

Aluminium improves road safety

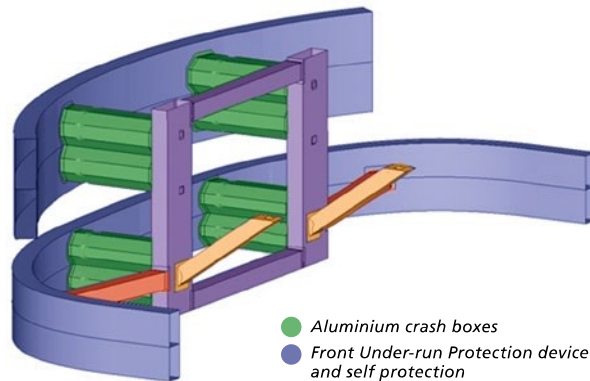
Road safety is a major priority for EU policy makers. One way to improve road safety is to reduce the severity of accidents between large trucks, smaller personal vehicles and vulnerable road users. A study⁷ was conducted to investigate if a tractor optimized for better aerodynamics and pedestrian safety could be equipped with an energy-absorbing crash management system (CMS). The aerodynamic design led to an extra

space in the front of the tractor, and this space was identified as a good place to mount this energy absorbing structure. A state-of-the-art aluminium CMS was developed, and the study demonstrated that the severity of car to truck accidents can be significantly reduced, while at the same time the self-protection for truck drivers can be improved.

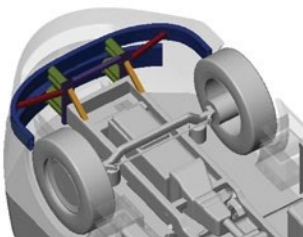
The safety improvements that this brings involve a very low weight increase of less than 10 kg compared to a CMS from a conventional tractor. To introduce this type of passive safety devices into trucks, the tractor would have to be extended in the forward section by 500-1000 mm. The European Directive on the weight and dimensions of trucks (96/53/EC) is currently being revised in that direction.



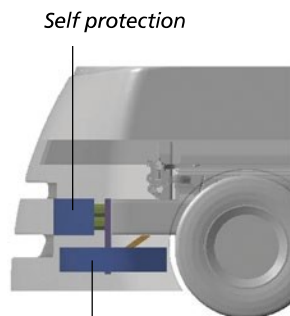
Tractor optimized for better aerodynamics and safety



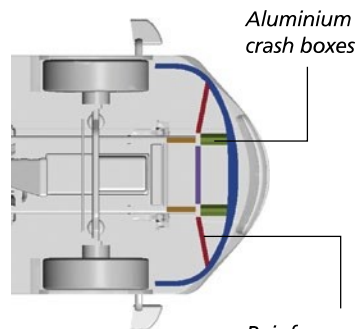
- Aluminium crash boxes
- Front Under-run Protection device and self protection
- Reinforcement for ECE-approval
- Vertical supports
- Base plate



Design of the aluminium CMS for a truck with extended front.



Front under-run protection



Reinforcement for ECE-approval