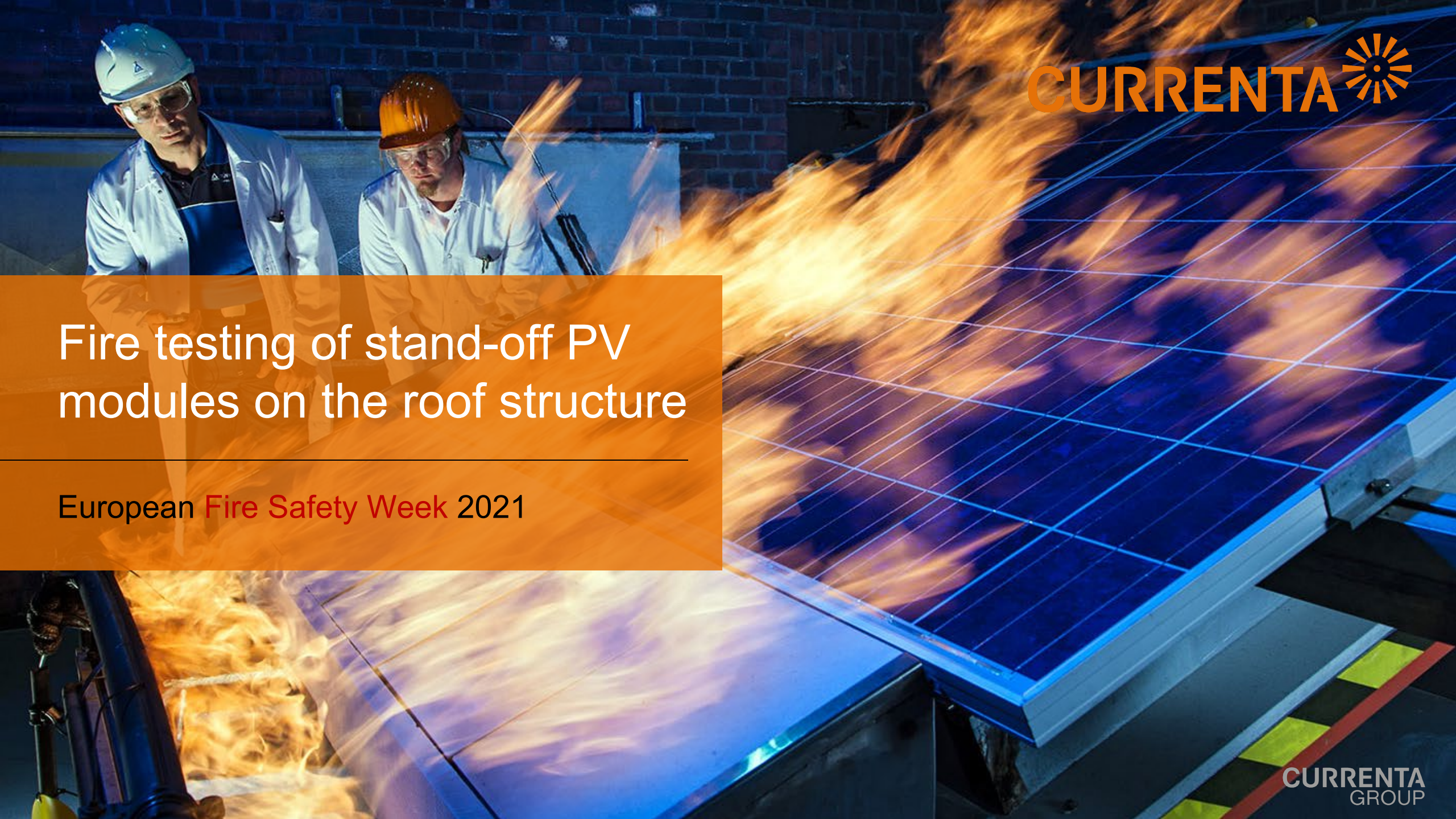

Fire testing of stand-off PV modules on the roof structure

European Fire Safety Week 2021

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Introduction

- Roofs in Europe are tested and approved for specific scenarios, including external fire impacts

➢ **But what happens to already approved roofs, on which a photovoltaic (PV) system has been installed, under the influence of external fire?**

- Due to installed elevated PV systems, a different fire behavior of the roof is present - but how big is the impact?

- Current recommendation from insurance companies is not to install PV systems on roofs with combustible insulation

Test setup

Test result

- Class A2
  Mineral fiber
  Insulation material

- Class C
  Thermoset
  Foam Insulation Material
  (PIR)

Test result

Conclusion

- The use of the square gas burner as an ignition source provided a constant heat release and better reproducibility

- The damage pattern on the insulation materials is comparable, none of the tested insulations contributed significantly to the fire

- In general, the fire performance of the different PV modules differs from each other

➢ **For the safe implementation of the energy transition, the fire protection requirements for PV modules have to be re-evaluated**

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