

## HIGH IMPACT PLASTIC SHIMS: PROPERTY CHART

<u>MECHANICAL PROPERTY</u>	<u>UNITS</u>	<u>ASTM TEST</u>	<u>HIPS POLYMER</u>
specific gravity	-	D792	1.05
tensile strength, 73°	PSI	D638	8,000-10,000
tensile modulus of elasticity, 73°	PSI	D638	240,000
tensile modulus of elongation, 73°	%	D638	3
flexural strength, 73°	PSI	D790	10,000-15,000
flexural modulus of elasticity, 73°	PSI	D790	-
shear strength	PSI	D732	7,500-8,000
compressive strength	PSI	D695	-
compressive modulus of elasticity, 73°	PSI	D695	-
coefficient of friction	-	-	-
(dry vs. Steel) dynamic	-	-	-
hardness, rockwell, 73°	-	D785	R110-120
hardness, durometer, 73°	-	D676	D80-85
tensile impact, 73°	Ft.lb.in.2	D1822	-

### THERMAL PROPERTY

coefficient of linear thermal expansion	in./in./°F	D696	5.0x10(-5)
deformation under load (122EF 2,000 PSI)	%	D621	1.0
deflection temperature: 264 PSI	°F	D648	200-225
66 PSI	°F	D648	-
melting point	°F	D789	187
continuous service temp in air (maximum)	°F	-	215

### ELECTRICAL PROPERTY

dielectric strength short time	volts/mil	D149	700-1,200
volume resistivity	OHM - CM	D257	10
dielectric constant: 60HZ	-	D150	2.55
10/cubed HZ	-	D150	2.55
10/sixth HZ	-	D150	2.55

### CHEMICAL PROPERTY

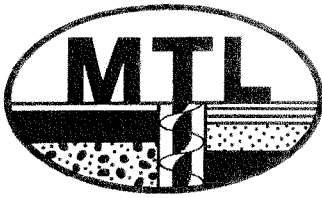
Water absorption immersion: 24 hours	%	D570	0.02-0.03
Acids: Weak 73°			A
Strong 73°			A
Alkalies: Weak 73°			A
Strong 73°			A
Hydrocarbons Aromatic 73°			U
Hydrocarbons Aliphatic 73°			U
Ketones 73°			L
Ethers 73°			L
Esters 73°			L
Alcohols			L
Inorganic Salt Solutions, 73°			L
Continuous Sunlight, 73°			-

### KEY

A = ACCEPTABLE SERVICE

L = LIMITED SERVICE

U = UNACCEPTABLE SERVICE



**MTL Group, Inc.**  
CONSULTING ENGINEERS

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**LABORATORY REPORT**

MASONPRO, Inc.  
43300 Seven Mile Road  
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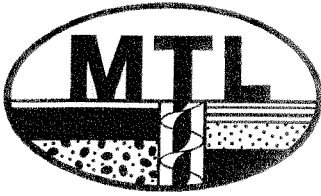
PROJECT: Laboratory Testing of  
Black Plastic Shims PC4214  
P.O. # 0013327

DATE TESTED: 01/31/07

MTL REPORT NO: 076380-03R

A. Compressive Strength, psi and load Vs. deflection.

Sample	Compressive Strength	
Color	-	Black
Part No.	PC4214	
Length, inches	-	3 <sup>7</sup> / <sub>8</sub>
Width, inches	-	1 <sup>7</sup> / <sub>8</sub>
Thickness, inches	-	<sup>1</sup> / <sub>4</sub>
Test Area, Sq. In.	-	7.26
Load, lbs	PSI	Deflection, in.
1,000	138	0.001
2,000	275	0.003
3,000	413	0.004
4,000	551	0.005
5,000	689	0.007
6,000	826	0.008
8,000	1102	0.009
10,000	1377	0.010
12,000	1653	0.012
14,000	1929	0.013
16,000	2204	0.014
18,000	2499	0.015
20,000	2755	0.016
22,000	3030	0.018
24,000	3306	0.020
26,000	3581	0.021
28,000	3857	0.023
30,000	4132	0.025
35,000	4821	0.028
40,000	5510	0.031
45,000	6198	0.033



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50,000	6887	0.035
60,000	8264	0.038
70,000	9642	0.041
80,000	11019	0.043
90,000	12397	0.045
100,000	13774	0.047
120,000	16529	0.050
140,000	19288	0.053
160,000	22039	0.056
180,000	24793	0.059
200,000	27548	0.063
220,000	30303	0.067
240,000	33058	0.072
260,000	35813	0.076

Respectfully submitted,  
MTL GROUP, INC.  
Joseph Z. Khakshour