

# SUPER WAUDITE



**COMPRESSED  
ASBESTOS-FREE  
FIBRE JOINTING  
SHEETS**

AN ISO 9001 : 2000 COMPANY



**SUPER WAUDITE  
JOINTINGS PVT. LTD.**

**MAJOR CHAI  
COMPRESSED ASBESTOS**

MATERIAL DESIGNATION	DENSITY G/CC.	TENSILE STRENGTH AS PER ASTM F152 IN MPa	RESIDUAL STRESS AS PER BS 7531 IN MPa	GAS PERMEABILITY AS PER BS 7531 IN CC/MIN.	COMPRESSIBILITY AS PER ASTM F36 IN %	RECOVERY AS PER ASTM F36 IN %	FLUID RESISTANCE		
							ASTM OIL NO.3 5 HOURS AT 150° c.		
							THICKNESS INCREASE %	MASS INCREASE %	THICKNESS INCREASE %
<b>AF-WAUDCOLITE</b>	1.8-2.0	≥ 11	18	< 1.0	7-12	≥ 35	≤ 10	≤ 15	≤ 15
<b>AF-WAUDCO</b>	1.8-2.0	≥ 12	18	< 1.0	7-12	≥ 35	≤ 10	≤ 15	≤ 15
<b>AF-WAUDCO EXTRA</b>	1.8-2.0	≥ 13	22	< 1.0	7-12	≥ 40	≤ 10	≤ 15	≤ 10
<b>AF-WAUDITE</b>	1.8-2.0	≥ 14	22	< 0.5	7-12	≥ 40	≤ 10	≤ 10	≤ 8
<b>AF-SUPER WAUDITE H.P.</b>	1.8-2.0	≥ 15	25	< 0.1	7-12	≥ 45	≤ 8	≤ 10	≤ 8
<b>AF-SUPER WAUDITE OIL</b>	1.7-1.9	≥ 15	25	< 0.1	7-12	≥ 45	≤ 8	≤ 10	≤ 8
<b>AF-SUPER WAUDITE ACID</b>	1.7-2.0	≥ 13	25	< 0.1	8-12	≥ 40	≤ 8	≤ 10	≤ 8

Available Sheet Size : 1575 x 2000 mm ± 5% with printing,  
3190 x 2000 mm ± 5 % without printing.

Available thickness Range : 0.4 mm, 0.8 mm, 1.5 mm, 3.0 mm  
(other thicknesses on request, subject to minimum manufacturing quantity)

Available Colour : Green / Black / Red / Blue / Yellow / Off White  
(Generally in Green Colour)

# CHARACTERISTIC FOR FREE FIBRE JOINTING SHEETS



Temp. °C. MASS INCREASE %	IGNITION LOSS % AT 825°C. FOR 30 MINUTES	MAXIMUM OPERATING PRESSURE IN BAR	TEMPERATURE RATING	SERVICE FEATURES
≤ 15	≤ 25	30	Max. short term service temp. : 380°C Max. continuous service temp. : 240°C Max. operation temp. for steam : 170°C	<ul style="list-style-type: none"> <li>● General purpose AF jointing sheet suitable for use in low pressure steam, oils, gases, water, air, waste water, light industrial and domestic applications.</li> <li>● Available with gauge wire insertion</li> <li>● Also available with anti-stick coating or graphite coating.</li> </ul>
≤ 15	≤ 25	35	Max. short term service temp. : 400°C Max. continuous service temp. : 250°C Max. operation temp. for steam : 180°C	<ul style="list-style-type: none"> <li>● A good quality general purpose jointing material developed for low stress conditions. Suitable for complete sealing of low pressure steam, water, air, gases and various mild alkaline chemicals.</li> <li>● Can be used in Automotive / Light Industrial and Domestic Application.</li> <li>● Available with gauge wire insertion.</li> <li>● Also available with anti-stick coating or graphite coating.</li> </ul>
≤ 15	≤ 30	80	Max. short term service temp. : 400°C Max. continuous service temp. : 250°C Max. operation temp. for steam : 190°C	<ul style="list-style-type: none"> <li>● For wide range of Industrial applications.</li> <li>● Recommended for medium pressure steam, gases, water and dilute chemicals, oil and solvents.</li> <li>● Available with gauge wire insertion.</li> <li>● Also available with anti-stick coating or graphite coating.</li> </ul>
≤ 10	≤ 35	80	Max. short term service temp. : 400°C Max. continuous service temp. : 250°C Max. operation temp. for steam : 200°C	<ul style="list-style-type: none"> <li>● AF jointing sheet for applications in hydrocarbons, such as oils and solvents and general purpose use in water, steam, gases, dilute acids and alkalis, glycols, and aqueous solutions.</li> <li>● Available with gauge wire insertion.</li> <li>● Also available with anti-stick coating for graphite coating.</li> </ul>
≤ 10	≤ 35	150	Max. short term service temp. : 450°C Max. continuous service temp. : 250°C Max. operation temp. for steam : 250°C	<ul style="list-style-type: none"> <li>● For use with oils, solvents, gases, steam, dilute acid &amp; alkalies.</li> <li>● Excellent tensile strength.</li> <li>● Outstanding gas sealability.</li> <li>● High resistance to creep under elevated temperatures &amp; pressures.</li> <li>● Available with gauge wire insertion.</li> <li>● Also available with anti-stick coating or graphite coating.</li> </ul>
≤ 10	≤ 40	150	Max. short term service temp. : 450°C Max. continuous service temp. : 250°C Max. operation temp. for steam : 250°C	<ul style="list-style-type: none"> <li>● High resistance to hot oils, fuels, hydrocarbons and refrigerants.</li> <li>● Good steam resistance.</li> <li>● Excellent creep resistance.</li> <li>● Very low gas permeability.</li> <li>● Available with gauge wire insertion.</li> <li>● Also available with anti-stick coating or graphite coating.</li> </ul>
≤ 10	≤ 40	150	Max. short term service temp. : 250°C Max. continuous service temp. : 210°C Max. operation temp. for steam : 210°C	<ul style="list-style-type: none"> <li>● Acid resistance grade.</li> <li>● Recommended for use against hot concentrated organic, inorganic and mineral acids.</li> <li>● Resistant to Alkalis, Ketones, Aldehydes.</li> <li>● Resistant to Hydrocarbons, fuels and refrigerants.</li> <li>● Also available with anti-stick coating or graphite coating.</li> </ul>

**NOTE :** The operating temperature for non-asbestos sheet material is related to the thickness of materials selected. Thinner materials offer better temperature and pressure properties.

**IMPORTANT :** The above information has been compiled to the best of our knowledge. In view of the multiplicity of operating and installation conditions, the given information can only serve as a general guideline. For instance, Maximum temperature and pressure may not be applicable simultaneously and also be affected by media and other factors. One cannot, therefore, draw any conclusions regarding the behaviour of the material in a gasketed joint. Hence the above information cannot form the basis of any liability or warranty claims. In case of doubt regarding the suitability of the gasket material please consult us. Details of all operational and installation parameters will enable us to assist you with proper selection of the most appropriate gasket material.

## JOINTING PRINCIPLES - TO HELP YOU SELECT :

### WHY USE GASKETS ?

If flange surface mated perfectly, there would be no need for gaskets. In practice, flanges always have slight surface irregularities, and compressible, resilient material - the gasket - is used to compensate for them. This provides an uninterrupted barrier against the medium and compensates for slight movement of the flanges during service.

### DESIGNING OF GASKET :

This involves determining of three basic elements, namely - (i) right material, (ii) proper dimension, and (iii) correct surface stress; and the selection of right gasket material depends on three factors namely - (i) medium, (ii) working temperature and (iii) working pressure.

### SURFACE STRESS :

Even at low internal pressures the gasket must be pressed against the flanges with a definite minimum surface stress. The 'deformation stress' depends on the structure and compressibility of the gasket material.

### HYDROSTATIC ENDTHRUST :

In a closed vessel or a closed pipeline, the internal pressure of a medium exerts a thrust on the cover lid. This is called the hydrostatic end thrust, which tends to pull apart the flanges and thereby reduce the "assembly stress" originally applied to the gasket. The assembly stress must therefore compensate for the effect of the hydrostatic end thrust, while still maintaining the "minimum gasket surface stress" needed to seal at the working pressure.

### MAXIMUM SURFACE STRESS :

Too high a gasket surface stress can cause leakage. This is because the gasket loses the resilience needed to maintain its pressure against the flange surfaces. The surface stress on the gasket must never exceed the recommended maximum. For a given material the maximum permissible surface stress depends mainly on the temperatures and the thickness. For example, thin materials withstand higher stresses depend, mainly on the temperature and the thickness. For example, thin materials withstand higher stresses than thick ones, cold conditions permit higher stresses than hot.

### THE RIGHT GASKET THICKNESS :

Compressed non asbestos materials have a slight porosity, so gaskets should be as thin as possible. However, the minimum gasket thickness depends on (i) depth of flange surface roughness, (ii) compressibility of the gasket, and (iii) gasket surface stress at working pressure.

### GASKET ASSEMBLY GUIDELINES FOR GETTING THE MOST :

**FLANGES** should be even and parallel and also sufficiently rigid not to be distorted by the bolt load.

**FLANGE FINISH** is important. Concentric groove finish is ideal for high pressure. Spiral (gramophone) groove finish gives a continuous path for leakage and is not recommended for gases. For flanges with flat surface a finish equivalent to is considered best.

**BOLTS** should be tightened with a torque spanner, working at diametrically opposite nuts alternately. First turn all bolts to about half the recommended torque, then follow up to full assembly torque. It is important to follow up the bolts about 4 hours later or 1 hour after the gasket reaches its working temperature.

**PIPELINES** undergo longitudinal thermal expansion which generates force that can crush the gasket. On the other hand, contraction of pipelines can reduce the gasket surface stress below the minimum required for sealing. Pipe expansions and contractions must therefore



## DET NORSKE VERITAS MANAGEMENT SYSTEM CERTIFICATE

Certificate No. 00010-2002-AQ-BDA-RvA

*This is to certify that  
the Quality Management System  
of*

### SUPER WAUDITE JOINTINGS PVT. LTD.

*at*  
G-1, Shyamsunder Apartment, 6 Laxmi Society,  
B/h. Sheeba Hotel, Navrangpura, Ahmedabad-9, INDIA  
*has been found to conform  
to the Quality Management System Standard:*

**ISO 9001:2000**

*This Certificate is valid for the following product or  
service ranges:*

**MANUFACTURE AND SUPPLY OF ASBESTOS AND  
NON-ASBESTOS BASED JOINTINGS, INSULATION,  
SEALING AND PACKING PRODUCTS**

*Original Certificate date :*  
2002-10-28

*Place and date :*  
New Delhi, 2002-10-28

*This Certificate is valid until :*  
2005-10-28

*for the Accredited Unit :*  
DNV CERTIFICATION B.V.  
THE NETHERLANDS

*Conformity to the Standard in respect to the  
indicated scope is verified by the  
DNV approved registered Team Leader*

M. L. Badheka  
*Lead Auditor*

A. Venkataram  
*Management Representative*

*Lack of Fulfillment of Conditions as set out in the  
Appendix may render this Certificate invalid*



**SUPER WAUDITE  
JOINTINGS PVT. LTD.**



G/1, SHYAMSUNDER APARTMENT, 6, LAXMI SOCIETY, B/H. SHEEBA HOTEL,  
NAVRANGPURA, AHMEDABAD-380 006. INDIA.

TELE / FAX: 079-26560744, 26564699

e-mail: superad1@sancharnet.in ❖ e-mail: super020@yahoo.co.in

**Branch :** 230/A, A. J. C. Bose Road, 'CHITRAKOOT'  
(9th floor) Kolkata - 700 020.  
Ph. : 2247 7826, 2247 5459 Fax : 033 - 2247 7971

**Branch :** 404, Vireswar Chambers, Shaan Cinema Complex,  
M. G. Road, Vile-Parle (East) Mumbai - 400 057.  
Telefax : 022-26101917 (M) 9821032478