



**Technical Data Sheet:**

**North Wood Plastics Wood-Filled  
Molding Grade HDPE**

North Wood Plastics wood-filled HDPEs provide an attractive balance of increased stiffness with retained toughness. For those products demanding even higher performance, impact modified grades are also available.

Molding grades find application in traditional high-pressure injection molding, as well as in structural foam molding. Structural foam technology is used to produce a variety of parts—from brush blocks to tool boxes to pallets.

PROPERTY	UNITS	ASTM TEST	UNFILLED RESIN <sup>a</sup>	20% FIBER	40% FIBER	60% FIBER
Density	g/cc	D792	.953	1.003	1.054	1.158
Melt Flow Index	g/10 min	D1238	20	2.6 <sup>b</sup>	2.3 <sup>b</sup>	1.5 <sup>b</sup>
Mold Shrinkage	%	D955	n/a	1.35	.72	.56
Tensile Strength @ Yield	psi (MPa)	D638	3850 (26.5)	2480 (17.1)	2580 (17.8)	2250 (15.5)
Tensile Strength @ Fail	psi (MPa)	D638	n/a	2170 (14.9)	2320 (16.0)	2180 (15.1)
Tensile Modulus	psi (GPa)	D638	n/a	245,000 (1.7)	390,000 (2.7)	642,000 (4.4)
Elongation	%	D638	19	15	4.9	1.3
Flexural Modulus	psi (GPa)	D790	189,000 (1.3)	210,000 (1.4)	352,000 (2.4)	589,000 (4.1)
Flexural Strength	psi (MPa)	D790	n/a	4420 (30.5)	5090 (35.1)	4310 (29.7)
Notched Izod Impact	ft-lbf/in (J/m)	D256	0.56 (29.9)	0.5 (27.7)	0.4 (20.9)	0.3 (16.1)
Un-notched Izod Impact	ft-lbf/in (J/m)	D256	n/a	2.7 (145)	1.0 (55)	0.5 (27)
HDT (@ 264 psi)	°F (°C)	D648	n/a	113 (45)	127 (53)	143 (62)

<sup>a</sup> Unfilled resin data from published sources.

<sup>b</sup> Molding characteristics of wood-filled PE are often much better than the Melt Flow Index suggests.

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## Processing Guidelines: *Injection Molding*

The optimum performance of North Wood Plastics wood-filled compounds can be tailored by polymer choice, wood filler type and amount, and additive selection.

Processing conditions, such as injection pressures and speeds may be required to optimize molding conditions. Many molders take advantage of the lower heat content of our wood-filled resins to reduce cycle times by 10 to 30% compared to unfilled materials.

Some molders choose to add our heavily-loaded, wood-filled plastic compounds as "concentrates" or "masterbatches", blending them into their standard house resins. Others prefer our custom compounds made with the exact fiber content needed for maximum consistency and convenience. Regardless of form, the following processing guidelines apply:

### SUGGESTED PROCESSING CONDITIONS

ITEM	CONDITIONS	COMMENTS
Dryer Inlet Temperatures		
HDPE, LDPE, PP	220° F	Typical desiccant dryers are satisfactory.
Styrenics	190° F	
Dew Point	-20° F	Dry to -20° F or until Inlet Dryer Temp - Outlet Dryer Temp = 10° F.
Drying Time	2-4 hours	Varies depending on initial moisture content, dryer efficiency and relative humidity.
Processing Temperatures		
Rear	< 360° F	Excessively high barrel heats can cause scorching.
Middle	< 370° F	
Front	< 380° F	
Nozzle	< 380° F	
Residence Time	< 15 minutes	Avoid excessively long residence times. Purge if necessary.
Blowing Agents		Low temperature blowing agents can be used effectively.
Screw Type	Conventional	Suggested.