



## *Magnesium Sets a New Protection Standard: Durability, Strength and Cutting-Edge Style*

A new era of magnesium-alloy-encased computer notebooks emphasizes lightness and toughness to support and protect the hottest technology contained within. Millions of notebook cases are being manufactured at a breakneck pace to satisfy continued demand for various notebook applications including business, industrial, public safety, military, gaming, and personal use.



The slim, sleek profile of magnesium alloy casing is lightweight, yet tough.

the two most important components in the unit. Both are cast of magnesium alloy AZ91D and exhibit the key attributes Dell needed to protect the extra-bright Hi-Definition LED 13.3-inch widescreen display, the motherboard, hard drive, and all internal components." The Inspiron™ XPS M1330 notebook has been praised for its cutting-edge technology and its stunning design, dubbed "One of the world's thinnest 13.3-inch notebooks."

Dell Inc. exemplifies the computer industry's growing use of magnesium in notebook hardware. Drew Moore, Director of Mechanical Engineering for Dell's product group says, "In my view, the top surface and the base of our XPS M1330 notebook are

Photos © Copyright courtesy of Dell Inc. Used with permission.

© 2007 International Magnesium Association. All Rights Reserved.

1000 N. Rand Rd. Suite 214 Wauconda, IL 60084 USA | Voice: (847) 526-2010 | Fax: (847) 526-3993 | info@intlmg.org | www.intlmg.org



The Dell XPS M1330 notebook case tops feature powder-coated magnesium alloy in Tuxedo Black, Crimson Red, and Alpine White.

Magnesium alloy top and base components add a high-end, elegant feel to the M1330. Users say it has the best tactile feel, a surface that looks stylish and is durable, unlike a plastic toy. The upscale M1330 has a built-in webcam and offers total connectivity with Bluetooth, Wi-Fi and mobile broadband options. It is manufactured in Tuxedo Black, Crimson Red, and Alpine White finishes; it also features an available biometric fingerprint reader. Moore notes the techniques used to finish the magnesium alloy: "Paint finishes vary from 1K high-temperature paint which is a "wet paint," to hydrographics which is a floating film technology."



Magnesium alloy AZ91D is the mainstay of these business notebooks' top and base components.

*"In my view, the top surface and the base of the notebook are the two most important components in the unit... The magnesium construction is critical to protecting the inner components."*

*Drew Moore, Dell Inspiron Product Manager*

"The magnesium alloy case, the top surface and the bottom base, have a good feel of rigidity and stiffness," said Moore, "Eighty percent of our business notebooks are shipped with these magnesium components across the board. The XPS line is designed for performance. Magnesium gives a thinner, lighter product, using about 1.5 pounds of magnesium in each notebook." The M1330's sleek magnesium alloy case design helped it win PC Magazine's Editor's Choice Award in 2007.



Primed magnesium alloy notebook cases on the paint line await their final high-tech finish coat.

Media relations director Robert Kaufman notes, "Users say the XPS M1330 has the look and feel of a serious business product. Dell XPS notebook models all use magnesium alloy housing, including the newly introduced M1730 high-performance gaming notebook, and Dell's D430, D630, and D830 notebooks, which all rely exclusively on magnesium backs and bases. We speak to three million customers per day regarding our notebooks."

## Magnesium Alloy Means Toughness and Durability

"Using magnesium backs and bases lengthens the notebook's life and stands up to much greater damage that ordinary notebooks could not withstand," notes Moore. Dell first began using magnesium components in their notebooks in 2003 and introduced the current line of magnesium notebook components in 2005. According to Kaufman, the magnesium-housed notebooks are used in a variety of ways by gamers, business travelers, and workers in industrial settings.

*"Magnesium gives a thinner, lighter product, using about 1.5 pounds of magnesium in each notebook."*

*Drew Moore*



Componentry is well-protected as it is carefully installed into the magnesium notebook base on a subassembly line.



Magnesium case components on Dell's Latitude ATG D630 notebook protect the technology inside under extreme conditions, meeting military specs for durability.

Dell's Latitude ATG D630 notebook, considered its most rugged model, also uses magnesium alloy backs and bases and meets military specifications. This model takes a beating not only for military use, but in applications such as police patrol cars and oil rigs. "The magnesium construction is critical to protecting the inner components on the D630. It especially protects the high-visibility LCD screen, which is viewable outdoors even in direct sun," Moore notes.

*"Eighty percent of our notebook models now use magnesium alloy housing."* Robert Kaufman, Dell Media Relations

## Reuse and Recycling an Essential Advantage of Magnesium

*According to Robert Brown, publisher of Magnesium Monthly Review, the greatest growth item for magnesium over the past several years has been computer notebooks.*

*With so many casting machines now dedicated to computer notebook production, reuse and recycling magnesium alloy material is a major consideration. At the core of Dell's environmental initiatives is their motto: "No computer should go to waste." Kaufman says "Dell's magnesium recycling program is robust. Our company has an extensive commitment to reuse and recycling." Kate Krebs, director of the National Recycling Coalition says "Dell is leading the computer industry with its new program that makes computer recycling cost-effective and convenient for consumers no matter where they live in the United States. The Dell Recycling program exemplifies a higher environmental stewardship for any company, in any industry." Dell has partnered with the Environmental Protection Agency's national education program Plug into Recycling, and its National Cristina Foundation provides refurbished technology equipment to disabled and economically disadvantaged children and adults.*

Photos © Copyright courtesy of Dell Inc. Used with permission.

© 2007 International Magnesium Association. All Rights Reserved.

1000 N. Rand Rd. Suite 214 Wauconda, IL 60084 USA | Voice: (847) 526-2010 | Fax: (847) 526-3993 | info@intlmg.org | www.intlmg.org



Magnesium alloy notebook base is positioned at a computer numerical control (cnc) center for secondary machining. Millions of units are manufactured to meet ever-increasing global demand.



The Dell XPS M1730 uses magnesium alloy (AZ91D) top and base to protect elite 3-D graphics, programmable lighting, and the first notebook physics processing unit for dynamic motion and interaction.



*“Magnesium alloy AZ91D components integrate very well with the notebook’s other components, due to castability and great dimensional stability.” Drew Moore*

“Magnesium alloy AZ91D components integrate very well with the notebook’s other components, due to castability and great dimensional stability. These components have all of the proper geometries from those processes, with all of the durability and strength of magnesium. Sturdiness is a measurable benefit – users can feel the quality and stiffness of the magnesium,” Moore states, “Magnesium alloy protective casing stands up to greater damage that ordinary notebooks are not designed to withstand, lengthening the notebook’s service life substantially.”

Magnesium alloy serves as the lifeblood of today’s notebook case components, giving the high-end look and feel, extended lifecycle, and lightweight design essential to achieving success in a highly competitive marketplace. Magnesium alloy provides the strength and protection that cannot be achieved with any plastic or hybrid composite materials. Magnesium’s outstanding durability allows the advanced technology contained within notebook computers to endure unscathed year after year. ❖

*“Magnesium alloy protective casing stands up to greater damage that ordinary notebooks are not designed to withstand, lengthening the notebook’s service life substantially.” Drew Moore*

### *Fast Facts:*

- » Inspiron XPS M1330 notebook features premium Magnesium Alloy AZ91D casing for elegance and durability
- » 80% of Dell’s business notebooks and all of its XPS notebook line utilize magnesium alloy back and base for rigidity, stiffness, and performance
- » Magnesium alloy case on Latitude ATG D630 notebook meets military specs for ruggedness and durability
- » Approximately 1.5 pounds of magnesium alloy used in each M1330 notebook
- » Magnesium alloy case protects the display, mother board, hard drive, and all critical components.



Photos © Copyright courtesy of Dell Inc. Used with permission.

To learn more about the benefits of designing products with magnesium, contact the **International Magnesium Association**  
1000 N. Rand Road, Suite 214, Wauconda, IL 60084 USA  
Tel. 847.526.2010 • Fax 847.526.3993 • E-mail: info@intlmg.org • www.intlmg.org

© Copyright 2007, International Magnesium Association

*IMA: The global voice of the magnesium industry*