

Abstract

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Effects of Vehicle Windshield Defrosting and Demisting Process on Passenger Comfort (Ford Mondeo)

Maintaining adequate visibility at all times, through a vehicle windshield, is critical to the safe usage of the vehicle. The ability of the windshield defrost and demist system to quickly and completely melt ice on the outer windshield surface and remove mist formed on the inner surface is therefore of paramount importance. The objective of this paper is to investigate the fluid flow and heat transfer on the windshield of a full-scale vehicle. The results presented are from numerical simulations validated by experiment using conventional and optical instrumentation. The paper discusses the influence of the defroster and demister vents on the fluid motion enclosed within the vehicle as well as comfort and safety issues.