

## AGS TECHNOLOGY CASE STUDY: INJECTOBLEND™ BRACKETS SUMMIT THE FRONT FASCIA OF DENALI

### PRODUCT PROFILE

**Industry:**

Automotive (Exterior)

**Applications:**

GMC Yukon Denali Fascia Brackets

**Material Description:**

33% Glass Reinforced Nylon 66

**Requirements:**

- Tensile Strength
- Toughness
- Chemical Resistance
- Dimensional Stability

### CUSTOMER ISSUE

Fascias are subjected to very demanding physical and environmental conditions, especially front end systems. These demanding conditions often require more expensive, high performance engineering polymers for use in functional black mounting brackets. The front fascia support brackets on the GMC Yukon Denali were no exception as specified by General Motors Materials Engineering in a 33% glass reinforced Nylon 66.

### AGS INJECTION MOLDING SOLUTION

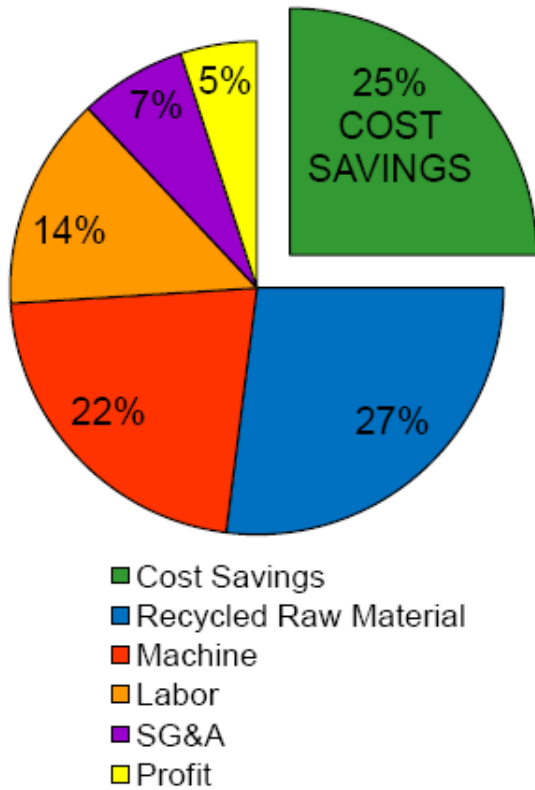
To help contain the cost of using virgin materials, AGS Technology specializes in injection molding recycled grades of polyamides into fascia mounting brackets. AGS Injectoblend™ FPA66233 is a 33% glass reinforced Nylon 66 approved to General Motors GMP.PA66.013 offered at an unbeatable cost to performance ratio.



**LOWER FASCIA BRACE COST SAVING EXAMPLE**

Piece Part Cost Savings = \$0.08  
Percent Cost Saving = 25%

**GMC Yukon Denali Fascia Brace Piece Part Price  
AGS Injectoblend™ FPA66233**



**AGS** Technology Inc.

To find out more about how you can take advantage of AGS Technology's unique injection molding capability using Injectoblend™ materials call (847) 534-6600.

Typical Properties of AGS Thermoplastics

**INJECTOBLEND™ FPA66233**

Nylon 6'6, 33% Glass Fiber Reinforced, Heat Stabilized

Properties reported DAM. Further information is available upon request

Properties Reported DAM. Properties @ 50% RH are available upon request	Test Method	English		Metric	
		(U.S.)	Units (System)	(S.I.)	Units (System)
<b>PHYSICAL</b>					
Specific Gravity, solid	D 792	-	1.40	-	1.40
Mold Shrinkage, flow, 0.125" (3.2mm)	D 955	%	0.3	%	0.3
Mold Shrinkage, cross-flow, 0.125" (3.2mm)	D 955	%	1.1	%	1.1
Water Absorption, 73F (23C), 24 hrs	D 570	%	0.6	%	0.6
Water Absorption, saturation, 73F (23C)	D 570	%	5.4	%	5.4
Fiberglass Content	D 2584	%	33	%	33
<b>MECHANICAL</b>					
Tensile Modulus, 73°F (23°C)	ISO 527-1/2	-	-	MPa	10,000
Tensile Strength @ Break, 73°F (23°C)	D 638	Psi	25,000	MPa	173
	ISO 527-1/2	-	-	MPa	170
Tensile Elongation @ Break, 73°F (23°C)	D 638	%	2	%	2
Flexural Strength, 73°F (23°C)	ISO 178	-	-	MPa	255
Flexural Modulus, 73°F (23°C)	ISO 178	-	-	MPa	8,500
Izod Impact Strength, notched, 73°F (23°C), 0.125" (3.2mm)	D256	ft-lb/in	2.0	J/m	107
Izod Impact, Strength, notched, 23°C, 4 mm	ISO 180 1/A	-	-	kJ/m²	10
Izod Impact Strength, notched, -30°C, 4 mm	ISO 180 1/A	-	-	kJ/m²	7
Charpy Impact Strength, 23°C, 4 mm	ISO 179/1eU	-	-	kJ/m²	70
<b>THERMAL</b>					
Deflection Temperature, unannealed	D 648				
264 psi (1.82 MPa), Load		°F	473	°C	245
66 psi (0.45 MPa), Load		°F	482	°C	250
1.82 MPa Load, flatwise	ISO 75-1/2	-	-	°C	248
CLTE, -40 °C - +35 °C (-40 °F - +95 °F)	D 696	in/in/°F	1.38 E-5	m/m/°C	2.50 E-5
Melting Point	ISO 3146	°F	502	°C	261
<b>FLAMMABILITY</b>					
UL 94 Flame Class. 0.058" (1.47mm)	UL 94	-	HB	-	HB
2.00mm +/- 0.2 mm	ISO 3795	-	-	mm/min	<100

The values shown on the data sheet are typical values that have been obtained on typical AGS materials, are not intended for specification purposes and are provided without any warranty or guarantee. Each user of the material should make his own test to determine the suitability of the material for his use. Therefore, it is understood and agreed that the customer assumes and hereby releases AGS Technology, Inc. from all liabilities, incurred in connection with the use of AGS products, technical assistance and information.