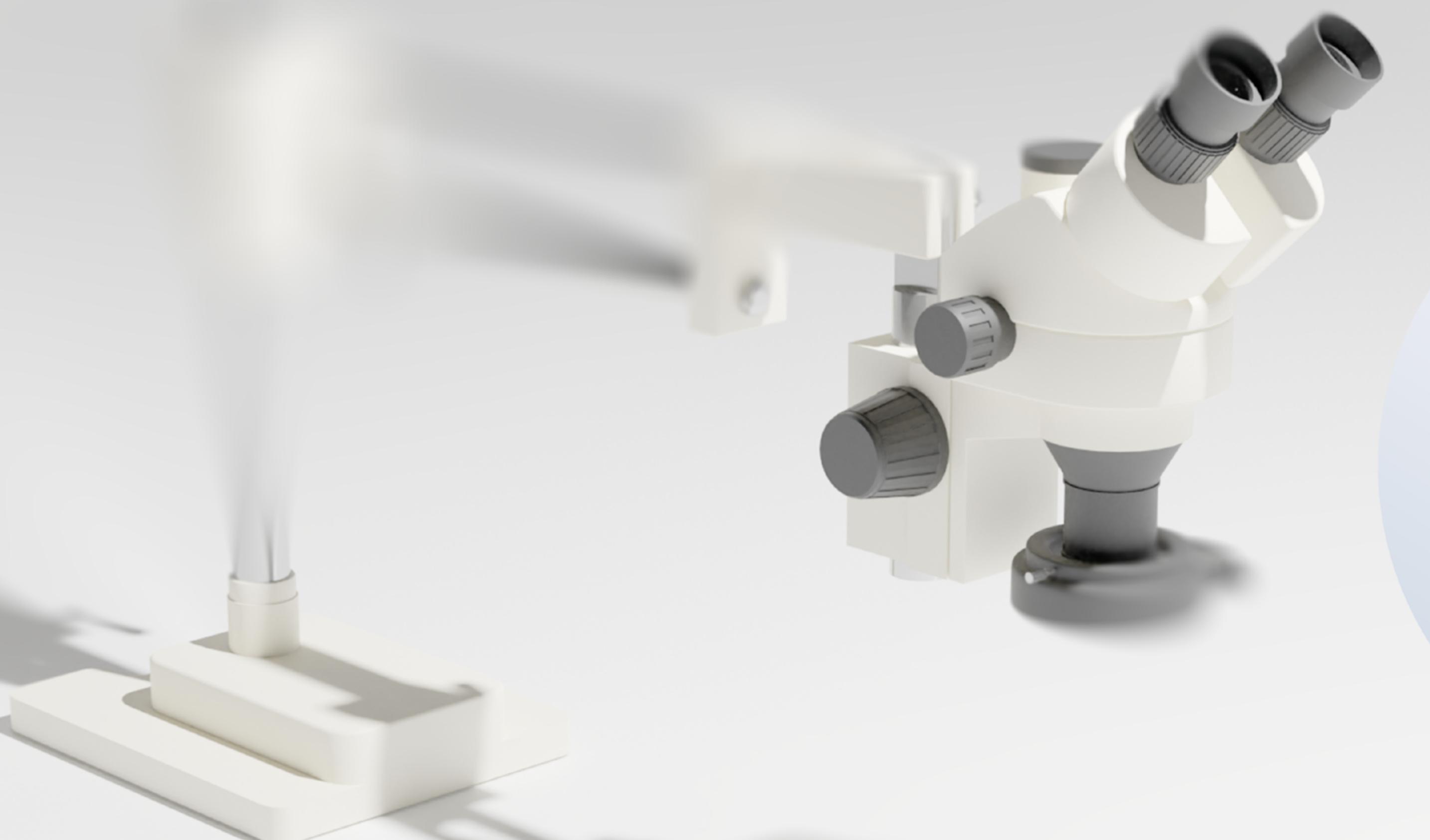




**SANOK RUBBER**



Laboratory research services

| Test subject  | Test parameter   | Test standard             |
|---|--|---------------------------|
| Rubber compounds  | Evaluation of homogenization and purity of the rubber compound       | Own methodology           |
| Rubber compounds  | Measurement of vulcanization characteristics                         | PN-ISO 6502               |
| Rubber compounds  | Determination of Mooney viscosity                                    | PN-ISO 289-1              |
| Rubber compounds  | Extrudability of Unvulcanized Compounds                              | ASTM D-2230               |
| Vulcanized rubber compounds, rubber products, plastic products                            | Density  | ASTM D-2230               |
| Vulcanized rubber compounds, rubber products [except sponge rubber], and plastic products | Hardness<br>Range: [35-100] ShA                                      | ISO 48-4<br>PN-EN ISO 868 |
| Vulcanized rubber compounds, rubber products [except sponge rubber], and plastic products | Hardness<br>Range: [30-100] IRHD                                     | ISO 48-2 met. M [mikro]   |
| Vulcanized rubber compounds   | Rebound resilience method Schoba                                     | ISO 4662                  |
| Vulcanized rubber compounds, rubber products  | Tensile strength properties  | PN-ISO 37                 |
| Vulcanized rubber compounds, rubber products  | Tear strength properties   | PN-ISO 34-1, PN-ISO 34-2  |
| Vulcanized rubber compounds, rubber products  | Accelerated ageing and heat resistance                               | PN-ISO 188                |
| Vulcanized rubber compounds, rubber products  | Liquid resistance, including oil resistance                          | PN-ISO 1817               |
| Vulcanized rubber compounds, rubber products  | Compression set  | PN-ISO 815                |
| Vulcanized rubber compounds, rubber products [except sponge rubber],                      | Abrasion resistance using the Schoppera-Schlobacha apparatus         | PN-ISO 4649               |
| Vulcanized rubber compounds, rubber products  | Brittleness temperature  | PN-ISO 812                |
| Vulcanized rubber compounds, rubber products  | Resistance to low-temperature-temperature reaction procedure-TR test | ISO 2912                  |
| Rubber products, plastic products   | Burning  | ISO 3795                  |
| Rubber products, plastic products   | Fogging-gravimetric method   | ISO 6452 / DIN 75201-B    |



| Test subject  | Test parameter  | Test standard                   |
|---|---|---------------------------------|
| Vulcanized rubber compounds, rubber products                    | Resistance to ozone   | ISO 1431-1                      |
| Rubber products, plastic products                               | Gloss - angle 60°   | PN-EN ISO 2813                  |
| Vulcanized rubber compounds, rubber products, plastic products  | Color measurement   | PN-EN ISO 11664-4               |
| Rubber products, plastic products with a coating                | Resistance of coatings to detachment from the substrate<br>[Cross-cut test] | PN-EN ISO 2409                  |
| Rubber products, plastic products                               | Resistance to weather conditions  | PN-EN ISO 4892-2 met. A         |
| Rubber products, rubber-metal products, rubber-plastic products | Measurements of static characteristics up to 100kN or 500Nm / 50°           |                                 |
| Rubber products, rubber-metal products, rubber-plastic products | Creep test up to 50kN   |                                 |
| Rubber products, rubber-metal products, rubber-plastic products | Axial push in and push out force measurements                               |                                 |
| Rubber products, rubber-metal products, rubber-plastic products | Dynamic stiffness and Loss angle measurements up to 400Hz                   |                                 |
| Rubber products, rubber-metal products, rubber-plastic products | Amplitude and frequency characteristics measurements up to 400Hz            | Acc. to delivered documentation |
| Rubber products, rubber-metal products, rubber-plastic products | Determination of the tensile strength and elongation to failure up to 100kN |                                 |
| Rubber products, rubber-metal products, rubber-plastic products | Bonding strength up to 100kN  |                                 |
| Rubber products, rubber-metal products, rubber-plastic products | Determination of the permanent set characteristics up to 50kN               |                                 |
| Metal sleeves   | Axial compression resistance up to 100kN                                    |                                 |



## Checking of measuring instruments

| Test subject                 | Test parameter  | Test standard                               |
|------------------------------|---|---|
| PRESSURE GAUGE               | Pressure  | Own methodology LP 03/02                    |
| TEMPERATURE SENSOR           | Temperature   | Own methodology LP 03/04                    |
| TRANSDUCER P/I               | Pressure / ameprage   | Own methodology LP 03/05                    |
| TRANSDUCER P/V               | Pressure / voltage  | Own methodology LP 03/05                    |
| CALIPER up to 150 mm         | Length  | Own methodology LP 03/01                    |
| MICROMETR GAUGE up to 50 mm  | Length  | Own methodology LP 03/01                    |
| TEMPERATURE MEASURER + GAUGE | Temperature   | Own methodology LP 03/04                    |
| TEMPERATURE CONTROLLER       | Temperature   | Own methodology LP 03/04                    |
| SCALES up to 50 kg           | Mass  | Own methodology LP 03/03                    |
| SCALES over 50 kg            | Mass  | Own methodology LP 03/03                    |
| Water & sewage               |   |   |
| Water & sewage               | pH  | PN-EN ISO 10523:2012                        |
|                              | Chlorides   | PN-ISO 9297:1994                            |
|                              | Determination of the chemical index of oxygen demand [ChZT]                     | PN-ISO 15705:2005                           |
|                              | Determination of the biochemical oxygen demand after n-days [BZT <sub>n</sub> ] | PN-EN 1899-1:2002 oraz<br>PN-EN 1899-2:2002 |
|                              | Suspended solids  | PN-EN 872:2007/Ap1                          |
|                              | Nitrate nitrogen  | PN-82/C-04576/08                            |



## Water &amp; sewage

| Test subject                              | Test parameter               | Test standard   |
|---|------------------------------|---|
| Water & sewage                            | Sampling                     | PN-ISO 5667-10:1997; PNEN ISO 5667-3:2013;<br>PNISO 5667-11:2004; PN-ISO 5667-6:2003;<br>PN-74/C-04620/11 |
|   | Ammonia nitrogen             | PN-ISO-7150-1:2002  |
|   | Nitrite                      | PN-EN 26777:1999  |
|   | Total iron                   | Test method nr 8008 HACH LANGE  |
|   | Sulfur                       | Test method 8051 HACH LANGE   |
|   | Total phosphorus             | Test method LCK 350 HACH LANGE  |
|   | Total nitrogen 20 – 100 mg/l | Test methoda LCK 338 HACH LANGE   |
| Working environment                       | Total nitrogen 5 – 40 mg/l   | Test method LCK 238 HACH LANGE  |
|   | Lightning                    | PN-EN 12464-1:2012; PN 83/E-04040   |
|   | Noise                        | PN-N-01307/1994   |
|   | Microclimate                 | PN-EN ISO 7730/2006; PN-EN 27243/2006;<br>PNEN ISO 11079/2008   |
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