

Effect different coating of paraffine emulsion on selected properties of OSB boards

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Introduction

The use of OSB is popular in various building materials. The OSB are imposed among other things, the requirements for moisture resistance. In the production of OSB boards, the moisture resistance sets the chemical adjuvants - e.g. paraffin emulsion. In this work we aimed to assess the impact of 2% and 3% paraffin emulsion coating to selected properties in the manufacture of OSB boards in industrial conditions. The measurements were carried out on OSB 3 thickness 22 mm.

Aim

Assess the impact of changes in coating hydrophobic medium - paraffin emulsion on selected physical and mechanical properties OSB boards.

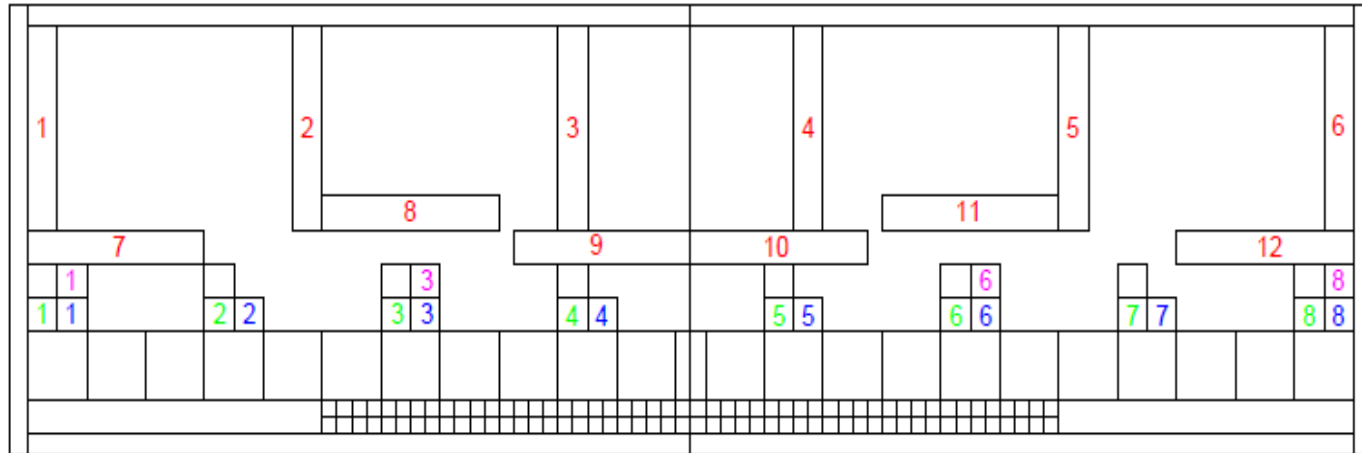
Material and methods

In Industrial conditions - produced OSB 3 boards
with:

- thickness 22 mm
- paraffin emulsion: - 2%
- 3%
- press factor – 5.6 s/mm
- pMDI resin - 2.60 % amount on surface
- 2.40 % amount on core

Material and methods

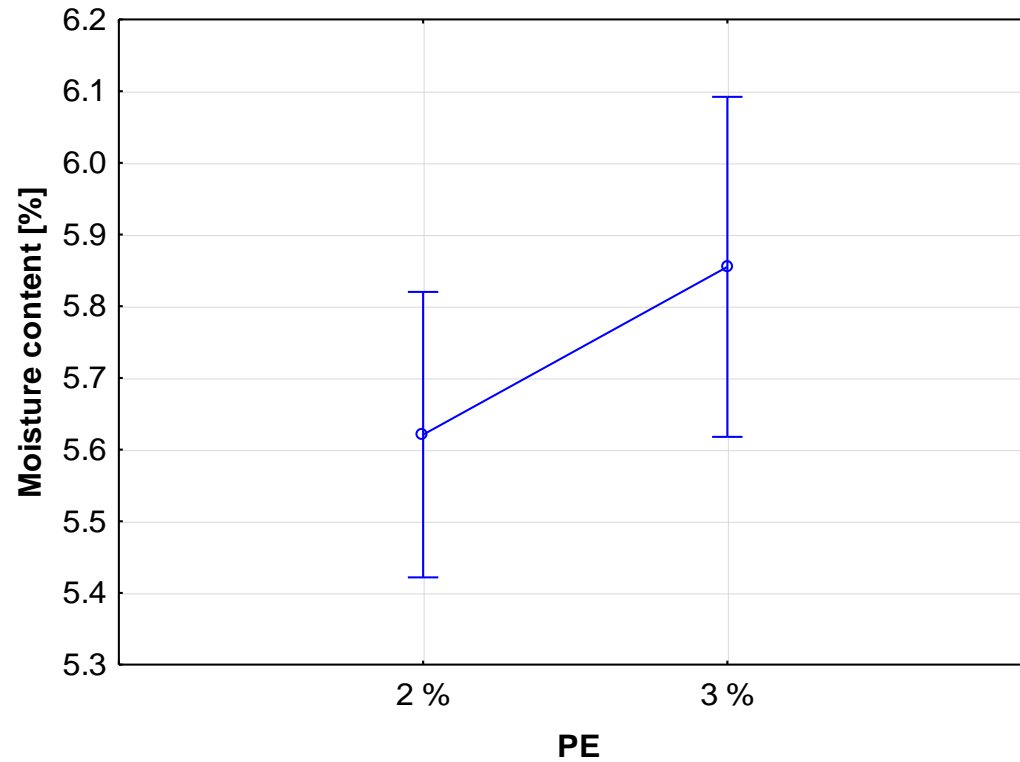
Cutting scheme (2500x600mm)



- 1 - 6** Samples for MOR and MOE parallel (EN 310)
- 7 - 12** Samples for MOR and MOE perpendicular (EN 310)
- 1- 8** Samples for tensile strength perpendicularly to the plane (EN 319) and Density (EN 323) 50x50 mm
- 1- 8** Samples for swelling after 24 hours (EN 317) 50x50mm
- 1,3,6, 8** Samples moisture content (EN 322) 50x50 mm

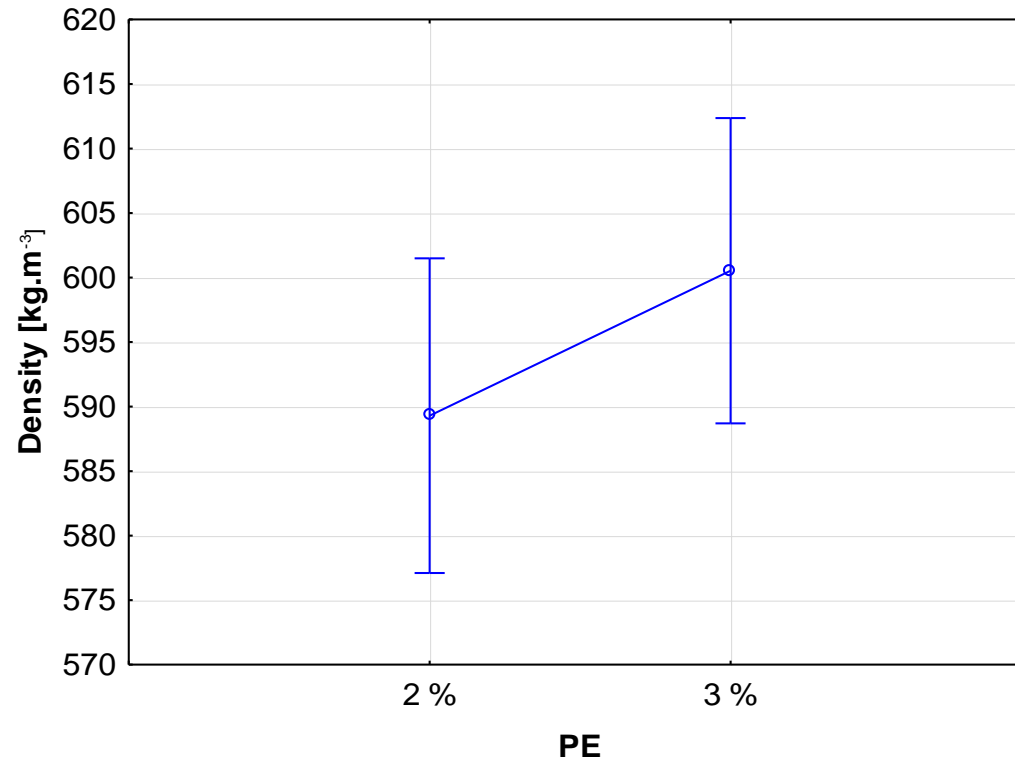
Results: Physical properties.

Moisture content



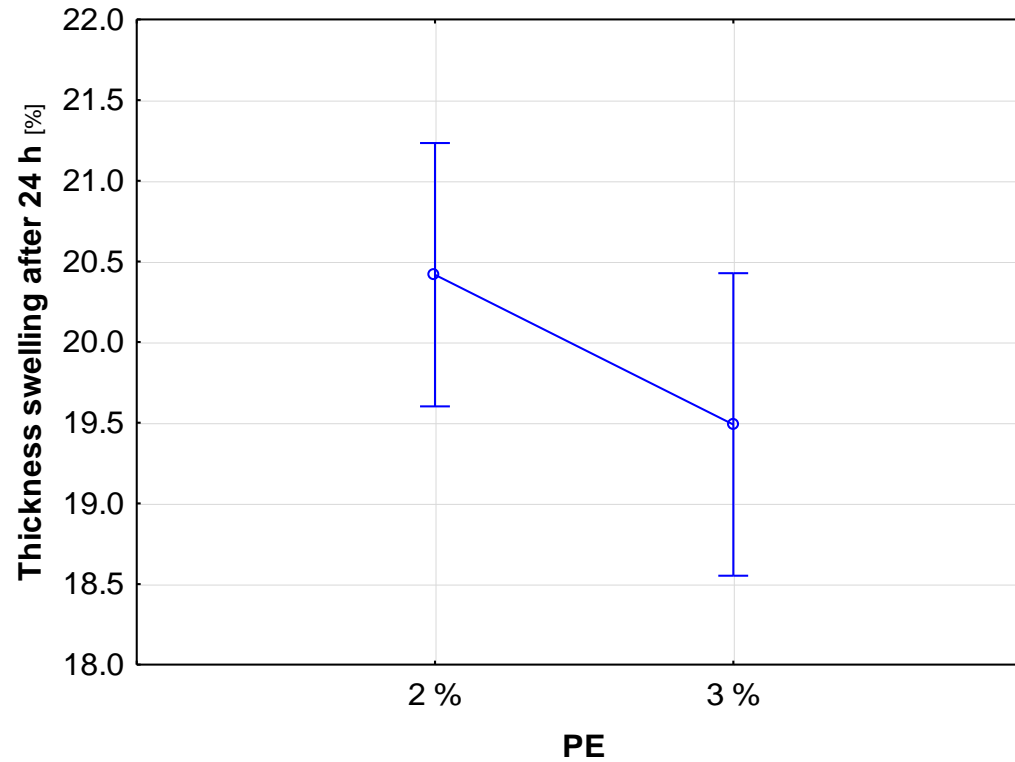
Results: Physical properties.

Density



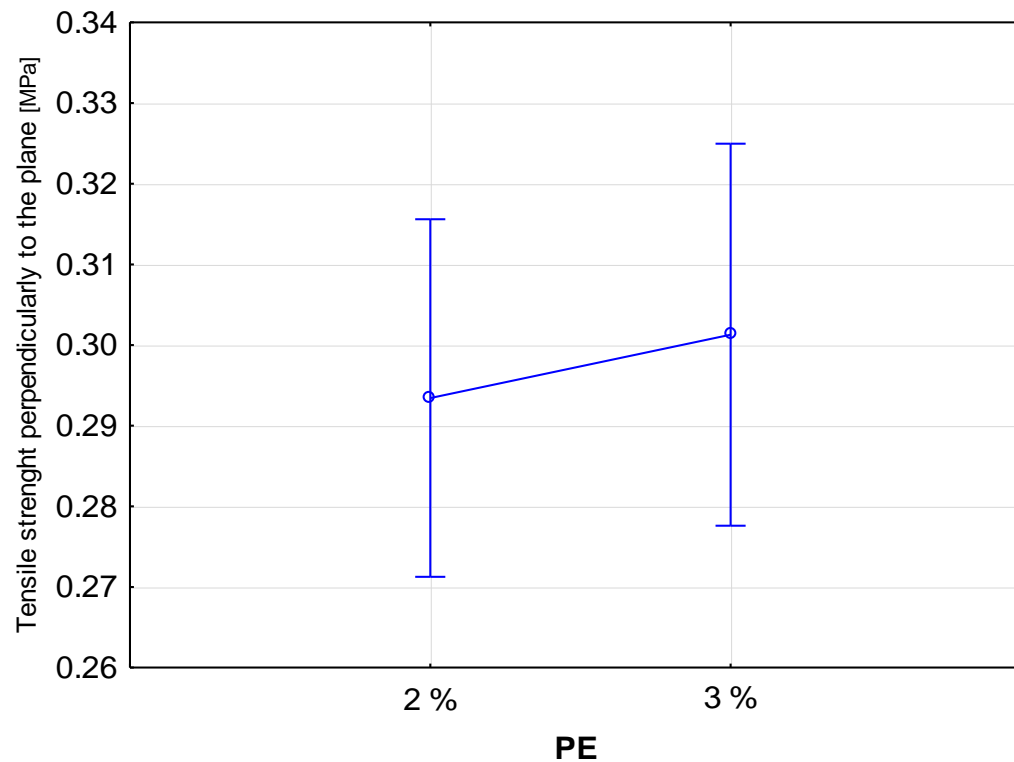
Results: Physical properties.

Thickness swelling after 24h



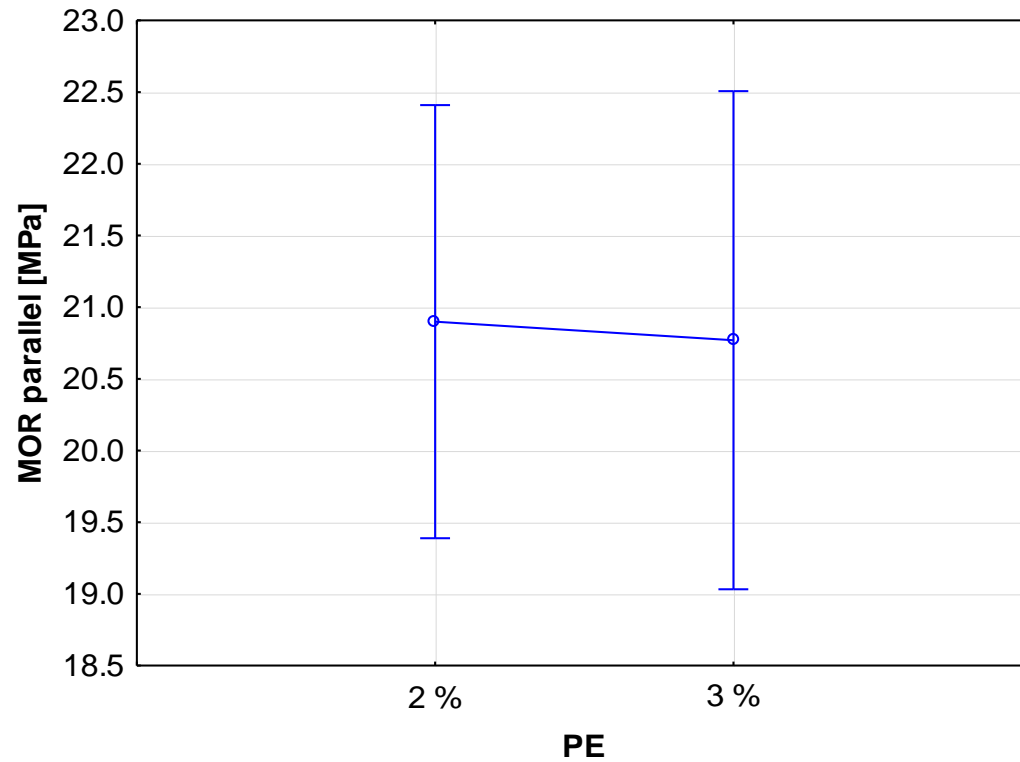
Results: Mechanical properties.

Tensile strength perpendicularly to the plane



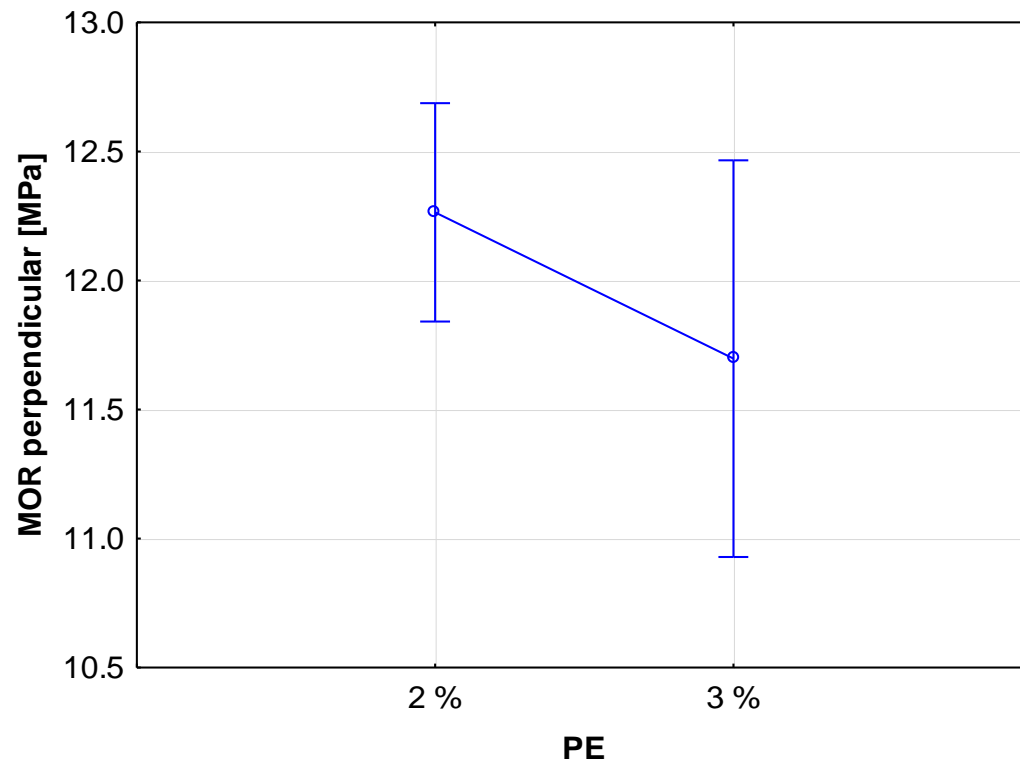
Results: Mechanical properties.

Modulus of ruptures parallel



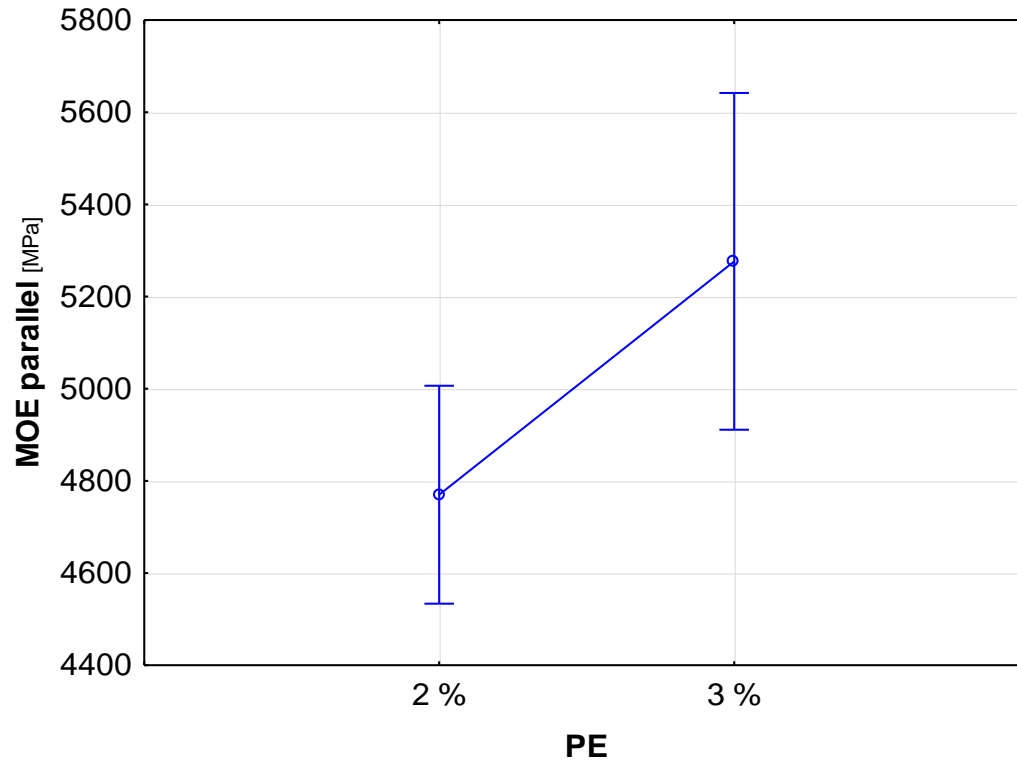
Results: Mechanical properties.

Modulus of ruptures perpendicular



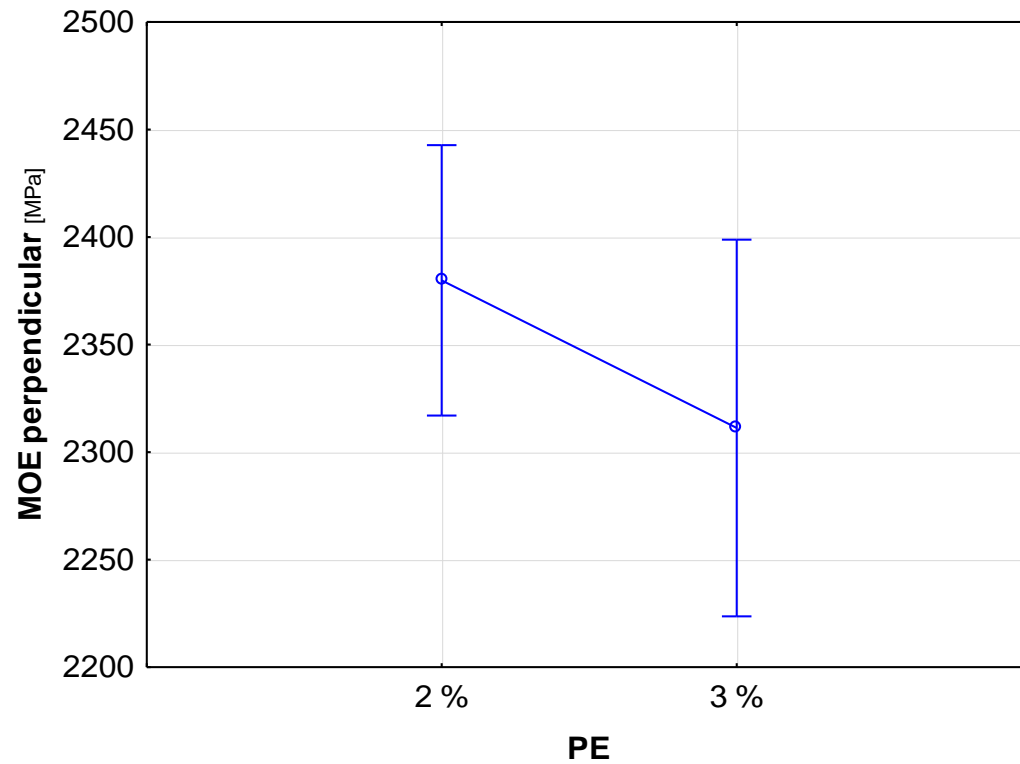
Results: Mechanical properties.

Modulus of elasticity parallel



Results: Mechanical properties.

Modulus of elasticity perpendicular



Conclusions

It was confirmed that the increased loading to paraffin emulsion, in particular the decrease of the mechanical properties. Paraffin emulsion while the impact on the physical properties especially swelling was slightly positive.

Thank you for your attention

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