

# **Advanced Evacuation Analysis considering the effects of fire using Computational Methods**

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## **Abstract:**

The analysis to verify the adequacy of escape routes for evacuation is mandated by SOLAS for new passenger vessels, w.e.f 1st January 2020. The analysis needs to consider several factors including the composition and walking speed of the passengers, location and geometry of the escape routes etc. It is thus beneficial to perform an advanced evacuation analysis considering the various influencing parameters for precise assessment of evacuation time for a given design/layout and effect due to change in the parameters. Advanced evacuation analysis helps in identifying the critical bottlenecks in the evacuation path and facilitate design improvement effectively. The present paper presents description of performing advanced evacuation analysis with a practical example. Also presents description on coupling of advanced evacuation analysis with computational fluid dynamics (CFD) solver to compute the effects of fire (smoke, heat and toxicity) on the passenger walking speed with an example of fire inside a restaurant scenario.