

DID YOU KNOW?

Did you know that thanks to CFD you can travel comfortably in your vehicle without suffering from temperature extremes?

In the automotive sector, CFD (Computational Fluid Dynamics) is not only applied to aerodynamic calculations, it is also used for an unexpected wide variety of applications, such as thermal comfort.

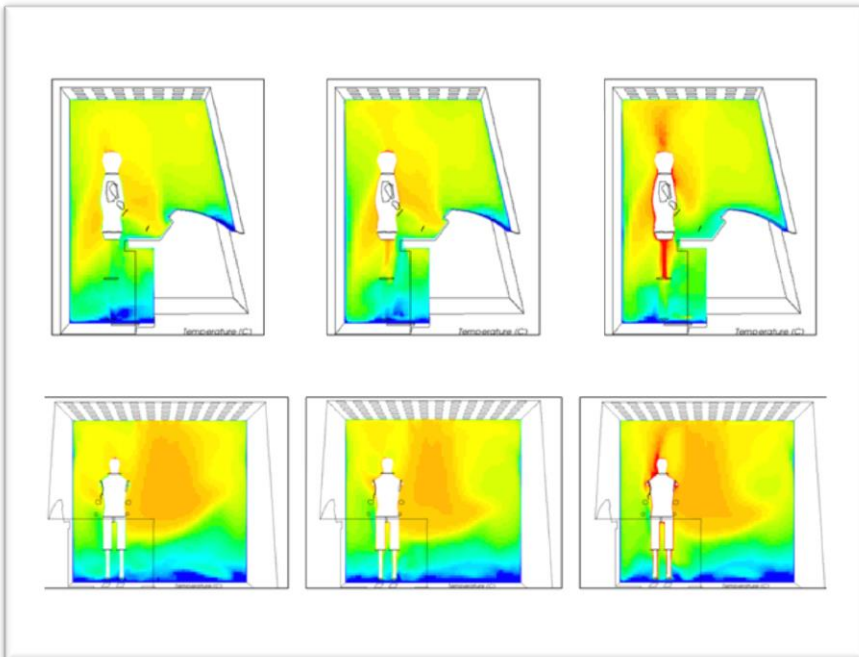
Subjective to individual perception, thermal comfort is defined in British Standard BS EN ISO 7730 as:

'The condition of mind which expresses satisfaction with the thermal environment.'

Quantitatively, air temperatures in vehicles are imposed by International and EU regulations and standards (EN ISO 14505).

Renuda® with ALSTOM Transport (world leader in very high speed and high speed train sector) have been working on thermal comfort at the early design stage of a driver's cabin and a passenger carriage in order to ensure that temperature criteria imposed by EU standards are respected.

The influence of the human body on thermal comfort in a carriage is important but extremely difficult to assess, even more so when the passenger carriage is crowded.



understanding of a wide range of coupled physical phenomena, from turbulent flow to reactive and multiphase flow.

Renuda and its innovative approach in CFD will provide you with fast, cost effective and accurate solutions optimising your industrial and design processes, accelerating decision making and reducing your R&D costs.

www.renuda.com Tel: +44 (0) 20 3371 1709

Nicolas Tonello- Director- Email: nicolas.tonello@renuda.com

Lydia Fulton- Marketing Manager- Email: lydia.fulton@renuda.com

EN ISO 14505 gives guidelines and specifies a standard test method for the assessment of thermal comfort. It applies to both passengers and operators of vehicles.

This European and International norm is applicable to all types of vehicles including:

- Cars
- Buses
- Trucks
- Trains
- Ships
- Submarines
- Aircraft
- Off-road vehicles

Thanks to Renuda's expertise in CFD, different human body models were developed and validated and simulations were run in order to understand the impact of the human body on thermal comfort.

All these models are now available for use and can be applied for a broad range of vehicles, from trains to ships.

Renuda's consultants are experts in fluid dynamics and heat transfer with a wide experience of industrial applications (Automotive, Energy, Oil and Gas, Turbo machinery, Process industry, etc.) and in-depth