

The Aluminum Association Presents: 2015 Ducker Worldwide Automaker Survey

DRIVING INNOVATION
// AUTOMOTIVE ALUMINUM FOR THE MASSES //

A SURVEY OF AUTOMAKERS CONDUCTED BY DUCKER WORLDWIDE CONFIRMS FUTURE TRUCKS, SUVs AND SEDANS WILL BECOME LIGHTER, SAFER AND MORE EFFICIENT WHILE MAINTAINING SIZE

BY 2025 // WHAT'S COMING?

7/10 NEW PICKUPS WILL HAVE AN ALUMINUM BODY

**Automakers
Driving Forward
with Aluminum**



An Aluminum Association Webinar

DriveAluminum.org/ducker | [@DriveAluminum](https://twitter.com/DriveAluminum)

Aluminum Transportation Group (ATG)



2015 Survey Results: Aluminum Use by North American Automakers

Discussion Outline

- **About Ducker Worldwide & 2015 Study**
- **Aluminum Growth: 2015 – 2025**
- **Emerging Aluminum Growth**
- **Questions**



DUCKER WORLDWIDE
Advancing Growth



Download the executive summary:
DriveAluminum.org/ducker

Ducker Worldwide – Introduction

Market Intelligence and Research

Strategy Consulting

Transaction Advisory and Diligence

Ducker Facts

- 52 Year history
- 150 Team members worldwide
- 275 End-use markets served
- 34 Languages spoken
- 98 Countries where they have experience

Global Footprint



Industry and Sector Experts

Automotive
OEM
Aftermarket

Industrials &
Raw Materials

Building Products &
Materials

Business Services

Heavy Equipment &
Capital Goods

Healthcare Device &
Services

Aluminum Study Methodology – 7th Edition

Two Pronged Simultaneous Approach



Study Attributes

- Six-month market research
- “Bottom up” forecasting process

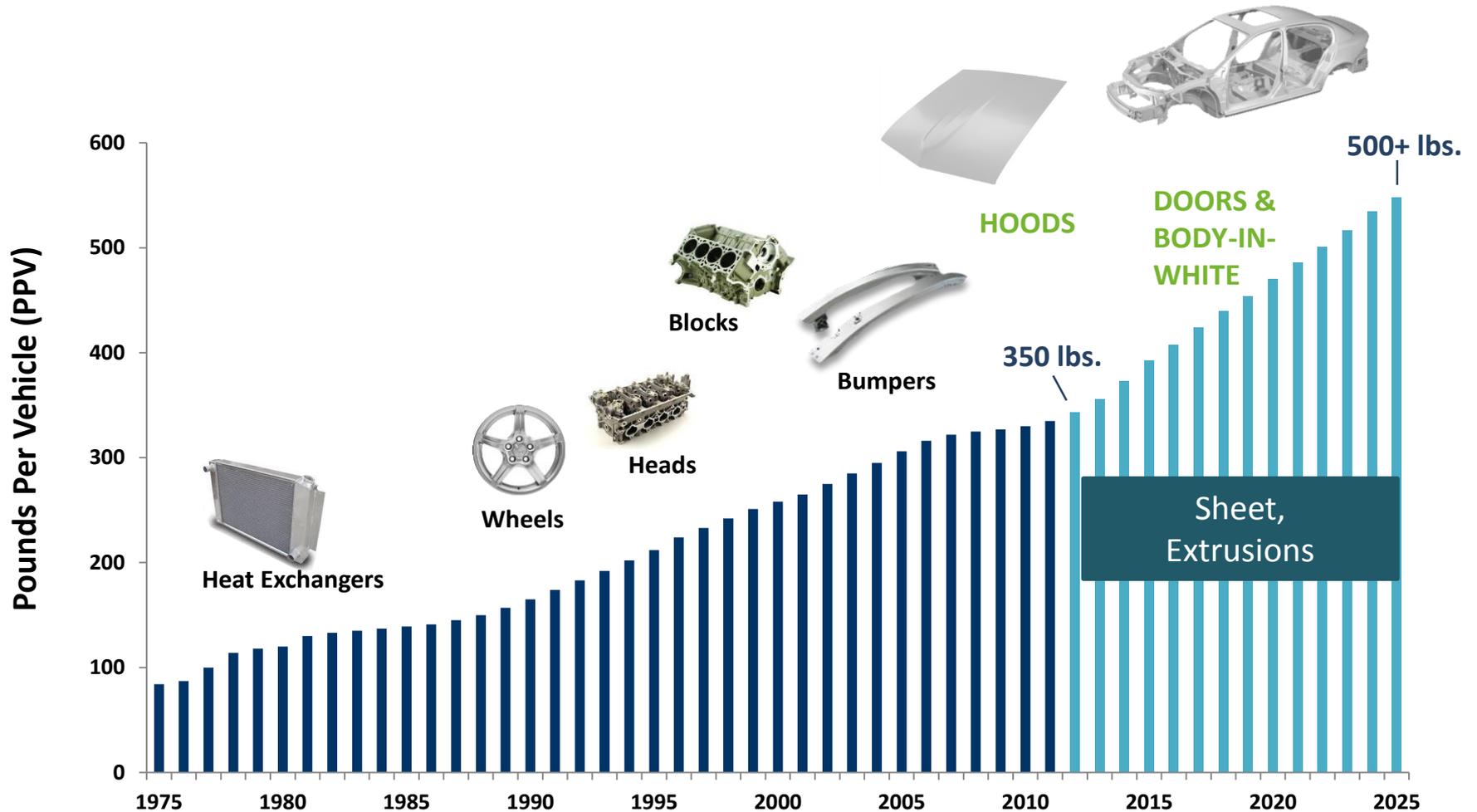
TEAM A

- Forecasts NA vehicle production
- Develop master part weight and product form file
 - Domestic NAFTA production
 - Manufacturer / Model specific
 - Yearly to 2025
 - Actual / estimated part material, process, weight
- Recalculate 2012 content by vehicle and component with latest changes in part weights and penetrations
- Fieldwork on industry trends for key vehicle components
- Develop trend forecast of material use for most vehicle components

TEAM B

- OEM / Tier 1 interviews - materials use plans
- Estimate future penetration for alternative materials
- Estimate material breakdown by product and product form
- Determine final content breakdown by component, vehicle segment and product form

50 Years of Automotive Aluminum Growth

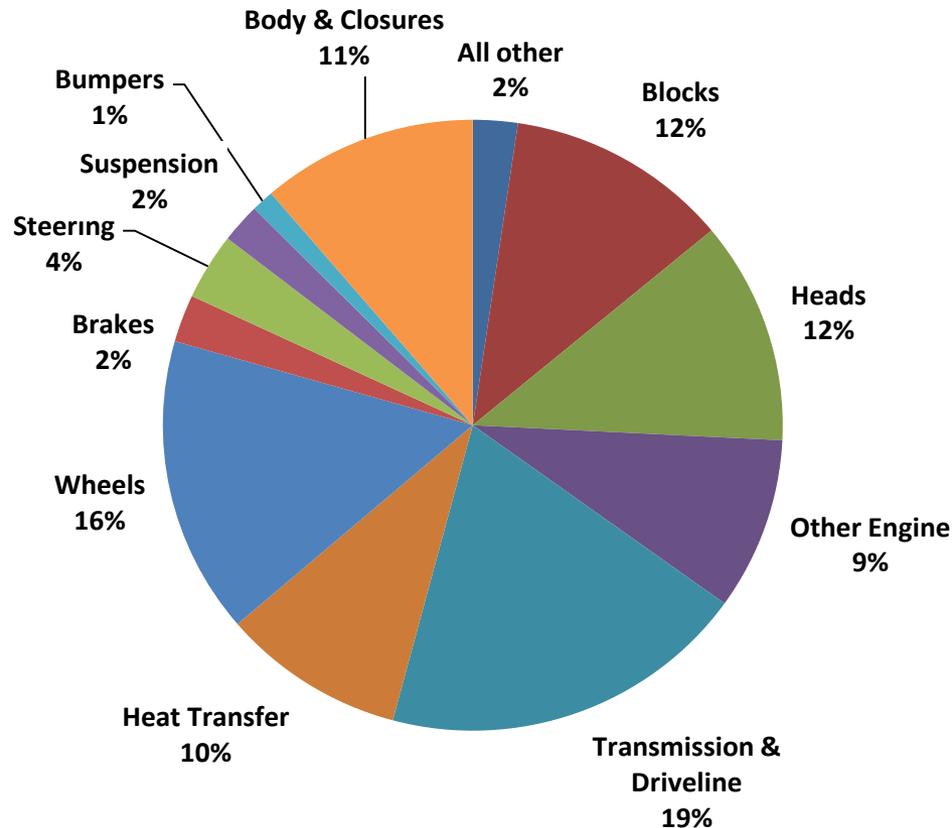


Ducker 2015 - Key Aluminum Findings

- **40 year growth trend continues**
 - (+7 lbs. per year)
 - accelerating
- **Highest growth - 2015**
 - First high-volume automotive body and structures
F-150 pickup truck all-aluminum body
 - sheet and extrusions - body, closures
- **Continued growth**
 - non-body applications: castings and extrusions
- **Aluminum content**
 - 10% of average curb weight (393 PPV)

2015 Total Aluminum Content

Aluminum Component Share by Weight



11%

Body & Closures

73%

Castings

33%

Engine

6.9 Billion Pounds

2015 Aluminum Content by Segment

A/B Segment

Fiat 500
Ford Fiesta



252 lbs.
3% of Production

MPV Segment

Honda Odyssey
Chrysler Town & Country



396 lbs.
4% of Production

C Segment

Ford Focus
Honda Civic



274 lbs.
17% of Production

SUV Segment

Chevy Suburban
Jeep Grand Cherokee



410 lbs.
33% of Production

D Segment

Chevy Malibu
Dodge Charger
MUSTANG



363 lbs.
21% of Production

VAN Segment

Dodge Sprinter
Ford Transit



273 lbs.
2% of Production

E Segment

Cadillac XTS
STING RAY



547 lbs.
2% of Production

PU Segment

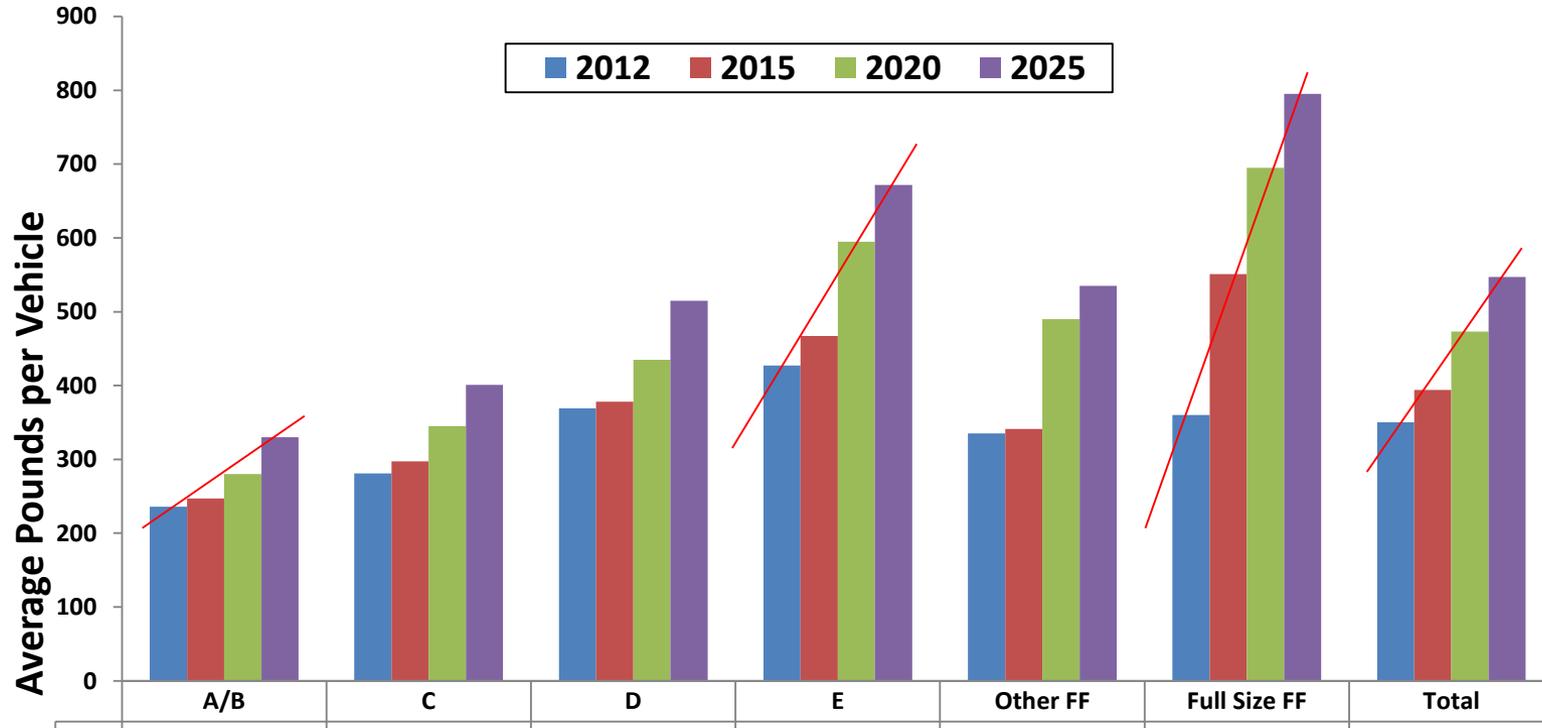
Ford F150
Ram 1500



549 lbs.
17% of Production

Vehicle Segment Analysis

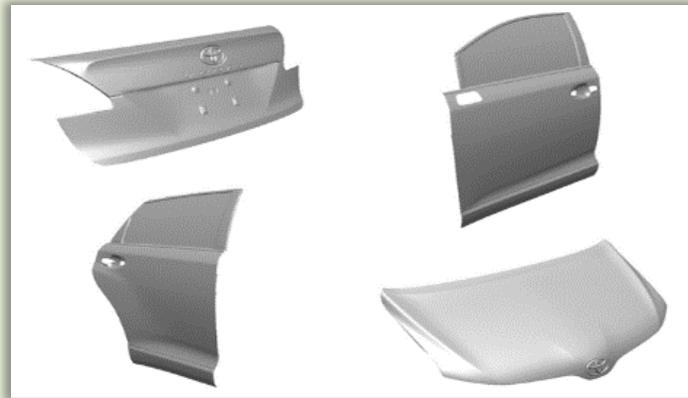
Aluminum Content Change by Vehicle Segment



Ducker 2025 - Key Aluminum Projections

- **50 years uninterrupted growth**
 - last 10 years: +14 lbs. per year
- **Main aluminum content increase**
 - body sheet and extrusions
- **7 out of 10 new pickup trucks**
 - aluminum-bodied
- **Continued growth in non-body applications**
 - castings and extrusions
- **Aluminum content**
 - 16% of average curb weight (547 PPV)
 - 60% increase over 2015

Emerging Growth Segment: Aluminum Closures and Bodies



ALUMINUM PENETRATION BY 2025

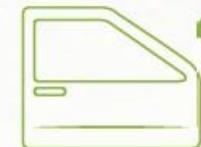
85%
HOODS



18%
COMPLETE BODIES



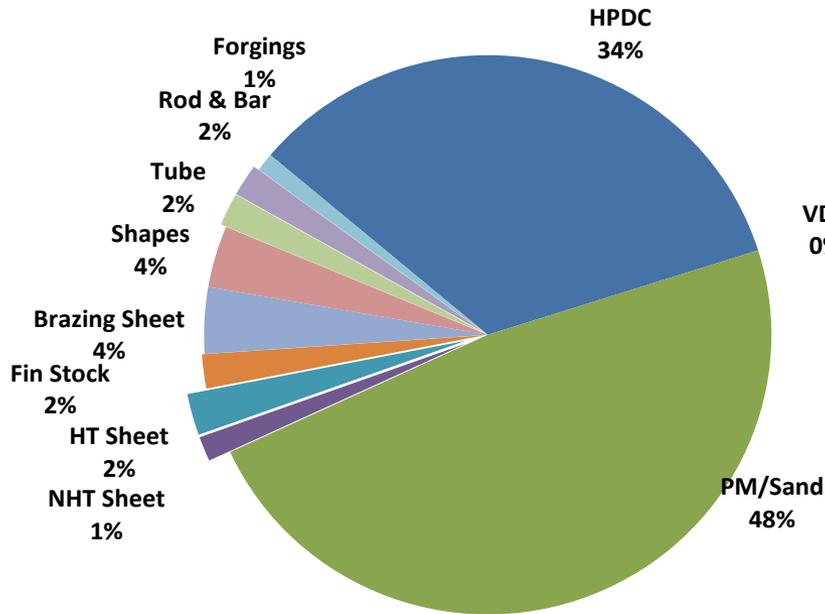
46%
DOORS



2012 – 2025 Aluminum Products Transition

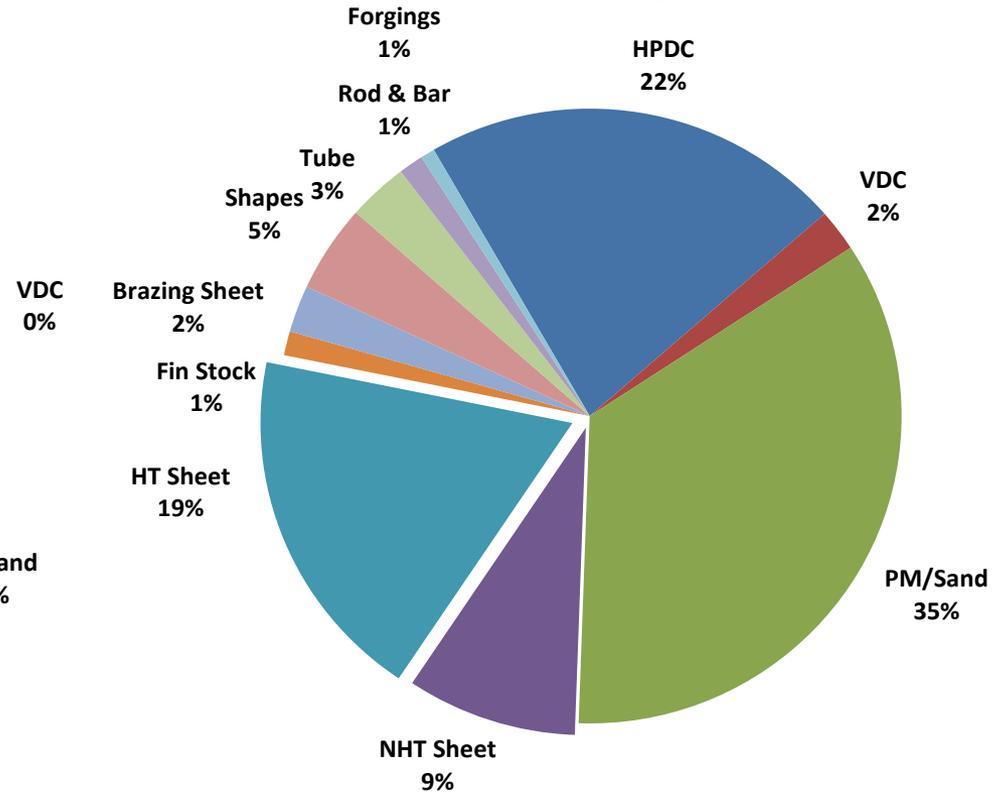
Mill Products: 18% - 41%

2012



18% Mill Products

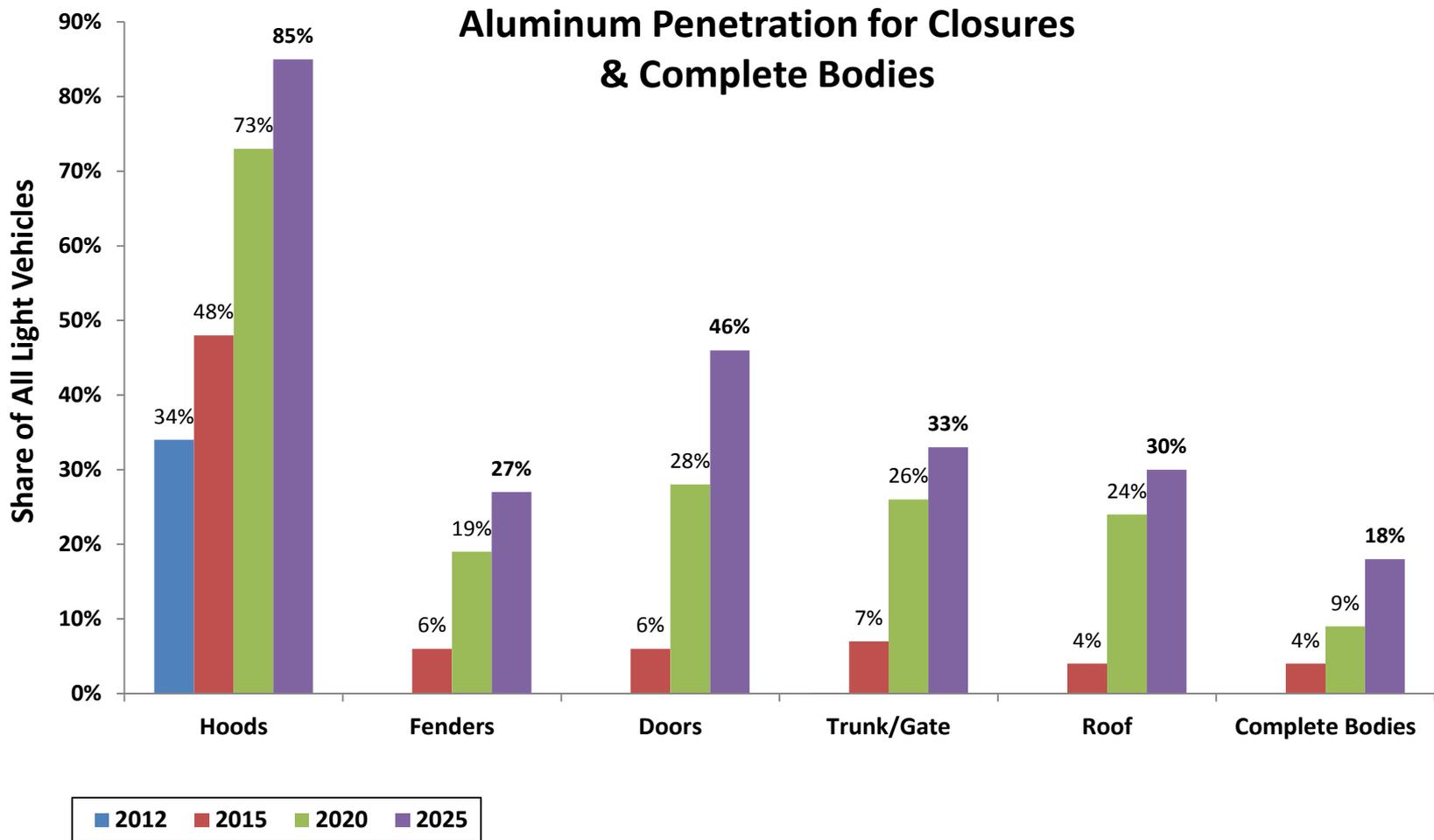
2025



41% Mill Products

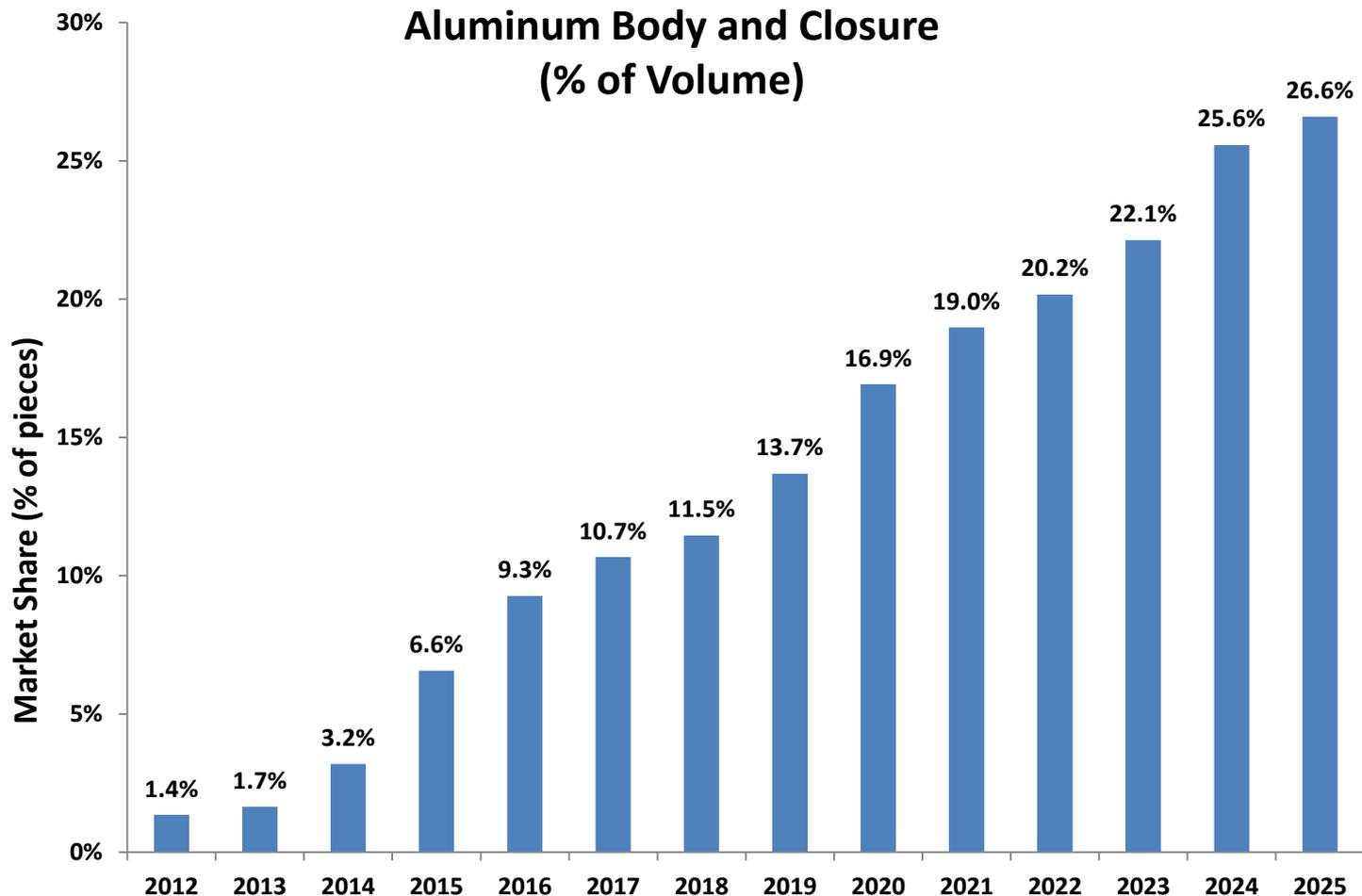
2012 - 2025

Growth in Aluminum Body & Closures



2025

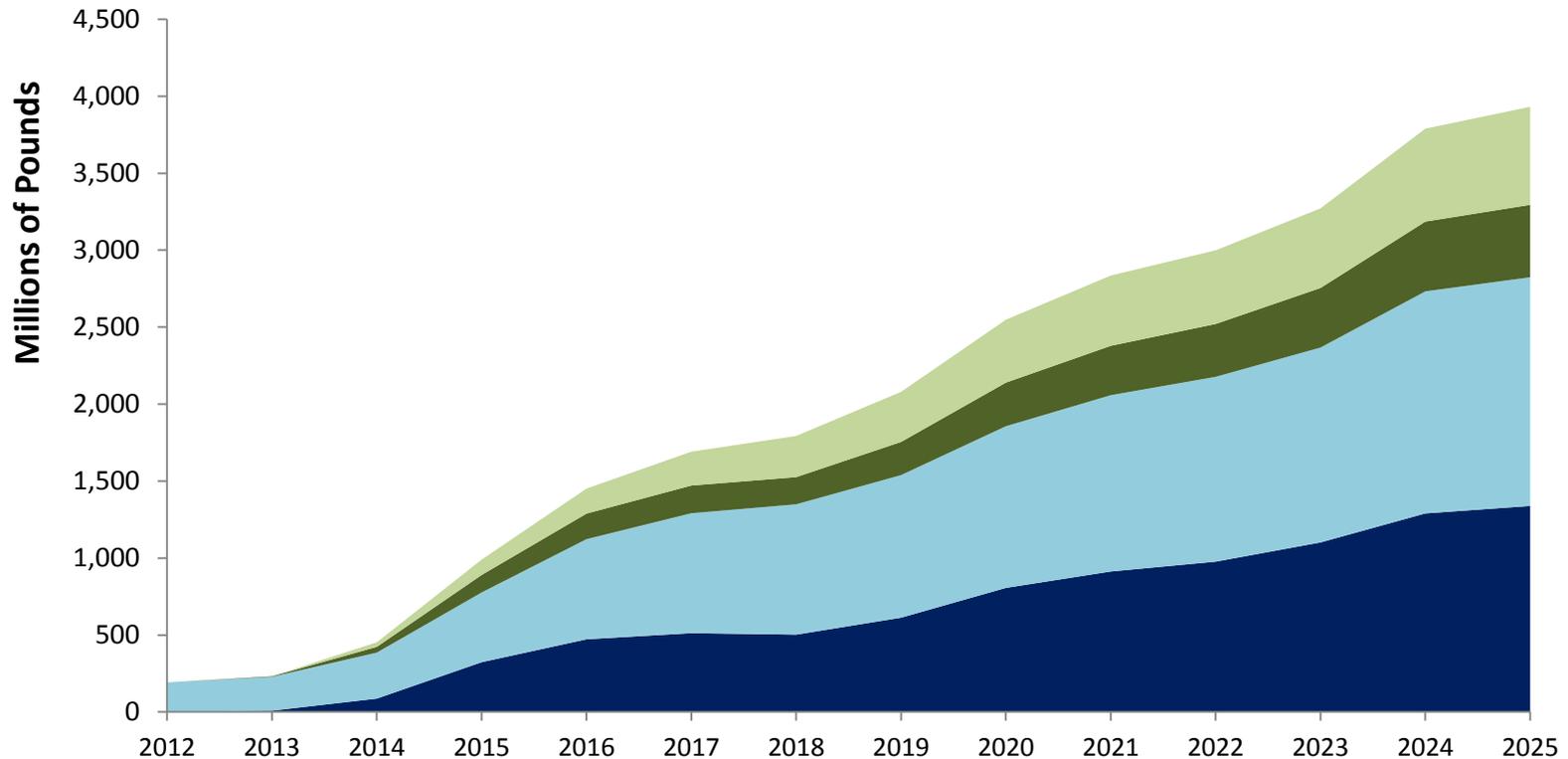
26% of Body & Closures Parts Aluminum



Aluminum Sheet Shipments Approach 4B Pounds

Sheet shipments: 70% 6xxx; 30% 5xxx alloys

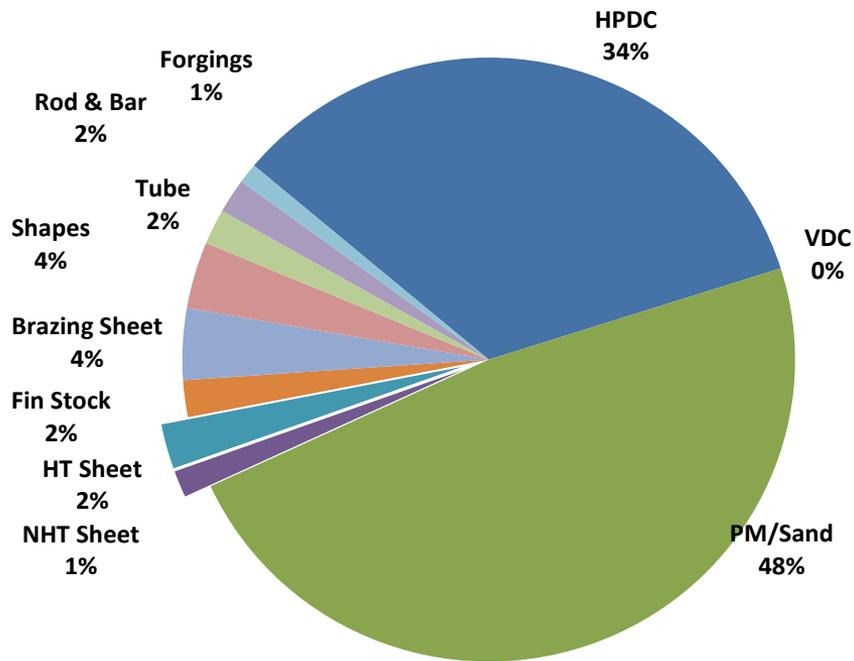
North American Light Vehicle Gross Aluminum Sheet (MM pounds)



2012 – 2025 Aluminum Product Forms Transition

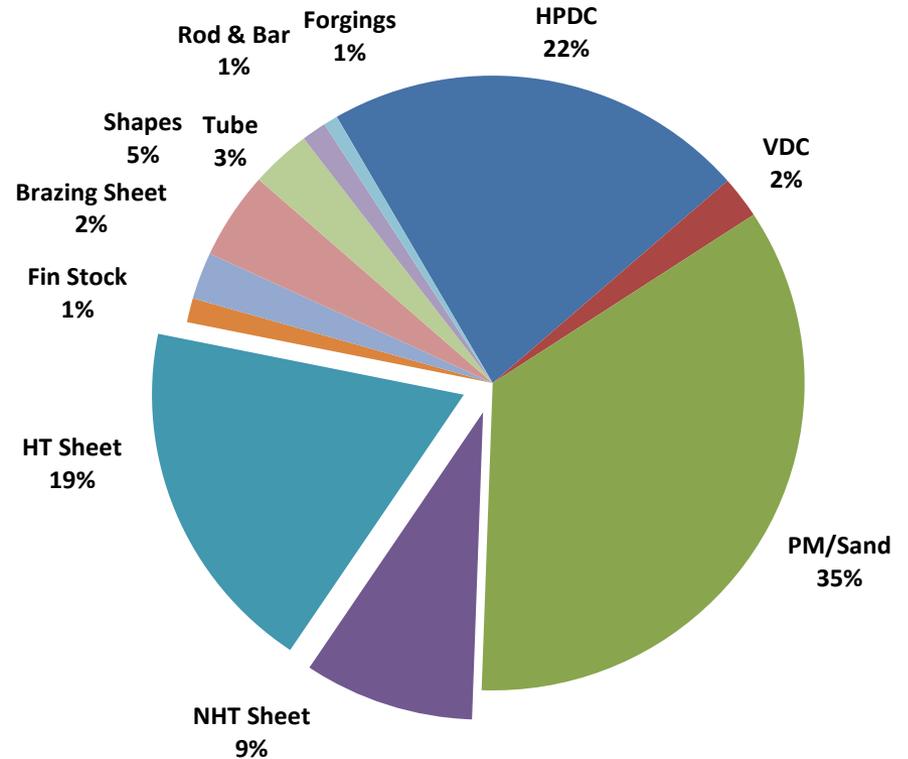
Mill Products: 18% - 41%

2012



18% Mill Products

2025



41% Mill Products

Summary – Automotive Aluminum 2025

- ✓ Multi-material vehicle designs – the new norm
Efficient utilization of all available materials
- ✓ Automakers - Increasing Aluminum Use
16% by 2025 (10% 2015)
+ 14 Lb./Yr. – Next 10 years (+ 7 Lb./Yr. – Past 40 years)
- ✓ Emerging Applications – Closures and Body
Closures - 26% by 2025
Body - 18% by 2025
Sheet and Extrusions average: + 128 Lbs./Veh. average



Thank you!

**Q & A | Please submit
questions through the box
that appears on your screen**

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