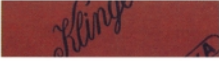






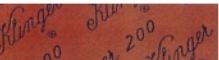
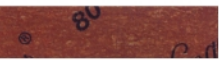
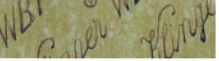



Material Description	Operating Guidelines	(see note below*)	Typical Specifications	Typical Original Properties (1.5mm)	Typical Properties after Fluid Immersion (1.5mm)					
<b>Klingerit® 3XA</b>  <p>Top quality service sheet for steam, gas, water, alkaline media, non-aggressive solvents and many other chemicals such as aliphatic alcohols, esters, ketones and amines composed of SBR binder and high grade chrysotile asbestos. Colour: Red/Brown.</p>	<b>Max. Temperature</b> <b>Max. Pressure</b> (Indian Standard IS 2712 / 1998 : Gr. W/1 & O/1)	550°C 130 bar	British German American French	BS 1832 Grade A & O DIN 3754 IT 400 ASTM F104-F112551 M8 NFT48001 Cat. D.	<b>Minimum tensile strength (cross grain)</b> <b>Specific gravity</b> <b>Compressibility</b> <b>Recovery</b> <b>Stress relaxation</b>	ASTM F152 ASTM F36A ASTM F36A BS 1832	35 N/mm <sup>2</sup> 1.95 gm/cm <sup>3</sup> 8% 55% 30 N/mm <sup>2</sup>	<b>Thickness increase</b> ASTM Oil 3 ASTM Fuel A ASTM Fuel B	5 hours 150°C 5 hours 20°C 5 hours 20°C	20% 0-10% 15%
<b>Klingerit® Universal 3XA</b>  <p>Top quality universal service sheet suitable for nearly all media such as : hydrocarbons, alkalines and medium strong acids. Composed of NBR binder and high grade chrysotile asbestos. Particularly suitable for use in aviation industry, hot oil and thermic fluids. Colour : Blue.</p> <p>† Do not retorquer fasteners at cryogenic temperatures</p>	<b>Max. Temperature</b> <b>Max. Pressure</b> <b>Min. Temperature</b> † (Indian Standard IS 2712 / 1998 : Gr. O1 & W/1)	550°C 140 bar -200°C	British German American French	BS 1832 Grade A and O BS F125 (types 1 and 3) DIN 3754 IT 400 DIN 3754 IT C DIN 3754 IT O ASTM F104-F112121 M8 NFT 48001 Cat. D	<b>Minimum tensile strength (cross grain)</b> <b>Specific gravity</b> <b>Compressibility</b> <b>Recovery</b> <b>Stress relaxation</b>	ASTM F152 ASTM F36A ASTM F36A BS 1832	42 N/mm <sup>2</sup> 1.95 gm/cm <sup>3</sup> 8% 55% 30 N/mm <sup>2</sup>	<b>Thickness increase</b> ASTM Oil 3 ASTM Fuel A ASTM Fuel B	5 hours 150°C 5 hours 20°C 5 hours 20°C	8% 0-10% 12%
<b>Klingerit® 1000</b>  <p>Top grade material based on Klingerit, but reinforced with wire mesh for demanding and extreme services. Especially suitable and recommended for condition of fluctuating pressures and temperatures, i.e. when steam hammers might occur or in automotive applications. Composed of SBR binder and high grade chrysotile asbestos. Delivered with graphited surfaces. Colour : Graphite black.</p>	<b>Max. Temperature</b> <b>Max. Pressure</b>	550°C 200°C	There are no standards to cover wire reinforced materials	<b>Minimum tensile strength (cross grain)</b> <b>Specific gravity</b> <b>Compressibility</b> <b>Recovery</b> <b>Stress relaxation</b>	ASTM F152 ASTM F36A ASTM F36A BS 1832	33 N/mm <sup>2</sup> 2.1 gm/cm <sup>3</sup> 8% 50% 31 N/mm <sup>2</sup>	As there are no standards to cover wire reinforced materials, refer to Klingerit 3XA for typical properties			
<b>Klinger® Oilit 3XA</b>  <p>Top quality oil and petrol resistant material suitable for fuels, oils, solvents including aromatic and chlorinated hydrocarbons for high mechanical and thermal demand. Excellent resistance and compatibility for natural and town gas, water, steam, alkalines, mild acids and many other chemicals. Suitable for potable water (WRC certification) Composed of chrysotile asbestos and NBR binder. Also available in metallic Colour : Black.</p> <p>† Do not retorquer fasteners at cryogenic temperatures</p>	<b>Max. Temperature</b> <b>Max. Pressure</b> <b>Min. Temperature</b> (Indian Standard IS 2712 / 1998 : Gr. O/1 & W/1)	500°C 130 bar -200°C	British German American French	BS 1832 Grade A and O DIN 3754 IT O ASTM F104-F112120M8 NFT 48001 Cat. D. Approved by the Water Research Council for use with potable water	<b>Minimum tensile strength (cross grain)</b> <b>Specific gravity</b> <b>Compressibility</b> <b>Recovery</b> <b>Stress relaxation</b>	ASTM F152 ASTM F36A ASTM F36A BS 1832	38 N/mm <sup>2</sup> 1.95 gm/cm <sup>3</sup> 8% 55% 30 N/mm <sup>2</sup>	<b>Thickness increase</b> ASTM Oil 3 ASTM Fuel A ASTM Fuel B	5 hours 150°C 5 hours 20°C 5 hours 20°C	6% 0-10% 8%
<b>Klinger® Acidit Plus</b>  <p>High quality acid resistant material based in chrysotile asbestos and special binders compatible with strong organic and inorganic acids. Widely used in the chemical industry. Colour : White</p>	<b>Max. Temperature</b> <b>Max. Pressure</b> (Indian Standard IS 2712 / 1998 : Gr. A/1)	400°C 100 bar	British German American French	— DIN 3754 IT S ASTM F104-F112000 NFT 48001 Cat. E.	<b>Minimum tensile strength (cross grain)</b> <b>Specific gravity</b> <b>Compressibility</b> <b>Recovery</b>	ASTM F152 ASTM F36A ASTM F36A	30 N/mm <sup>2</sup> 1.90 gm/cm <sup>3</sup> 8% 50%	<b>Thickness increase</b> 96% Sulphuric acid 95% Nitric acid 50% Nitric acid	5% Not suitable 15%	
<b>Klinger® 100</b>  <p>High quality grade similar to Klingerit widely used in the petro-chemical industry. Especially suitable for steam, gas, water, alkalines and other non-aggressive media. Composed for chrysotile asbestos and SBR binder Colour : Grey</p> <p>† Do not retorquer fasteners at cryogenic temperatures</p>	<b>Max. Temperature</b> <b>Max. Pressure</b> <b>Min. Temperature</b> (Indian Standard IS 2712 / 1998 : Gr. W/1 & O/2)	510°C 100 bar -200°C	British German American French	BS 1832 Grade A and O DIN 3754 IT 400 ASTM F104-F112551M8 NFT 48001 Cat. D.	<b>Minimum tensile strength (cross grain)</b> <b>Specific gravity</b> <b>Compressibility</b> <b>Recovery</b> <b>Stress relaxation</b>	ASTM F152 ASTM F36A ASTM F36A BS 1832	30 N/mm <sup>2</sup> 1.95 gm/cm <sup>3</sup> 8% 55% 29 N/mm <sup>2</sup>	<b>Thickness increase</b> ASTM Oil 3 ASTM Fuel A ASTM Fuel B	5 hours 150°C 5 hours 20°C 5 hours 20°C	25% 5-15% 17%
<b>Klinger® SOE</b>  <p>A Medium Grade Product for hydrocarbon service, fuels and oil solutions. Good resistance for medium pressure gases, water, steam, alkalines &amp; acids. Colour : Black</p>	<b>Max. Temperature</b> <b>Max. Pressure</b> (Indian Standard IS 2712 / 1998 : Gr. O/1)	400°C 80 bar	German	DIN 3754 IT O	<b>Minimum tensile strength (cross grain)</b> <b>Specific gravity</b> <b>Compressibility</b> <b>Recovery</b> <b>Stress relaxation</b>	ASTM F152 ASTM F36A ASTM F36A BS 1832	22 N/mm <sup>2</sup> 1.95 gm/cm <sup>3</sup> 10% 40% 25 N/mm <sup>2</sup>	<b>Thickness increase</b> ASTM Oil 3 ASTM Fuel A ASTM Fuel B	5 hours 150°C 5 hours 23°C	10% 12%
<b>Klinger® 200</b>  <p>Good quality suitable for most applications of steam, gas, water, alkalines and other non-aggressive media under less demanding conditions. Composed of chrysotile asbestos fibre bonded with SBR. Colour : Red/Brown.</p>	<b>Max. Temperature</b> <b>Max. Pressure</b> (Indian Standard IS 2712 / 1998 : W/2)	400°C 40 bar	British German American	BS 1832 Grade B DIN 3754 IT 200 ASTM F104-F112750 M7	<b>Minimum tensile strength (cross grain)</b> <b>Specific gravity</b> <b>Compressibility</b> <b>Recovery</b> <b>Stress relaxation</b>	ASTM F152 ASTM F36A ASTM F36A BS 1832	22 N/mm <sup>2</sup> 1.95 gm/cm <sup>3</sup> 8% 55% 26 N/mm <sup>2</sup>	<b>Thickness increase</b> ASTM Oil 3 ASTM Fuel A ASTM Fuel B	5 hours 150°C 5 hours 20°C 5 hours 20°C	30% 5-20% 20%
<b>Klinger® 80</b>  <p>Medium quality for general purpose use. Contains chrysotile asbestos fibre bonded with SBR. Also available in metallic Colour : Red/Brown</p>	<b>Max. Temperature</b> <b>Max. Pressure</b> (Indian Standard IS 2712 / 1998 : Gr. W/3)	350°C 35 bar	British American	BS 1832 Grade B ASTM F104-F112700	<b>Minimum tensile strength (cross grain)</b> <b>Specific gravity</b> <b>Compressibility</b> <b>Recovery</b> <b>Stress relaxation</b>	ASTM F152 ASTM F36A ASTM F36A BS 1832	13 N/mm <sup>2</sup> 2 gm/cm <sup>3</sup> 8% 50% 21 N/mm <sup>2</sup>	<b>Thickness increase</b> ASTM Oil 3 ASTM Fuel A ASTM Fuel B	5 hours 150°C 5 hours 20°C 5 hours 20°C	25% 5-20% 15%
<b>Klinger® WB1</b>  <p>Medium quality controlled swell material extensively used by the automotive industry. Particularly suitable for applications where bolt loadings are relatively light or uneven. Composed o chrysotile asbestos fibre bonded with SBR. Colour: Yellow</p>	<b>Max. Temperature</b> <b>Max. Pressure</b> (Indian Standard IS 2712 / 1998 : Gr. W/3 : O/2)	350°C 30 bar	American	ASTM F104-F112970	<b>Minimum tensile strength (cross grain)</b> <b>Specific gravity</b> <b>Compressibility</b> <b>Recovery</b> <b>Stress relaxation</b>	ASTM F152 ASTM F36A ASTM F36A BS 1832	20 N/mm <sup>2</sup> 1.95 gm/cm <sup>3</sup> 8% 50% 15 N/mm <sup>2</sup>	<b>Thickness increase</b> ASTM Oil 3 ASTM Fuel A ASTM Fuel B	5 hours 150°C 5 hours 20°C 5 hours 20°C	40% 5-20% 25%
<b>Klinger® KLR - 232</b>  <p>A New Grade Medium Range General Purpose Gasket Joining For Steam, Water and Gas Application. Colour : Red / Black</p>	<b>Max. Temperature</b> <b>Max. Pressure</b> (Indian Standard IS 2712 / 1998 : Gr. W/3)	270°C 25 bar	—	—	<b>Minimum tensile strength (cross grain)</b> <b>Specific gravity</b> <b>Compressibility</b> <b>Recovery</b> <b>Stress relaxation</b>	ASTM F152 ASTM F36A ASTM F36A BS 1832	8 N/mm <sup>2</sup> 2.15 gm/cm <sup>3</sup> 8% 40% 14 N/mm <sup>2</sup>	<b>Thickness increase</b> ASTM Oil 3 ASTM Fuel A ASTM Fuel B	5 hours 150°C 5 hours 23°C	45% 30%

\*Note : Maximum temperature and pressure capabilities do not necessarily operate together for all gasket thickness and service conditions.



### Tolerances

Nominal Sheet Size	Standard		Reinforced	
	Width (mm)	Length (mm)	Width (mm)	Length (mm)
1.5 X 4.0 M	1510 to 1475	4100 to 3800	1500 to 1450	4100 to 3800
1.5 X 2.0 M	1510 to 1475	2040 to 1975	1500 to 1450	2040 to 1975
1.5 X 1.5 M	1510 to 1475	1510 to 1475	1500 to 1450	1510 to 1475
1.5 X 1.0 M	1510 to 1475	1020 to 975	1500 to 1450	1020 to 975

### Nominal Thickness

Up to and including 0.5 mm  
Over 0.5 mm, Up to and including 1.0 mm  
Over 1.0 mm, Up to and including 2.0 mm  
Over 2.0 mm

### Tolerances

Plus or Minus 0.05 mm  
Plus or Minus 0.10 mm  
Plus or Minus 0.15 mm  
Plus or Minus 0.20 mm

### Maximum variation within one sheet.

0.05 mm  
0.10 mm  
0.15 mm  
0.20 mm

Special Tolerances on request.

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**BELLOW SEALED VALVES**

In view of technical progress designs and dimensions are subject to change without notice.



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A joint venture of the Neterwala group of companies and KLINGER AG, Switzerland.



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