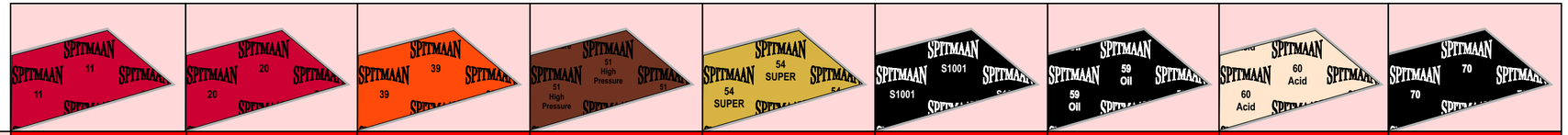
COMPRESSED ASBESTOS FIBRE JOINTINGS

SPITMAAN®



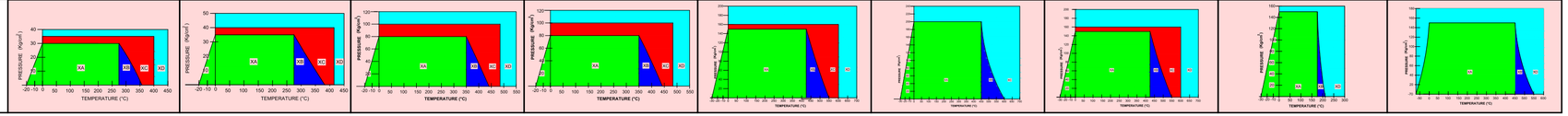
STYLES	STYLE 11		STYLE 20 Steam		STYLE 39		STYLE 51 High Pressure		STYLE 54 SUPER		S1001 METALLIC	STYLE 59 Oil		STYLE 60 Acid	STYLE 70
	Non Metallic	Metallic	Non Metallic	Metallic	Non Metallic	Metallic	Non Metallic	Metallic	Non Metallic	Metallic	Metallic	Non Metallic	Metallic	Non Metallic	Non Metallic
Compliance	IS 2712 Grade W/ 3		IS 2712 Grade W/ 3		IS 2712 Grade O/ 2		IS 2712 Grade W/ 2		IS 2712 Grade W/ 1		IS 2712 Grade W/ 1	IS 2712 Grade O/ 1		IS 2712 Grade A/ 1	IS 2712 Grade O/ 1
Line Callout Number	ASTM104F112009A9B0E00M9T1		ASTMF104F112009A9B0E00M9T2		ASTMF104F112999A9B9E99M9T3		ASTMF104F112009A9B0E00M9T4		ASTMF104F112009A9B0E00M9T5		ASTMF104F112009A9B0E00M9T6	ASTMF104F112999A9B9E99M9T7		ASTMF104F112009A9B0E00M9T8	ASTMF104F112009A9B0E00M9T9
Product Description	Compressed Asbestos Fibre Jointing is a consistently uniform, solid run constructed resilient quality product with a high dependable performance. Its adaptability to many sealing requirements makes this product the most ECONOMICAL sheet packing		Compressed Asbestos Fibre Jointing is a consistently uniform, solid run constructed resilient quality product with a high dependable performance. Its adaptability to many sealing requirements makes this product the most ECONOMICAL sheet packing		Manufactured from Quality Asbestos Fibres, Fillers & vulcanized with special rubber compound meeting with the exacting requirements of modern industry.		Manufactured from Selected Asbestos Fibres, Fillers & Bonded with Premium Grade Binder Compound. This Product has a vide range of Industrial Applications & Various Engineering Service Conditions which do not warrant the use of high grade material like SPITMAAN STYLE 54 SUPER		Manufactured from an Excellent Quality of Chrysotile Asbestos Fibres & Fillers Blended Intimately with Heat Resistant Rubber Compounds under a Special Process to Ensure Maximum Stability to Withstand High Pressures and Temperatures.		Top Grade Compressed Asbestos Gasket Sheet material primarily composed of High Grade chrysotile Asbestos Fibres and Binders reinforced with steel wire gauze insertion. Developed to comply extremely demanding sealing applications for stability at high fluctuating temperatures& pressures.	A high grade Asbestos Fiber Jointing bonded with a premium compound. This specialized Jointing withstands the most exacting demands of Oil and Petrochemical Plants, Solvents, Refrigerators etc. Used in pipelines and apparatus of the petrochemical field, petrochemical distillates, oil and petroleum refining industries.		This is a specialised Asbestos Fibre Jointing Sheet which is intimately bonded with Acid resisting compound to withstand the corrosive action of acids and chemicals	Superior Grade Compressed Asbestos Gasket Sheet material primarily composed of High Grade Chrysotile Asbestos Fibres, Fillers and bonded with Polychloroprene (CR) Binder specially developed for fuel system agregates in engines of aviation class and Refrigerations including flanges of magnesium alloy.
Colour	Red/ Graphited as Standard	With special Metallic reinforcement to enhance strength & stability	Red/ Graphited as Standard	With special Metallic reinforcement to enhance strength & stability	Red-Grey/ Graphited as Standard	With special Metallic reinforcement to enhance strength & stability	Brown-Grey/ Graphited as Standard	With special Metallic reinforcement to enhance strength & stability	Yellow-Grey/ Graphited as Standard	With special Metallic reinforcement to enhance strength & stability	Black Graphited as Standard with special metallic reinforcement	Dark Grey/ Graphited as Standard	With special Metallic reinforcement to enhance strength & stability	Cream/ Light Grey as Standard	Black as Standard
Suitable Industries/ Properties	General Purpose Gasketing material		General Purpose Gasketing material		Suitable for medium to high stress conditions of steam motor oil transmission and hydraulic fluids, low temperature oils, antifreeze for I.C. Engines, Compressors & Pipes etc.		General Purposes. Medium Service Conditions		Primarily a Super Heated Steam Jointing Popularly used in Marine Engines, Electricity Generating Sets etc.		Specially Developed for stability at high fluctuating temperatures and pressures.	Petrochemicals, Steam Supplies, Automobiles, Ship building & General Purposes. High Service Conditions		Chemical Industries (Acids & Alkalies)	Specially Recommended for Aviation class and Refrigerations
Appropriate/ Suitable Media	Suitable for Water, Steam, & for some chemical Low Service Conditions		Suitable for Water, Steam, & for some chemical Low Service Conditions		Oils-Medium and Nominal Service Conditions		Water, Steam and for Some Chemicals - Medium Service Conditions		Suitable for Saturated Steam, Oxygen, Petroleum Distillates, Oils, Fats, Fuels, Internal Cumbustion Engines, Hydro Carbons, Alcohols, Solvents, Lyes etc.		Would be an Excellent & Economical choice for Sugar Plants/ Boiler Engineers.	Recommended in industrial processes with high contents of aromatic substances, sulphurous compounds, chloric hydrocarbons, phenols, refrigerants, solvents, steam, alkalies, freeze, refrigerations etc. including steam. Use of SPITMAAN Style 59 OIL Gasket Sheet assures safety and economy even in critical working conditions		Recommended in industrial processes with high contents of aromatic substances, sulphurous compounds, chloric hydrocarbons, phenols, refrigerants, solvents, steam, alkalies, freeze, refrigerations etc. including steam. Use of SPITMAAN Style 59 OIL Gasket Sheet assures safety and economy even in critical working conditions	Recommended for use against hot concentrated organic, Inorganic and mineral acids including hydrochloric Acid, sulphuric (Oleum) Acid & Nitric Acids under service conditions of Temperatures & Pressures commonly encountered in Chemical Industries.	Recommended also for Petrochemical fields, Petrochemical Distillates, Solvents, Oils & Petroleum Refining Industries.

GENERAL DATA

Standard Sheet Size (mm)	1600/1500 x 1500 1600/ 1500 x 2000 1600/ 1500 x 3000 1600/ 1500 x 6000 1525 x 1650 1525 x 5000 2000 x 6000 2000 x 2000 3000 x 3000 1000 x 1000 2000 x 3000		
Thickness (mm)	0.40 to 6.00 for Non Metallic & 0.50 to 6.00 for Metallic		
Thickness Tolerances (mm)	Upto & including 0.50 = ± 0.05		
	Over 0.50, Upto & including 1.00 = ± 0.10		
	Over 1.00 Upto & including 2.00 = ± 0.15		
	Over 2.00 Upto & including 3.00 = ± 0.20		
	Over 3.00 Upto & including 4.00 = ± 0.30		
	Over 4.00 = ± 0.40		
Gasket Factors	**Thickness (mm)**	**"M" Factor**	**"Y" Stress (Psi)**
	0.80	3.50	6500
	1.60	2.75	3700
	3.20	2.00	1600
All Metalic Jointing Sheets shall be supplied with a Graphite Finish			

TECHNICAL DATA - TYPICAL VALUES FOR A THICKNESS OF 1.60 mm

Density	IS 2712	g/cc	1.80 - 2.20	1.85 - 2.40	1.80 - 2.20	1.85 - 2.40	1.80 - 2.20	1.80 - 2.40	1.80 - 2.20	1.85 - 2.40	1.80 - 2.20	1.85 - 2.40	1.85 - 2.40	1.80 - 2.20	1.85 - 2.40	1.80 - 2.20	1.80 - 2.20
Tensile Strength	IS 2712	Kg/cm^2	≥ 80	≥ 90	≥ 85	≥ 100	≥ 150	≥ 160	≥ 150	≥ 160	≥ 265	≥ 280	≥ 325	≥ 265	≥ 285	≥ 260	≥ 270
Compressibility	IS 2712	%	8 - 12	8 - 12	8 - 12	8 - 12	8 - 12	8 - 12	8 - 12	8 - 12	7.5 - 11	7.5 - 11	7 - 10	7 - 10	7 - 10	8 - 12	8 - 12
Recovery	IS 2712	%	≥ 42.5	≥ 45	≥ 42.5	≥ 45	≥ 45	≥ 45	≥ 45	≥ 45	≥ 50	≥ 50	≥ 65	≥ 50	≥ 50	≥ 45	≥ 55
Ignition Loss	IS 2712	%	≤ 20	≤ 20	≤ 20	≤ 20	≤ 20	≤ 20	≤ 20	≤ 20	≤ 22	≤ 22	≤ 22	≤ 22	≤ 22	≤ 22	≤ 24
Stress Relaxation (Residual Stress)	IS 2712	N/mm^2	-----	-----	-----	-----	20	21	20	21	28	30	30	28	30	-----	28
Flexibility @RT (Cracking, delamination or distress)	IS 2712	---	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
Oil Absorption 5 H @ 150°C (Thickness/ Mass)	IS 2712	%	-----	-----	-----	-----	≤ 15 / ≤ 15	≤ 15 / ≤ 15	-----	-----	-----	-----	-----	≤ 10 / ≤ 10	≤ 10 / ≤ 10	-----	≤ 10 / ≤ 10
Fuel B Absorption 22 H @ RT (Thickness/ Mass)	IS 2712	%	-----	-----	-----	-----	≤ 15 / ≤ 16	≤ 15 / ≤ 16	-----	-----	-----	-----	-----	≤ 10 / ≤ 10	≤ 10 / ≤ 10	-----	≤ 10 / ≤ 10
Water Absorption 5 H @ 100°C (Thickness/ Mass)	IS 2712	%	-----	-----	-----	-----	≤ 8	≤ 8	≤ 8	≤ 8	≤ 7	≤ 7	≤ 5	≤ 8	≤ 8	-----	≤ 6
Recommended Maximum Temperature	-----	°C	380	400	380	415	450	480	450	480	550	600	600	560	600	220	-70 to 550
Recommended Maximum Pressure	-----	Kg/cm^2	35	40	45	50	85	100	85	100	150	160	200	150	160	160	150



ACCREDITED COMPANY GB/T45001-2020 (ISO45001:2018.IDT)

Performance Chart & Recommendation

Maximum Values of Temperature and Pressure should not be used simultaneously, they are given only as guidance. Maximum Temperature and Pressure depends not only on the type of gasket material but also on the application conditions such as thickness of material, nature of service medium, type of flange, surface stress etc.

XA General suitability using common installation practices under conditions of chemical compatibility

XB Maximum performance is ensured through appropriate measures for joint designs and gasket installations. Consultation is recommended.

XC Limited application area. Technical consultation is mandatory

XD Area not recommended

RECOMMENDATION CHART MEDIA	STYLE E11	STYLE E20	STYLE E39	STYLE E51	STYLE E54	STYLE S1001	STYLE E59	STYLE E60	STYLE E70
AIR AND GAS									
Air	B	B	B	B	A	B	B	B	A
Argon	B	B	B	B	A	B	B	B	A
Butane	C	C	C	C	B	C	A	C	A
Carbon Dioxide	B	B	B	B	A	B	B	B	A
Coal Gas	B	B	B	B	A	B	B	B	A
Ethane	C	C	C	C	B	C	A	C	A
Hydrogen	B	B	B	B	A	B	B	B	A
Methane	C	C	C	C	B	C	A	C	A
Natural Gas	B	B	B	B	A	B	B	B	A
Nitrogen	B	B	B	B	A	B	B	B	A
Oxygen	B	B	B	B	A	B	B	B	B
Propane	C	C	C	C	B	C	A	C	A
Propylene	C	C	C	C	B	C	A	C	A
Sulphur Dioxide (dry)	X	X	X	X	C	C	C	B	C
Cane Sugar/ Juice	B	B	B	B	A	B	A	C	B
Castor Oil	X	X	B	X	A	B	A	X	A
Food Products	B	B	B	B	A	B	B	C	B
Milk	B	B	B	B	A	B	B	B	B
Vegetable Oils	X	X	B	X	A	B	A	B	A
Fruit Juices	B	B	B	B	A	B	B	B	B
Syrups	B	B	A	B	A	B	B	B	B
Vinegar	C	C	B	B	A	B	B	B	B
Wine/ Whisky	C	C	B	B	A	B	A	B	B
Alum	B	B	B	B	A	B	B	B	B
Bleach Liquor	B	B	B	B	A	B	B	B	B
Borax	B	B	B	B	A	B	B	B	B
Bromine	C	C	C	C	C	C	C	C	C
Calcium Carbonate	B	B	B	B	A	B	B	B	B
Calcium Chloride	B	B	B	B	A	B	B	B	B
Chlorine	C	C	C	C	C	C	C	C	C
Chlorobenzene	C	C	C	C	C	C	C	C	X
Chloromethane	X	X	C	X	C	C	C	C	C
Copper Sulphate	B	B	B	B	A	B	B	B	B
Dowtherm	X	X	X	X	B	X	B	X	A
Ether	B	B	B	B	B	B	A	B	A
Ethyl Acetate	X	X	C	X	C	C	C	C	C
Ethyl Alcohol	B	B	B	B	B	B	A	X	B
Ferric Chloride	B	B	B	B	B	C	B	B	B
Glycerine	B	B	B	B	A	B	B	B	B
Hydrogen Peroxide(20 Vols)	C	C	C	C	C	C	C	C	C
Lye	B	B	B	B	A	B	B	B	B
Methyl Acetate	X	X	C	X	C	C	C	C	C
Methyl Alcohol	B	B	B	B	A	B	B	C	A
Methyl Chloride	X	X	C	X	C	C	C	C	C
Methylene Chloride	X	X	C	X	C	C	C	C	X
Pentane	X	X	C	X	B	C	A	X	A
Sewage	B	B	B	B	B	B	B	B	B
Sodium Salts	B	B	B	B	B	B	B	B	B
Sodium	B	B	B	B	B	B	B	B	B
Sodium Sulphite	B	B	B	B	B	B	B	B	B
Sodium Thiosulphate	B	B	B	B	B	B	B	B	B
Tin Sodium Phosphate	B	B	B	B	B	B	B	B	B
Zinc Sulphate	B	B	B	B	B	B	B	B	B
ORGANIC SOLVENTS/ OILS									
Acetone	C	C	B	B	B	B	A	X	B
Alcohol	C	C	B	B	B	B	A	C	B
Benzene	X	X	C	X	B	C	B	X	A
Carbon Disulphide	X	X	X	X	X	X	X	B	C
Carbon Tetrachlorde	X	X	C	X	C	C	C	C	C
Cellosolve	X	X	C	X	B	C	B	X	A
Chloroform	X	X	C	X	C	C	C	C	C
Cyclohexane	X	X	B	X	B	B	B	X	A
Cyclohexanol	X	X	B	X	B	B	B	X	A
Heptane	X	X	B	X	B	B	B	X	A
Isopropyl Alcohol	C	C	B	B	B	B	A	C	B
Ketones	B	B	B	B	B	B	A	X	B
Naphta	X	X	C	X	B	C	B	X	A
Nitrobenzene	X	X	X	X	C	C	C	X	C
Perchlorethylene	C	C	C	C	C	C	C	C	C
Propyl Acetate	X	X	C	X	C	C	C	C	C
Tetra Chlorethylene	X	X	C	X	C	C	C	C	C
Toluene	X	X	C	X	B	C	B	X	A
Trichlorethylene	X	X	C	X	C	C	C	C	C
Triethylamine	X	X	X	X	C	X	C	X	B
Turpentine	X	X	C	X	B	C	A	B	B
White Spirit	X	X	C	X	B	C	A	B	B
Amyl Acetate	X	X	C	X	C	C	C	C	C
Aromatic Fuels	C	C	B	X	B	C	B	X	A
Aviation Fuel	X	X	B	X	B	C	B	X	A
Benzine	B	B	C	B	B	C	B	X	A
Diesel Fuel	X	X	C	X	B	C	B	X	A
Creosote	X	X	C	X	B	C	B	X	A
Gasoline	X	X	C	X	B	C	B	X	A
Hydrocarbons	X	X	C	X	B	C	B	X	A
Kerosene	X	X	C	X	B	B	B	X	A

RECOMMENDATION CHART MEDIA	STYLE E11	STYLE E20	STYLE E39	STYLE E51	STYLE E54	STYLE S1001	STYLE E59	STYLE E60	STYLE E70
ORGANIC SOLVENTS/ OILS									
Methylated Spirit	X	X	B	X	B	B	B	A	C	B
Paraffin	X	X	C	X	B	C	B	X	A
Petrol	X	X	C	X	B	C	B	X	A
Petroleum Ether/ Spirit	X	X	C	X	B	C	A	X	A
Raffinate	X	X	B	X	B	C	A	X	A
Bunker C Fuel	X	X	B	X	B	B	B	X	A
Coconut	X	X	B	X	B	B	A	X	A
Cotton Seed	X	X	B	X	B	B	A	X	A
Crude	X	X	C	X	B	C	A	X	A
Diesel	X	X	C	X	B	C	A	X	A
Engine	X	X	C	X	B	C	A	X	A
Fuel	X	X	C	X	B	C	A	X	A
Gas	X	X	C	X	B	B	A	X	A
Heavy	X	X	C	X	B	C	A	X	A
Hydraulic	X	X	C	X	B	C	A	X	A
Hydrogenated	X	X	B	X	B	B	A	X	A
Light	X	X	B	X	B	C	A	X	A
Linseed	X	X	B	X	B	B	A	X	A
Lubricating	X	X	B	X	B	C	A	X	A
Mineral	X	X	C	X	B	C	A	X	A
Naphthanic	X	X	C	X	B	C	A	X	A
Natural	X	X	B	X	B	C	A	X	A
Paraffin Base	X	X	B	X	B	C	A	X	A
Quenching	X	X	C	X	B	C	A	X	A
Rape- seed	X	X	B	X	B	B	A	X	A
Refrigeration	X	X	B	X	C	C	A	X	A
Residue	X	X	C	X	B	C	A	X	A
Rich	X	X	C	X	B	C	A	X	A
Silicon	C	C	C	C	B	C	A	X	A
Slop	C	C	B	C	B	B	A	X	A
Soda Solution	C	C	A	C	B	B	A	X	A
Spindle	X	X	C	X	B	C	A	X	A
Transformer	X	X	C	X	B	C	A	X	A
Vaccum Distillate	X	X	C	X	B	C	A	X	A
WATER									
Boiler Feed	C	C	B	C	A	A	A	X	A
Cold	A	A	A	A	A	A	A	X	A
Condensate	B	B	A	B	A	B	B	X	A
Distilled	X	X	B	B	A	B	B	X	A
Hot	X	X	A	B	A	B	B	X	A
Sea	B	B	B	B	A	B	B	X	A
Soapy	B	B	B	B	A	X	A	X	A
STEAM									
Saturated	A	A	A	A	A	A	B	X	A
Superheated	B	B	A	A	A	A	B	X	A
Upto 375 psi	X	X	A	B	A	A	B	X	A
Upto 600 psi	X	X	B	X	A	A	B	X	A
Upto 1200 psi	X	X	X	X	A	B	B	X	B
Upto 1500 psi	X	X	X	X	A	B	B	X	B
Upto 2000 psi	X	X	X	X	C	C	C	X	C
Over 2000 psi									
ACIDS									
Acetic Glacial	C	C	B	B	B	X	B	A	B
Benzoic	C	C	B	B	B	C	B	A	B
Carbolic (Phenol)	X	X	C	X	B	C	B	X	C
Chromic	X	X	X	X	C	X	C	A	X
Cresylic	C	C	C	C	B	C	B	X	C
Formic	C	C	C	C	B	X	B	A	C
Hydrochloric (Conc.)	X	X	C	C	B	X	B	A	C
Hydrochloric (Dilute)	X	X	C	C	B	X	B	A	C
Hydrofluoric	X	X	X	X	X	X	X	B	X
Nitric (Conc.)	X	X	X	X	X	X	X	B	X
Nitric (Dilute)	X	X	X	X	X	X	X	B	X
Oleum (Fuming Sulphuric)	X	X	X	X	X	X	X	C	X
Phosphoric	X	X	B	C	B	X	B	A	B
Sulphuric (Conc.)	X	X	X	X	C	X	C	A	C
Sulphuric (Dilute)	X	X	X	X	C	X	C	B	C
Sulphurous	X	X	B	C	B	X	A	A	B
Tar	C	C	B	C	B	X	A	A	B
ALKALIES									
Ammonia, Anhydrous/ Aqua	C	C	B	B	A	B	A	B	B
Caustic Liquor	X	X	B	C	A	X	A	B	B
Oil/ Soda Solution	B	B	B	B	A	B	A	B	B
Potassium Hydroxide Solution	C	C	B	B	A	B	A	B	B
Sodium Hydroxide Solution	B	B	B	B	A	B	B	B	B
Sodium Silicate	B	B	B	B	A	B	B	B	B
REFRIGERANTS									
Ammonia, Anhyfrous/ Aqua	C	C	B	B	A	B	B	B	B
Freons	C	C	B	B	A	X	B	B	B
Ethylene Glycol	X	X	X	X	C	C	B	X	A
Oil & Ammonia	X	X	C	C	C	X	B	X	A
Oil & Freon 11, 12 or 22	X	X	X	X	C	X	B	X	A
Oil and Methylene Chloride	X	X	X	X	C	X	B	X	A
Oil & Sulphur Dioxide	X	X	X	X	C	X	B	X	A

A Resistive, B Conditionally Resistive C Technical Consultation Mandatory X Not Recommended

Should you have any doubts about the choice of the gasket material, please refer/ contact us at cjpl@spitmaan.com Our Technical Cell shall be happy to assist you.

COMPANY
Champion Jointings Pvt. Ltd.

CONTACT INFORMATION
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Champion Jointings Pvt. Ltd., a part of the **SPITMAAN Group** is a dynamic global manufacturing Organization established in 1969 having multiple manufacturing locations supplying vast range of Calendared products and services to virtually every industrial sector.
Our expertise and capabilities in high performance sealing and bolting technology, led by engineering design and material science, embraces the complete industrial cycle from research, development and manufacture to product application and plant monitoring. These activities help us to keep the global industry running safely, efficiently and with improved environmental performance, year-in, year- out.

Certifications:
We are associated with the ISO family since 2003 and are certified to the following Standards: ISO 9001: 2015, ISO 14001: 2015,ISO45001: 2018 & ISO 17025: 2017

Gasket Selection:
Gaskets must maintain and function as a seal for an acceptable period against all the operational forces involved and to achieve this, there are eight important properties which any good gasket should possess:

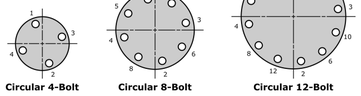
- The gasket should not be porous to the fluid being sealed and should compress into the imperfections on the flange to create an initial seal on application of sealing force.
- The gasket should not show significant creep under the influence of load and temperature.Such flow will allow the bolts to relax, reduce gasket surface stress and cause leakage.
- The gasket should be capable of catering to slight distortion between the flanges.
- The gasket should withstand chemical attack from the media being handled.
- The gasket has to be easily dismantled after use.
- The gasket should be able to withstand effects of temperature of the confined media.
- The gasket should not cause corrosion of the flange faces.

(Please do visit our website for the questionnaire form, to be filled and sent to us for your guidance on appropriate Style selection for any new/ existing applications)

Our Jointing Sheets are manufactured on latest factory equipment's and developed with the aid of research and scientific facts to take care of one and all of the above factors combined with highly specialized technical knowledge of Engineers with experience of a life time. Our products meet with the increasing exacting requirements in Engineering and Chemical industries for contact gaskets on fixed sealing faces. Our Jointing sheets are manufactured to international quality standards, which our customers can depend upon. The operating temperatures for jointing sheet material is related to the thickness selected. Thinner materials offer better temperature and pressure properties.

Proper Bolting Procedures:
The sequence in which bolts are tightened has a substantial bearing upon the distribution of contact area stress. Improper bolting may cock the flange out of parallel.

It is important for proper sealebility that the flanges are clean and free from any serious defect.



SPITMAAN®

COMPRESSED ASBESTOS Fibre Jointing Sheets

Quality
Reliability
Stability