# Resiten® 112 GG

#### Phenolic

**ITEN INDUSTRIES** 

#### Message:

Phenolic materials were first used as insulation in the electrical industry with the invention of Bakelite about one hundred years ago. Since that time, the chemistry, additives and processing have been highly refined. Today, Phenolic materials are found in all facets of our daily lives. They insulate our electric light bulbs and beautify the counter tops in our kitchens. Handles on our pots and pans withstand high temperatures. Massive mounting bases support high voltage switching equipment.

Iten Industries processes Phenolic resin into a wide range of laminates that find their way into market areas from high voltage electrical, low voltage electrical to laser engraved signage. The laminate sheets are processed by the compression molding method. A wide range of reinforcing substrates is used. A full spectrum of sizes and thicknesses is available.

PRODUCTS: ANSI / NEMA PAPER PHENOLIC: X(P) / XX(P) / XXX(P) / XPC CANVAS PHENOLIC: C / CE LINEN PHENOLIC: L / LE GLASS PHENOLIC: G3

Features     Good Electrical Properties       Uses     Laminates Sheet       Agency Ratings     EC 1907/2006 (REACH)       RoHS Compliant     Colors Available       Appearance     Colors Available       Forms     Sheet       Processing Method     Compression Molding       Mechanical     Nominal Value     Unit       Across Flow: Yield     68.9     MPa       Flow: Yield     68.9     MPa       Flow: Yield     103     MPa       -r <sup>2</sup> 112     MPa       -r <sup>3</sup> 154     MPa       Compressive Strength     1     1       -r <sup>4</sup> 117     MPa       -r <sup>4</sup> 127     MPa       -r <sup>4</sup> 127     MPa       Impact     Nominal Value     Unit       Notched Izod Impact <sup>6</sup> 3     J/m       Rebarical     Salad     J/m       Impact     3     J/m       Rebarical     Nominal Value     Unit       Rebarical     Nominal Value     J/m       Rebarical     Nominal Value     Apros	General Information				
ShetAgency RatingsC1907/2006 (REACH)ReHS ComplianceReHS CompliantAppearanceColors AvailableFormsShetProcessing MethodCompression MoldingMechanicalNominal ValueMechanicalOhiFersile Strength 1StateAcross Flow: Yield68.9Rows Yield03BevarusterI-1-212.0-1-212.0-1-315.4Compressive StrengthI-1-417.0-1-512.7ImpactMPa-1-512.7ImpactMPa-1-512.7Arcoss Flow12.7ImpactMana-1-512.7Arcoss Flow28.0ImpactJinImpactManaFlow33ImpactJinElectricalNominal ValueImpactJinImpact	Features	Good Electrical Properties			
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RoHS Compliance       RoHS Compliant         Appearance       Colors Available         Forms       Sheet         Processing Method       Compression Molding         Mechanical       Nominal Value       Unit         Tensile Strength <sup>1</sup> Across Flow: Yield       68.9       MPa         Flow: Yield       103       MPa       Image: Second Se		Sheet			
RoHS Compliance       RoHS Compliant         Appearance       Colors Available         Forms       Sheet         Processing Method       Compression Molding         Mechanical       Nominal Value       Unit         Tensile Strength <sup>1</sup> Across Flow: Yield       68.9       MPa         Flow: Yield       103       MPa       Image: Second Se					
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Forms       Sheet         Processing Method       Compression Molding         Mechanical       Nominal Value       Unit         Tensile Strength <sup>1</sup> Tensile Strength       Image: Strength         Across Flow : Yield       68.9       MPa         Flow : Yield       103       MPa         Flexural Strength       Image: Strength       Image: Strength <sup>2</sup> 112       MPa <sup>3</sup> 154       MPa         Compressive Strength       Image: Strength       Image: Strength <sup>4</sup> 17       MPa <sup>5</sup> 127       MPa         Impact       Nominal Value       Unit         Notched Izod Impact <sup>6</sup> Image: Strength         Flow       33       J/m         Flow       33       J/m	RoHS Compliance	RoHS Compliant			
Processing Method       Compression Molding         Mechanical       Nominal Value       Unit         Tensile Strength <sup>1</sup> Image: Strength       Image: Strength         Across Flow : Yield       68.9       MPa         Flow : Yield       103       MPa         Flexural Strength       Image: Strength       Image: Strength <sup>2</sup> 112       MPa <sup>3</sup> 154       MPa         Compressive Strength       Image: Strength       Image: Strength <sup>4</sup> 117       MPa <sup>5</sup> 127       MPa         Impact       Nominal Value       Unit         Notched Izod Impact <sup>6</sup> Image: Strength         Flow       33       J/m         Flow       33       J/m         Flow       33       J/m	Appearance	Colors Available			
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Tensile Strength <sup>1</sup> Across Flow: Yield       68.9       MPa         Flow: Yield       103       MPa         Flow: Yield       112       MPa <sup>3</sup> 112       MPa <sup>3</sup> 154       MPa         Compressive Strength       Impact       MPa <sup>4</sup> 117       MPa <sup>5</sup> 127       MPa         Impact       Nominal Value       Unit         Across Flow       28       J/m         Flow       33       J/m         Electrical       Nominal Value       Unit         Dielectric Strength (In Oil)       7.1       K/mm	Processing Method	Compression Molding			
Across Flow : Yield68.9MPaFlow : Yield103MPaFlexural Strength22112MPa3154MPaCompressive Strength	Mechanical	Nominal Value	Unit		
Flow: Yield103MPaFlexural Strength2112MPa3154MPa	Tensile Strength <sup>1</sup>				
Flexural Strength <sup>2</sup> 112       MPa <sup>3</sup> 54       Compressive Strength <sup>4</sup> 117       MPa <sup>5</sup> 127       MPa       Impact     Nominal Value       Nominal Value     Unit       Flow     33       Impact     Nominal Value       Impact     33       Impact     Nominal Value       Impact     Nominal Value       Impact     13       Impact     13       Impact     Nominal Value       Impact     13       Impact     Nominal Value       Impact </td <td>Across Flow : Yield</td> <td>68.9</td> <td>MPa</td> <td></td>	Across Flow : Yield	68.9	MPa		
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3     154     MPa      3     154     MPa      4     117     MPa      5     127     MPa       Impact     Nominal Value     Unit       Notched Izod Impact 6     28     J/m       Flow     33     J/m       Electrical     Nominal Value     Unit       Across Flow     21     J/m       Flow     33     J/m					
Compressive Strength4117MPa5127MPaImpactNominal ValueUnitNotched Izod Impact 628J/mFlow33J/mElectricalNominal ValueUnitDielectric Strength (In Oil)7.1kV/mm	<sup>2</sup>	112	MPa		
<sup>4</sup> 117MPa <sup>5</sup> 127MPaImpactNominal ValueUnitImpact <sup>6</sup> J/mImpact <sup>6</sup> Across Flow28J/mFlow33J/mElectricalNominal ValueUnitDielectric Strength (In Oil)7.1KV/mmAcross Flow3.5KV/mm	<sup>3</sup>	154	MPa		
5127MPaImpactNominal ValueUnitNotched Izod Impact 628J/mFlow33J/mElectricalNominal ValueUnitDielectric Strength (In Oil)7.1KV/mm					
ImpactNominal ValueUnitNotched Izod Impact 628J/mFlow33J/mElectricalNominal ValueUnitDielectric Strength (In Oil)7.1kV/mm	4	117	MPa		
Notched Izod Impact 6       Across Flow     28       Flow     33       Flow     33       Electrical     Nominal Value       Dielectric Strength (In Oil)     7.1	5	127	MPa		
Across Flow28J/mFlow33J/mElectricalNominal ValueUnitTest MethodDielectric Strength (In Oil)7.1kV/mmASTM D149	Impact	Nominal Value	Unit		
Flow33J/mElectricalNominal ValueUnitTest MethodDielectric Strength (In Oil)7.1kV/mmASTM D149	Notched Izod Impact <sup>6</sup>				
Electrical   Nominal Value   Unit   Test Method     Dielectric Strength (In Oil)   7.1   kV/mm   ASTM D149	Across Flow	28	J/m		
Dielectric Strength (In Oil)   7.1   kV/mm   ASTM D149	Flow	33	J/m		
	Electrical	Nominal Value	Unit	Test Method	
Relative Permittivity ASTM D150	Dielectric Strength (In Oil)	7.1	kV/mm	ASTM D149	
	Relative Permittivity			ASTM D150	

1 MHz <sup>7</sup>	7.11			
1 MHz <sup>8</sup>	6.41			
Dissipation Factor			ASTM D150	
1 MHz <sup>9</sup>	0.86			
1 MHz <sup>10</sup>	0.67			
Arc Resistance			ASTM D495	
<sup>11</sup>	70.0	sec		
12	127	sec		
Dielectric Breakdown			ASTM D149	
13	3000	V		
14	26000	V		
NOTE				
1.	Condition A			
2.	Across Flow, Condition A			
3.	Flow, Condition A			
4.	Across Flow, Condition A			
5.	Flow, Condition A			
6.	E48/50			
7.	D24/23			
8.	Condition A			
9.	D24/23			
10.	Condition A			
11.	D48/50			
12.	Condition A			
13.	D48/50			
14.	Condition A			

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