



Serving the Forest Products Industry in Products Development, Process Improvement and Training

**USE OF MICRO WAVE PREHEATING IN A
BATCH PRESS LVL MANUFACTURE
AN EXPLORATORY STUDY**

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INTRODUCTION

The first continuous press for the manufacture of LVL using microwave (MW) pre-heating started at Rocky Mountain, AB, Canada in October 1997. The basis for this installation was primarily theoretical with only cursory laboratory work conducted with respect to material behavior under MW, resin system characterization process economics, etc. With five such LVL mills operating in the world now, it has been demonstrated that the use of MW technology and continuous pressing of LVL is not only a technologically viable but also economically sound.

There is now a lot of in-mill experience about the use of MW systems as used in continuous press LVL manufacture. As well, there are several questions that are coming out with respect to the optimization of such processes with regard to technology updates, species of wood, resin system, veneer moisture content, glue spread levels, to mention a few. Besides getting some answers on these questions, we believe that it is logical to explore the advantages of MW technology in other forest products manufacturing applications. These include OSB, MDF, Particleboard, I-Joist, Gluelam, etc. The absence of a development laboratory with the appropriate technology MW technology had however, hindered further advancement of the technology into these products as well as further refinements of the existing systems in the field.

TTS Inc. is a forest products consulting operation with a products development laboratory in Edmonton, AB, Canada. While the principal was involved in the development of specifications, start-up and optimization of the first LVL operation using microwave (MW) pre-heating, TTS has been involved at the various stages in the start-up and optimization of three of the other plants. As a result, the company has established a recognized leadership position in MW applications in forest products manufacture. In order to maintain its leadership position in the application of MW technologies for forest products manufacture TTS installed the first laboratory continuous microwave pre-heating system in the world in January 2005 and several exploratory studies were conducted since then. This report briefly covers the results of one such study.