

PRODUCT SPECIFICATION SHEET

MATERIAL : WCL Carbo Fiber

WCL

CARBO-FIBER

N° 03.55.e/1.01

High quality non-asbestos jointing sheet based on carbon fibres, kevlar® aramid fibres, mineral fillers and NBR elastomeric binder. The carbon fibres provide excellent chemical and thermal stability, resulting in high stress retention at high temperature and even in case of fire. The material exhibits outstanding flexibility for adaptation to flange surfaces.

Applications

Excellent performance in high pressure and temperature applications, steam service, hydrocarbons, oils, mild acids and a wide range of alkalis.

Technical Data (typical values relate to 2 mm thickness)

Density	DIN 3754	1,8	g/cm ³
Service limits*:			
Max. short term temperature		440	°C
Max. continuous operating temperature with non-aggressive media		350	°C
Max. continuous operating temperature with steam		280	°C
Max. operating pressure		120	bar
Compressibility	ASTM F36	6 ÷ 11	%
Recovery	ASTM F36	> 55	%
Stress retention:			
- 16 hrs, 300 °C, 50 N/mm ²	DIN 52913	30	N/mm ²
- 16 hrs, 175 °C, 50 N/mm ²		35	N/mm ²
Tensile Strength (across grain)	DIN 52910	8	N/mm ²
Nitrogen permeability (50x90 mm, 32 MPa, 40 bar)	DIN 3535/4	< 0,1	mg/(s.m)



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PRODUCT SPECIFICATION **SHEET**

MATERIAL : WCL Carbo Fiber

Compression strength at room temp.: σ_{VO}	DIN 28090	> 160	N/mm ²		
" " " at 100°C σ_{BO} :	"	90	N/mm ²		
" " " at 200°C σ_{BO} :	"	45	N/mm ²		
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Immersion test in ASTM Oil 3 for 5 hrs. at 150°C	ASTM F146				
- thickness increase		5	%		
- weight increase		12	%		
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Immersion test in ASTM Fuel B for 5 hrs at 20°C	ASTM F146				
- thickness increase		5	%		
- weight increase		10	%		
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Min. recommended assembly stress on flange RF DN 40 PN 40, with nitrogen		5 bar	20 bar	40 bar	80 bar
at:		20	30	40	55
for leakage: 0,2 ml/min, thickness 1,5 mm:	N/mm ²	38	60	75	100
for leakage: 0,2 ml/min, thickness 3,0 mm:	N/mm ²				

* Max. temperature and pressure do not hold simultaneously and are reported for proper seating conditions and gasket design

Supply data

Surface color:	black	4xA Anti-stick surface coating is standard on both sides
Sheet size - Standard:	1500 x 1500 mm (upon request: 1500x3000 and 1500x4500 mm)	tolerance: +/- 50 mm
Thickness:	from 0,3 to 5,0 mm	tolerance: +/- 10%

References

Italian Ministry of Defense: approval for use with steam up to 300°C, 25 bar
Tecnimont: approval for use with steam, hydrocarbons and alkalis up to 250°C, 20 bar.
DIN 28091 FA-CA N=0, BS 7531 grade X

Note: WCL Carbo Fiber jointing manufacture is quality assured in accordance with ISO 9001

Data here reported, corresponding to laboratory and field tests results, are meant as non-binding guideline for gasket selection.
No guarantee claim can be inferred from them. When needed, we shall be pleased to help you with specific technical assistance.



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