

## **FENOLIC RESIN SHEET**

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<b>Sr. No.</b>	<b>Description</b>	<b>Material</b>	<b>Quantity</b>
1.	Sheet 4 x 1000 x 1000 mm	Fenolic Resin As per attached Technical Specification No. DNF003-TS001-MS- 05/213(Rev. 0) (Annexure – C)	01 No.

**Note:**

Please submit attached check list (Annexure – B) along with your quotation, after encircling either “Yes” or “No”.

## Check List for Fenolic Resin Sheet

Please carefully fill all the entries by either encircling "YES" or "No" and mention specifications of offered components when "No" is encircled. Use separate sheet if required.

	Physical Properties	Units	ASTM Test Method	Value	Encircle		Available Specs (Where "No" is encircled)
1	Density	Kg/m <sup>3</sup>	D792	1356	Yes	No	
2	Specific Gravity	-	D792	1.35	Yes	No	
3	Water Absorption, @ 24 Hrs	%	D570	2	Yes	No	
	<b>Mechanical Properties</b>	<b>Units</b>	<b>Test</b>	<b>Value</b>			
4	Tensile Strength						
i-	-Lengthwise	PSI	D638	15000	Yes	No	
ii-	-Crosswise			12000	Yes	No	
5	Flexural Strength						
i-	-Lengthwise	PSI	D790	16000	Yes	No	
ii-	-Crosswise			13200	Yes	No	
6	Compressive Strength	PSI	D695	32000	Yes	No	
7	Flexural Modulus						
i-	-Lengthwise	KPSI	D790	1100	Yes	No	
ii-	-Crosswise			900	Yes	No	
8	Izod Impact (Notched)						
i-	-Lengthwise	ft-lb/in	D256	0.65	Yes	No	
ii-	-Crosswise			0.6	Yes	No	
9	Rockwell Hardness	-	D785	M100	Yes	No	
	<b>Thermal Properties</b>	<b>Units</b>	<b>Test</b>	<b>Value</b>			
10	Coefficient of Thermal Expansion						
i-	-Lengthwise	X10 <sup>-5</sup> /°F	D696	0.8	Yes	No	
ii-	-Crosswise			1.2	Yes	No	
11	Continuous Service Temp (Operating)	°F	-	257	Yes	No	
12	Thermal Conductivity	BTU-in/hr-ft <sup>2</sup> °F	C177	2.03	Yes	No	
13	Flammability Rating	-	UL94	HB	Yes	No	
	<b>Electrical Properties</b>	<b>Units</b>	<b>Test</b>	<b>Value</b>			
14	Dielectric Strength, Short Term., @ 0.125" Thick	Volts/Mil	D149	750	Yes	No	
15	Arc Resistance	Sec	D495	110	Yes	No	
16	Dielectric Constant at 1 MHz	-	D150	5	Yes	No	
17	Dissipation Factor at 1 MHz	-	D150	0.045	Yes	No	
	<b>Certification:</b>						
18	A certificate of compliance in English language shall be provided by the manufacturer/supplier, stating that the Phenolic Sheets have been produced in accordance with this specification.				Yes	No	

## Note:

Please submit this check list along with your quotation, after encircling either "Yes" or "No"

# Annexure-C

## Material Specification

No. DNF003-TS001-MS-05/ 213

Date: 26/09/2018 Rev. No. 0

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Product : Phenolic Sheets

Type : Paper (XX)

Physical Properties	Units	ASTM Test Method	Value
Density	Kg/m <sup>3</sup>	D792	1356
Specific Gravity	-	D792	1.35
Water Absorption, @ 24 Hrs	%	D570	2
Mechanical Properties	Units	Test	Value
Tensile Strength	PSI	D638	15000
-Lengthwise			
-Crosswise			12000
Flexural Strength	PSI	D790	16000
-Lengthwise			
-Crosswise			13200
Compressive Strength	PSI	D695	32000
Flexural Modulus	KPSI	D790	1100
-Lengthwise			
-Crosswise			900
Izod Impact (Notched)	Ft-lb/in	D256	0.65
-Lengthwise			
-Crosswise			0.60
Rockwell Hardness	-	D785	M100
Thermal Properties	Units	Test	Value
Coefficient of Thermal Expansion	X10 <sup>-5</sup> /°F	D696	0.80
-Lengthwise			
-Crosswise			1.20
Continuous Service Temp (Operating)	°F	-	257
Thermal Conductivity	BTU-in/hr-ft <sup>2</sup> °F	C177	2.03
Flammability Rating	-	UL94	11B
Electrical Properties	Units	Test	Value
Dielectric Strength, Short Term, @ 0.125" Thick	Volts/Mil	D149	750
Arc Resistance	Sec	D495	110
Dielectric Constant at 1 MHz	-	D150	5
Dissipation Factor at 1 MHz	-	D150	0.045

### Certification:

A certificate of compliance in English language shall be provided by the manufacturer/supplier, stating that the Phenolic Sheets have been produced in accordance with this specification.