

Flashover times ranged from no flashover in 15 minutes to less than five minutes. The rank order of products from least to greatest time to flashover was:

1. Oriented Strand Board
2. Southern Yellow Pine, Particleboard
3. Douglas Fir, Redwood
4. Fire Retardant Treated Douglas Fir PW

These results suggest very reasonable agreement between flame spread classifications as determined by the 25' Tunnel and the fire growth rates as determined by flashover in a room fire test.

Hao Tran (FPL) and Marc Janssens, who generated these results, plan to determine the heat release and flame spread characteristics of these six materials and then model the tests using the CORNWALL Model. James White will model the fires using the most recent version of the OSU ROOM Model and the OSU RHR.

4. APPLICATION OF MODELING RESEARCH

The fire growth modeling and room fire testing will eventually be used as evidence for proposing changes in the model building codes. Specifically, the proposal will recommend that fire performance of structural elements and assemblies be based on the fire growth scenario probable for that building and the major factors influencing the fire and smoke development. This would allow trade-offs in the building design and materials without sacrificing fire safety. Architects and building owners would gain greater flexibility.

Another very practical use of this modeling work has been its use in new product and assembly development. Right now an E 119 fire can be used in the exposure scenario and prediction of the fire endurance of the assembly can be made. Additional information on the progress being made in this area will be forthcoming.

5. CONCLUSION

The progress made to date in this modeling and room test program is encouraging despite some obvious needs for improvement. Researchers participating in this work remain committed to achieving the goals set out at the beginning of this paper and look forward to reporting future progress.

6. REFERENCES

- Parker, William J. Determination of the Input Data for a Model of the Heat Release Rate of Wood, ASTM Special Technical Publication 983, Pennsylvania, 1988.
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- Tran, Hao C., and Marc L. Janssens, "Room Fire Test for Fire Growth Modeling--A Sensitivity Study," For Publication in Journal of Fire Sciences, Technomic Publishing Company, Pennsylvania, 1989.