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COMPARISON OF PRESS SYSTEMS FOR GLUED LAMINATED TIMBER PRODUCTION

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RESUMO: Vários sistemas de prensas de tecnologia de ponta para a fabricação de vigas de madeira colada laminada (MLC) e outros produtos laminados colados são comparados, incluindo as vantagens e desvantagens. Esse trabalho foi baseado no trabalho de campo do autor.

Palavras-chave: MLC, estrutura de madeira, produção, prensa

ABSTRACT: Various state-of-the-art press systems are compared for the production of glued laminated timber and similar products (including Japanese posts, duolam/triolam, etc), listing their advantages and disadvantages. The work is based on fieldwork and notes made by the author.

Keywords: glulam, timber structures, production, press

1 INTRODUCTION

Along with the finger-joining equipment, press systems for laminating are the heart of any glued laminated beam production. They lend the factory their character, and they very often determine what the remaining machinery in the factory should be. Presses and the press tact, together with the adhesive type chosen for production, determine the production capacity of the factory. Adhesive systems can always be speeded up; the press, however, must be able to work fast enough to keep up with our ever-faster setting adhesives.

This paper is segmented into two parts: the first section for straight, standard beams; a second for curved, custom-made beams. No specific products are being endorsed in this paper; companies named are representative examples of the press systems described.

2 PRESS SYSTEMS FOR STRAIGHT BEAMS

2.1 Pressing at ambient temperature

2.1.1 Manual screw clamping for straight beams

This is the original method used to hold two lamellae surfaces together while the adhesive is curing. It is simple to install and produce, very inexpensive when compared to other press systems, and does not require qualified personnel. Very long beam lengths can be made on such presses, given enough press beds are available.

Figure 1 – Manual clamping of straight beams (MARRA)

However: production capacities are small (making it hard to compete nowadays in the standard beam market), assembly times and accompanying press times are longer, and often a higher glue spread is needed. Various press layers can be placed over each other on the same press bed, but this decreases productivity. An automatic feed-in system before the glue spreader greatly improves productivity, as manual glue spreading is avoided. This system is acceptable for small producers, with low investment costs, low personnel costs, and no productivity constraints.