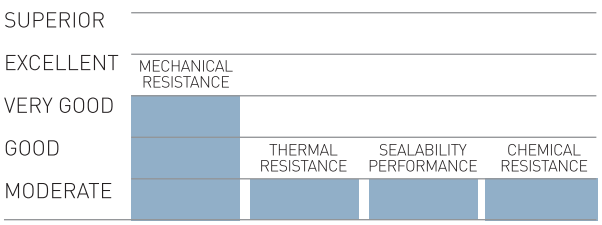
WILHELMSEN A/S | TESNIT® BA-R

TESNIT® BA-R has very good mechanical properties (resistance to high internal and surface pressure). TESNIT® BA-R is designed for the automotive and engine-building industries.

PROPERTIES



APPROPRIATE INDUSTRIES & APPLICATIONS

- AUTOMOTIVE AND ENGINE BUILDING INDUSTRY
- SHIPBUILDING

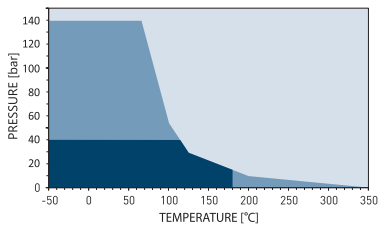
Composition	Aramid fibres, inorganic fillers, NBR binder, carbon steel wire mesh insert.
Colour	Black
Approvals	BAM (Oxygen) Germanischer Lloyd

TECHNICAL DATA Typical values for a thickness of 2 mm

Density	DIN 28090-2	g/cm³	2.0
Compressibility	ASTM F36J	%	8
Recovery	ASTM F36J	%	55
Tensile strength	ASTM F152	MPa	17
Stress resistance	DIN 52913		
16 h, 50 MPa, 175 °C		MPa	30
16 h, 50 MPa, 300 °C		MPa	25
Specific leak rate	DIN 3535-6	mg/(s·m)	/
Thickness increase	ASTM F146		
Oil IRM 903, 5 h, 150 °C		%	8
ASTM Fuel B, 5 h, 23 °C		%	/
Compression modulus	DIN 28090-2		
At room temperature: ε_{KSW}		%	8.5
At elevated temperature: $\varepsilon_{WSW/200\,°C}$		%	15.8
Percentage creep relaxation	DIN 28090-2		
At room temperature: ε_{KRW}		%	4.2
At elevated temperature: $\varepsilon_{WRW/200\,°C}$		%	0.7
Max. operating conditions			
Peak temperature		°C/°F	400/752
Continuous temperature		°C/°F	350/662
- with steam		°C/°F	/
Pressure		bar/psi	140/2030

P-T DIAGRAM

EN 1514-1, Type IBC, PN 40, DIN 28091-2 / 3.8, 2.0 mm



- General suitability - Under common installation practices and chemical compatibility.
- Conditional suitability - Appropriate measures ensure maximum performance for joint design and gasket installation. Technical consultation is recommended.
- Limited suitability - Technical consultation is mandatory.

Surface finish	Standard: 2G. Optional: graphite or PTFE.
Standard dimension of sheets	Size (mm): 1000 x 1500 | 1500 x 1500 Thickness (mm): 1.0 | 1.5 | 2.0 | 3.0 Other sizes and thicknesses available on request.
Tolerances	On length and width: ± 5 % On thickness up to 1.0 mm: ± 0.1 mm On thickness above 1.0 mm: ± 10 %

Acetamide	+
Acetic acid, 10%	−
Acetic acid, 100% (Glacial)	−
Acetone	?
Acetonitrile	−
Acetylene (gas)	+
Acid chlorides	−
Acrylic acid	−
Acrylonitrile	−
Adipic acid	−
Air (gas)	+
Alcohols	+
Aldehydes	?
Alum	?
Aluminium acetate	−
Aluminium chlorate	−
Aluminium chloride	−
Aluminium sulfate	−
Amines	−
Ammonia (gas)	?
Ammonium bicarbonate	+
Ammonium chloride	−
Ammonium hydroxide	+
Amyl acetate	?
Anhydrides	−
Aniline	−
Anisole	?
Argon (gas)	+
Asphalt	+
Barium chloride	−
Benzaldehyde	−
Benzene	+
Benzoic acid	?
Bio-diesel	+
Bio-ethanol	+
Black liquor	−
Borax	+
Boric acid	−
Butadiene (gas)	+
Butane (gas)	+
Butyl alcohol (Butanol)	+
Butyric acid	−
Calcium chloride	−
Calcium hydroxide	+
Carbon dioxide (gas)	+
Carbon monoxide (gas)	+
Cellosolve	?
Chlorine (gas)	−
Chlorine (in water)	−
Chlorobenzene	?
Chloroform	−
Chloroprene	?
Chlorosilanes	−
Chromic acid	−
Citric acid	−
Copper acetate	−
Copper sulfate	−
Creosote	?
Cresols (Cresylic acid)	−
Cyclohexane	+
Cyclohexanol	+
Cyclohexanone	?
Decalin	+
Dextrin	+
Dibenzyl ether	?
Dibutyl phthalate	?
Dimethylacetamide (DMA)	?
Dimethylformamide (DMF)	?

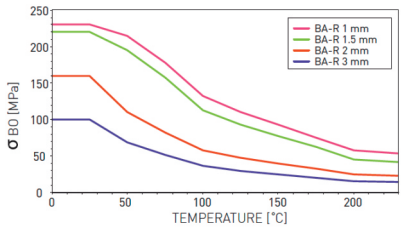
Dioxane	−
Diphyl (Dowtherm A)	+
Esters	?
Ethane (gas)	+
Ethers	?
Ethyl acetate	?
Ethyl alcohol (Ethanol)	+
Ethyl cellulose	?
Ethyl chloride (gas)	−
Ethylene (gas)	+
Ethylene glycol	+
Formaldehyde (Formalin)	?
Formamide	?
Formic acid, 10%	−
Formic acid, 85%	−
Formic acid, 100%	−
Freon-12 (R-12)	+
Freon-134a (R-134a)	+
Freon-22 (R-22)	?
Fruit juices	−
Fuel oil	+
Gasoline	+
Gelatin	+
Glycerine (Glycerol)	+
Glycols	+
Helium (gas)	+
Heptane	+
Hydraulic oil (Glycol based)	+
Hydraulic oil (Mineral type)	+
Hydraulic oil (Phosphate ester based)	?
Hydrazine	−
Hydrocarbons	+
Hydrochloric acid, 10%	−
Hydrochloric acid, 37%	−
Hydrofluoric acid, 10%	−
Hydrofluoric acid, 48%	−
Hydrogen (gas)	+
Iron sulfate	−
Isobutane (gas)	+
Isooctane	+
Isoprene	+
Isopropyl alcohol (Isopropanol)	+
Kerosene	+
Ketones	?
Lactic acid	−
Lead acetate	−
Lead arsenate	−
Magnesium sulfate	+
Maleic acid	−
Malic acid	−
Methane (gas)	+
Methyl alcohol (Methanol)	+
Methyl chloride (gas)	?
Methylene dichloride	?
Methyl ethyl ketone (MEK)	?
N-Methyl-pyrrolidone (NMP)	?
Milk	+
Mineral oil (ASTM no.1)	+
Motor oil	+
Naphtha	+
Nitric acid, 10%	−
Nitric acid, 65%	−
Nitrobenzene	−
Nitrogen (gas)	+
Nitrous gases (NOx)	−
Octane	+
Oils (Essential)	+
Oils (Vegetable)	+

Oleic acid	−
Oleum (Sulfuric acid, fuming)	−
Oxalic acid	−
Oxygen (gas)	+
Palmitic acid	−
Paraffin oil	+
Pentane	+
Perchloroethylene	−
Petroleum (Crude oil)	+
Phenol (Carbolic acid)	−
Phosphoric acid, 40%	−
Phosphoric acid, 85%	−
Phthalic acid	−
Potassium acetate	−
Potassium bicarbonate	+
Potassium carbonate	+
Potassium chloride	−
Potassium cyanide	−
Potassium dichromate	−
Potassium hydroxide	?
Potassium iodide	−
Potassium nitrate	−
Potassium permanganate	−
Propane (gas)	+
Propylene (gas)	+
Pyridine	−
Salicylic acid	−
Seawater/brine	−
Silicones (oil/grease)	+
Soaps	+
Sodium aluminate	+
Sodium bicarbonate	+
Sodium bisulfite	−
Sodium carbonate	+
Sodium chloride	−
Sodium cyanide	−
Sodium hydroxide	?
Sodium hypochlorite (Bleach)	−
Sodium silicate (Water glass)	?
Sodium sulfate	+
Sodium sulfide	−
Starch	+
Steam	?
Stearic acid	−
Styrene	?
Sugars	+
Sulfur	?
Sulfur dioxide (gas)	?
Sulfuric acid, 20%	−
Sulfuric acid, 98%	−
Sulfuryl chloride	−
Tar	+
Tartaric acid	−
Tetrahydrofuran (THF)	−
Titanium tetrachloride	−
Toluene	+
2,4-Toluenediisocyanate	?
Transformer oil (Mineral type)	+
Trichloroethylene	−
Vinegar	−
Vinyl chloride (gas)	−
Vinylidene chloride	−
Water	?
White spirits	+
Xylenes	+
Xylenol	−
Zinc sulfate	−

All information and data quoted are based upon decades of experience in the production and operation of sealing elements. This data may not be used to support any warranty claims. With its publication this latest edition supersedes all previous issues and is subject to change without further notice.

σ_{BO} DIAGRAM

DIN 28090-1



σ_{BO} diagrams represent σ_{BO} values for different gasket material thicknesses. These values indicate the maximum in-service compressive pressures which can be applied on the gasket area involved without destructing or damaging the gasket material.

P-T diagrams indicate the maximum permissible combination of internal pressure and service temperature which can be simultaneously applied for a given gasket according its material type, thickness, size and tightness class. Given the wide variety of gasket applications and service conditions, these values should only be regarded as guidance for the proper gasket assembly. In general, thinner gaskets exhibit better P-T properties.

CHEMICAL RESISTANCE CHART

The recommendations made here are intended as a guideline for the selection of a suitable gasket type. As the function and durability of products are dependent upon a number of factors, the data may not be used to support any warranty claims.

+ Recommended
? Recommendation depends on operating conditions
− Not recommended

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