70° | -30° to +180° | -20° to +180° | -25° to +80° | -10° to +140° | -30° to +100° |
| Shore hardness to DIN 53505 | 40 to 90 | 55 ± 5 | 30 to 85** | 55 ± 5 | 30 to 90 | 60 ± 5 | 55 |
| Colour / coding | black, grey, blue, light blue | black | white, translucent | black | grey, light brown, black | blue | blue, green |

* Approximate value: depends on ambient temperature, application force and recovery time

** After-bake of silicone 10 h/160 °C = + 5 ... 10 Shore A

●●●● excellent

●●● very good

●● good

● poor to satisfactory

Selection aid for suction pad materials

| Anwendungen | NBR | NBR-AS | SI | SI-AS | NK | HT1 | PU |
|--------------------------------|-----------------------|-----------------------|------------------------------|------------------------------|-------------------|----------|-----------|
| Branch-specific applications | Universal application | Universal application | CD/DVD Packaging Plastics | CD/DVD Packaging Plastics | Wood Packaging | Plastics | Packaging |
| Foodstuff quality | | | ☑ | | | | |
| Oily workpieces | ☑ | ☑ | | | | ☑ | ☑ |
| No marking of workpieces | | | | | | ☑ | |
| Slight marking of workpieces | ○ | ○ | ☑ | ☑ | ☑ | | ☑ |
| Higher temperatures | | | ☑ | ☑ | | ☑ | |
| Lower temperatures | | | ☑ | ☑ | ☑ | | |
| Very heavy loads | | | | | | | ☑ |
| Very smooth surfaces (glass) | ☑ | | | | | | ☑ |
| Rougher surfaces (wood, stone) | | | | | ☑ | | ☑ |

○ grey version with little marking

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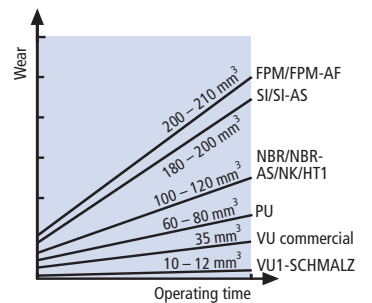
Material overview

| Vulkollan | Polyvinyl chloride | Fluorcaoutchuc (AF = no making) | | Chloroprene | Ethylene-propylene-rubber |
|-----------------|--------------------|---------------------------------|-------------------|-------------------|------------------------------|
| VU 1 | PVC | FPM | FPM-AF | CR | EPDM (foam r.) |
| ●●●●● | ●●●● | ● | ● | ●● | ● |
| ●● | ● | ●●●● | ●●●● | ●● | ●● |
| ●●●● | ●● | ●●●●● | ●●●●● | ●●●● | ●●●●● |
| ●●●● | ●●●● | ●●●●● | ●●●●● | ●●●● | ●●●●● |
| ●●●● | ●●●● | ●●●●● | ●●●●● | ●●●● | ●●●●● |
| ●● | ● | ●●●●● | ●●●●● | ●●●● | ●●●●● |
| ●●●●● | ● | ●● | ●● | ● | ● |
| ● | ● | ●●●● | ●●●● | ●●●●● | ●●●●● |
| ● | ●●●● | ●●●● | ●●●● | ●● | ●● |
| ● | ●●●● | ●● | ● | ●● | ●●●● |
| ●●●●● | ●● | ●● | ●● | ●● | ● |
| 10–12 at 72 Sh. | 100–120 at 50 Sh. | 200–210 at 65 Sh. | 200–210 at 65 Sh. | 120–140 at 60 Sh. | Not suitable for foam rubber |
| – | – | – | – | – | – |
| -40° to +100° | -30° to +65° | -10° to +250° | -10° to +250° | -40° to +100° | -35° to +130° |
| -40° to +80° | -15° to +50° | -10° to +200° | -10° to +200° | -20° to +70° | -25° to +100° |
| 72 | 50 | 65 ± 5 | 65 ± 5 | 20–60 | ~15**** |
| dark green | blue, translucent | black | black | black, grey | black |

*** With slight oil wetting
**** Varies, for technical reasons, for foam rubber

The application and the ambient conditions are decisive for the selection of the appropriate suction pad material. In many cases, for example, the application demands resistance to abrasion, resistance to oil or suitability for use with foodstuffs.

The overview summarizes the properties of various suction pad materials and shows typical applications for which the materials are particularly suitable.



Note: we recommend the use of commercially available soap solution for cleaning suction pads

Selection aid for suction pad materials

| VU 1 | PVC | FPM | FPM-AF | CR | EPDM (foam r.) |
|-------------------------------------|-------------------------------------|--|--|-------------------------------------|-------------------------------------|
| Metal | Packaging | Typical application for high temperature | Typical application for high temperature | Metal | Metal |
| Wood | CD/DVD | | | Wood | Wood |
| Packaging | | | | | |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | |
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