



ArcelorMittal

news release

ArcelorMittal unveils new ultra lightweight car door solutions offering up to 34 percent weight savings over existing steel car doors

Maizières-les-Metz, June 25th 2013 - ArcelorMittal, the world's largest steel and mining company, today unveiled its new, innovative ultra lightweight car door solutions. Using steels and technology currently available, ArcelorMittal's global research and development (R&D) automotive team has demonstrated that a 27 percent weight and cost saving can be achieved without compromising safety and structural requirements. By looking ahead to new advanced high strength steels and technology that will come to market over the next few years, the team has identified additional solutions that will deliver even greater weight savings – up to 34 percent compared to existing steel car door solutions.

Opening the door to weight savings

Carmakers need to reduce the weight of their vehicles in order to meet future regulations; currently-enacted regulations in Europe (tailpipe emissions) come into full force in 2015 and those for the USA (tailpipe emissions and fuel economy) come into full force in 2021. With even tougher standards being considered for the years ahead to 2025 in both regions, every part of the vehicle is being studied to determine where weight can be reduced. By reducing the weight of the vehicle by around 12 kg (26 lbs), one gram of CO₂-equivalent emissions per kilometre (1.6 g/mile) is saved.

Brian Aranha, vice president automotive worldwide said: “As the leading supplier of steels to the global automotive industry, we have worked with all carmakers for many years to help them reduce the weight of their vehicles. ArcelorMittal's S-in motion study launched in November 2010 has already identified a whole range of innovative steel solutions that are significantly reducing the weight of the body-in-white (BIW) of current and future production vehicles, including hang-on parts such as doors. This is the next step for us in continuing to offer weight saving solutions and subsequently cost savings to our customers. Automotive is one of our franchise businesses and we are discussing with all the major OEMs to work with them to integrate these new solutions into the design of future cars.”

Short-term weight savings with existing steel grades

Using a combination of existing advanced high strength steels (AHSS) and ultra high strength steels (UHSS) it is now possible to reduce the weight of the baseline C-segment door from 18.3 kg (40.3 lbs) to just 13.3 kg (29.3 lbs) while meeting standard structural and safety requirements. This is truly a momentous weight reduction for one automotive application, especially considering automotive weight savings is typically measured in grams. This short-term solution uses UHSS grades such as MS 1500 and Usibor[®] for structural parts, and Dual Phase steels such as FF280DP for the outer panel. These steels are available now and are already being utilised in production vehicles today.

In the redesigned outer panel of the short-term front door solution, a 0.6 mm FF280DP grade is used and local reinforcements (patches) are added to improve stiffness. This solution also includes a new laser welded blank (LWB) inner panel concept with a very thin gauge.

Part of the weight savings in both the short- and medium-term solutions is achieved by using thinner steel for the outer door panel. Known as down-gauging, this technique is only possible with steels that exhibit increased yield strength while ensuring the doors will pass industry standards for dent resistance.

Medium-term solutions with new steel grades in development

The 'medium-term' solutions go further in lightweighting while maintaining the same performance levels. Local properties are optimized by the use of LWBs. Several options are possible in order to match the different types of doors to each customer's need. The new high strength steels and technology will come to market in the next few years, making these solutions available by 2017.

The requirements of a C-segment door include the management of both frontal and lateral crash load cases. ArcelorMittal proposes an evolution of the short-term solution toward lighter doors with up to a 34 percent weight reduction, resulting in a total door weight of about 12 kg (26.4 lbs). This involves innovative steel grades which are currently under development such as Usibor[®] 2000 for some non-visible parts and other AHSS for the outer panel in order to reduce the outer panel thickness to 0.5 mm. The requirements for larger D-segment doors do not include the frontal crash load cases, allowing lighter doors with more limited light weighting potential.

Greg Ludkovsky, vice president global R&D said: "Many key innovations in automotive steel products and solutions in the past 10 years have come from ArcelorMittal's R&D teams. By applying the present solutions, a car door can be 30 percent less expensive than an aluminium door. Innovative steel solutions like the ultra lightweight car door solutions are further proof that steel is by far the most sustainable, the most versatile and the most affordable material to help carmakers produce lighter vehicles and achieve their weight reduction targets on time. "

For more information and illustrations about ArcelorMittal's new ultra lightweight car door solutions, please visit: www.arcelormittal.com/automotive

About ArcelorMittal

ArcelorMittal is the world's leading integrated steel and mining company, with a presence in more than 60 countries.

ArcelorMittal is the leader in all major global steel markets, including automotive, construction, household appliances and packaging, with leading R&D and technology, as well as sizeable captive supplies of raw materials and outstanding distribution networks. With an industrial presence in over 20 countries spanning four continents, the Company covers all of the key steel markets, from emerging to mature.

Through its core values of sustainability, quality and leadership, ArcelorMittal commits to operating in a responsible way with respect to the health, safety and well-being of its employees, contractors and the communities in which it operates. It is also committed to the sustainable management of the environment. It takes a leading role in the industry's efforts to develop breakthrough steelmaking technologies and is actively researching and developing steel-based technologies and solutions that contribute to combat climate change.

In 2012, ArcelorMittal had revenues of \$84.2 billion and crude steel production of 88.2million tonnes, representing approximately 6 percent of world steel output.

ArcelorMittal is listed on the stock exchanges of New York (MT), Amsterdam (MT), Paris (MT), Luxembourg (MT) and on the Spanish stock exchanges of Barcelona, Bilbao, Madrid and Valencia (MTS).

For more information about ArcelorMittal please visit: www.arcelormittal.com.

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